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UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No.	99879-00026
First Inventor	Ira Marlowe
Title	Multimedia Device Integration System
Express Mail Label	EV623706889US

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

1. ☐ **Fee Transmittal Form** (e.g., PTO/SB/17) *(Submit an original and a duplicate for fee processing)*
2. ☑ **Applicant claims small entity status.** See 37 CFR 1.27.
3. ☑ **Specification** [Total 102] Both the claims and abstract must start on a new page *(For information on the preferred arrangement, see MPEP 608.01(a))*
4. ☑ **Drawing(s)** *(35.U.S.C. 113)* [Total Sheets 36]
5. Oath or Declaration [Total Sheets]
   a. ☑ Newly Unexecuted Declaration
   b. ☐ Copy from a prior application (37 CFR 1.63(d)) *(for continuation/divisional with Box 18 completed)*
      i. ☐ DELETION OF INVENTOR(S) Signed statement attached deleting inventor(s) name in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).
6. ☐ **Application Data Sheet.** See 37 CFR 1.76
7. ☐ **CD-ROM or CD-R** in duplicate, large table or Computer Program *(Appendix)*
   ☐ Landscape Table on CD
8. **Nucleotide and/or Amino Acid Sequence Submission** *(if applicable, items a. - c. are required)*
   a. Computer Readable Form (CRF)
      i. ☐ Computer Readable Form (CRF)
      ii. ☐ Transfer Request (37 CFR 1.821(e))
   b. Specification Sequence Listing on:
      i. ☐ CD-ROM or CD-R (2 copies); or
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ACCOMPANYING APPLICATION PARTS

9. ☐ **Assignment Papers** (cover sheet & document(s))
   Name of Assignee
10. ☐ **37 CFR 3.73(b) Statement** *(when there is an assignee)* ☐ **Power of Attorney**
11. ☐ **English Translation Document** *(if applicable)*
12. ☐ **Information Disclosure Statement** (PTO/SB/08 or
    ☐ Copies of foreign patent documents, publications, & other information
13. ☐ **Preliminary Amendment**
14. ☑ **Return Receipt Postcard** (MPEP 503) *(Should be specifically itemized)*
15. ☐ **Certified Copy of Priority Document(s)** *(if foreign priority is claimed)*
16. ☐ **Nonpublication Request** under 35 U.S.C. 122 (b)(2)(B)(i). Applicant must attach form PTO/SB/35 or equivalent.
17. ☑ Other: **Transmittal Letter**

18. If a CONTINUING APPLICATION, *check appropriate box, and supply the requisite information below and in the first sentence of the specification following the title, or in an Application Data Sheet under 37 CFR 1.76:*

☐ Continuation ☐ Divisional ☑ Continuation-in-part (CIP) of prior application No.: **11/071,667**

Prior application information: Examiner **Edward F. Urban** Art Unit: **2618**

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This collection of information is required by 37 CFR 1.53(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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Date: June 27, 2006

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Customer No.: 27614

File: 99879-00026
Inventor(s): Ira Marlowe
Title: Multimedia Device Integration System
Express Mail Label No.: EV 623706889 US

Sir:

Enclosed herewith please find the following documents in the above-identified application for Letters Patent of the United States:

- 102 Pages of Specification including claims 1-91 and 1 page of Abstract
- 36 Sheets of Drawings (Figs. 1-24)
- X Utility Patent Application Transmittal Form PTO/SB/05
- X Unexecuted Declaration and Power of Attorney (1 sheet)
- X Return-addressed Postcard
- X Transmittal Letter (2 sheets)

- X Applicant claims small entity status

Basic Filing Fee	$ 150.00
Additional Fees:	
Utility Search Fee	$ 250.00
Utility Examination Fee	$ 100.00
Total number of claims (including multiple dependent claims) 91	
Total number of claims in excess of 20, times $25 71	$ 1,775.00
Number of independent claims 7	
Number of independent claims minus 3, times $100 4	$ 400.00
Fee for multiple dependent claims ($360/$180)	$ 0.00
Fee for each additional 50 sheets exceeding 100 ($125)	$ 125.00
TOTAL FILING FEES:	**$ 2,800.00**

PRIORITY CLAIM:

This is a ___ Continuation _X_ Continuation-in-Part ____ Divisional, of U.S. Application Serial No. 11/071,667 filed March 3, 2005, which is a continuation-in-part of U.S. Application Serial No. 10/732,909 filed December 10, 2003, which is a continuation-in-part of U.S. Application Serial No. 10/316,961 filed December 11, 2002.

McCARTER ENGLISH

Please note that this application is being filed with an unexecuted Declaration and Power of Attorney. Pursuant to 37 C.F.R. 1.53, the United States Patent and Trademark Office is respectfully requested to accept this application and accord a serial number and filing date as of the date that this application is deposited with the U.S. Postal Service for Express Mail. Further, it is respectfully requested that the NOTICE OF MISSING PARTS-FILING DATE GRANTED pursuant to 37 C.F.R. 1.53 be sent to the undersigned attorney.

Respectfully submitted,

McCARTER & ENGLISH, LLP

Michael R. Friscia
Reg. No. 33,884

MRF/jf
Enclosures

CERTIFICATE OF MAILING BY EXPRESS MAIL

I hereby certify that this correspondence is being deposited with the United States Postal Service, postage prepaid, as "Express Mail Post Office to Addressee", Mailing Label No. EV623706889 to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on 6/27/06.

Janelle Fava 6/27/06
Janelle Fava (date)

Express Mail Label No.: EV623706889US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

INVENTOR: IRA MARLOWE

TITLE: MULTIMEDIA DEVICE INTEGRATION SYSTEM

SPECIFICATION

BACKGROUND OF THE INVENTION

RELATED APPLICATIONS

This application is a continuation-in-part of U.S. Patent Application Serial No. 11/071,667, filed March 3, 2005, now U.S. Patent No._____, which is a continuation-in-part of U.S. Patent Application Serial No. 10/732,909 filed December 10, 2003, now U.S. Patent No. _____, which is a continuation-in-part of U.S. Patent Application Serial No. 10/316,961 filed December 11, 2002, now U.S. Patent No. _____, the entire disclosures of which applications are each expressly incorporated herein by reference.

FIELD OF THE INVENTION

The present invention relates to a multimedia device integration system. More specifically, the present invention relates to a multimedia device integration system for integrating after-market components such as satellite receivers, CD players, CD changers, digital media devices (*e.g.*, MP3 players, MP4 players, WMV players, Apple iPod devices, portable media centers, and other devices), Digital Audio Broadcast (DAB) receivers, auxiliary audio sources, video devices (*e.g.*, DVD players), cellular telephones, and other devices for use with factory-installed (OEM) or after-market car stereo and video systems.

RELATED ART

Automobile audio systems have continued to advance in complexity and the number of options available to automobile purchasers. Early audio systems offered a simple AM and/or FM tuner, and perhaps an analog tape deck for allowing cassettes, 8-tracks, and other types of tapes to be played while driving. Such early systems were closed, in that external devices could not be easily integrated therewith.

With advances in digital technology, CD players have been included with automobile audio systems. Original Equipment Manufacturers (OEMs) often produce car stereos having CD players and/or changers for allowing CDs to be played while driving. However, such systems often include proprietary buses and protocols that do not allow after-market audio systems, such as satellite receivers (e.g., XM satellite tuners), digital audio broadcast (DAB) receivers, digital media players (*e.g.*, Apple iPod, MP3, MP4, WMV, etc.), CD changers, auxiliary input sources, video devices (*e.g.*, DVD players), cellular telephones, and the like, to be easily integrated therewith. Thus, automobile purchasers are frequently forced to either entirely replace the OEM audio system, or use same throughout the life of the vehicle or the duration of ownership. Even if the OEM radio is replaced with an after-market radio, the after-market radio also frequently is not operable with an external device.

A particular problem with integrating after-market audio and video systems with existing car stereo and video systems is that signals generated by both systems are in proprietary formats, and are not capable of being processed by the after-market system. Additionally, signals generated by the after-market system are also in a proprietary format that is not recognizable by

the car stereo or video system. Thus, in order to integrate after-market systems with existing car stereo and video systems, it is necessary to convert signals between such systems.

It known in the art to provide one or more expansion modules for OEM and after-market car stereos for allowing external audio products to be integrated with the car stereo. However, such expansion modules only operate with and allow integration of external audio products manufactured by the same manufacturer as the OEM / after-market car stereo. For example, a satellite receiver manufactured by PIONEER, Inc., cannot be integrated with an OEM car radio manufactured by TOYOTA or an after-market car radio manufactured by CLARION, Inc. Thus, existing expansion modules only serve the limited purpose of integrating equipment by the same manufacturer as the car stereo. Thus, it would be desirable to provide an integration system that allows any audio device of any manufacture to be integrated with any OEM or after-market radio system. Further, radio-frequency (RF) transmitters and cassette tape adapters have been developed for allowing music from a device external to a car radio, such as a portable CD player, to be played through the car radio using the FM receiver or the cassette deck of the radio. However, such systems are often prone to interference, and do not provide high fidelity.

Moreover, it would be desirable to provide an integration system that not only achieves integration of various audio and video devices that are alien to a given OEM or after-market car stereo or video system, but also allows for information to be exchanged between the after-market device and the car stereo or video system. For example, it would be desirable to provide a system wherein station, track, time, and song information can be retrieved from the after-market device, formatted, and transmitted to the car stereo or video system for display thereby, such as

at an LCD panel of the car stereo or on one or more display panels of a car video system. Such information could be transmitted and displayed on both hardwired car stereo and video systems (*e.g.*, radios installed in dashboards or at other locations within the car), or integrated for display on one or more software or graphically-driven radio systems operable with graphical display panels. Additionally, it would be desirable to provide a multimedia device integration system that allows a user to control more than one device, such as a CD or satellite receiver and one or more auxiliary sources, and to quickly and conveniently switch between same using the existing controls of the car stereo or video system. Still further, it would be desirable to provide a multimedia device integration system that allows for wireless integration of portable devices for use with car audio and/or video systems, wherein full remote control of the portable device is provided at the controls of the car system.

Accordingly, the present invention addresses these needs by providing a multimedia device integration system that allows a plurality of after-market devices, such as CD players, CD changers, digital media devices (*e.g.*, MP3 players, MP4 players, Apple iPod, WMV players, portable media centers, and other devices), satellite receivers, DAB receivers, auxiliary input sources, video devices (*e.g.*, DVD players), cellular telephones, or any combination thereof, to be integrated into existing car stereo and video systems while allowing information to be displayed on, and control to be provided from, the car stereo or video system.

SUMMARY OF THE INVENTION

The present invention relates to a multimedia device integration system. One or more after-market audio devices, such as CD players, CD changers, digital media devices (*e.g.*, MP3 players, MP4 players, WMV players, Apple iPod devices, portable media centers, and other devices), satellite receivers (*e.g.*, XM or Sirius receivers), digital audio broadcast (DAB) receiver, or auxiliary input sources, can be connected to and operate with an existing stereo system in an automobile, such as an OEM car stereo system or an after-market car stereo system installed in the automobile. The integration system connects to and interacts with the car stereo at any available port of the car stereo, such as a CD input port, a satellite input, or other known type of connection. If the car stereo system is an after-market car stereo system, the present invention generates a signal that is sent to the car stereo to keep same in an operational state and responsive to external data and signals. Commands generated at the control panel are received by the present invention and converted into a format recognizable by the after-market device. The formatted commands are executed by the after-market device, and audio therefrom is channeled to the car stereo. Information from the after-market device is received by the present invention, converted into a format recognizable by the car stereo, and forwarded to the car stereo for display thereby. The formatted information could include information relating to a CD or MP3 track being played, channel, song, and artist information from a satellite receiver or DAB receiver, or video information from one or more external devices connected to the present invention. The information can be presented as one or more menus, textual, or graphical prompts for display on an LCD display of the radio, allowing interaction with the user at the radio. A docking port may be provided for allowing portable external audio devices to be connected to the interface of the present invention.

In an embodiment of the present invention, a dual-input device is provided for integrating both an external audio device and an auxiliary input with an OEM or after-market car stereo. The user can select between the external audio device and the auxiliary input using the controls of the car stereo. The invention can automatically detect the type of device connected to the auxiliary input, and integrate same with the car stereo.

In another embodiment of the present invention, an interface is provided for integrating a plurality of auxiliary input sources with an existing car stereo system. A user can select between the auxiliary sources using the control panel of the car stereo. One or more after-market audio devices can be integrated with the auxiliary input sources, and a user can switch between the audio device and the auxiliary input sources using the car stereo. Devices connected to the auxiliary input sources are inter-operable with the car stereo, and are capable of exchanging commands and data via the interface.

In another embodiment of the present invention, an interface is provided for integrating an external device for use with a car stereo or video system, wherein the interface is positioned within the car stereo or video system. The system comprises a car stereo or video system; an after-market device external to the car stereo or video system; an interface positioned within the car stereo or video system and connected between the car stereo or video system and the after-market device for exchanging data and audio or video signals between the car stereo or video system and the after-market device; means for processing and dispatching commands for controlling the after-market device from the car stereo or video system in a format compatible with the after-market device; and means for processing and displaying data from the after-market

device on a display of the car stereo or video system in a format compatible with the car stereo or video system. The after-market device could comprise one or more of a CD changer, CD player, satellite receiver (*e.g.*, XM or Sirius), digital media device (*e.g.*, MP3, MP4, WMV, or Apple iPod device), video device (*e.g.*, DVD player), cellular telephone, or any combination thereof.

In another embodiment of the present invention, an interface is provided for integrating a cellular telephone for use with a car stereo or video system. The system comprises a car stereo or video system; a cellular telephone external to the car stereo or video system; an interface connected between the car stereo or video system and the cellular telephone for exchanging data and audio or video signals between the car stereo or video system and the cellular telephone; means for processing and dispatching commands for controlling the cellular telephone from the car stereo or video system in a format compatible with the cellular telephone; and means for processing and displaying data from the cellular telephone on a display of the car stereo or video system in a format compatible with the car stereo or video system.

In another embodiment of the present invention, an interface is provided for integrating an external video system for use with a car video system. The system comprises a car video system; an after-market video device external to the car video system; an interface connected between the car video system and the after-market video device for exchanging data, audio, and video signals between the car video system and the after-market video device; means for processing and dispatching commands for controlling the after-market video device from the car video system in a format compatible with the after-market video device; and means for

processing and displaying data from the after-market video device on a display of the car video system in a format compatible with the car video system.

The present invention also provides an interface for integrating a plurality of after-market devices for use with a car stereo or video system using a single interface. In one embodiment, the system comprises an interface in electrical communication with a car stereo or video system and an after-market device; a plurality of configuration jumpers in the interface for specifying a first device type corresponding to the car stereo or video system and a second device type corresponding to the after-market device; and a plurality of protocol conversion software blocks stored in memory in the interface for converting signals from the after-market device into a first format compatible with the car stereo or video system and for converting signals from the car stereo or video system into a second format compatible with the after-market device, wherein at least one of the protocol conversion software blocks are selected by the interface using settings of the plurality of configuration jumpers. In another embodiment, the system comprises an interface in electrical communication with a car stereo or video system and an after-market device; first and second wiring harnesses attached to the interface, wherein the first wiring harness includes a first electrical configuration corresponding to the car stereo or video system and the second wiring harness includes a second electrical configuration corresponding to the after-market device; and a plurality of protocol conversion software blocks stored in memory in the interface for converting signals from the after-market device into a first format compatible with the car stereo or video system and for converting signals from the car stereo or video system into a second format compatible with the after-market device, wherein at least one of the protocol conversion software blocks are selected by the interface using the first and second

electrical configurations of the first and second wiring harnesses. A plurality of wiring harnesses can be provided for integrating a plurality of devices.

The present invention also provides a method for integrating an after-market device for use with a car stereo or video system, comprising the steps of interconnecting the car stereo or video system and the after-market device with an interface; determining a first device type corresponding to the car stereo or video system and a second device type corresponding to the after-market device; loading a protocol conversion software block from memory in the interface using the first and second device types; converting signals from the after-market device into a first format compatible with the car stereo or video system using the protocol conversion software block; and converting signals from the car stereo or video system into a second format compatible with the after-market device using the protocol conversion software block.

The present invention further provides a multimedia device integration system that allows for the wireless integration of a portable audio and/or video device with a car audio and/or video system. The portable device could comprise a CD changer, CD player, satellite receiver (*e.g.*, XM or Sirius), digital media device (*e.g.*, MP3, MP4, WMV, or Apple iPod device), video device (*e.g.*, DVD player), or a cellular telephone. The portable device includes a wireless interface and an integration subsystem positioned within the portable device. The wireless interface establishes a wireless communications channel between the portable device and the car system, and allows for the wireless exchange of control commands, data, video, and audio signals between the portable device and the car system. The integration module receives control commands issued at the car system and transmitted over the wireless channel, processes same

into a format compatible with the portable device, and dispatches same to the portable device for execution thereby. The integration module also receives data from the portable device (including, but not limited to, track information, song information, artist information, time information, and other related information), processes the data into a format compatible with the car system, and transmits same over the wireless channel to the car system for display thereon. Optionally, the integration module could be positioned within the car system.

The integration module could also include a voice recognition subsystem for acquiring spoken commands from a user, converting same into control commands compatible with the portable device, and dispatching the processed control commands to the portable device for execution thereby. The voice commands could be received at the car audio and/or video system (i.e., using a microphone connected to the car audio and/or video system or some other vehicle component), or at the portable device (i.e., using a microphone connected to or forming a part of the portable device). Additionally, the integration module could include a speech synthesizer for generating synthesized speech for conveying data generated by the portable device to a user. The synthesized speech could be channeled to the car audio and/or video system by the integration module to be played through the car audio and/or video system.

The present invention further provides a multimedia device integration system that allows for the integration of a portable audio and/or video device with a car audio and/or video system using a docking slot provided in the car system. The portable device includes an integration module positioned within the portable device and an external interface for allowing electrical communication with the car system via the docking slot. Optionally, the integration module

could be positioned within the car audio or video system. The integration module could also include a voice recognition subsystem for acquiring spoken commands from a user, converting same into control commands compatible with the portable device, and dispatching the processed control commands to the portable device for execution thereby. Additionally, the integration module could include a speech synthesizer for generating synthesized speech for conveying data generated by the portable device to a user.

BRIEF DESCRIPTION OF THE DRAWINGS

These and other important objects and features of the invention will be apparent from the following Detailed Description of the Invention, taken in connection with the accompanying drawings, in which:

FIG. 1 is a block diagram showing the multimedia device integration system of the present invention.

FIG. 2a is a block diagram showing an alternate embodiment of the multimedia device integration system of the present invention, wherein a CD player is integrated with a car radio.

FIG. 2b is a block diagram showing an alternate embodiment of the multimedia device integration system of the present invention, wherein a MP3 player is integrated with a car radio.

FIG. 2c is a block diagram showing an alternate embodiment of the multimedia device integration system of the present invention, wherein a satellite or DAB receiver is integrated with a car radio.

FIG. 2d is a block diagram showing an alternate embodiment of the multimedia device integration system of the present invention, wherein a plurality of auxiliary input sources are integrated with a car radio.

FIG. 2e is a block diagram showing an alternate embodiment of the multimedia device integration system of the present invention, wherein a CD player and a plurality of auxiliary input sources are integrated with a car radio.

FIG. 2f is a block diagram showing an alternate embodiment of the present invention, wherein a satellite or DAB receiver and a plurality of auxiliary input source are integrated with a car radio.

FIG. 2g is a block diagram showing an alternate embodiment of the present invention, wherein a MP3 player and a plurality of auxiliary input sources are integrated with a car radio.

FIG. 2h is a block diagram showing an alternate embodiment of the present invention, wherein a plurality of auxiliary interfaces and an audio device are integrated with a car stereo.

FIG. 3a is a circuit diagram showing a device according to the present invention for integrating a CD player or an auxiliary input source with a car radio.

FIG. 3b is a circuit diagram showing a device according to the present invention for integrating both a CD player and an auxiliary input source with a car radio, wherein the CD player and the auxiliary input are switchable by a user.

FIG. 3c is a circuit diagram showing a device according to the present invention for integrating a plurality of auxiliary input sources with a car radio.

FIG. 3d is a circuit diagram showing a device according to the present invention for integrating a satellite or DAB receiver with a car radio.

FIG. 4a is a flowchart showing processing logic according to the present invention for integrating a CD player with a car radio.

FIG. 4b is a flowchart showing processing logic according to the present invention for integrating a MP3 player with a car radio.

FIG. 4c is a flowchart showing processing logic according to the present invention for integrating a satellite receiver with a car radio.

FIG. 4d is a flowchart showing processing logic according to the present invention for integrating a plurality of auxiliary input sources with a car radio.

FIG. 4e is a flowchart showing processing logic according to the present invention for integrating a CD player and one or more auxiliary input sources with a car radio.

FIG. 4f is a flowchart showing processing logic according to the present invention for integrating a satellite or DAB receiver and one or more auxiliary input sources with a car radio.

FIG. 4g is a flowchart showing processing logic according to the present invention for integrating a MP3 player and one or more auxiliary input sources with a car stereo.

FIG. 5 is a flowchart showing processing logic according to the present invention for allowing a user to switch between an after-market audio device and one or more auxiliary input sources.

FIG. 6 is a flowchart showing processing logic according to the present invention for determining and handling various device types connected to the auxiliary input ports of the invention.

FIG. 7a is a perspective view of a docking station according to the present invention for retaining an audio device within a car.

FIG. 7b is an end view of the docking station of **FIG. 7a**.

FIGS. 8a-8b are perspective views of another embodiment of the docking station of the present invention, which includes the multimedia device integration system of the present invention incorporated therewith.

FIG. 9 is a block diagram showing the components of the docking station of **FIGS. 8a-8b**.

FIG. 10 is a block diagram showing an alternate embodiment of the multimedia device integration system of the present invention, wherein the interface is incorporated within a car stereo or car video system.

FIG. 11a is a diagram showing an alternate embodiment of the multimedia device integration system of the present invention for integrating a cellular telephone for use with a car stereo or video system; **FIG. 11b** is a flowchart showing processing logic for integrating a cellular telephone for use with a car stereo or video system.

FIG. 12a is a diagram showing an alternate embodiment of the multimedia device integration system of the present invention for integrating an after-market video device for use with a car video system; **FIG. 12b** is a flowchart showing processing logic for integrating an after-market video device for use with a car video system.

FIG. 13a is a block diagram showing an alternate embodiment of the multimedia device integration system of the present invention, wherein configuration jumpers and protocol conversion software blocks are provided for integrating after-market devices of various types using a single interface.

FIG. 13b is a block diagram showing an alternate embodiment of the multimedia device integration system of the present invention, wherein wiring harnesses and protocol conversion software blocks are provided for integrating after-market devices of various types using a single interface.

FIG. 14 is a flowchart showing processing logic of the multimedia device integration system of the present invention for integrating after-market devices of various types using a single interface.

FIG. 15 is a flowchart showing processing logic of the multimedia device integration system of the present invention for allowing a user to specify one or more after-market device types for integration using a single interface.

FIG. 16 is a flowchart showing processing logic of the multimedia device integration system of the present invention for allowing a user to quickly navigate through a list of songs on one or more after-market devices using the controls of a car stereo or video system.

FIG. 17 is a diagram showing another embodiment of the present invention, wherein a plurality of external devices are integrated using a single interface.

FIG. 18 is a diagram showing another embodiment of the present invention, wherein wireless integration is provided between a car audio and/or video system and a portable audio and/or video device using a wireless transceiver and an integration module positioned within the portable device.

FIG. 19 is a diagram showing another embodiment of the present invention, wherein wireless integration is provided between a car audio and/or video system and a portable audio and/or video device using a wireless transceiver and an integration module positioned within the car audio and/or video system.

FIG. 20 is a diagram showing another embodiment of the present invention, wherein a docking slot is provided in a car audio and/or video system for receiving a portable audio and/or video device, and an integration module is positioned within the portable device.

FIG. 21 is a diagram showing another embodiment of the present invention, wherein a docking slot is provided in a car audio and/or video system for receiving a portable audio and/or video device, and an integration module is positioned within the car audio and/or video system.

FIG. 22 is a diagram showing another embodiment of the present invention, wherein wireless integration is provided between a car audio and/or video system and a portable audio and/or video device, and the portable device includes an integration module having speech synthesis and recognition capabilities.

FIG. 23 is a diagram showing another embodiment of the present invention, wherein wireless integration is provided between a car audio and/or video system and a portable audio and/or video device, and the car audio and/or video system includes an integration module having speech synthesis and recognition capabilities.

FIG. 24 is a flowchart showing processing logic according to the present invention for wirelessly integrating a portable audio and/or video device for use with a car audio or video system.

DETAILED DESCRIPTION OF THE INVENTION

The present invention relates to a multimedia device integration system. One or more after-market devices, such as a CD player, CD changer, digital media player (*e.g.*, MP3 player, MP4 player, WMV player, Apple iPod, portable media center, or other device), satellite receiver, digital audio broadcast (DAB) receiver, video device (*e.g.*, DVD player), cellular telephone, or the like, can be integrated with an existing car radio or car video device, such as an OEM or after-market car stereo or video system. Control of the after-market device is enabled using the car stereo or car video system, and information from the after-market device, such as channel, artist, track, time, song, and other information, is retrieved form the after-market device, processed, and forwarded to the car stereo or car video system for display thereon. The information channeled to the car stereo or video system can include video from the external device, as well as graphical and menu-based information. A user can review and interact with information via the car stereo. Commands from the car stereo or video system are received, processed by the present invention into a format recognizable by the after-market device device, and transmitted thereto for execution. One or more auxiliary input channels can be integrated by the present invention with the car stereo or video system. The user can switch between one or more after-market devices and one or more auxiliary input channels using the control panel buttons of the car stereo or video system.

As used herein, the term "integration" or "integrated" is intended to mean connecting one or more external devices or inputs to an existing car stereo or video system via an interface, processing and handling signals, audio, and/or video information, allowing a user to control the devices via the car stereo or video system, and displaying data from the devices on the car stereo

or video system. Thus, for example, integration of a CD player with a car stereo system allows for the CD player to be remotely controlled via the control panel of the stereo system, and data from the CD player to be sent to the display of the stereo. Of course, control of after-market devices can be provided at locations other than the control panel of the car stereo or video system without departing from the spirit or scope of the present invention. Further, as used herein, the term "inter-operable" is intended to mean allowing the external audio or video device to receive and process commands that have been formatted by the interface of the present invention, as well as allowing a car stereo or video system to display information that is generated by the external audio or video device and processed by the present invention. Additionally, by the term "inter-operable," it is meant allowing a device that is alien to the environment of an existing OEM or after-market car stereo or video system to be utilized thereby.

Also, as used herein, the terms "car stereo" and "car radio" are used interchangeably and are intended to include all presently existing car stereos, radios, video systems, such as physical devices that are present at any location within a vehicle, in addition to software and/or graphically- or display-driven receivers. An example of such a receiver is a software-driven receiver that operates on a universal LCD panel within a vehicle and is operable by a user via a graphical user interface displayed on the universal LCD panel. Further, any future receiver, whether a hardwired or a software/graphical receiver operable on one or more displays, is considered within the definition of the terms "car stereo" and "car radio," as used herein, and is within the spirit and scope of the present invention. Moreover, the term "car" is not limited to any specific type of automobile, but rather, includes all automobiles. Additionally, by the term

"after-market," it is meant any device not installed by a manufacturer at the time of sale of the car.

FIG. 1 is a block diagram showing the multimedia device integration (or interface) system of the present invention, generally indicated at **20**. A plurality of devices and auxiliary inputs can be connected to the interface **20**, and integrated with an OEM or after-market car radio **10**. A CD player or changer **15** can be integrated with the radio **10** via interface **20**. A satellite radio or DAB receiver **25**, such as an XM or Sirius radio satellite receiver or DAB receiver known in the art, could be integrated with the radio **10**, via the interface **20**. Further, an MP3 player **30** could also be integrated with the radio **10** via interface **20**. The MP3 player **30** could be any known digital media device, such as an Apple iPod or any other digital media device. Moreover, a plurality of auxiliary input sources, illustratively indicated as auxiliary input sources **35** (comprising input sources 1 through *n*, *n* being any number), could also be integrated with the car radio **10** via interface **20**. Optionally, a control head **12**, such as that commonly used with after-market CD changers and other similar devices, could be integrated with the car radio **10** via interface **20**, for controlling any of the car radio **10**, CD player/changer **15**, satellite/DAB receiver **25**, MP3 player **30**, and auxiliary input sources **35**. Thus, as can be readily appreciated, the interface **20** of the present invention allows for the integration of a multitude of devices and inputs with an OEM or after-market car radio or stereo.

FIG. 2a is a block diagram of an alternate embodiment of the multimedia device interface system of the present invention, wherein a CD player/changer **15** is integrated with an OEM or after-market car radio **10**. The CD player **15** is electrically connected with the interface

20, and exchanges data and audio signals therewith. The interface **20** is electrically connected with the car radio **10**, and exchanges data and audio signals therewith. In a preferred embodiment of the present invention, the car radio **10** includes a display **13** (such as an alphanumeric, electroluminescent display) for displaying information, and a plurality of control panel buttons **14** that normally operate to control the radio **10**. The interface **20** allows the CD player **15** to be controlled by the control buttons **14** of the radio **10**. Further, the interface **20** allows information from the CD player **15**, such as track, disc, time, and song information, to be retrieved therefrom, processed and formatted by the interface **20**, sent to the display **13** of the radio **10**.

Importantly, the interface **20** allows for the remote control of the CD player **15** from the radio **10** (e.g., the CD player **15** could be located in the trunk of a car, while the radio **10** is mounted on the dashboard of the car). Thus, for example, one or more discs stored within the CD player **15** can be remotely selected by a user from the radio **10**, and tracks on one or more of the discs can be selected therefrom. Moreover, standard CD operational commands, such as pause, play, stop, fast forward, rewind, track forward, and track reverse (among other commands) can be remotely entered at the control panel buttons **14** of the radio **10** for remotely controlling the CD player **15**.

FIG. 2b is a block diagram showing an alternate embodiment of the present invention, wherein an MP3 player **30** is integrated with an OEM or after-market car radio **10** via interface **20**. As mentioned earlier, the interface **20** of the present invention allows for a plurality of disparate audio devices to be integrated with an existing car radio for use therewith. Thus, as

shown in **FIG. 2b**, remote control of the MP3 player **30** via radio **10** is provided for via interface **20**. The MP3 player **30** is electronically interconnected with the interface **20**, which itself is electrically interconnected with the car radio **10**. The interface **20** allows data and audio signals to be exchanged between the MP3 player **30** and the car radio **10**, and processes and formats signals accordingly so that instructions and data from the radio **10** are processable by the MP3 player **30**, and vice versa. Operational commands, such as track selection, pause, play, stop, fast forward, rewind, and other commands, are entered via the control panel buttons **14** of car radio **10**, processed by the interface **20**, and formatted for execution by the MP3 player **30**. Data from the MP3 player, such as track, time, and song information, is received by the interface **20**, processed thereby, and sent to the radio **10** for display on display **13**. Audio from the MP3 player **30** is selectively forwarded by the interface **20** to the radio **10** for playing.

FIG. 2c is a block diagram showing an alternate embodiment of the present invention, wherein a satellite receiver or DAB receiver **25** is integrated with an OEM or after-market car radio **10** via the interface **20**. Satellite/DAB receiver **25** can be any satellite radio receiver known in the art, such as XM or Sirius, or any DAB receiver known in the art. The satellite/DAB receiver **25** is electrically interconnected with the interface **20**, which itself is electrically interconnected with the car radio **10**. The satellite/DAB receiver **25** is remotely operable by the control panel buttons **14** of the radio **10**. Commands from the radio **10** are received by the interface **20**, processed and formatted thereby, and dispatched to the satellite/DAB receiver **25** for execution thereby. Information from the satellite/DAB receiver **25**, including time, station, and song information, is received by the interface **20**, processed, and

transmitted to the radio **10** for display on display **13**. Further, audio from the satellite/DAB receiver **25** is selectively forwarded by the interface **20** for playing by the radio **10**.

FIG. 2d is a block diagram showing an alternate embodiment of the present invention, wherein one or more auxiliary input sources **35** are integrated with an OEM or after-market car radio **10**. The auxiliary inputs **35** can be connected to analog sources, or can be digitally coupled with one or more audio devices, such as after-market CD players, CD changers, MP3 players, satellite receivers, DAB receivers, and the like, and integrated with an existing car stereo. Preferably, four auxiliary input sources are connectable with the interface **20**, but any number of auxiliary input sources could be included. Audio from the auxiliary input sources **35** is selectively forwarded to the radio **10** under command of the user. As will be discussed herein in greater detail, a user can select a desired input source from the auxiliary input sources **35** by depressing one or more of the control panel buttons **14** of the radio **10**. The interface **20** receives the command initiated from the control panel, processes same, and connects the corresponding input source from the auxiliary input sources **35** to allow audio therefrom to be forwarded to the radio **10** for playing. Further, the interface **20** determines the type of audio devices connected to the auxiliary input ports **35**, and integrates same with the car stereo **10**.

As mentioned previously, the present invention allows one or more external audio devices to be integrated with an existing OEM or after-market car stereo, along with one or more auxiliary input sources, and the user can select between these sources using the controls of the car stereo. Such "dual input" capability allows operation with devices connected to either of the inputs of the device, or both. Importantly, the device can operate in "plug and play" mode,

wherein any device connected to one of the inputs is automatically detected by the present invention, its device type determined, and the device automatically integrated with an existing OEM or after-market car stereo. Thus, the present invention is not dependent any specific device type to be connected therewith to operate. For example, a user can first purchase a CD changer, plug same into a dual interface, and use same with the car stereo. At a point later in time, the user could purchase an XM tuner, plug same into the device, and the tuner will automatically be detected and integrated with the car stereo, allowing the user to select from and operate both devices from the car stereo. It should be noted that such plug and play capability is not limited to a dual input device, but is provided for in every embodiment of the present invention. The dual-input configuration of the preset invention is illustrated in **FIGS. 2e-2h** and described below.

FIG. 2e is a block diagram showing an alternate embodiment of the present invention, wherein an external CD player/changer **15** and one or more auxiliary input sources **35** are integrated with an OEM or after-market car stereo **10**. Both the CD player **15** and one or more of the auxiliary input sources **35** are electrically interconnected with the interface **20**, which, in turn, is electrically interconnected to the radio **10**. Using the controls **14** of the radio **10**, a user can select between the CD player **15** and one or more of the inputs **35** to selectively channel audio from these sources to the radio. The command to select from one of these sources is received by the interface **20**, processed thereby, and the corresponding source is channeled to the radio **10** by the interface **20**. As will be discussed later in greater detail, the interface **20** contains internal processing logic for selecting between these sources.

FIG. 2f is a block diagram of an alternate embodiment of the present invention, wherein a satellite receiver or DAB receiver and one or more auxiliary input sources are integrated by the interface **20** with an OEM or after-market car radio **10**. Similar to the embodiment of the present invention illustrated in **FIG. 2e** and described earlier, the interface **20** allows a user to select between the satellite/DAB receiver **25** and one or more of the auxiliary input sources **35** using the controls **14** of the radio **10**. The interface **20** contains processing logic, described in greater detail below, for allowing switching between the satellite/DAB receiver **25** and one or more of the auxiliary input sources **35**.

FIG. 2g is a block diagram of an alternate embodiment of the present invention, wherein a MP3 player **30** and one or more auxiliary input sources **35** are integrated by the interface **20** with an OEM or after-market car radio **10**. Similar to the embodiments of the present invention illustrated in **FIGS. 2e** and **2f** and described earlier, the interface **20** allows a user to select between the MP3 player **30** and one or more of the auxiliary input sources **35** using the controls **14** of the radio **10**. The interface **20** contains processing logic, as will be discussed later in greater detail, for allowing switching between the MP3 player **30** and one or more of the auxiliary input sources **35**.

FIG. 2h is a block diagram showing an alternate embodiment of the present invention, wherein a plurality of auxiliary interfaces **40** and **44** and an audio device **17** are integrated with an OEM or after-market car stereo **10**. Importantly, the present invention can be expanded to allow a plurality of auxiliary inputs to be connected to the car stereo **10** in a tree-like fashion. Thus, as can be seen in **FIG. 2h**, a first auxiliary interface **40** is connected to the interface **20**,

and allows data and audio from the ports **42** to be exchanged with the car radio **10**. Connected to one of the ports **42** is another auxiliary interface **44**, which, in turn, provides a plurality of input ports **46**. Any device connected to any of the ports **42** or **46** can be integrated with the car radio **10**. Further, any device connected to the ports **42** or **46** can be inter-operable with the car radio **10**, allowing commands to be entered from the car radio **10** (*e.g.*, such as via the control panel **14**) for commanding the device, and information from the device to be displayed by the car radio **10**. Conceivably, by configuring the interfaces **40**, **44**, and successive interfaces in a tree configuration, any number of devices can be integrated using the present invention.

The various embodiments of the present invention described above and shown in **FIGS. 1** through **2h** are illustrative in nature and are not intended to limit the spirit or scope of the present invention. Indeed, any conceivable audio device or input source, in any desired combination, can be integrated by the present invention into existing car stereo systems. Further, it is conceivable that not only can data and audio signals be exchanged between the car stereo and any external device, but also video information that can be captured by the present invention, processed thereby, and transmitted to the car stereo for display thereby and interaction with a user thereat.

Various circuit configurations can be employed to carry out the present invention. Examples of such configurations are described below and shown in **FIGS. 3a-3d**.

FIG. 3a is an illustrative circuit diagram according to the present invention for integrating a CD player or an auxiliary input source with an existing car stereo system. A

plurality of ports **J1C1, J2A1, X2, RCH,** and **LCH** are provided for allowing connection of the interface system of the present invention between an existing car radio, an after-market CD player or changer, or an auxiliary input source. Each of these ports could be embodied by any suitable electrical connector known in the art. Port **J1C1** connects to the input port of an OEM car radio, such as that manufactured by TOYOTA, Inc. Conceivably, port **J1C1** could be modified to allow connection to the input port of an after-market car radio. Ports **J2A1, X2, RCH,** and **LCH** connect to an after-market CD changer, such as that manufactured by PANASONIC, Inc., or to an auxiliary input source.

Microcontroller **U1** is in electrical communication with each of the ports **J1C1, J2A1,** and **X2**, and provides functionality for integrating the CD player or auxiliary input source connected to the ports **J2A1, X2, RCH,** and **LCH**. For example, microcontroller **U1** receives control commands, such as button or key sequences, initiated by a user at control panel of the car radio and received at the connector **J1C1**, processes and formats same, and dispatches the formatted commands to the CD player or auxiliary input source via connector **J2A1**. Additionally, the microcontroller **U1** receives information provided by the CD player or auxiliary input source via connector **J2A1**, processes and formats same, and transmits the formatted data to the car stereo via connector **J1C1** for display on the display of the car stereo. Audio signals provided at the ports **J2A1, X2, RCH** and **LCH** is selectively channeled to the car radio at port **J1C1** under control of one or more user commands and processing logic, as will be discussed in greater detail, embedded within microcontroller **U1**.

In a preferred embodiment of the present invention, the microcontroller **U1** comprises the 16F628 microcontroller manufactured by MICROCHIP, Inc. The 16F628 chip is a CMOS, flash-based, 8-bit microcontroller having an internal, 4 MHz internal oscillator, 128 bytes of EEPROM data memory, a capture/compare/PWM, a USART, 2 comparators, and a programmable voltage reference. Of course, any suitable microcontroller known in the art can be substituted for microcontroller **U1** without departing from the spirit or scope of the present invention.

A plurality of discrete components, such as resistors **R1** through **R13**, diodes **D1** through **D4**, capacitors **C1** and **C2**, and oscillator **Y1**, among other components, are provided for interfacing the microcontroller **U1** with the hardware connected to the connectors **J1C1, J2A1, X2, RCH**, and **LCH**. These components, as will be readily appreciated to one of ordinary skill in the art, can be arranged as desired to accommodate a variety of microcontrollers, and the numbers and types of discrete components can be varied to accommodate other similar controllers. Thus, the circuit shown in **FIG. 3a** and described herein is illustrative in nature, and modifications thereof are considered to be within the spirit and scope of the present invention.

FIG. 3b is a diagram showing an illustrative circuit configuration according to the present invention, wherein one or more after-market CD changers / players and an auxiliary input source are integrated with an existing car stereo, and wherein the user can select between the CD changer/player and the auxiliary input using the controls of the car stereo. A plurality of connectors are provided, illustratively indicated as ports **J4A**, **J4B**, **J3**, **J5L1**, **J5R1**, **J1,** and **J2**. Ports **J4A, J4B,** and **J3** allow the audio device interface system of the present invention to be

connected to one or more existing car stereos, such as an OEM car stereo or an after-market car stereo. Each of these ports could be embodied by any suitable electrical connector known in the art. For example, ports **J4A** and **J4B** can be connected to an OEM car stereo manufactured by BMW, Inc. Port **J3** can be connected to a car stereo manufactured by LANDROVER, Inc. Of course, any number of car stereos, by any manufacturer, could be provided. Ports **J1** and **J2** allow connection to an after-market CD changer or player, such as that manufactured by ALPINE, Inc., and an auxiliary input source. Optionally, ports **J5L1** and **J5R1** allow integration of a standard analog (line-level) source. Of course, a single standalone CD player or auxiliary input source could be connected to either of ports **J1** or **J2**.

Microcontroller **DD1** is in electrical communication with each of the ports **J4A**, **J4B**, **J3**, **J5L1**, **J5R1**, **J1**, and **J2**, and provides functionality for integrating the CD player and auxiliary input source connected to the ports **J1** and **J2** with the car stereo connected to the ports **J4A** and **J4B** or **J3**. For example, microcontroller **DD1** receives control commands, such as button or key sequences, initiated by a user at control panel of the car radio and received at the connectors **J4A** and **J4B** or **J3**, processes and formats same, and dispatches the formatted commands to the CD player and auxiliary input source via connectors **J1** or **J2**. Additionally, the microcontroller **DD1** receives information provided by the CD player and auxiliary input source via connectors **J1** or **J2**, processes and formats same, and transmits the formatted data to the car stereo via connectors **J4A** and **J4B** or **J3** for display on the display of the car stereo. Further, the microcontroller **DD1** controls multiplexer **DA3** to allow selection between the CD player/changer and the auxiliary input. Audio signals provided at the ports **J1, J2, J5L1** and **J5R1** is selectively channeled to the

car radio at ports **J4A** and **J4B** or **J3** under control of one or more user commands and processing logic, as will be discussed in greater detail, embedded within microcontroller **DD1**.

In a preferred embodiment of the present invention, the microcontroller **DD1** comprises the 16F872 microcontroller manufactured by MICROCHIP, Inc. The 16F872 chip is a CMOS, flash-based, 8-bit microcontroller having 64 bytes of EEPROM data memory, self-programming capability, an ICD, 5 channels of 10 bit Analog-to-Digital (A/D) converters, 2 timers, capture/compare/PWM functions, a USART, and a synchronous serial port configurable as either a 3-wire serial peripheral interface or a 2-wire inter-integrated circuit bus. Of course, any suitable microcontroller known in the art can be substituted for microcontroller **DD1** without departing from the spirit or scope of the present invention. Additionally, in a preferred embodiment of the present invention, the multiplexer **DA3** comprises the CD4053 triple, two-channel analog multiplexer/demultiplexer manufactured by FAIRCHILD SEMICONDUCTOR, Inc. Any other suitable multiplexer can be substituted for **DA3** without departing from the spirit or scope of the present invention.

A plurality of discrete components, such as resistors **R1** through **R18**, diodes **D1** through **D3**, capacitors **C1-C11**, and **G1-G3**, transistors **Q1-Q3**, transformers **T1** and **T2**, amplifiers **LCH:A** and **LCH:B**, oscillator **XTAL1**, among other components, are provided for interfacing the microcontroller **DD1** and the multiplexer **DA3** with the hardware connected to the connectors **J4A, J4B, J3, J5L1, J5R1, J1,** and **J2**. These components, as will be readily appreciated to one of ordinary skill in the art, can be arranged as desired to accommodate a variety of microcontrollers and multiplexers, and the numbers and types of discrete components can be

varied to accommodate other similar controllers and multiplexers. Thus, the circuit shown in **FIG. 3b** and described herein is illustrative in nature, and modifications thereof are considered to be within the spirit and scope of the present invention.

FIG. 3c is a diagram showing an illustrative circuit configuration for integrating a plurality of auxiliary inputs using the controls of the car stereo. A plurality of connectors are provided, illustratively indicated as ports **J1**, **RCH1**, **LCH1**, **RCH2**, **LCH2**, **RCH3, LCH3, RCH4,** and **LCH4**. Port **J1** allows the multimedia device integration system of the present invention to be connected to one or more existing car stereos. Each of these ports could be embodied by any suitable electrical connector known in the art. For example, port **J1** could be connected to an OEM car stereo manufactured by HONDA, Inc., or any other manufacturer. Ports **RCH1**, **LCH1**, **RCH2**, **LCH2**, **RCH3, LCH3, RCH4,** and **LCH4** allow connection with the left and right channels of four auxiliary input sources. Of course, any number of auxiliary input sources and ports/connectors could be provided.

Microcontroller **U1** is in electrical communication with each of the ports **J1**, **RCH1**, **LCH1**, **RCH2**, **LCH2**, **RCH3, LCH3, RCH4,** and **LCH4**, and provides functionality for integrating one or more auxiliary input sources connected to the ports **RCH1**, **LCH1**, **RCH2**, **LCH2, RCH3, LCH3, RCH4,** and **LCH4** with the car stereo connected to the port **J1**. Further, the microcontroller **U1** controls multiplexers **DA3** and **DA4** to allow selection amongst any of the auxiliary inputs using the controls of the car stereo. Audio signals provided at the ports **RCH1, LCH1, RCH2, LCH2, RCH3, LCH3, RCH4,** and **LCH4** are selectively channeled to the car radio at port **J1** under control of one or more user commands and processing logic, as will

be discussed in greater detail, embedded within microcontroller **U1**. In a preferred embodiment of the present invention, the microcontroller **U1** comprises the 16F872 microcontroller discussed earlier. Additionally, in a preferred embodiment of the present invention, the multiplexers **DA3** and **DA4** comprises the CD4053 triple, two-channel analog multiplexer/demultiplexer, discussed earlier. Any other suitable microcontroller and multiplexers can be substituted for **U1, DA3,** and **DA4** without departing from the spirit or scope of the present invention.

A plurality of discrete components, such as resistors **R1** through **R15**, diodes **D1** through **D3**, capacitors **C1-C5,** transistors **Q1-Q2,** amplifiers **DA1:A** and **DA1:B,** and oscillator **Y1**, among other components, are provided for interfacing the microcontroller **U1** and the multiplexers **DA3** and **DA4** with the hardware connected to the ports **J1**, **RCH1**, **LCH1**, **RCH2**, **LCH2**, **RCH3, LCH3, RCH4,** and **LCH4**. These components, as will be readily appreciated to one of ordinary skill in the art, can be arranged as desired to accommodate a variety of microcontrollers and multiplexers, and the numbers and types of discrete components can be varied to accommodate other similar controllers and multiplexers. Thus, the circuit shown in **FIG. 3c** and described herein is illustrative in nature, and modifications thereof are considered to be within the spirit and scope of the present invention.

FIG. 3d is an illustrative circuit diagram according to the present invention for integrating a satellite receiver with an existing OEM or after-market car stereo system. Ports **J1** and **J2** are provided for allowing connection of the integration system of the present invention between an existing car radio and a satellite receiver. These ports could be embodied by any suitable electrical connector known in the art. Port **J2** connects to the input port of an existing

car radio, such as that manufactured by KENWOOD, Inc. Port **1** connects to an after-market satellite receiver, such as that manufactured by PIONEER, Inc.

Microcontroller **U1** is in electrical communication with each of the ports **J1** and **J2**, and provides functionality for integrating the satellite receiver connected to the port **J1** with the car stereo connected to the port **J2**. For example, microcontroller **U1** receives control commands, such as button or key sequences, initiated by a user at control panel of the car radio and received at the connector **J2**, processes and formats same, and dispatches the formatted commands to the satellite receiver via connector **J2**. Additionally, the microcontroller **U1** receives information provided by the satellite receiver via connector **J1**, processes and formats same, and transmits the formatted data to the car stereo via connector **J2** for display on the display of the car stereo. Audio signals provided at the port **J1** is selectively channeled to the car radio at port **J2** under control of one or more user commands and processing logic, as will be discussed in greater detail, embedded within microcontroller **U1**.

In a preferred embodiment of the present invention, the microcontroller **U1** comprises the 16F873 microcontroller manufactured by MICROCHIP, Inc. The 16F873 chip is a CMOS, flash-based, 8-bit microcontroller having 128 bytes of EEPROM data memory, self-programming capability, an ICD, 5 channels of 10 bit Analog-to-Digital (A/D) converters, 2 timers, 2 capture/compare/PWM functions, a synchronous serial port that can be configured as a either a 3-wire serial peripheral interface or a 2-wire inter-integrated circuit bus, and a USART. Of course, any suitable microcontroller known in the art can be substituted for microcontroller **U1** without departing from the spirit or scope of the present invention.

A plurality of discrete components, such as resistors **R1** through **R7**, capacitors **C1** and **C2**, and amplifier **A1**, among other components, are provided for interfacing the microcontroller **U1** with the hardware connected to the connectors **J1** and **J2**. These components, as will be readily appreciated to one of ordinary skill in the art, can be arranged as desired to accommodate a variety of microcontrollers, and the numbers and types of discrete components can be varied to accommodate other similar controllers. Thus, the circuit shown in **FIG. 3d** and described herein is illustrative in nature, and modifications thereof are considered to be within the spirit and scope of the present invention.

FIGS. 4a through **6** are flowcharts showing processing logic according to the present invention. Such logic can be embodied as software and/or instructions stored in a read-only memory circuit (*e.g.*, and EEPROM circuit), or other similar device. In a preferred embodiment of the present invention, the processing logic described herein is stored in one or more microcontrollers, such as the microcontrollers discussed earlier with reference to **FIGS. 3a-3d**. Of course, any other suitable means for storing the processing logic of the present invention can be employed.

FIG. 4a is a flowchart showing processing logic, indicated generally at **100**, for integrating a CD player or changer with an existing OEM or after-market car stereo system. Beginning in step **100**, a determination is made as to whether the existing car stereo is powered on. If a negative determination is made, step **104** is invoked, wherein the present invention enters a standby mode and waits for the car stereo to be powered on. If a positive determination is made, step **106** is invoked, wherein a second determination is made as to whether the car

stereo is in a state responsive to signals external to the car stereo. If a negative determination is made, step **106** is re-invoked.

If a positive determination is made in step **106**, a CD handling process, indicated as block **108**, is invoked, allowing the CD player/changer to exchange data and audio signals with any existing car stereo system. Beginning in step **110**, a signal is generated by the present invention indicating that a CD player/changer is present, and the signal is continuously transmitted to the car stereo. Importantly, this signal prevents the car stereo from shutting off, entering a sleep mode, or otherwise being unresponsive to signals and/or data from an external source. If the car radio is an OEM car radio, the CD player presence signal need not be generated. Further, the signal need not be limited to a CD player device presence signal, but rather, could be any type of device presence signal (*e.g.*, MP3 player device presence signal, satellite receiver presence signal, video device presence signal, cellular telephone presence signal, or any other type of device presence signal). Concurrently with step **110**, or within a short period of time before or after the execution of step **110**, steps **112** and **114** are invoked. In step **112**, the audio channels of the CD player/changer are connected (channeled) to the car stereo system, allowing audio from the CD player/changer to be played through the car stereo. In step **114**, data is retrieved by the present invention from the CD player/changer, including track and time information, formatted, and transmitted to the car stereo for display by the car stereo. Thus, information produced by the external CD player/changer can be quickly and conveniently viewed by a driver by merely viewing the display of the car stereo. After steps **110**, **112**, and **114** have been executed, control passes to step **116**.

In steps **116**, the present invention monitors the control panel buttons of the car stereo for CD operational commands. Examples of such commands include track forward, track reverse, play, stop, fast forward, rewind, track program, random track play, and other similar commands. In step **118**, if a command is not detected, step **116** is re-invoked. Otherwise, if a command is received, step **118** invokes step **120**, wherein the received command is converted into a format recognizable by the CD player/changer connected to the present invention. For example, in this step, a command issued from a GM car radio is converted into a format recognizable by a CD player/changer manufactured by ALPINE, Inc. Any conceivable command from any type of car radio can be formatted for use by a CD player/changer of any type or manufacture. Once the command has been formatted, step **122** is invoked, wherein the formatted command is transmitted to the CD player/changer and executed. Step **110** is then re-invoked, so that additional processing can occur.

FIG. 4b is a flowchart showing processing logic, indicated generally at **130**, for integrating an MP3 player with an existing car stereo system. Examples of MP3 players that can be integrated by the present invention include, but are not limited to, the Apple iPod and other types of digital media devices. Beginning in step **132**, a determination is made as to whether the existing car stereo is powered on. If a negative determination is made, step **134** is invoked, wherein the present invention enters a standby mode and waits for the car stereo to be powered on. If a positive determination is made, step **136** is invoked, wherein a second determination is made as to whether the car stereo is in a state responsive to signals external to the car stereo. If a negative determination is made, step **136** is re-invoked.

If a positive determination is made in step **136**, an MP3 handling process, indicated as block **138**, is invoked, allowing the MP3 player to exchange data and audio signals with any existing car stereo system. Beginning in step **140**, a signal is generated by the present invention indicating that an MP3 player is present, and the signal is continuously transmitted to the car stereo. Importantly, this signal prevents the car stereo from shutting off, entering a sleep mode, or otherwise being unresponsive to signals and/or data from an external source. In step **142**, the audio channels of the MP3 player are connected (channeled) to the car stereo system, allowing audio from the MP3 player to be played through the car stereo. In step **144**, data is retrieved by the present invention from the MP3 player, including track, time, title, and song information, formatted, and transmitted to the car stereo for display by the car stereo. Thus, information produced by the MP3 player can be quickly and conveniently viewed by a driver by merely viewing the display of the car stereo. After steps **140**, **142**, and **144** have been executed, control passes to step **146**.

In steps **146**, the present invention monitors the control panel buttons of the car stereo for MP3 operational commands. Examples of such commands include track forward, track reverse, play, stop, fast forward, rewind, track program, random track play, and other similar commands. In step **148**, if a command is not detected, step **146** is re-invoked. Otherwise, if a command is received, step **148** invokes step **150**, wherein the received command is converted into a format recognizable by the MP3 player connected to the present invention. For example, in this step, a command issued from a HONDA car radio is converted into a format recognizable by an MP3 player manufactured by PANASONIC, Inc. Any conceivable command from any type of car radio can be formatted for use by an MP3 player of any type or manufacture. Once the

command has been formatted, step **152** is invoked, wherein the formatted command is transmitted to the MP3 player and executed. Step **140** is then re-invoked, so that additional processing can occur.

FIG. 4c is a flowchart showing processing logic, indicated generally at **160**, for integrating a satellite receiver or a DAB receiver with an existing car stereo system. Beginning in step **162**, a determination is made as to whether the existing car stereo is powered on. If a negative determination is made, step **164** is invoked, wherein the present invention enters a standby mode and waits for the car stereo to be powered on. If a positive determination is made, step **166** is invoked, wherein a second determination is made as to whether the car stereo is in a state responsive to signals external to the car stereo. If a negative determination is made, step **166** is re-invoked.

If a positive determination is made in step **166**, a satellite/DAB receiver handling process, indicated as block **168**, is invoked, allowing the satellite/DAB receiver to exchange data and audio signals with any existing car stereo system. Beginning in step **170**, a signal is generated by the present invention indicating that a satellite or DAB receiver is present, and the signal is continuously transmitted to the car stereo. Importantly, this signal prevents the car stereo from shutting off, entering a sleep mode, or otherwise being unresponsive to signals and/or data from an external source. In step **172**, the audio channels of the satellite/DAB receiver are connected (channeled) to the car stereo system, allowing audio from the satellite receiver or DAB receiver to be played through the car stereo. In step **174**, data is retrieved by the present invention from the satellite/DAB receiver, including channel number, channel name, artist name, song time, and

song title, formatted, and transmitted to the car stereo for display by the car stereo. The information could be presented in one or more menus, or via a graphical interface viewable and manipulable by the user at the car stereo. Thus, information produced by the receiver can be quickly and conveniently viewed by a driver by merely viewing the display of the car stereo. After steps **170**, **172**, and **174** have been executed, control passes to step **176**.

In steps **176**, the present invention monitors the control panel buttons of the car stereo for satellite/DAB receiver operational commands. Examples of such commands include station up, station down, station memory program, and other similar commands. In step **178**, if a command is not detected, step **176** is re-invoked. Otherwise, if a command is received, step **178** invokes step **180**, wherein the received command is converted into a format recognizable by the satellite/DAB receiver connected to the present invention. For example, in this step, a command issued from a FORD car radio is converted into a format recognizable by a satellite receiver manufactured by PIONEER, Inc. Any conceivable command from any type of car radio can be formatted for use by a satellite/DAB receiver of any type or manufacture. Once the command has been formatted, step **182** is invoked, wherein the formatted command is transmitted to the satellite/DAB receiver and executed. Step **170** is then re-invoked, so that additional processing can occur.

FIG. 4d is a flowchart showing processing logic, indicated generally at **190**, for integrating a plurality of auxiliary input sources with a car radio. Beginning in step **192**, a determination is made as to whether the existing car stereo is powered on. If a negative determination is made, step **194** is invoked, wherein the present invention enters a standby mode

and waits for the car stereo to be powered on. If a positive determination is made, step **196** is invoked, wherein a second determination is made as to whether the car stereo is in a state responsive to signals external to the car stereo. If a negative determination is made, step **196** is re-invoked.

If a positive determination is made in step **196**, an auxiliary input handling process, indicated as block **198**, is invoked, allowing one or more auxiliary inputs to be connected (channeled) to the car stereo. Further, if a plurality of auxiliary inputs exist, the logic of block **198** allows a user to select a desired input from the plurality of inputs. Beginning in step **200**, a signal is generated by the present invention indicating that an external device is present, and the signal is continuously transmitted to the car stereo. Importantly, this signal prevents the car stereo from shutting off, entering a sleep mode, or otherwise being unresponsive to signals and/or data from an external source. Then, in step **202**, the control panel buttons of the car stereo are monitored.

In a preferred embodiment of the present invention, each of the one or more auxiliary input sources are selectable by selecting a CD disc number on the control panel of the car radio. Thus, in step **204**, a determination is made as to whether the first disc number has been selected. If a positive determination is made, step **206** is invoked, wherein the first auxiliary input source is connected (channeled) to the car stereo. If a negative determination is made, step **208** is invoked, wherein a second determination is made as to whether the second disc number has been selected. If a positive determination is made, step **210** is invoked, wherein the second auxiliary input source is connected (channeled) to the car stereo. If a negative determination is made, step

212 is invoked, wherein a third determination is made as to whether the third disc number has been selected. If a positive determination is made, step **214** is invoked, wherein the third auxiliary input source is connected (channeled) to the car stereo. If a negative determination is made, step **216** is invoked, wherein a fourth determination is made as to whether the fourth disc number has been selected. If a positive determination is made, step **218** is invoked, wherein the fourth auxiliary input source is connected (channeled) to the car stereo. If a negative determination is made, step **200** is re-invoked, and the process disclosed for block **198** repeated. Further, if any of steps **206**, **210**, **214**, or **218** are executed, then step **200** is re-invoked and block **198** repeated.

The process disclosed in block **198** allows a user to select from one of four auxiliary input sources using the control buttons of the car stereo. Of course, the number of auxiliary input sources connectable with and selectable by the present invention can be expanded to any desired number. Thus, for example, 6 auxiliary input sources could be provided and switched using corresponding selection key(s) or keystroke(s) on the control panel of the radio. Moreover, any desired keystroke, selection sequence, or button(s) on the control panel of the radio, or elsewhere, can be utilized to select from the auxiliary input sources without departing from the spirit or scope of the present invention.

FIG. 4e is a flowchart showing processing logic, indicated generally at **220**, for integrating a CD player and one or more auxiliary input sources with a car radio. Beginning in step **222**, a determination is made as to whether the existing car stereo is powered on. If a negative determination is made, step **224** is invoked, wherein the present invention enters a

standby mode and waits for the car stereo to be powered on. If a positive determination is made, step **226** is invoked, wherein a second determination is made as to whether the car stereo is in a state responsive to signals external to the cars stereo. If a negative determination is made, step **226** is re-invoked.

If a positive determination is made in step **226**, then step **228** is invoked, wherein a signal is generated by the present invention indicating that an external device is present, and the signal is continuously transmitted to the car stereo. Importantly, this signal prevents the car stereo from shutting off, entering a sleep mode, or otherwise being unresponsive to signals and/or data from an external source. Then, in step **230**, a determination is made as to whether a CD player is present (*i.e.*, whether an external CD player or changer is connected to the multimedia device integration system of the present invention). If a positive determination is made, steps **231** and **232** are invoked. In step **231**, the logic of block **108** of **FIG. 4a** (the CD handling process), described earlier, is invoked, so that the CD player/changer can be integrated with the car stereo and utilized by a user. In step **232**, a sensing mode is initiated, wherein the present invention monitors for a selection sequence (as will be discussed in greater detail) initiated by the user at the control panel of the car stereo for switching from the external CD player/changer to one or more auxiliary input sources. Step **234** is then invoked, wherein a determination is made as to whether such a sequence has been initiated. If a negative determination is made, step **234** re-invokes step **228**, so that further processing can occur. Otherwise, if a positive determination is made (*i.e.*, the user desires to switch from the external CD player/changer to one of the auxiliary input sources), step **236** is invoked, wherein the audio channels of the CD player/changer are disconnected from the car stereo. Then, step **238** is invoked, wherein the logic of block **198** of

FIG. 4d (the auxiliary input handling process), discussed earlier, is executed, allowing the user to select from one of the auxiliary input sources. In the event that a negative determination is made in step **230** (no external CD player/changer is connected to the present invention), then step **238** is invoked, and the system goes into auxiliary mode. The user can then select from one or more auxiliary input sources using the controls of the radio.

FIG. 4f is a flowchart showing processing logic, indicated generally at **240**, for integrating a satellite receiver or DAB receiver and one or more auxiliary input sources with a car radio. Beginning in step **242**, a determination is made as to whether the existing car stereo is powered on. If a negative determination is made, step **244** is invoked, wherein the present invention enters a standby mode and waits for the car stereo to be powered on. If a positive determination is made, step **246** is invoked, wherein a second determination is made as to whether the car stereo is in a state responsive to signals external to the car stereo. If a negative determination is made, step **246** is re-invoked.

If a positive determination is made in step **246**, then step **248** is invoked, wherein a signal is generated by the present invention indicating that an external device is present, and the signal is continuously transmitted to the car stereo. Importantly, this signal prevents the car stereo from shutting off, entering a sleep mode, or otherwise being unresponsive to signals and/or data from an external source. Then, in step **250**, a determination is made as to whether a satellite receiver or DAB receiver is present (*i.e.*, whether an external satellite receiver or DAB receiver is connected to the multimedia device integration system of the present invention). If a positive determination is made, steps **251** and **252** are invoked. In step **251**, the logic of block **168** of

FIG. 4c (the satellite/DAB receiver handling process), described earlier, is invoked, so that the satellite receiver can be integrated with the car stereo and utilized by a user. In step **252**, a sensing mode is initiated, wherein the present invention monitors for a selection sequence (as will be discussed in greater detail) initiated by the user at the control panel of the car stereo for switching from the external satellite receiver to one or more auxiliary input sources. Step **254** is then invoked, wherein a determination is made as to whether such a sequence has been initiated. If a negative determination is made, step **254** re-invokes step **258**, so that further processing can occur. Otherwise, if a positive determination is made (*i.e.*, the user desires to switch from the external satellite/DAB receiver to one of the auxiliary input sources), step **256** is invoked, wherein the audio channels of the satellite receiver are disconnected from the car stereo. Then, step **258** is invoked, wherein the logic of block **198** of **FIG. 4d** (the auxiliary input handling process), discussed earlier, is executed, allowing the user to select from one of the auxiliary input sources. In the event that a negative determination is made in step **250** (no external satellite/DAB receiver is connected to the present invention), then step **258** is invoked, and the system goes into auxiliary mode. The user can then select from one or more auxiliary input sources using the controls of the radio.

FIG. 4g is a flowchart showing processing logic according to the present invention for integrating an MP3 player and one or more auxiliary input sources with a car stereo. Beginning in step **262**, a determination is made as to whether the existing car stereo is powered on. If a negative determination is made, step **264** is invoked, wherein the present invention enters a standby mode and waits for the car stereo to be powered on. If a positive determination is made, step **266** is invoked, wherein a second determination is made as to whether the car stereo is in a

state responsive to signals external to the car stereo. If a negative determination is made, step **266** is re-invoked.

If a positive determination is made in step **266**, then step **268** is invoked, wherein a signal is generated by the present invention indicating that an external device is present, and the signal is continuously transmitted to the car stereo. Importantly, this signal prevents the car stereo from shutting off, entering a sleep mode, or otherwise being unresponsive to signals and/or data from an external source. Then, in step **270**, a determination is made as to whether an MP3 player is present (*i.e.*, whether an external MP3 player is connected to the multimedia device integration system of the present invention). If a positive determination is made, steps **271** and **272** are invoked. In step **271**, the logic of block **138** of **FIG. 4b** (the MP3 handling process), described earlier, is invoked, so that the CD player/changer can be integrated with the car stereo and utilized by a user. In step **272**, a sensing mode is initiated, wherein the present invention monitors for a selection sequence (as will be discussed in greater detail) initiated by the user at the control panel of the car stereo for switching from the external CD player/changer to one or more auxiliary input sources. Step **274** is then invoked, wherein a determination is made as to whether such a sequence has been initiated. If a negative determination is made, step **274** re-invokes step **278**, so that further processing can occur. Otherwise, if a positive determination is made (*i.e.*, the user desires to switch from the external MP3 player to one of the auxiliary input sources), step **276** is invoked, wherein the audio channels of the MP3 player are disconnected from the car stereo. Then, step **278** is invoked, wherein the logic of block **198** of **FIG. 4d** (the auxiliary input handling process), discussed earlier, is executed, allowing the user to select from one of the auxiliary input sources. In the event that a negative determination is made in step **270**

(no external MP3 player is connected to the present invention), then step **278** is invoked, and the system goes into auxiliary mode. The user can then select from one or more auxiliary input sources using the controls of the radio.

As mentioned previously, to enable integration, the present invention contains logic for converting command signals issued from an after-market or OEM car stereo into a format compatible with one or more external audio devices connected to the present invention. Such logic can be applied to convert any car stereo signal for use with any external device. For purposes of illustration, a sample code portion is shown in **Table 1**, below, for converting control signals from a BMW car stereo into a format understandable by a CD changer:

Table 1

```
;     ================================================
;     Radio requests changer to STOP (exit PLAY mode)
;     Decoding 6805183801004C message
;     ================================================

Encode_RD_stop_msg:

      movlw 0x68
      xorwf BMW_Recv_buff,W
      skpz
      return

      movlw 0x05
      xorwf BMW_Recv_buff+1,W
      skpz
      return

      movlw 0x18
      xorwf BMW_Recv_buff+2,W
      skpz
      return

      movlw 0x38
      xorwf BMW_Recv_buff+3,W
      skpz
      return

      movlw 0x01
      xorwf BMW_Recv_buff+4,W
      skpz
```

```
            return

            tstf  BMW_Recv_buff+5
            skpz
            return

            movlw 0x4C
            xorwf BMW_Recv_buff+6,W
            skpz
            return

            bsf   BMW_Recv_STOP_msg
            return
```

The code portion shown in **Table 1** receives a STOP command issued by a BMW stereo, in a format proprietary to BMW stereos. Preferably, the received command is stored in a first buffer, such as BMW_Recv_buff. The procedure "Encode_RD_stop_msg" repetitively applies an XOR function to the STOP command, resulting in a new command that is in a format compatible with the after-market CD player. The command is then stored in an output buffer for dispatching to the CD player.

Additionally, the present invention contains logic for retrieving information from an after-market audio device, and converting same into a format compatible with the car stereo for display thereby. Such logic can be applied to convert any data from the external device for display on the car stereo. For purposes of illustration, a sample code portion is shown in **Table 2**, below, for converting data from a CD changer into a format understandable by a BMW car stereo:

Table 2

```
;     ========================================
;     Changer replies with STOP confirmation
;     Encoding 180A68390002003F0001027D message
;     ========================================

Load_CD_stop_msg:
      movlw 0x18
      movwf BMW_Send_buff

      movlw 0x0A
      movwf BMW_Send_buff+1

      movlw 0x68
      movwf BMW_Send_buff+2

      movlw 0x39
      movwf BMW_Send_buff+3

      movlw 0x00              ;current status_XX=00, power off
      movwf BMW_Send_buff+4

      movlw 0x02              ;current status_YY=02, power off
      movwf BMW_Send_buff+5

      clrf  BMW_Send_buff+6   ;separate field, always =0

      movfw BMW_MM_stat       ;current status_MM , magazine config
      movwf BMW_Send_buff+7

      clrf  BMW_Send_buff+8   ;separate field, always =0

      movfw BMW_DD_stat       ;current status_DD , current disc
      movwf BMW_Send_buff+9

      movfw BMW_TT_stat       ;current status_TT , current track
      movwf BMW_Send_buff+10

      xorwf BMW_Send_buff+9,W ;calculate check sum
      xorwf BMW_Send_buff+8,W
      xorwf BMW_Send_buff+7,W
      xorwf BMW_Send_buff+6,W
      xorwf BMW_Send_buff+5,W
      xorwf BMW_Send_buff+4,W
      xorwf BMW_Send_buff+3,W
      xorwf BMW_Send_buff+2,W
      xorwf BMW_Send_buff+1,W
      xorwf BMW_Send_buff,W

      movwf BMW_Send_buff+11  ;store check sum
      movlw D'12'             ;12 bytes total
      movwf BMW_Send_cnt
      bsf   BMW_Send_on       ;ready to send
      return
```

The code portion shown in **Table 2** receives a STOP confirmation message from the CD player, in a format proprietary to the CD player. Preferably, the received command is stored in a first buffer, such as BMW_Send_buff. The procedure "Load_CD_stop_msg" retrieves status information, magazine information, current disc, and current track information from the CD changer, and constructs a response containing this information. Then, a checksum is calculated and stored in another buffer. The response and checksum are in a format compatible with the BMW stereo, and are ready for dispatching to the car stereo.

The present invention also includes logic for converting signals from an OEM car stereo system for use with a digital media device such as an MP3, MP4, or Apple iPod player. Shown below are code samples for allowing commands and data to be exchanged between a Ford car stereo and an Apple iPod device:

Table 3

```
//decoding Ford "play" command :41-C0-80-CA-01+

        if ( ACP_rx_ready == ON ) {
                ACP_rx_ready = OFF;
                ACP_rx_taddr = ACP_rx_buff[1];
                ACP_rx_saddr = ACP_rx_buff[2];
                ACP_rx_data1 = ACP_rx_buff[3];
                ACP_rx_data2 = ACP_rx_buff[4];
                ACP_rx_data3 = ACP_rx_buff[5];
                if ( (ACP_rx_saddr == 0x80) ) {
                        switch ( ACP_rx_taddr ) {
                                case 0xC0:
                                        if ( ACP_rx_data1 == 0xCA) {
                                                if ( ACP_rx_data2 == 0x01 ) {
                                                        flags.ACP_play_req = 1;
                                                }
                                                break;
                                        }
                                        break;
                        }
                }
```

In the code portion shown in **Table 3**, a "Play" command selected by a user at the controls of a Ford OEM car stereo is received, and portions of the command are stored in one or more buffer arrays. Then, as shown below in **Table 4**, the decoded portions of the command stored in the one or more buffer arrays are used to construct a "Play/Pause" command in a format compatible with the Apple iPod device, and the command is sent to the Apple iPod for execution thereby:

Table 4

```
// encoding iPod "play/pause" command 0xFF 0x55 0x03 0x02 0x00 0x01 0xFA

        if ( iPod_play_req == ON ) {
                iPod_play_req = OFF;
                iPod_tx_data[0] = 0x55;
                iPod_tx_data[1] = 0x03;
                iPod_tx_data[2] = 0x02;
                iPod_tx_data[3] = 0x00;
                iPod_tx_data[4] = 0x01;
                iPod_tx_counter = 5;
                iPod_tx_ready = ON;
        }
```

While the code portions shown in **Tables 1-2** are implemented using assembler language, and the code portions shown in **Tables 3-4** are implemented using the C programming language, it is to be expressly understood that any low or high level language known in the art could be utilized without departing from the spirit or scope of the invention. It will be appreciated that various other code portions can be developed for converting signals from any after-market or OEM car stereo for use by an after-market external audio device, and vice versa.

FIG. 5 is a flowchart showing processing logic, indicated generally at **300** for allowing a user to switch between an after-market audio device, and one or more auxiliary input sources. As was discussed earlier, the present invention allows a user to switch from one or more

connected audio devices, such as an external CD player/changer, MP3 player, satellite receiver, DAB receiver, or the like, and activate one or more auxiliary input sources. A selection sequence, initiated by the user at the control panel of the car stereo, allows such switching. Beginning in step **302**, the buttons of the control panel are monitored. In step **304**, a determination is made as to whether a "Track Up" button or sequence has been initiated by the user. The "Track Up" button or sequence can for a CD player, MP3 player, or any other device. If a negative determination is made, step **306** is invoked, wherein the sensed button or sequence is processed in accordance with the present invention and dispatched to the external audio device for execution. Then, step **302** is re-invoked, so that additional buttons or sequences can be monitored.

In the event that a positive determination is made in step **304**, step **308** is invoked, wherein the present invention waits for a predetermined period of time while monitoring the control panel buttons for additional buttons or sequences. In a preferred embodiment of the present invention, the predetermined period of time is 750 milliseconds, but of course, other time durations are considered within the spirit and scope of the present invention. In step **310**, a determination is made as to whether the user has initiated a "Track Down" button or sequence at the control panel of the car stereo within the predetermined time period. These sequences can be used for a CD player, MP3 player, or any other device. If a negative determination is made, step **312** is invoked. In step **312**, a determination is made as to whether a timeout has occurred (*e.g.*, whether the predetermined period of time has expired). If a negative determination is made, step **308** is re-invoked. Otherwise, is a positive determination is made, step **312** invokes step **306**, so that any buttons or key sequences initiated by the user that are not a "Track Down" command are

processed in accordance with the present invention and dispatched to the audio device for execution.

In the event that a positive determination is made in step **310** (a "Track Down" button or sequence has been initiated within the predetermined time period), then step **314** is invoked. In step **314**, the audio channels of the audio device are disconnected, and then step **316** is invoked. In step **316**, the logic of block **198** of **FIG. 4d** (the auxiliary input handling process), discussed earlier, is invoked, so that the user can select from one of the auxiliary input sources in accordance with the present invention. Thus, at this point in time, the system has switched, under user control, from the audio device to a desired auxiliary input. Although the foregoing description of the process **300** has been described with reference to "Track Up" and "Track Down" buttons or commands initiated by the user, it is to be expressly understood that any desired key sequence, keystroke, button depress, or any other action, can be sensed in accordance with the present invention and utilized for switching modes.

When operating in auxiliary mode, the present invention provides an indication on the display of the car stereo corresponding to such mode. For example, the CD number could be displayed as "1", and the track number displayed as "99," thus indicating to the user that the system is operating in auxiliary mode and that audio and data is being supplied from an auxiliary input source. Of course, any other indication could be generated and displayed on the display of the car stereo, such as a graphical display (*e.g.*, an icon) or textual prompt.

FIG. 6 is a flowchart showing processing logic, indicated generally at **320**, for determining and handling various device types connected to the auxiliary input ports of the invention. The present invention can sense device types connected to the auxiliary input ports, and can integrate same with the car stereo using the procedures discussed earlier. Beginning in step **322**, the control panel buttons of the car stereo are monitored for a button or sequence initiated by the user corresponding to an auxiliary input selection (such as the disc number method discussed earlier with reference to **FIG. 4d**). In response to an auxiliary input selection, step **324** is invoked, wherein the type of device connected to the selected auxiliary input is sensed by the present invention. Then, step **326** is invoked.

In step **326**, a determination is made as to whether the device connected to the auxiliary input is a CD player/changer. If a positive determination is made, step **328** is invoked, wherein the logic of block **108** of **FIG. 4a** (the CD handling process), discussed earlier, is executed, and the CD player is integrated with the car stereo. If a negative determination is made in step **326**, then step **330** is invoked. In step **330**, a determination is made as to whether the device connected to the auxiliary input is an MP3 player. If a positive determination is made, step **334** is invoked, wherein the logic of block **138** if **FIG. 4b** (the MP3 handling process), discussed earlier, is executed, and the MP3 player is integrated with the car stereo. If a negative determination is made in step **330**, then step **336** is invoked. In step **336**, a determination is made as to whether the device connected to the auxiliary input is a satellite receiver or a DAB receiver. If a positive determination is made, step **338** is invoked, wherein the logic of block **168** of **FIG. 4c** (the satellite/DAB receiver handling process), discussed earlier, is executed, and the satellite receiver is integrated with the car stereo. If a negative determination is made in step

336, step **322** is re-invoked, so that additional auxiliary input selections can be monitored and processed accordingly. Of course, process **320** can be expanded to allow other types of devices connected to the auxiliary inputs of the present invention to be integrated with the car stereo.

The present invention can be expanded for allowing video information generated by an external device to be integrated with the display of an existing OEM or after-market car stereo. In such a mode, the invention accepts RGB (red/green/blue) input signals from the external device, and converts same to composite signals. The composite signals are then forwarded to the car stereo for display thereby, such as on an LCD panel of the stereo. Additionally, the present invention can accept composite input signals from an external device, and convert same to RGB signals for display on the car stereo. Further, information from the external device can be formatted and presented to the user in one or more graphical user interfaces or menus capable of being viewed and manipulated on the car stereo.

FIG. 7a is a perspective view of a docking station **400** according to the present invention for retaining an audio device within a car. Importantly, the present invention can be adapted to allow portable audio devices to be integrated with an existing car stereo. The docking station **400** allows such portable devices to be conveniently docked and integrated with the car stereo. The docking station **400** includes a top portion **402** hingedly connected at a rear portion **408** to a bottom portion **404**, preferably in a clam-like configuration. A portable audio device **410**, such as the SKYFI radio distributed by DELPHI, Inc., is physically and electrically connected with the docking portion **412**, and contained within the station **100**. A clasp **406** can be provided for holding the top and bottom portions in a closed position to retain the device **410**. Optionally, a

video device could also be docked using the docking station **400**, and tabs **413** can be provided for holding the docking station **400** in place against a portion of a car. Conceivably, the docking station **400** could take any form, such as a sleeve-like device for receiving and retaining a portable audio device and having a docking portion for electrically and mechanically mating with the audio device. It should be noted that the docking station **400** could be formed without the top portion **402.**

FIG. 7b is an end view showing the rear portion **408** of the docking station **400** of **FIG. 7a**. A hinge **414** connects the top portion and the bottom portions of the docking station **400**. A data port **416** is provided for interfacing with the audio device docked within the station **400**, and is in electrical communication therewith. In a preferred embodiment of the present invention, the data port **416** is an RS-232 serial or USB data port that allows for the transmission of data with the audio device, and which connects with the multimedia device integration system of the present invention for integrating the audio device with an OEM or after-market car stereo. Any known bus technology can be utilized to interface with any portable audio or video device contained within the docking station **400**, such as FIREWIRE, D2B, MOST, CAN, USB/USB2, IE Bus, T Bus, I Bus, or any other bus technology known in the art. It should be noted that the present invention can be operated without a docking station, *i.e.*, a portable audio or video device can be plugged directly into the present invention for integration with a car stereo or video system.

FIGS. 8a-8b are perspective views of another embodiment of the docking station of the present invention, indicated generally at **500**, which includes the multimedia device integration

system of the present invention, indicated generally at **540**, incorporated therewith. As shown in **FIG. 8a**, the docking station **500** includes a base portion **530**, a bottom member **515** interconnected with the base portion **530** at an edge thereof, and a top member **510** hingedly interconnected at an edge to the base portion **530**. The top member **510** and the bottom member **515** define a cavity for docking and storing a portable audio device **520**, which could be a portable CD player, MP3 player, satellite (*e.g.*, XM, SIRIUS, or other type) tuner, or any other portable audio device. The docking station **500** would be configured to accommodate a specific device, such as an IPOD from Apple Computer, Inc., or any other portable device.

The multimedia device integration system **540**, in the form of a circuit board, is housed within the base portion **530** and performs the integration functions discussed herein for integrating the portable device **520** with an existing car stereo or car video system. The integration system **540** is in communication with the portable device **520** via a connector **550**, which is connected to a port on the device **520**, and a cable **555** interconnected between the connector **550** and the integration system **540**. The connector **550** could be any suitable connector and can vary according to the device type. For example, a MOLEX, USB, or any other connector could be used, depending on the portable device. The integration system **540** is electrically connected with a car stereo or car video system by cable **560**. Alternatively, the integration system could wirelessly communicate with the car stereo or car video system. A transmitter could be used at the integration system to communicate with a receiver at the car stereo or car video system. Where automobiles include Bluetooth systems, such systems can be used to communicate with the integration system. As can be readily appreciated, the docking station **500** provides a convenient device for docking, storing, and integrating a portable device

for use with a car stereo. Further, the docking station **500** could be positioned at any desired location within a vehicle, including, but not limited to, the vehicle trunk.

As shown in **FIG. 8b**, the top member **510** can be opened in the general direction indicated by arrow **A** to allow for access to the portable audio device **520**. In this fashion, the device **520** can be quickly accessed for any desired purpose, such as for inserting and removing the device **520** from the docking station **500**, as well as for providing access to the controls of the device **520**.

FIG. 9 is a block diagram showing the components of the docking station of **FIGS. 8a-8b**. The docking station **500** houses both a portable audio or video device **520** and a multimedia device integration system (or interface) **540**. The shape and configuration of the docking station **500** can be varied as desired without departing from the spirit or scope of the present invention.

The integration system of the present invention provides for control of a portable audio or video device, or other device, through the controls of the car stereo or video system system. As such, controls on the steering wheel, where present, may also be used to control the portable audio device or other device. Further, in all embodiments of the present invention, communication between the after-market device and a car stereo or video system can be accomplished using known wireless technologies, such as Bluetooth.

FIG. 10 is a block diagram showing an alternate embodiment of the multimedia device integration system of the present invention, indicated generally at **600**, wherein the interface **630**

is incorporated within a car stereo or car video system **610**. The interface **630** is in electrical communication with the control panel buttons **620**, display **615**, and associated control circuitry **625** of the car stereo or video system **610**. The interface **630** could be manufactured on a separate printed circuit board positioned within the stereo or video system **610**, or on one or more existing circuit boards of the stereo or video system **610**. An after-market device **635** can be put into electrical communication with the interface **630** via a port or connection on the car stereo or video system **610**, and integrated for use with the car stereo or video system **610**.

The device **635** can be controlled using the control panel buttons **620** of the car stereo or video system **610**, and information from the device **635** is formatted by the interface **630** and displayed in the display **615** of the car stereo or video system **610**. Additionally, control commands generated at the car stereo or car video device **610** are converted by the interface **630** into a format (protocol) compatible with the multimedia device **635**, and are dispatched thereto for execution. A plurality of multimedia devices could be integrated using the interface **630**, as well as one or more auxiliary input sources **640**. The after-market device **635** could comprise any audio, video, or telecommunications device, including, but not limited to, a CD player, CD changer, digital media player (*e.g.*, MP3 player, MP4 player, WMV player, Apple iPod, or any other player), satellite radio (*e.g.*, XM, Sirius, Delphi, etc.), video device (*e.g.*, DVD player), cellular telephone, or any other type of device or combinations thereof. Additionally, one or more interfaces could be connected to the interface **630** ("daisy-chained") to allow multiple products to be integrated. The device **600** could include one or more of the circuits disclosed in **FIGS. 3a-3d** and modified depending upon the type of the after-market device **635**.

FIG. 11a is a diagram showing an alternate embodiment of the present invention, indicated generally at **645**, wherein a cellular telephone **670** is integrated for use with a car stereo. The telephone **670** is in electrical communication with the interface **665**, which receives data from the cellular telephone and formats same for displaying on the display **650** of the car stereo or video system **660**. Commands for controlling the telephone **670** can be entered using the control panel buttons **655** of the car stereo or video system **660**. The commands are processed by the interface **665**, converted into a format (protocol) compatible with the telephone **670**, and transmitted to the telephone **670** for processing thereby. Additionally, audio from the telephone **670** can be channeled to the car stereo or video system **660** via the interface **665** and played through the speakers of the car stereo or video system **660**. For example, if the telephone **670** is provided with the ability to download songs or music, such songs or music can be selected using the car stereo or video system **660** and played therethrough using the interface **665**. It should be noted that control of the cellular telephone could be provided using one or more displays (*e.g.*, LCD) of a car video system. Moreover, control of the cellular telephone **670** is not limited to the use of buttons on the car stereo or video system **660**, and indeed, a software or graphically-driven menu or interface can be used to control the cellular telephone. The device **645** could include one or more of the circuits disclosed in **FIGS. 3a-3d** and modified for use with the cellular telephone **670**.

FIG. 11b is a flowchart showing processing logic, indicated generally at **647**, for integrating a cellular telephone with a car radio. Beginning in step **649**, a determination is made as to whether the existing car stereo is powered on. If a negative determination is made, step **651** is invoked, wherein the present invention enters a standby mode and waits for the car stereo to be

powered on. If a positive determination is made, step **653** is invoked, wherein a second determination is made as to whether the car stereo is in a state responsive to signals external to the car stereo. If a negative determination is made, step **649** is re-invoked.

If a positive determination is made in step **653**, a cellular telephone handling process, indicated as block **661**, is invoked. Beginning in step **654**, a signal is generated by the present invention indicating that a cellular telephone is present, and the signal is continuously transmitted to the car stereo. Importantly, this signal prevents the car stereo from shutting off, entering a sleep mode, or otherwise being unresponsive to signals and/or data from an external source. In step **657**, the audio channels of the cellular telephone are connected (channeled) to the car stereo system, allowing audio from the cellular telephone to be played through the car stereo. In step **659**, data is retrieved by the present invention from the cellular telephone, such as song information corresponding to one or more songs downloaded onto the cellular telephone. After steps **654**, **657**, and **659** have been executed, control passes to step **663**.

In steps **663**, the present invention monitors the control panel buttons of the car stereo for cellular telephone operational commands. In step **664**, if a command is not detected, step **663** is re-invoked. Otherwise, if a command is received, step **663** invokes step **667**, wherein the received command is converted into a format recognizable by the cellular telephone connected to the present invention. Once the command has been formatted, step **669** is invoked, wherein the formatted command is transmitted to the cellular telephone and executed. Step **654** is then re-invoked, so that additional processing can occur.

FIG. 12a is a diagram showing an alternate embodiment of the present invention, indicated generally at **675**, wherein an after-market video device **695** is integrated for use with a car video system **685**. The after-market video device **695** could comprise a portable DVD player, digital video (DV) camera, digital camera, or any other video device. The interface **690** receives output video signals from the device **695**, and converts same for display on one or more displays **680** (*e.g.*, LCD seat-back displays in a minivan, fold-down displays mounted on the roof of a vehicle, vehicle navigation displays, etc.) of the car video system **685**. The interface **690** could convert between composite and red/green/blue (RGB) video signals, and vice versa, using commercially-available video format conversion chips such as the TDA8315, TDA4570, TDA3567, TDA3566A, and TDA3569A video conversion chips manufactured by Philips Corp., and the AL251 and AL250 video conversion chips manufactured by Averlogic Technologies, Inc., or any other suitable video conversion chips. Commands issued by a user using the car video system **685** or display(s) **680** for controlling the device **695** are received by the interface **690**, converted into a format compatible with the device **695**, and transmitted thereto for processing. The device **675** could include one or more of the circuits disclosed in **FIGS. 3a-3d** and modified for use with the video device **695**.

FIG. 12b is a flowchart showing processing logic, indicated generally at **671**, for integrating an after-market video device with a car video system. Beginning in step **673**, a determination is made as to whether the existing car video system is powered on. If a negative determination is made, step **674** is invoked, wherein the present invention enters a standby mode and waits for the car video system to be powered on. If a positive determination is made, step **677** is invoked, wherein a second determination is made as to whether the car video system is in

a state responsive to signals external to the car video system. If a negative determination is made, step **673** is re-invoked.

If a positive determination is made in step **677**, an after-market video device handling process, indicated as block **687**, is invoked. Beginning in step **679**, a signal is generated by the present invention indicating that an external device is present, and the signal is continuously transmitted to the car video system. Importantly, this signal prevents the car video system from shutting off, entering a sleep mode, or otherwise being unresponsive to signals and/or data from an external source. In step **681**, the audio and video channels of the after-market device are connected (channeled) to the car video system, allowing audio and video from the after-market device to be played through the car video system. In step **684**, the display(s) of the car video system are updated with data from the after-market device. After steps **679**, **681**, and **684** have been executed, control passes to step **683**.

In step **683**, the present invention monitors the car video system for after-market video device operational commands. In step **689**, if a command is not detected, step **683** is re-invoked. Otherwise, if a command is received, step **689** invokes step **691**, wherein the received command is converted into a format recognizable by the after-market video device connected to the present invention. Once the command has been formatted, step **693** is invoked, wherein the formatted command is transmitted to the after-market video device and executed. Step **679** is then re-invoked, so that additional processing can occur.

FIG. 13a is a block diagram showing an alternate embodiment of the multimedia device integration system **710** of the present invention, wherein configuration jumpers **720** and protocol conversion software blocks **724** are provided for integrating after-market devices of various types using a single interface. The jumpers **720** can be set to a plurality of different settings, each of which corresponds to an after-market device of a specific type (*e.g.*, CD changer, CD player, digital media player, satellite radio, video device, cellular telephone, etc.) or from a specific manufacturer. Additionally, the jumpers **720** can be used to specify one or more device or manufacturer types for the car stereo or video system **705**. The settings of the configuration jumpers **720** correspond to one or more protocol conversion software blocks **724** stored in memory (*e.g.*, programmable flash memory, ROM, EEPROM, etc.) **725** of the interface **710**. Each of the software blocks **724** controls the interface circuitry **715** and contains instructions for converting data from the device **707** into a format compatible with the car stereo or video system **705**, and vice versa. For example, a first block could contain software for allowing communication between an Apple iPod and an in-dash car stereo manufactured by Sony, and a second block could contain software for allowing communication between a DVD player and a car video system. Any desired number of blocks could be stored in the memory **725** and can be selected as desired by the user via configuration jumpers **720**. As such, a single interface **710** can be used for integrating numerous devices of various types and manufactures for use with one or more car stereo or video systems. The device **710** could include one or more of the circuits shown in **FIGS. 3a-3d**, with modifications depending upon the device types of the devices **705** and **707.**

FIG. 13b is a block diagram showing an alternate embodiment of the multimedia device integration system of the present invention, wherein wiring harnesses **727** and **728** and protocol conversion software blocks **729** are provided for integrating multimedia devices of various types using a single interface **726**. In this embodiment, the electrical configurations (pinouts) of each of the harnesses **727** and **728** correspond to car stereo / video systems and after-market devices of specific types and made by specific manufacturers (*e.g.*, harness **727** could correspond to a BMW car stereo, and harness **728** could correspond to an ALPINE satellite tuner). The electrical configurations (pinouts) of the harnesses are utilized by the interface **726** to retrieve a specific protocol conversion software block **729** that allows communication between the devices. The interface **726** could be provided with a plurality of protocol conversion software blocks pre-loaded into memory in the interface, and could be provided with any desired harnesses. The interface **726** could include one or more of the circuits shown in **FIGS. 3a-3d**, with modification depending upon the device types of the devices attached to the wiring harnesses **727** and **728**.

FIG. 14 is a flowchart showing processing logic, indicated generally at **730**, of the multimedia device integration system of the present invention for integrating after-market devices of various types using a single interface. In step **735**, the interface determines types of devices that are connected thereto, including the car stereo or video system and one or more after-market devices to be integrated therewith. This could be achieved by the configuration jumper settings or the harness types connected to the interface and discussed with respect to **FIGS. 13a** and **13b**. Then, in step **740**, a protocol conversion software block is selected from blocks of conversion software (*e.g.*, from the blocks **725** and **729** shown in **FIGS. 13a** and **13b**).

In step **745**, instructions are converted using the selected conversion block to allow the car stereo or video system to operate with the multimedia device.

FIG. 15 is a flowchart showing processing logic, indicated generally at **750**, of the multimedia device integration system of the present invention for allowing a user to specify one or more after-market device types for integration using a single interface. In step **770**, a user is provided with one or more lists of devices to be integrated, which are displayed on the display **760** of the car stereo or video device **755**. Then, in step **775**, using the buttons **765** of the car video device, the user can specify the type of multimedia device to be integrated (*e.g.*, by scrolling through the lists). Additionally, the device type could be specified using a graphical or software menu displayed on the car stereo or car video system. In step **780**, a determination is made as to whether a timeout has occurred (*e.g.*, the user has not selected a device type within a predetermined period of time). If a positive determination is made, step **785** occurs, wherein a protocol conversion software block is selected from memory corresponding to the last device type displayed by the car stereo or video system. If a negative determination is made, step **790** is invoked, wherein a determination is made as to whether the user has specified a device type. If a negative determination is made, step **775** is re-invoked so that the user can specify a device type. If a positive determination is made, step **795** is invoked, wherein a protocol conversion software block is selected from memory corresponding to the device specified by the user. In step **800**, the protocol conversion software block is mapped to a logical address in memory. Then, in step **805**, instructions to be exchanged between the car stereo or video system and the after-market device are converted using the software block to allow communication between the devices using compatible formats. Accordingly, the logic of **FIG. 15** allows a single interface having

multiple protocol conversion software blocks to be used integrate a plurality of after-market devices with a car stereo or video system.

FIG. 16 is a flowchart showing processing logic of the multimedia device integration system of the present invention, indicated generally at **810**, for allowing a user to quickly navigate through a list of songs on one or more after-market devices using the controls of a car stereo or video system (fast navigation technique). This method allows a user to quickly select a song from a list of songs available on an after-market device for playing on the car stereo or video system, and could be applied for use with any type of after-market device, including, but not limited to, a digital media player such as an MP3 player or Apple iPod player. Beginning in step **812**, a user is provided with a list of alphanumeric characters on a display of the car stereo or video system. This list could include the letters A through Z, as well as the numbers 0 through 9. In step **814**, the user can specify a desired alphanumeric character, which can be specified by scrolling through the list using one or more controls of the car stereo or video system and pressing a button once the desired character has been highlighted, or optionally, if an alphanumeric keypad (or touchscreen interface) is provided on the car stereo or video system, the user can directly enter the desired alphanumeric character.

When the desired alphanumeric character has been specified, in step **816** a remote database is queried using the alphanumeric character. The remote database could comprise a list of songs stored in one or more after-market devices integrated by the present invention for use with the car stereo or video system. In step **818**, a list of potentially matching songs is retrieved from the database and presented on the display of the car stereo or video system for perusal by

the user. For example, if the user specified the letter "A," the list could include all songs in the remote database having titles (or artists) beginning with the letter "A." In step **820**, a determination is made as to whether a desired song appears in the list and is immediately viewable by the user, without requiring the user to scroll through the list. If a positive determination is made, step **822** is invoked, wherein the desired song is selected by the user and retrieved from the after-market device for playing on the car stereo or video system.

In the event that a negative determination is made in step **820**, step **824** is invoked, wherein the user can specify an additional alphanumeric character using the car stereo or video system. For example, if the user initially specified the letter "A" and the desired song is not visible in the list of songs without scrolling, the user can refine the query by adding an additional alphanumeric character. Thus, for example, the user can specify the letters "AN" to search for songs having titles (or artists) beginning with the letters "AN." In step **826**, the remote database of the after-market device is queried using the specified letters. In step **828**, a list of potential matches is presented to the user at the car stereo or video system. In step **830**, a determination is made as to whether the desired song appears in the list and is immediately viewable without requiring the user to scroll through the list. If a positive determination is made, step **822** is invoked, wherein the user can select the desired song for retrieval from the after-market device and playing on the car stereo or video system. If a negative determination is made, step **832** is invoked, wherein a determination is made as to whether a threshold number of alphanumeric characters has been specified by the user. For example, a maximum threshold of 3 alphanumeric characters could be specified, or any other desired number. If a negative determination is made, steps **824-832** are re-invoked in the manner disclosed herein to allow the user to specify

additional alphanumeric characters for querying the remote database. If a positive determination is made (threshold met), then processing terminates and the user must scroll through the list of retrieved songs or repeat the processing disclosed in **FIG. 16** to begin a new query.

FIG. 17 is a diagram showing an another embodiment of the present invention, indicated generally at **850**, wherein a plurality of external devices are integrated using a single interface **852**. Any desired number or combination of devices can be integrated for use with a car stereo or video system using the interface **852**. The interface **852** houses a plurality of ports **858** for connecting any desired number of external devices, and a port **856** for connection with a car stereo or video system. The ports **858** and **856** could be any suitable type of input port, and could vary depending upon the types of devices to be integrated. Additionally, the interface **852** includes integration electronics **854**, which could include any desired electronics disclosed herein for integrating a plurality of external devices.

As shown in **FIG. 17**, a CD player **860**, a digital media device **862**, a satellite tuner **864**, a video device **866**, a cellular phone **868**, and an auxiliary input **870** are connected to the interface **852** and integrated for use with a car stereo or video system. The CD player **860** could comprise any desired CD player or changer. The digital media device **862** could comprise any portable digital media device, such as an Apple iPod, MP3 player, MP4, player, WMV player, portable music center, or any other desired device. The satellite tuner **864** could comprise any desired satellite tuner, such as an XM or Sirius tuner. The video device **866** could comprise any desired video device, such as a DVD player. The cellular phone **868** could comprise any cellular

telephone capable of downloading and storing music or video files. The auxiliary input **870** could comprise any desired external device. Any desired number of interfaces **852** could be interconnected ("daisy-chained"). Further, the interface **852** could form part of an existing car stereo or video system. Control of the external devices connected to the interface **852** is provided through the car stereo or video system.

FIG. 18 is a diagram showing another embodiment of the present invention, indicated generally at **900**, wherein wireless integration is provided between a car audio and/or video system **910** and a portable audio and/or video device **924**. The car system **910** could be any OEM or after-market car audio and/or video system. The portable device **924** could comprise a CD player, CD changer, digital media player (*e.g.*, MP3 player, MP4 player, WMV player, Apple iPod, Apple video iPod), portable media center, portable media player, satellite receiver, digital audio broadcast (DAB) receiver (also commonly referred to as a high-definition (HD) radio receiver), video device (*e.g.*, DVD player or digital media player, such as the SONY PSP digital media player), cellular telephone, or any other portable device.

The car system **910** includes system electronics **912** (e.g., circuitry and components provided by an OEM or after-market car audio and/or video system manufacturer), a display **918**, a control panel **920** (e.g., buttons, touch screen display, etc.) for allowing user interaction and control, and a wireless interface or transceiver **916**. The wireless interface **916** could comprise an AT76C551 Bluetooth transceiver manufactured by Atmel, Inc., which includes a Bluetooth baseband controller with an integrated digital signal processor (DSP), and an AT7024 2.4 - 2.5 GHz band RF front end transceiver manufactured by Atmel, Inc., which includes a low-noise

amplifier and transmit / receive switch driver. Any other suitable wireless transceiver (e.g., IEEE 802.11a, 802.11b, or 802.11g) could also be substituted. The display **918** could comprise any display associated with the car system **910**, including, but not limited to, a display panel, a seat-back display, a dashboard display, an LCD or plasma display, or any other display in a car or associated with a car audio and/or video system, positioned anywhere within a vehicle.

The portable device **924** includes device electronics **934** (e.g., circuitry and components provided by the portable device manufacturer), a wireless interface or transceiver **926**, and an integration subsystem or module **932** positioned within the portable device **924**. Optionally, the wireless interface **926** could be positioned external to the portable device **924**. The wireless interface **926** is identical to the wireless interface **916**, and both interfaces **916** and **926** establish a wireless communications channel or link **922** between the car system **910** and the portable device **924**.

The integration subsystem **932** receives control commands that are issued at the car system **910** and wirelessly transmitted to the portable device **924** via the wireless communications link **922**, processes the commands into a format compatible with the device electronics **934** of the portable device **924**, and dispatches same to the device electronics **934** for execution thereby, so as to provide remote, wireless control of the portable device **924** using the car system **910**. For example, a "Play" command could be entered at the car system **910** (which could be a BMW car stereo), wirelessly transmitted to the portable device **924** (which could be an Apple iPod), converted by the integration subsystem **932** into a format recognizable by the device electronics **934**, and executed thereby. The integration subsystem **932** also receives data

generated by the device electronics **934** (including, but not limited to, track information, artist information, song title, time information, etc.), processes same into a format compatible with the car system **910**, and transmits the processed data to the car system **910** using the wireless link **922** for display thereon using the display **918**. For example, playlists or other data generated by the portable device **924** could be processed by the integration subsystem **932** into a format compatible with the car system **910**, and wirelessly transmitted thereto for display on the display **918**.

Audio and video information generated by the portable device **924** can be transmitted digitally to the car system **910** using the wireless link **922**. This information could also be transmitted via one or more analog RF carrier signals, using suitable digital-to-analog and analog-to-digital conversion circuitry known in the art. The integration subsystem **932** could also include conversion circuitry (*e.g.*, using the video format conversion chips discussed above with respect to **FIG. 12a**) for converting video information generated by the portable device **924** for display on the display **918** of the car system **910** (e.g., by converting composite video signals to red, green, and blue (RGB) video signals, or vice versa). It should be noted that the integration subsystem **932** could also be utilized to process data, video, and audio information provided by the portable device **924** where the portable device **924** is connected to the Internet (*e.g.*, via a wireless Internet connection established by a cellular telephone). In such circumstances, the display **918** of the car system **910** would function as an Internet browser, and the controls **920** of the car system **910** could be utilized to navigate the Internet.

The integration subsystem **932** contains circuitry similar to the circuitry disclosed in the various embodiments of the present invention discussed herein, and could include a PIC16F872 or PIC16F873 microcontroller manufactured by Microchip, Inc. and programmed in accordance with the flowchart discussed below with respect to **FIG. 24**. Additionally, the integration subsystem **932** generates a device presence signal for maintaining the car system **910** in a state responsive to the portable device **924**. It should be noted that a non-wireless connection **930** could be provided between optional external interfaces ports **914** and **928** of the car system **910** and the portable device **924**, respectively, using any suitable wired connection type such as serial, FIREWIRE, CAN/CAN2, USB/USB2, IE Bus, T Bus, I Bus, or any other connection, to allow for wired integration between the car system **910** and the portable device **924**. Additionally, the non-wireless connection **930** could include a fiber-optic connection, such as a D2B or MOST fiber-optic connection. The device presence can be transmitted to the car system **910** using the wireless link **922** or, optionally, the non-wireless connection **930**.

FIG. 19 is a diagram showing another embodiment of the present invention, indicated generally at **1000**, wherein wireless integration is provided between a car audio and/or video system **1010** and a portable audio and/or video device **1024**. The components shown in **FIG. 19** are identical to the components shown in **FIG. 18**, and reference numerals of corresponding components have been increased by 100. In this embodiment, the integration subsystem **1032** is positioned internally within the car system **1010**, which also includes system electronics **1012**, wireless interface **1016**, display **1018**, control panel **1020**, and, optionally, external interface port **1014**. The portable device **1024** includes a wireless interface **1026** in communication with

device electronics **1034**, and optionally, an external interface port **1028** for communicating with the external interface port **1014** of the car system **1010** via non-wireless connection **1030**.

FIG. 20 is a diagram showing another embodiment of the present invention, indicated generally at **1100**, wherein a docking slot **1140** is provided in a car audio and/or video system **1110** for receiving a portable audio and/or video device **1124**. The car system **1110** includes system electronics **1112** (e.g., circuitry and components provided by an OEM or after-market car audio or video system manufacturer), a display **1118**, and a control panel **1120**. The portable device **1124** includes an integration subsystem or module **1132**, device electronics **1134** (e.g., circuitry and components provided by the manufacturer of the portable device **1124**) and an external interface port **1142** that interfaces with the docking slot **1140** to allow electrical communication between the integration subsystem **1132** of the car system **1110** and the device electronics **1134** of the portable device **1124**. The electrical connection formed by the external interface port **1142** and the docking slot **1140** could include a FIREWIRE, CAN/CAN2, USB/USB2, IE Bus, T Bus, or I Bus connection, or any other suitable connection type. Additionally, a fiber-optic connection could be formed between the external interface port **1142** and the docking slot **1140**, using a D2B, MOST, or other suitable fiber-optic connection.

The portable device **1124** is inserted into the docking slot **1140** in the general direction indicated by arrow **A**. Once docked, the integration subsystem **1132** processes control commands issued at the car system **1110** into a format compatible with the portable device **1124**, and processes data generated by the portable device **1124** into a format compatible with the car system **1110** in the manner described herein. Audio and video signals generated by the portable

device **1124** are channeled by the integration subsystem **1132** to the system electronics **1112**, for playing through the car system **1110**. The portable device **1124** could comprise a digital media player (*e.g.*, MP3 player, MP4 player, WMV player, Apple iPod, Apple video iPod, or other device), a portable media center, a portable media player, a satellite receiver, a digital audio broadcast (DAB) receiver or high-definition (HD) radio receiver, a portable video device, a cellular telephone, or any other portable device.

FIG. 21 is a diagram showing another embodiment of the present invention, indicated generally at **1200**, wherein a docking slot **1240** is provided in a car audio and/or video system **1210** for receiving a portable audio and/or video device **1224**. The components shown in **FIG. 21** are identical to those disclosed in **FIG. 20**, and reference numerals of corresponding components have been increased by 100. In this embodiment, the integration subsystem **1232** is positioned within the car system **1210**, which also includes system electronics **1212**, display **1218**, and control panel **1220**. The portable device **1224** includes device electronics **1234** and an external interface port **1242** for interfacing with the docking slot **1240** and providing electrical (and/or optical) communication with the integration subsystem **1232**.

FIG. 22 is a diagram showing another embodiment of the present invention, indicated generally at **1300**, wherein wireless integration is provided between a car audio and/or video system **1310** and a portable audio and/or video device **1324**, and voice synthesis and speech recognition capabilities are provided. More particularly, the portable device **1324** includes an integration subsystem or module **1332** having a voice recognition subsystem **1336** and a speech synthesizer **1338**. As with the embodiments discussed earlier with respect to **FIGS. 18-19**, the

car system **1310** includes system electronics **1312** (*e.g.*, circuitry and components provided by an OEM or after-market car audio or video system manufacturer), an optional external interface port **1314**, a wireless interface or transceiver **1316** (which could be a Bluetooth or other suitable wireless transceiver), a display **1318**, and a control panel **1320**.

The portable device **1324** could comprise a CD player, CD changer, digital media player (*e.g.*, MP3 player, MP4 player, WMV player, Apple iPod, Apple video iPod, or other device), portable media center, portable media player, satellite receiver, digital audio broadcast (DAB) receiver, high-definition (HD) radio receiver, video device (*e.g.*, DVD player or digital media player, such as the SONY PSP digital media player), cellular telephone, or any other portable device. The portable device **1324** includes a wireless interface **1326** which communicates with the wireless interface **1316** to provide a wireless communications channel or link **1322**, an optional external interface port **1328** for providing a non-wireless connection **1330** with the external interface port **1314** (which could include any suitable wired connection, such as FIREWIRE, CAN/CAN2, USB/USB2, IE Bus, T Bus, I Bus, etc., or any suitable optical connection, such as D2B or MOST), device electronics **1334**, and optional external audio output **1340** and optional external audio input **1342**.

The voice recognition subsystem **1336** of the integration subsystem **1332** could comprise the HM2007 speech recognition processor manufactured by Hualon Microelectric Corporation, the VRP6679 speech recognition processor manufactured by Oki, Inc., or any other suitable speech recognition processor. The voice recognition subsystem **1336** receives control commands that are spoken by a user and are transmitted to the portable device **1324** via the wireless link

1322 or the non-wireless connection **1330** (where the car system **1310** another vehicle component connected to the car system **1310** includes a microphone for receiving voice commands). Optionally, a microphone could be connected to the external audio input **1342** of the portable device **1324** for receiving voice commands. Any desired, spoken commands could be received by the integration subsystem **1332** and processed by the voice recognition subsystem **1336** into a format compatible with the device electronics **1334** of the portable device **1324** for execution thereby. For example, a user could speak a desired artist name, whereupon the voice recognition subsystem **1336** processes the spoken artist name into a digital format, passes the processed artist name to the integration subsystem **1332**, and the integration subsystem **1332** constructs a query command and passes the query command to the device electronics **1334** along with the processed artist name to the device electronics **1334**. The device electronics **1334** then queries the portable device **1324** for all songs (e.g., by searching ID3 tags associated with each song and stored in the portable device **1324**) having a matching artist name. The resulting list is then passed to the integration subsystem **1332**, whereupon the information is processed into a format compatible with the car system **1310**. Then, the information is transmitted to the car system **1310** via the wireless link **1322** or the non-wireless connection **1330** for display on the display **1318** of the car system **1310**.

Voice recognition could also be used to retrieve other media files, such as video clips that are stored on the portable device **1324.** Such files, one retrieved, could then be processed by the integration subsystem **1332** in the manner described herein, transmitted to the car system **1310** (via the wireless link **1322** or the non-wireless connection **1330**), and displayed on the display

1318 of the car system **1310**. An index of such files could also be generated by the integration subsystem **1332** for quick browsing and retrieval using car system **1310** or voice commands.

The speech synthesizer **1338** provides synthesized speech corresponding to data produced by the portable device **1324**. For example, track lists, artist names, song titles, and other information (e.g., video clip titles, movie titles, etc.) could be retrieved from the portable device **1324** by the integration subsystem **1332** (e.g., in response to a command issued by the user at the car system **1310** or a spoken command processed by the voice recognition subsystem **1336**), and synthesized speech corresponding to the retrieved information could be generated by the speech synthesizer **1338** using known text-to-speech software. The speech synthesizer **1338** could include the RC 8650 or RC 8660 speech synthesis chipsets manufactured by RC Systems, Inc., or any other suitable speech synthesizers. Synthesized speech could be transmitted to the car system **1310** via the wireless link **1322** or the non-wireless connection **1330** and played through the car system **1310**, or optionally, the speech could be channeled to an external device via the optional external audio output **1340**. It should be noted that the voice recognition subsystem **1336** and the speech synthesizer **1338** could be formed on a single integrated circuit forming part of the integration subsystem **1332**. Additionally, the integration subsystem **1332** provides full control of the portable device **1324** using the car system **1310** and exchange of data, audio, and video signals between the portable device **1324** and the car system **1310**, in the manner described herein.

FIG. 23 is a diagram showing another embodiment of the present invention, indicated generally at **1400**, wherein wireless integration is provide between a car audio and/or video

system **1410** and a portable audio and/or video device **1424** and voice recognition and speech synthesis capabilities are provided. The components shown in **FIG. 23** are functionally identical to the components shown in **FIG. 22**, and reference numerals of corresponding components have been increased by 100. In this embodiment, the integration subsystem **1432** is positioned in the car system **1410**, which includes system electronics **1412**, an optional external interface port **1414**, a wireless interface **1416**, a display **1418**, and a control panel **1420**. The integration subsystem **1432** includes a voice recognition subsystem **1436** and a speech synthesizer **1438**, which provide the voice recognition and speech synthesis capabilities described above with reference to **FIG. 22**. The portable device **1424** includes a wireless interface **1426**, and optional external interface port **1428**, device electronics **1434**, an optional external audio output port **1440**, and an optional external audio input port **1442**.

FIG. 24 is a flowchart showing processing logic according to the present invention, indicated generally at **1450**, for wirelessly integrating a portable audio and/or video device for use with a car audio and/or video system. In step **1452**, a wireless link is established between the portable device and the car audio and/or video system. As discussed above, the wireless link could be any suitable wireless communications link, such as a Bluetooth wireless link, an IEEE 802.11 link, or any other suitable link. In step **1454**, the car audio and/or video system type is determined, such as the manufacturer name and/or model identifier. In step **1456**, the portable audio and/or video device type is identified, such as the manufacturer name and/or model identifier. In step **1458**, a protocol conversion software block is loaded from memory, based upon the corresponding device types of the car audio and/or video system and the portable audio and/or video device. The protocol conversion software block includes code for converting

commands issued at the car audio and/or video system into a format compatible with the portable audio and/or video device, as well as code for converting data generated by the portable audio and/or video device into a format compatible with the car audio and/or video system.

In step **1460**, data generated by the portable audio and/or video device is processed by the protocol conversion software block. Then, in step **1466**, the processed data is transmitted to the car audio and/or video system for display thereon, using the wireless link. In step **1462**, audio and/or video signal generated by the portable audio and/or video device are channeled to the car audio and/or video system using the wireless link. In step **1464**, a determination is made as to whether commands from the car audio and/or video system are to be processed. If a negative determination is made, step **1458** is re-invoked. Otherwise, step **1468** is invoked, wherein the commands are processed using the protocol conversion software block. Then, in step **1470**, the processed commands are transmitted to the car audio and/or video system using the wireless link. Step **1458** is then re-invoked, so that additional processing can occur.

Importantly, the present invention allows video files in any format (including video clips, movies, pictures, etc.) that are stored on a portable device to be displayed on one or more displays of a car audio and/or video system, and playback of such files to be controlled using the car audio and/or video system. Examples of such files include, but are not limited to, MPEG, WMV, AVI, JPEG, GIF, TIFF, MP4, or any other suitable video format. Such files could be stored on a cell phone, a portable media center, a portable media player, or any other portable device which is integrated by the present invention (through a wired or wireless connection) for use with a car audio and/or video system. Thus, for example, a video clip downloaded to a

cellular telephone or a video clip stored on a portable device (e.g., an Apple video iPod) can be displayed on one or more displays of a car audio and/or video system. Further, the present invention allows for live video streams, such as live television video received by a cellular telephone or other portable device, to be displayed on one or more displays of the car audio and/or video system.

Having thus described the invention in detail, it is to be understood that the foregoing description is not intended to limit the spirit and scope thereof.

CLAIMS

What is claimed is:

1. A multimedia device integration system comprising:

a car audio system having a display associated therewith;

a portable device external to the car audio system;

a first wireless interface in communication with the car audio system;

a second wireless interface in communication with the portable device, the first and second wireless interfaces establishing a wireless communications link between the car audio system and the portable device; and

an integration subsystem for generating a device presence signal for maintaining the car audio system in a state responsive to the portable device, wherein the integration subsystem transmits the device presence signal to the car audio system, channels audio from the portable device to the car audio system using the wireless communications link, processes video information generated by the portable device into a format compatible with the car audio system, and transmits the processed video information to the car audio system using the wireless communications link for displaying the processed video information on the display of the car audio system.

2. The system of Claim 1, wherein the integration subsystem processes data generated by the portable device into a format compatible with the car audio system and displays the processed data on the display of the car audio system.

3. The system of Claim 1, wherein the integration subsystem receives control commands issued at the car audio system and transmitted over the wireless communications link, processes the commands into a format compatible with the portable device, and dispatches the processed commands to the portable device for execution thereby.

4. The system of Claim 1, wherein the integration subsystem further comprises a voice recognition subsystem for processing spoken control commands issued by a user.

5. The system of Claim 4, wherein the integration subsystem retrieves an audio file or a video file from the portable device in response to a spoken command.

6. The system of Claim 4, wherein the integration subsystem further comprises a speech synthesizer for generating synthesized speech corresponding to data generated by the portable device.

7. The system of Claim 1, wherein the car audio system comprises an OEM car audio system.

8. The system of Claim 1, wherein the car audio system comprises an after-market car audio system.

9. The system of Claim 1, wherein the portable device comprises a portable receiver.

10. The system of Claim 10, wherein the portable receiver comprises a digital audio broadcast (DAB) receiver, a high-definition (HD) radio receiver, or a satellite receiver.

11. The system of Claim 1, wherein the portable device comprises a portable digital media player.

12. The system of Claim 11, wherein the portable digital media player comprises a video device, a portable media center, a portable media player, an MP3 player, an MP4 player, a WMV player, an Apple iPod, or an Apple video iPod.

13. The system of Claim 1, wherein the portable device comprises a cellular telephone.

14. The system of Claim 1, further comprising a non-wireless connection established between the car audio system and the portable device for exchanging data, commands, audio and video signals between the car audio system and the portable device.

15. The system of Claim 1, wherein the integration subsystem is positioned within the portable device.

16. The system of Claim 1, wherein the integration subsystem is positioned within the car audio system.

17. The system of Claim 1, wherein the video information comprises a video file stored on the portable device.

18. The system of Claim 1, wherein the video information comprises a picture stored on the portable device.

19. The system of Claim 1, wherein the video information comprises a television signal received by the portable device.

20. A multimedia device integration system comprising:

a car video system having a display associated therewith;

a portable device external to the car video system;

a first wireless interface in communication with the car video system;

a second wireless interface in communication with the portable device, the first and second wireless interfaces establishing a wireless communications link between the car video system and the portable device; and

an integration subsystem for generating a device presence signal for maintaining the car video system in a state responsive to the portable device, wherein the integration subsystem transmits the device presence signal to the car video system, channels audio from the portable device to the car video system using the wireless communications link, processes video information generated by the portable device into a format compatible with the car video system, and transmits the processed video information to the car video system using the wireless communications link for displaying the processed video information on the display of the car video system.

21. The system of Claim 20, wherein the integration subsystem processes data generated by the portable device into a format compatible with the car video system and displays the processed data on the display of the car video system.

22. The system of Claim 20, wherein the integration subsystem receives control commands issued at the car video system and transmitted over the wireless communications link, processes the commands into a format compatible with the portable device, and dispatches the processed commands to the portable device for execution thereby.

23. The system of Claim 20, wherein the integration subsystem further comprises a voice recognition subsystem for processing spoken control commands issued by a user.

24. The system of Claim 23, wherein the integration subsystem retrieves an audio file or a video file from the portable device in response to a spoken command.

25. The system of Claim 23, wherein the integration subsystem further comprises a speech synthesizer for generating synthesized speech corresponding to data generated by the portable device.

26. The system of Claim 20, wherein the car video system comprises an OEM car video system.

27. The system of Claim 20, wherein the car video system comprises an after-market car video system.

28. The system of Claim 20, wherein the portable device comprises a portable receiver.

29. The system of Claim 28, wherein the portable receiver comprises a digital audio broadcast (DAB) receiver, a high-definition (HD) radio receiver, or a satellite receiver.

30. The system of Claim 20, wherein the portable device comprises a portable digital media player.

31. The system of Claim 30, wherein the portable digital media player comprises a video device, a portable media center, a portable media player, an MP3 player, an MP4 player, a WMV player, an Apple iPod, or an Apple video iPod.

32. The system of Claim 20, wherein the portable device comprises a cellular telephone.

33. The system of Claim 20, further comprising a non-wireless connection established between the car video system and the portable device for exchanging data, commands, audio and video signals between the car video system and the portable device.

34. The system of Claim 20, wherein the integration subsystem is positioned within the portable device.

35. The system of Claim 20, wherein the integration subsystem is positioned within the car video system.

36. The system of Claim 20, wherein the video information comprises a video file stored on the portable device.

37. The system of Claim 20, wherein the video information comprises a picture stored on the portable device.

38. The system of Claim 20, wherein the video information comprises a television signal received by the portable device.

39. A multimedia device integration system comprising:

a car audio system;

a portable device external to the car audio system;

a docking slot formed in the car audio system for receiving the portable device and establishing electrical communication between the car audio system and the portable device; and

an integration subsystem for generating a device presence signal for maintaining the car audio system in a state responsive to the portable device, wherein the integration subsystem receives data generated by the portable device, processes the data into a format compatible with the car audio system, and transmits the processed data, the device presence signal, and audio signals to the car audio system.

40. The system of Claim 39, wherein the processed data is displayed on a display of the car audio system.

41. The system of Claim 39, wherein the integration subsystem processes a video file stored on the portable device into a format compatible with the car audio system and transmits the video file to the car audio system for displaying the video file on a display of the car audio system.

42. The system of Claim 39, wherein the integration subsystem receives control commands issued at the car audio system, processes the commands into a format compatible with the portable device, and dispatches the processed commands to the portable device for execution thereby.

43. The system of Claim 39, wherein the integration subsystem further comprises a voice recognition subsystem for processing spoken control commands issued by a user.

44. The system of Claim 43, wherein the integration subsystem retrieves an audio file or a video file from the portable device in response to a spoken command.

45. The system of Claim 43, wherein the integration subsystem further comprises a speech synthesizer for generating synthesized speech corresponding to data generated by the portable device.

46. The system of Claim 39, wherein the car audio system comprises an OEM car audio system.

47. The system of Claim 39, wherein the car audio system comprises an after-market car audio system.

48. The system of Claim 39, wherein the portable device comprises a portable receiver.

49. The system of Claim 48, wherein the portable receiver comprises a digital audio broadcast (DAB) receiver, a high-definition (HD) radio receiver, or a satellite receiver.

50. The system of Claim 39, wherein the portable device comprises a portable digital media player.

51. The system of Claim 50, wherein the portable digital media player comprises a video device, a portable media center, a portable media player, an MP3 player, an MP4 player, a WMV player, an Apple iPod, or an Apple video iPod.

52. The system of Claim 39, wherein the portable device comprises a cellular telephone.

53. The system of Claim 39, wherein the integration subsystem is positioned within the portable device.

54. The system of Claim 39, wherein the integration subsystem is positioned within the car audio system.

55. A multimedia device integration system comprising:

a car video system;

a portable device external to the car video system;

a docking slot formed in the car video system for receiving the portable device and establishing electrical communication between the car video system and the portable device; and

an integration subsystem for generating a device presence signal for maintaining the car video system in a state responsive to the portable device, wherein the integration subsystem receives data generated by the portable device, processes the data into a format compatible with the car video system, and transmits the processed data, the device presence signal, audio signals, and video signals to the car video system.

56. The system of Claim 55, wherein the processed data is displayed on a display of the car video system.

57. The system of Claim 55, wherein the integration subsystem processes a video file stored on the portable device into a format compatible with the car video system and transmits the video file to the car video system for displaying the video file on a display of the car video system.

58. The system of Claim 55, wherein the integration subsystem receives control commands issued at the car video system, processes the commands into a format compatible with the portable device, and dispatches the processed commands to the portable device for execution thereby.

59. The system of Claim 55, wherein the integration subsystem further comprises a voice recognition subsystem for processing spoken control commands issued by a user.

60. The system of Claim 59, wherein the integration subsystem retrieves an audio file or a video file from the portable device in response to a spoken command.

61. The system of Claim 59, wherein the integration subsystem further comprises a speech synthesizer for generating synthesized speech corresponding to data generated by the portable device.

62. The system of Claim 55, wherein the car video system comprises an OEM car video system.

63. The system of Claim 55, wherein the car video system comprises an after-market car video system.

64. The system of Claim 55, wherein the portable device comprises a portable receiver.

65. The system of Claim 64, wherein the portable receiver comprises a digital audio broadcast (DAB) receiver, a high-definition (HD) radio receiver, or a satellite receiver.

66. The system of Claim 55, wherein the portable device comprises a portable digital media player.

67. The system of Claim 66, wherein the portable digital media player comprises a video device, a portable media center, a portable media player, an MP3 player, an MP4 player, a WMV player, an Apple iPod, or an Apple video iPod.

68. The system of Claim 55, wherein the portable device comprises a cellular telephone.

69. The system of Claim 55, wherein the integration subsystem is positioned within the portable device.

70. The system of Claim 55, wherein the integration subsystem is positioned within the car video system.

71. A method for wirelessly integrating a portable device for use with a car audio system comprising:

establishing a wireless communications link between the car audio system and the portable device;

generating a device presence signal for maintaining the car audio system in a state responsive to the portable device;

transmitting the device presence signal to the car audio system over the wireless communications link;

processing video information generated by the portable device into a format compatible with the car audio system;

transmitting the processed video information and audio signals generated by the portable device to the car audio system over the wireless communications link;

displaying the processed video information on a display of the car audio system; and

playing the audio signals over the car audio system.

72. The method of Claim 71, further comprising processing data generated by the portable device into a format compatible with the car audio system.

73. The method of Claim 72, further comprising transmitting the processed data over the wireless communications link to the car audio system.

74. The method of Claim 73, further comprising displaying the processed data on a display of the car audio system.

75. The method of Claim 71, further comprising transmitting control commands issued by a user at the car audio system over the wireless communications link.

76. The method of Claim 75, further comprising receiving the control commands at the portable device and processing the control commands into a format compatible with the portable device.

77. The method of Claim 76, further comprising dispatching the processed control commands to the portable device for execution thereby.

78. The method of Claim 71, further comprising receiving spoken control commands with a voice recognition subsystem and processing the spoken control commands into a format compatible with the portable device.

79. The method of Claim 78, further comprising dispatching the processed control commands to the portable device for execution thereby.

80. The method of Claim 71, further comprising generating synthesized speech corresponding to data generated by the portable device.

81. A method for wirelessly integrating a portable device for use with a car video system comprising:

establishing a wireless communications link between the car video system and the portable device;

generating a device presence signal for maintaining the car video system in a state responsive to the portable device;

transmitting the device presence signal to the car video system over the wireless communications link;

processing video information generated by the portable device into a format compatible with the car video system;

transmitting the processed video information and audio signals generated by the portable device to the car video system over the wireless communications link;

displaying the processed video information on a display of the car video system; and

playing the audio signals over the car video system.

82. The method of Claim 81, further comprising processing data generated by the portable device into a format compatible with the car video system.

83. The method of Claim 82, further comprising transmitting the processed data over the wireless communications link to the car video system.

84. The method of Claim 83, further comprising displaying the processed data on a display of the car video system.

85. The method of Claim 81, further comprising transmitting control commands issued by a user at the car video system over the wireless communications link.

86. The method of Claim 85, further comprising receiving the control commands at the portable device and processing the control commands into a format compatible with the portable device.

87. The method of Claim 86, further comprising dispatching the processed control commands to the portable device for execution thereby.

88. The method of Claim 81, further comprising receiving spoken control commands with a voice recognition subsystem and processing the spoken control commands into a format compatible with the portable device.

89. The method of Claim 88, further comprising dispatching the processed control commands to the portable device for execution thereby.

90. The method of Claim 81, further comprising generating synthesized speech corresponding to data generated by the portable device.

91. A docking station for docking and integrating a portable device for use with a car stereo, comprising:

a base portion;

a bottom member connected to the base portion;

a top member removably connected to the base portion, the base portion, bottom member, and top member defining a cavity for receiving a portable device; and

an integration device connected to the base portion for integrating the portable device with a car stereo.

ABSTRACT

An multimedia device integration system is provided. One or more after-market audio or video devices, such as a CD player, CD changer, digital media device (*e.g.*, MP3 player, MP4 player, WMV player, Apple iPod, portable media center, or other device) satellite receiver (*e.g.*, XM or Sirius receiver), DAB receiver, video device (*e.g.*, DVD player), cellular telephone, or any other device or combinations thereof, is integrated for use with an existing OEM or after-market car stereo or video system, wherein control commands can be issued at the car stereo or video system and data from the after-market device can be displayed on the car stereo or video system. Control commands generated at the car stereo or video system are received, processed, converted into a format recognizable by the after-market device, and dispatched to the after-market device for execution. Information from the after-market device is converted into a format recognizable by the car stereo or video system, and dispatched to the car stereo or video system for display thereon. One or more auxiliary input sources can be integrated with the car stereo or video system, and selected using the controls of the car stereo or video system. A docking station is provided for docking a portable audio or video device for integration with the car stereo or video system. Wireless integration between the portable audio or video device and a car stereo or video system is provided, and voice recognition and speech synthesis capabilities are provided in the portable audio or video device or the car stereo or video system.

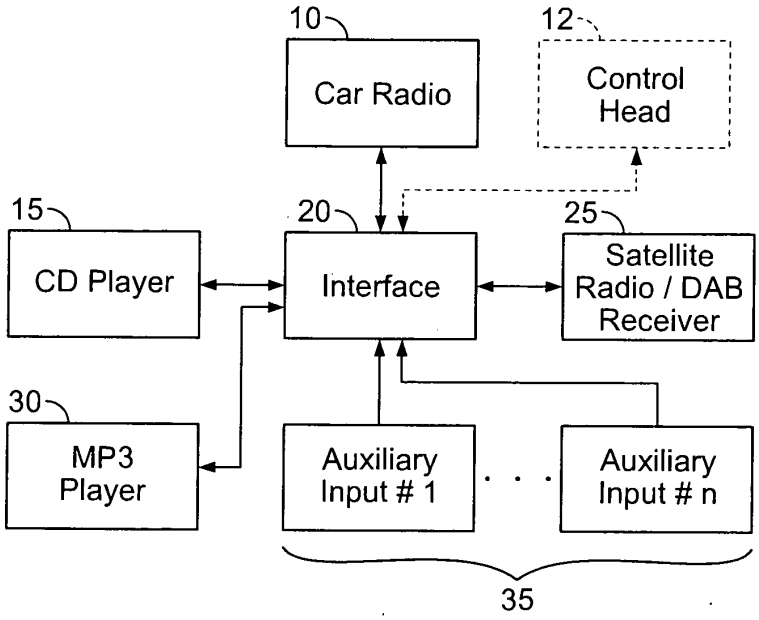

10
Car Radio
12
Control Head
15
CD Player
20
Interface
25
Satellite Radio / DAB Receiver
30
MP3 Player
Auxiliary Input # 1
Auxiliary Input # n
35

FIG. 1

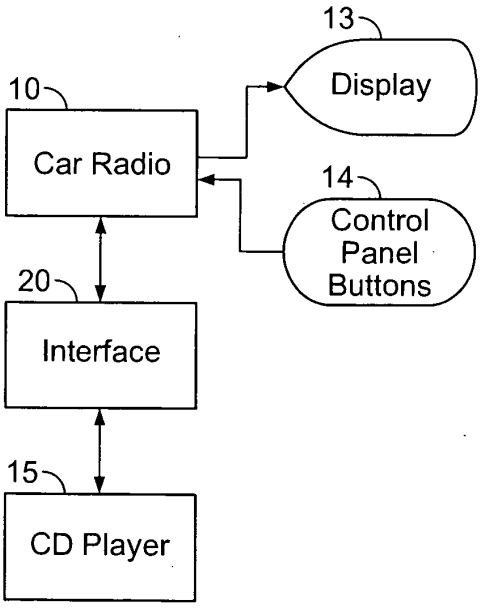

13
Display
10
Car Radio
14
Control Panel Buttons
20
Interface
15
CD Player

FIG. 2A

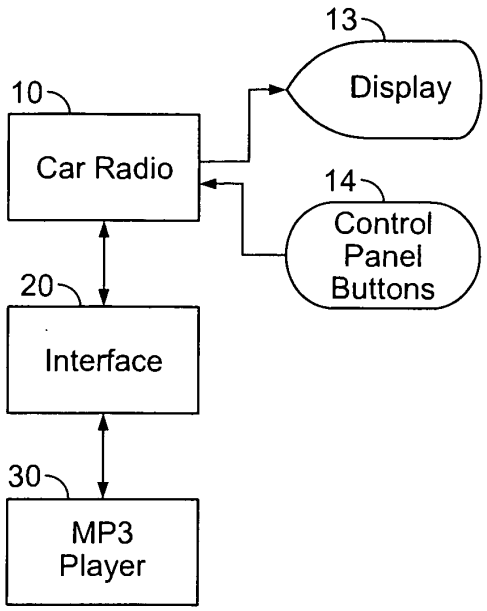

13
Display
10
Car Radio
14
Control Panel Buttons
20
Interface
30
MP3 Player

FIG. 2B

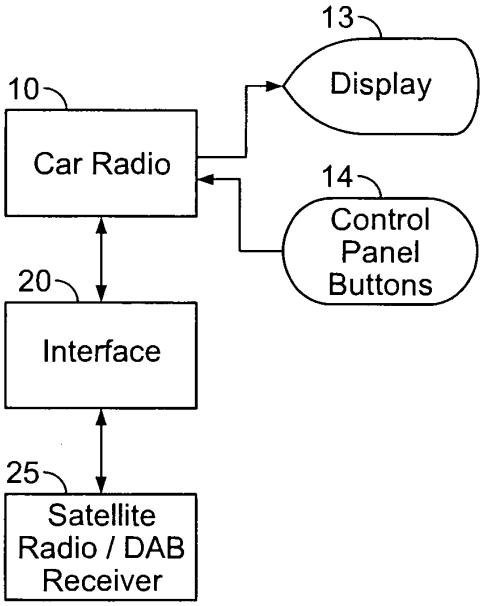

13
Display
10
Car Radio
14
Control Panel Buttons
20
Interface
25
Satellite Radio / DAB Receiver

FIG. 2C

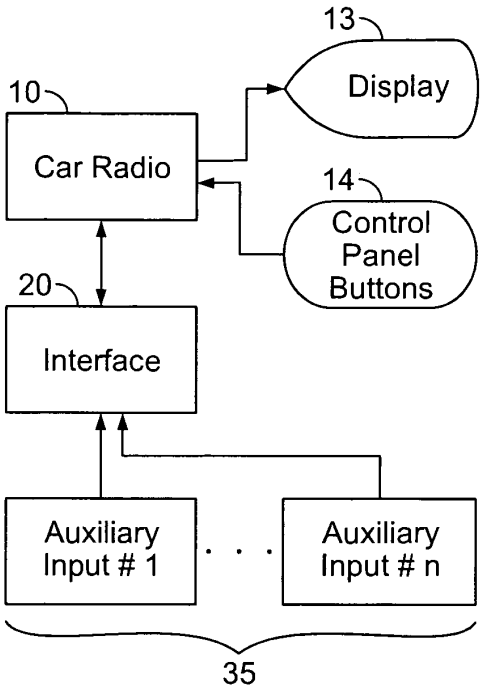

13
Display
10
Car Radio
14
Control Panel Buttons
20
Interface
Auxiliary Input # 1
Auxiliary Input # n
35

FIG. 2D

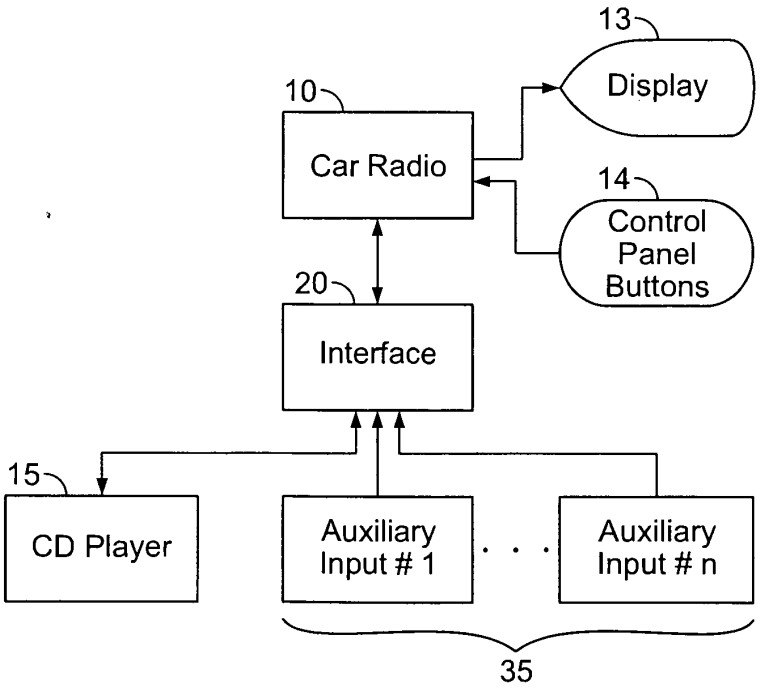

13
Display
10
Car Radio
14
Control Panel Buttons
20
Interface
15
CD Player
Auxiliary Input # 1
Auxiliary Input # n
35

FIG. 2E

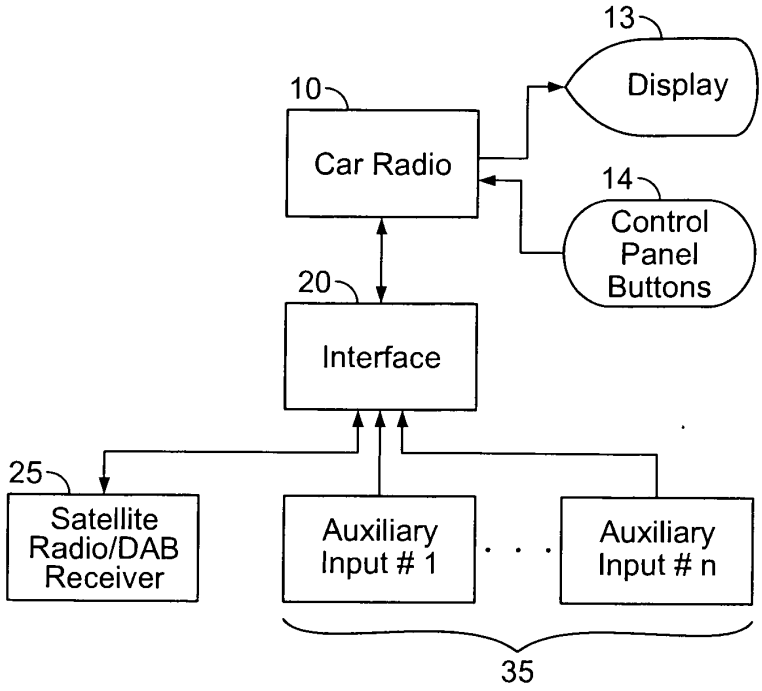

13
Display
10
Car Radio
14
Control Panel Buttons
20
Interface
25
Satellite Radio/DAB Receiver
Auxiliary Input # 1
Auxiliary Input # n
35

FIG. 2F

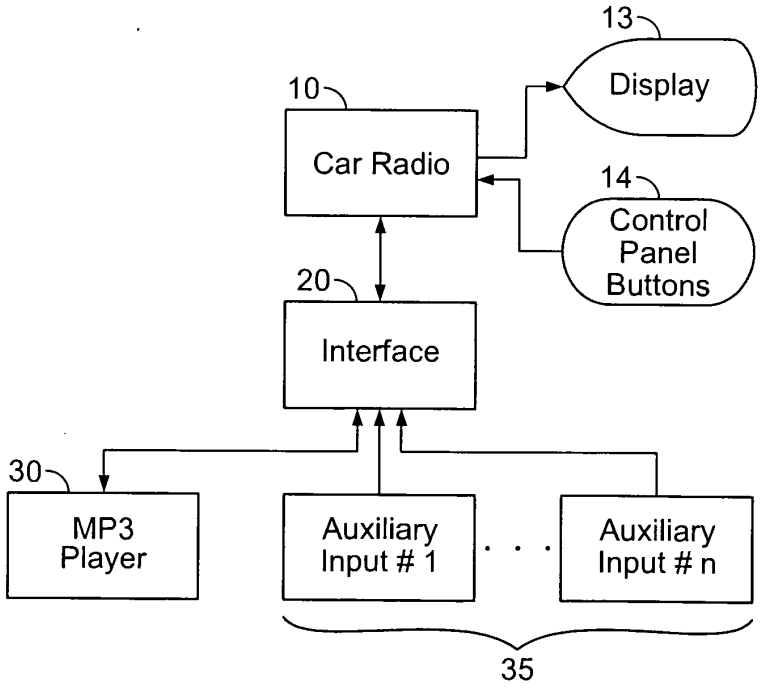

13
Display
10
Car Radio
14
Control Panel Buttons
20
Interface
30
MP3 Player
Auxiliary Input # 1
Auxiliary Input # n
35

FIG. 2G

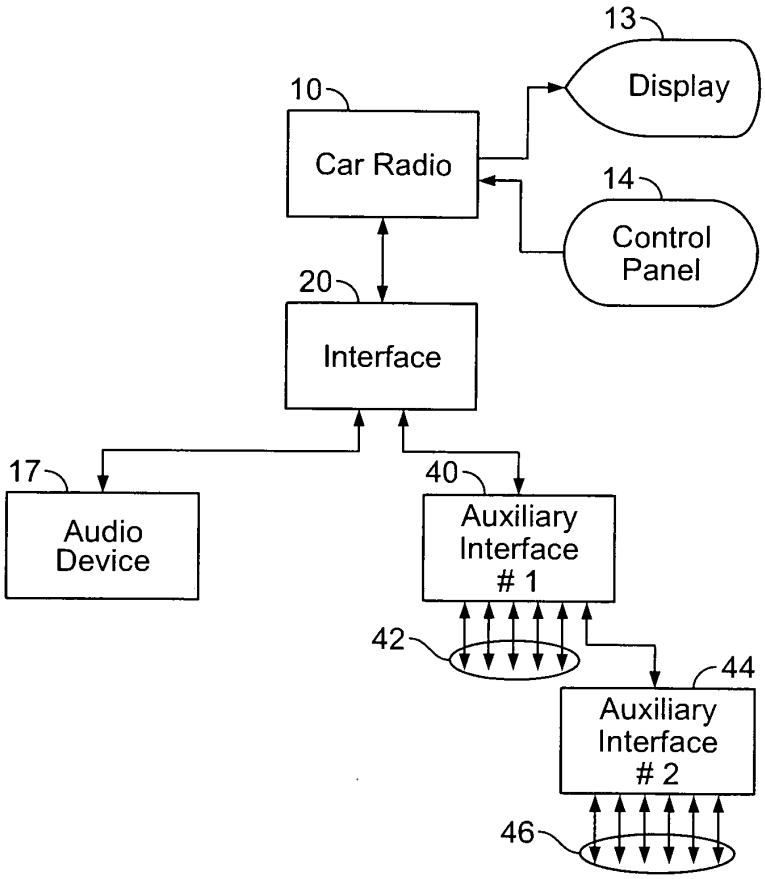

13
Display
10
Car Radio
14
Control Panel
20
Interface
17
Audio Device
40
Auxiliary Interface # 1
42
44
Auxiliary Interface # 2
46

FIG. 2H

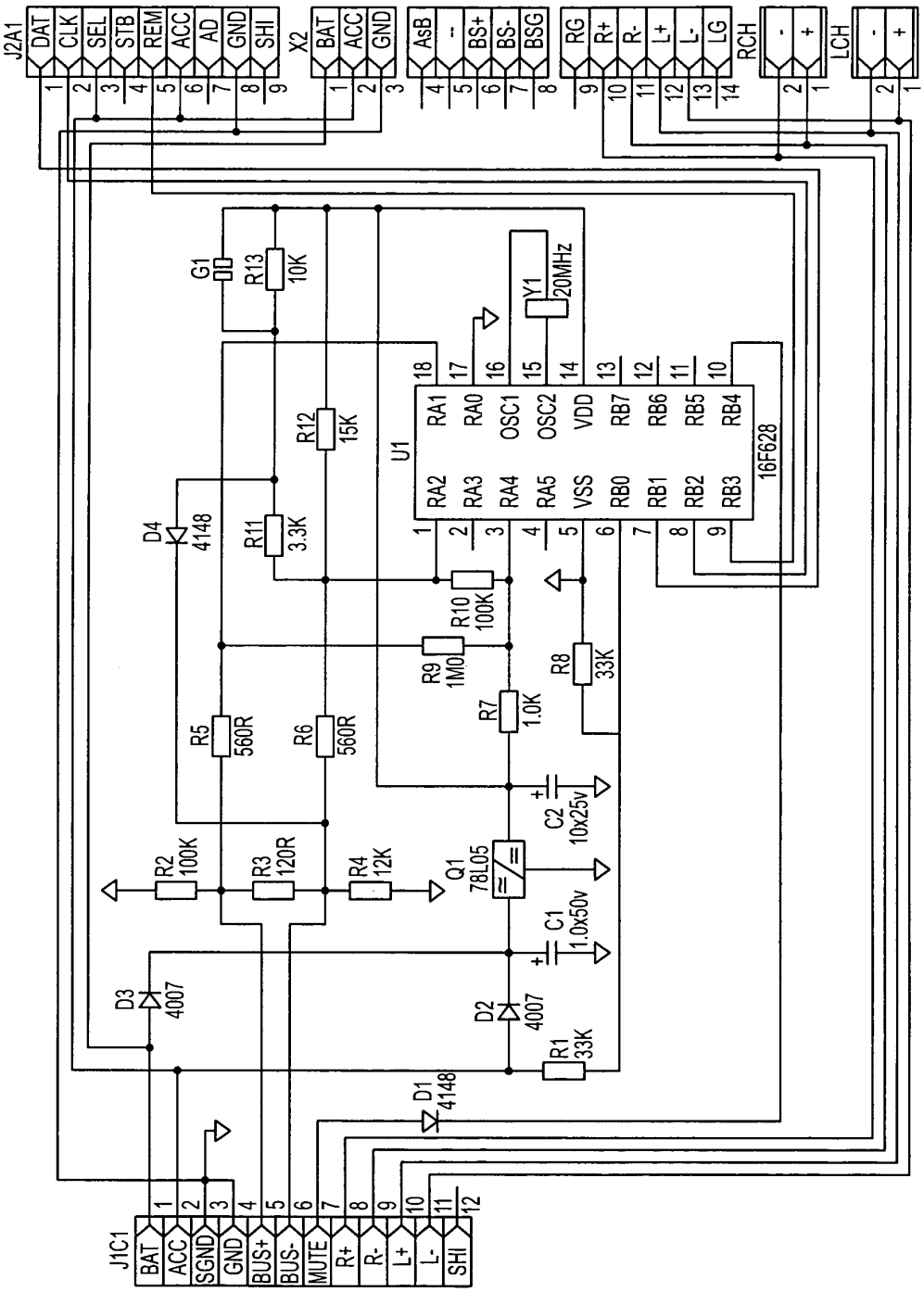
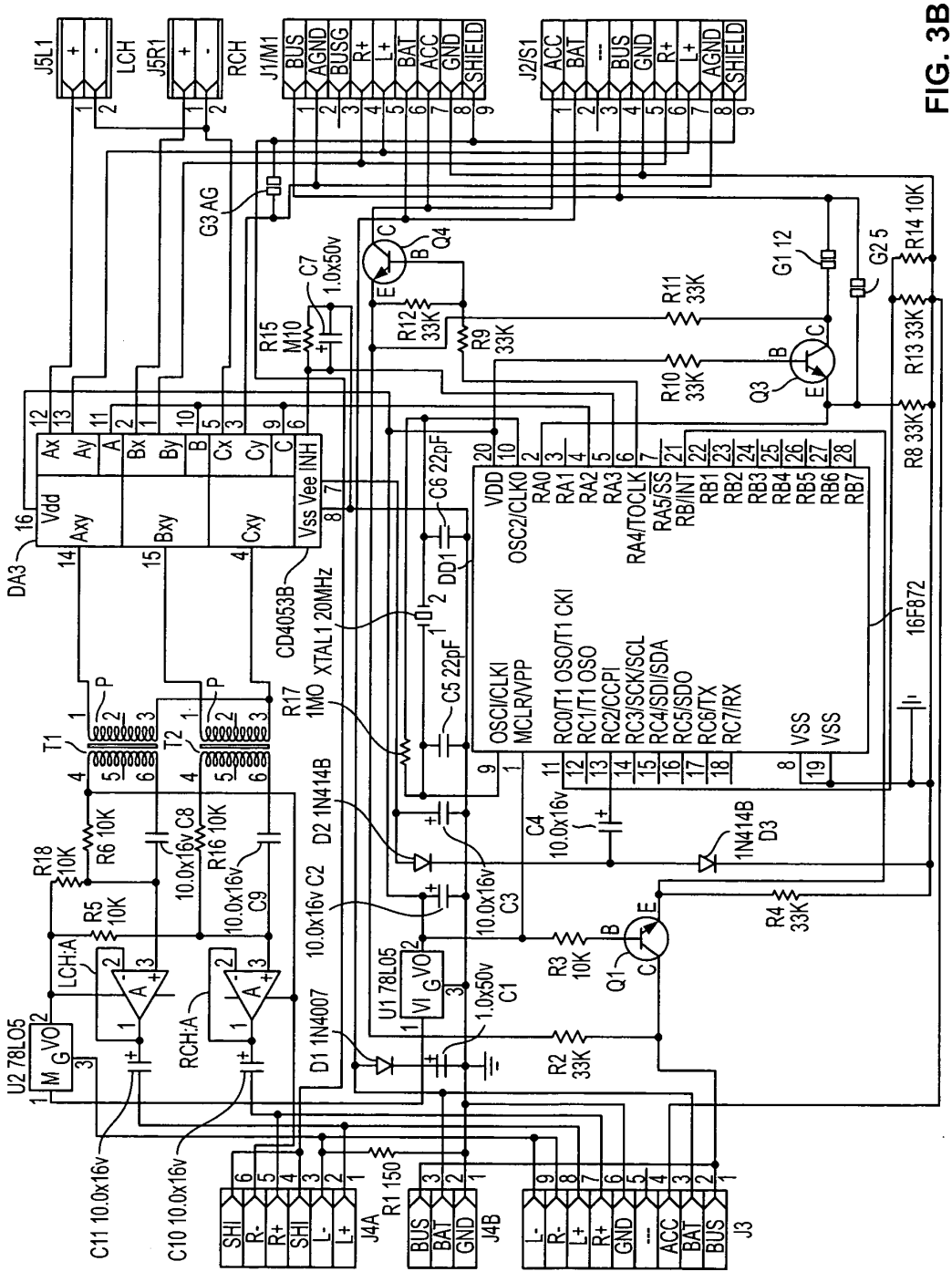

J2A1
DAT
CLK
SEL
STB
REM
ACC
AD
GND
SHI
X2
BAT
ACC
GND
AsB
--
BS+
BS-
BSG
RG
R+
R-
L+
L-
LG
RCH
-
+
LCH
-
+
G1
R13
10K
Y1
20MHz
U1
16F628
RA1
RA0
OSC1
OSC2
VDD
RB7
RB6
RB5
RB4
RA2
RA3
RA4
RA5
VSS
RB0
RB1
RB2
RB3
R12
15K
D4
4148
R11
3.3K
R10
100K
R9
1M0
R8
33K
R7
1.0K
R5
560R
R6
560R
C2
10x25v
R2
100K
R3
120R
R4
12K
Q1
78L05
C1
1.0x50v
D3
4007
D2
4007
R1
33K
D1
4148
J1C1
BAT
ACC
SGND
GND
BUS+
BUS-
MUTE
R+
R-
L+
L-
SHI

FIG. 3A


J5L1
LCH
J5R1
RCH
J1/M1
BUS
AGND
BUSG
R+
L+
BAT
ACC
GND
SHIELD
J2/S1
ACC
BAT

BUS
GND
R+
L+
AGND
SHIELD
G3 AG
C7 1.0x50v
Q4
R15 M10
R12 33K
R9 33K
R11 33K
G1 12
G2 5
R14 10K
R10 33K
Q3
R13 33K
R8 33K
DA3
CD4053B
C6 22pF
DD1
XTAL1 20MHz
C5 22pF
R17 1MO
T1
T2
R18 10K
R6 10K
C8 10.0x16v
R16 10K
C9 10.0x16v
R5 10K
LCH:A
RCH:A
U2 78L05
U1 78L05
C2 10.0x16v
D2 1N414B
C3 10.0x16v
C4 10.0x16v
D3 1N414B
R4 33K
R3 10K
Q1
C1 1.0x50v
D1 1N4007
R2 33K
R1 150
C11 10.0x16v
C10 10.0x16v
J4A
J4B
J3
16F872

FIG. 3B

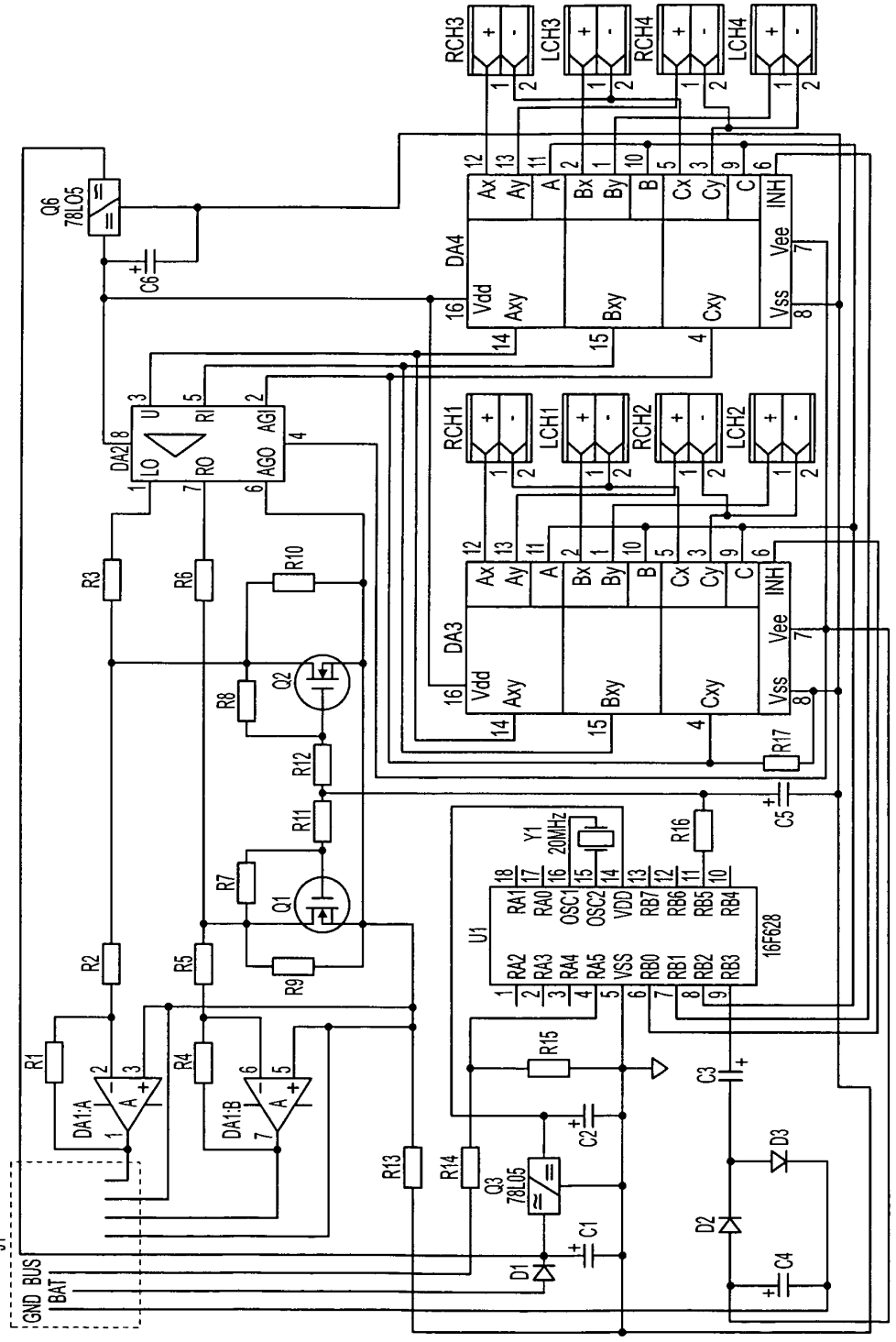

RCH3
LCH3
RCH4
LCH4
RCH1
LCH1
RCH2
LCH2
Q6
78L05
C6
DA4
DA3
DA2
Ax
Ay
A
Bx
By
B
Cx
Cy
C
INH
Vee
Vdd
Axy
Bxy
Cxy
Vss
U
LO
RI
RO
AGI
AGO
R3
R6
R10
R8
Q2
R12
R11
R7
Q1
R9
R2
R5
R1
R4
DA1:A
DA1:B
R13
R14
Q3
78L05
C1
D1
J1
GND BUS
BAT
C2
R15
C3
D2
D3
C4
R17
C5
R16
Y1
20MHz
U1
16F628
RA1
RA0
OSC1
OSC2
VDD
RB7
RB6
RB5
RB4
RA2
RA3
RA4
RA5
VSS
RB0
RB1
RB2
RB3

FIG. 3C

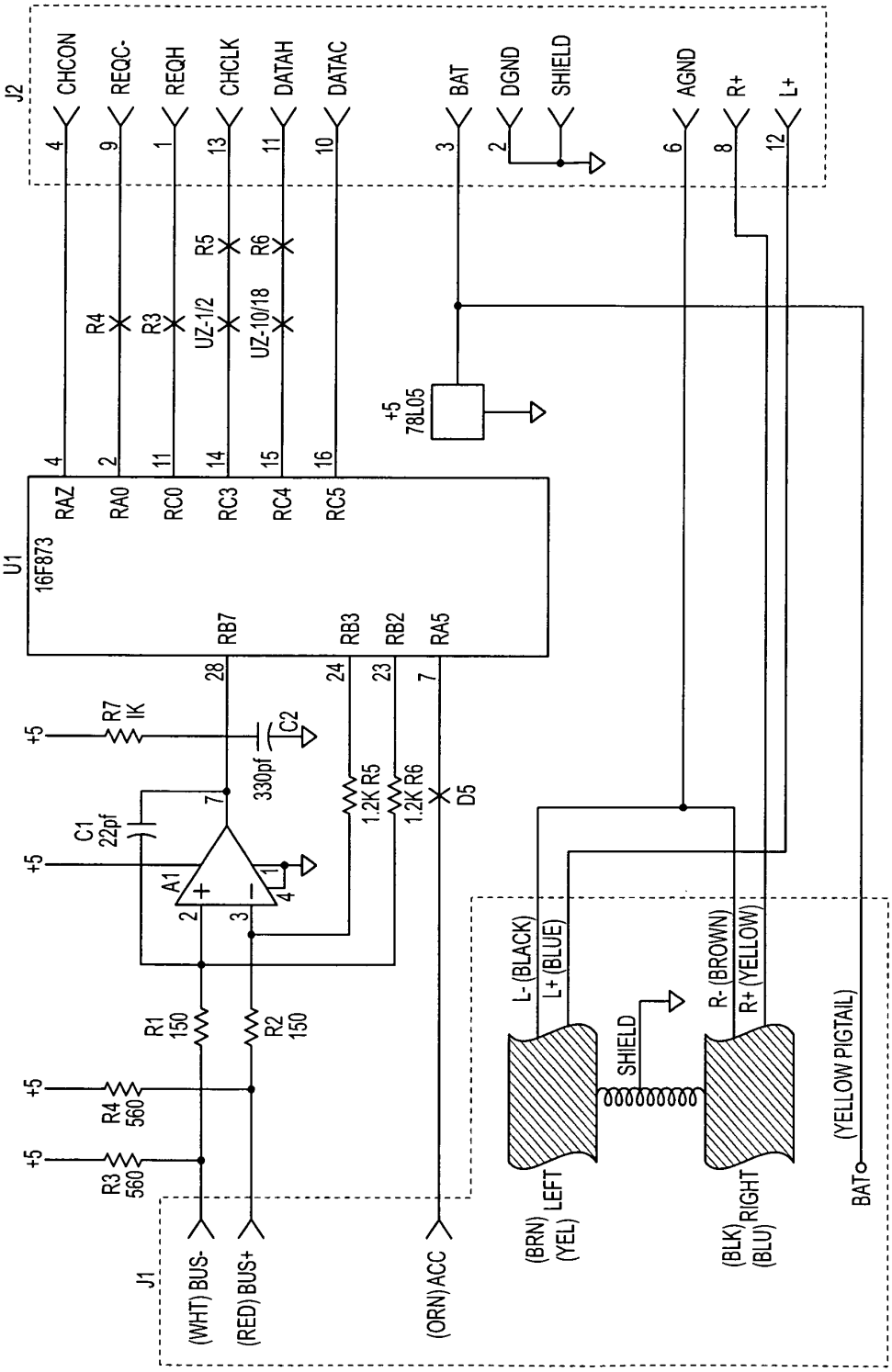

J2
CHCON
REQC-
REQH
CHCLK
DATAH
DATAC
BAT
DGND
SHIELD
AGND
R+
L+
U1
16F873
RAZ
RA0
RC0
RC3
RC4
RC5
RB7
RB3
RB2
RA5
R4
R3
R5
R6
UZ-1/2
UZ-10/18
+5
78L05
R7
1K
C2
330pf
C1
22pf
A1
1.2K R5
1.2K R6
D5
R1
150
R2
150
R4
560
R3
560
J1
(WHT) BUS-
(RED) BUS+
(ORN) ACC
L- (BLACK)
L+ (BLUE)
SHIELD
R- (BROWN)
R+ (YELLOW)
(YELLOW PIGTAIL)
(BRN) (YEL) LEFT
(BLK) (BLU) RIGHT
BAT

FIG. 3D

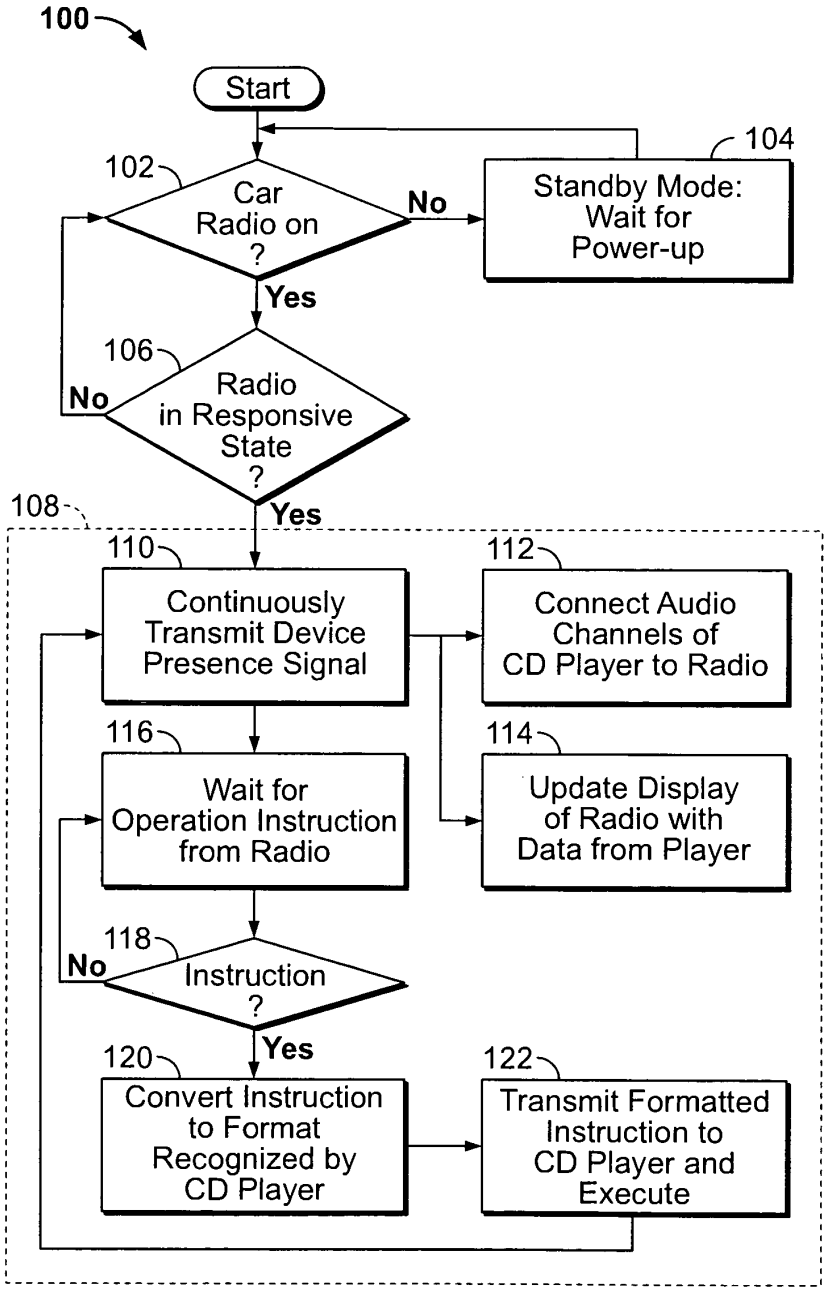

100
Start
102
Car Radio on ?
No
104
Standby Mode: Wait for Power-up
Yes
106
Radio in Responsive State ?
No
Yes
108
110
Continuously Transmit Device Presence Signal
112
Connect Audio Channels of CD Player to Radio
116
Wait for Operation Instruction from Radio
114
Update Display of Radio with Data from Player
118
Instruction ?
No
Yes
120
Convert Instruction to Format Recognized by CD Player
122
Transmit Formatted Instruction to CD Player and Execute

FIG. 4A

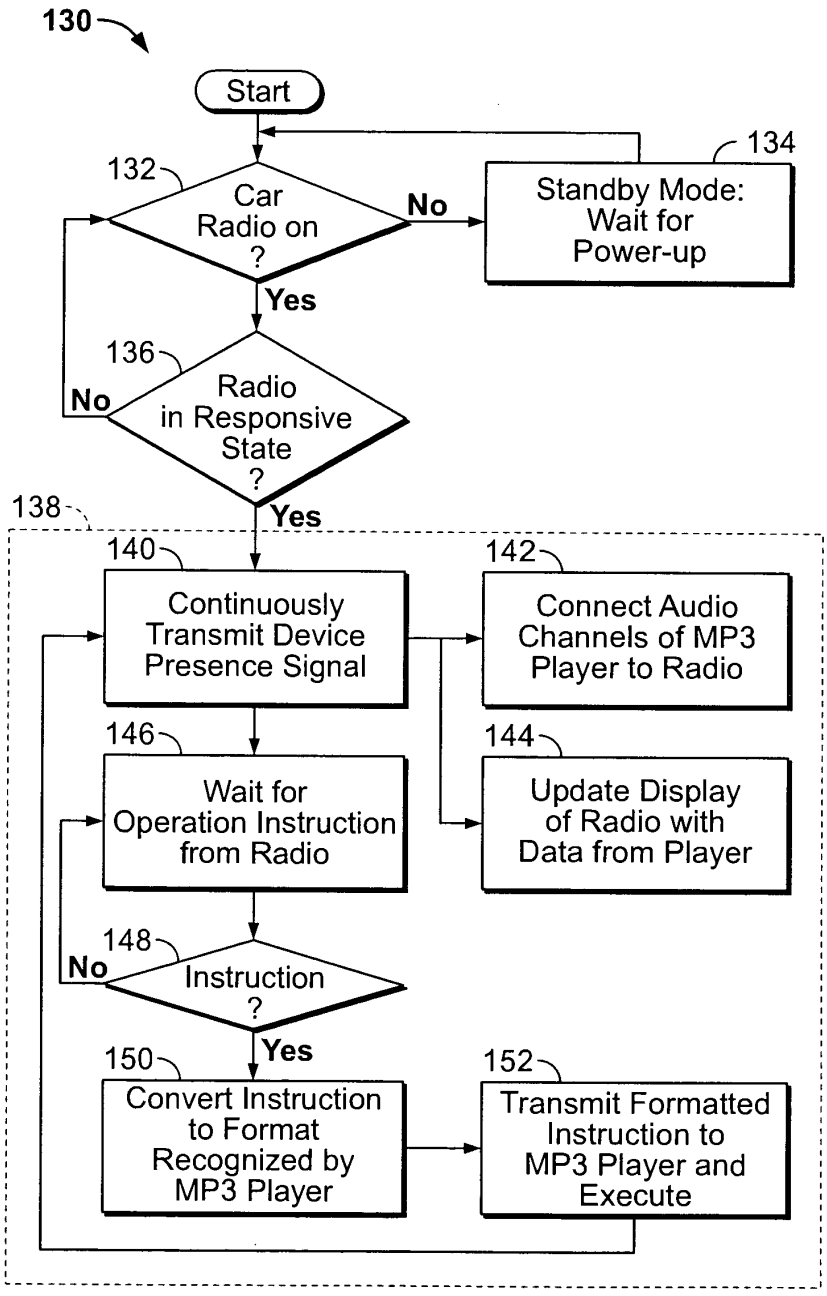

130
Start
132
Car Radio on ?
No
134
Standby Mode: Wait for Power-up
Yes
136
Radio in Responsive State ?
No
Yes
138
140
Continuously Transmit Device Presence Signal
142
Connect Audio Channels of MP3 Player to Radio
146
Wait for Operation Instruction from Radio
144
Update Display of Radio with Data from Player
148
Instruction ?
No
Yes
150
Convert Instruction to Format Recognized by MP3 Player
152
Transmit Formatted Instruction to MP3 Player and Execute

FIG. 4B

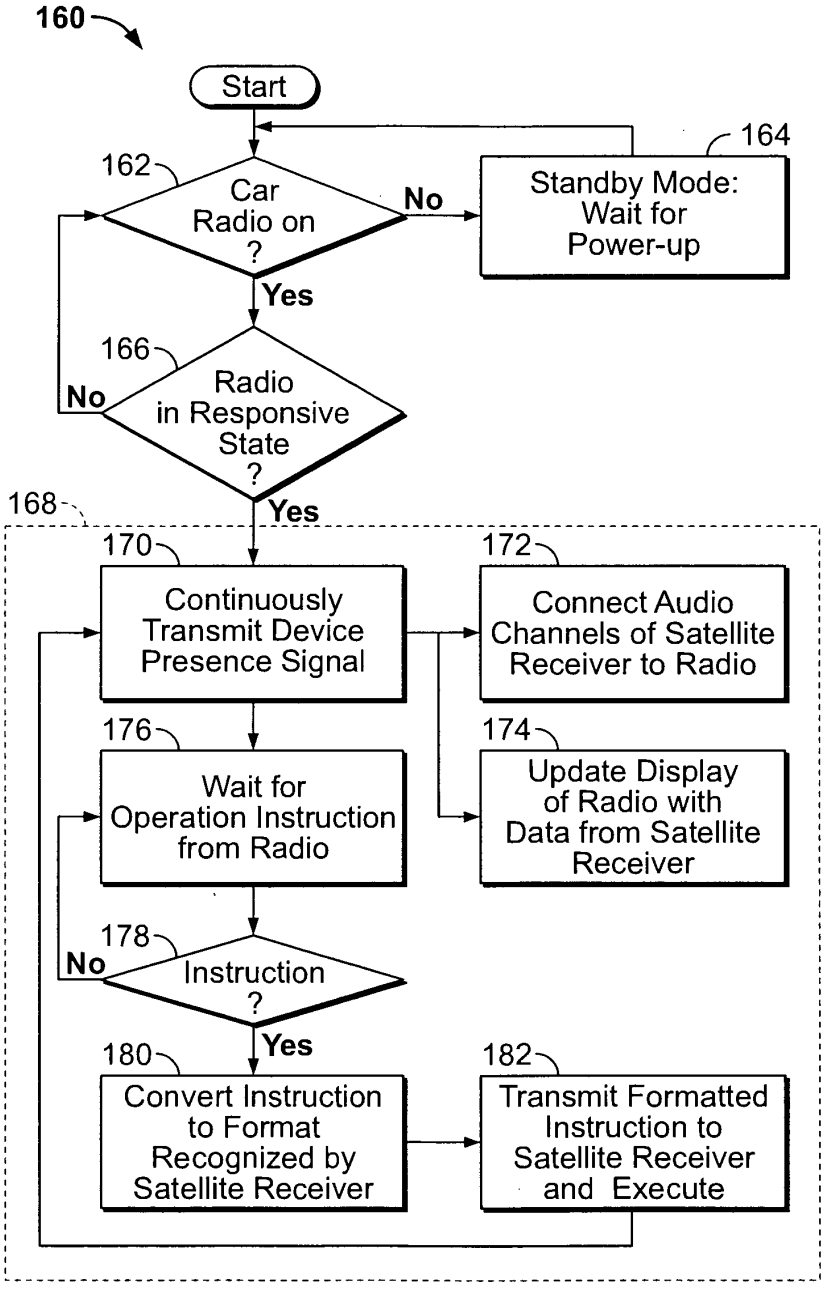

160
Start
162
Car Radio on ?
No
164
Standby Mode: Wait for Power-up
Yes
166
Radio in Responsive State ?
No
Yes
168
170
Continuously Transmit Device Presence Signal
172
Connect Audio Channels of Satellite Receiver to Radio
176
Wait for Operation Instruction from Radio
174
Update Display of Radio with Data from Satellite Receiver
178
Instruction ?
No
Yes
180
Convert Instruction to Format Recognized by Satellite Receiver
182
Transmit Formatted Instruction to Satellite Receiver and Execute

FIG. 4C

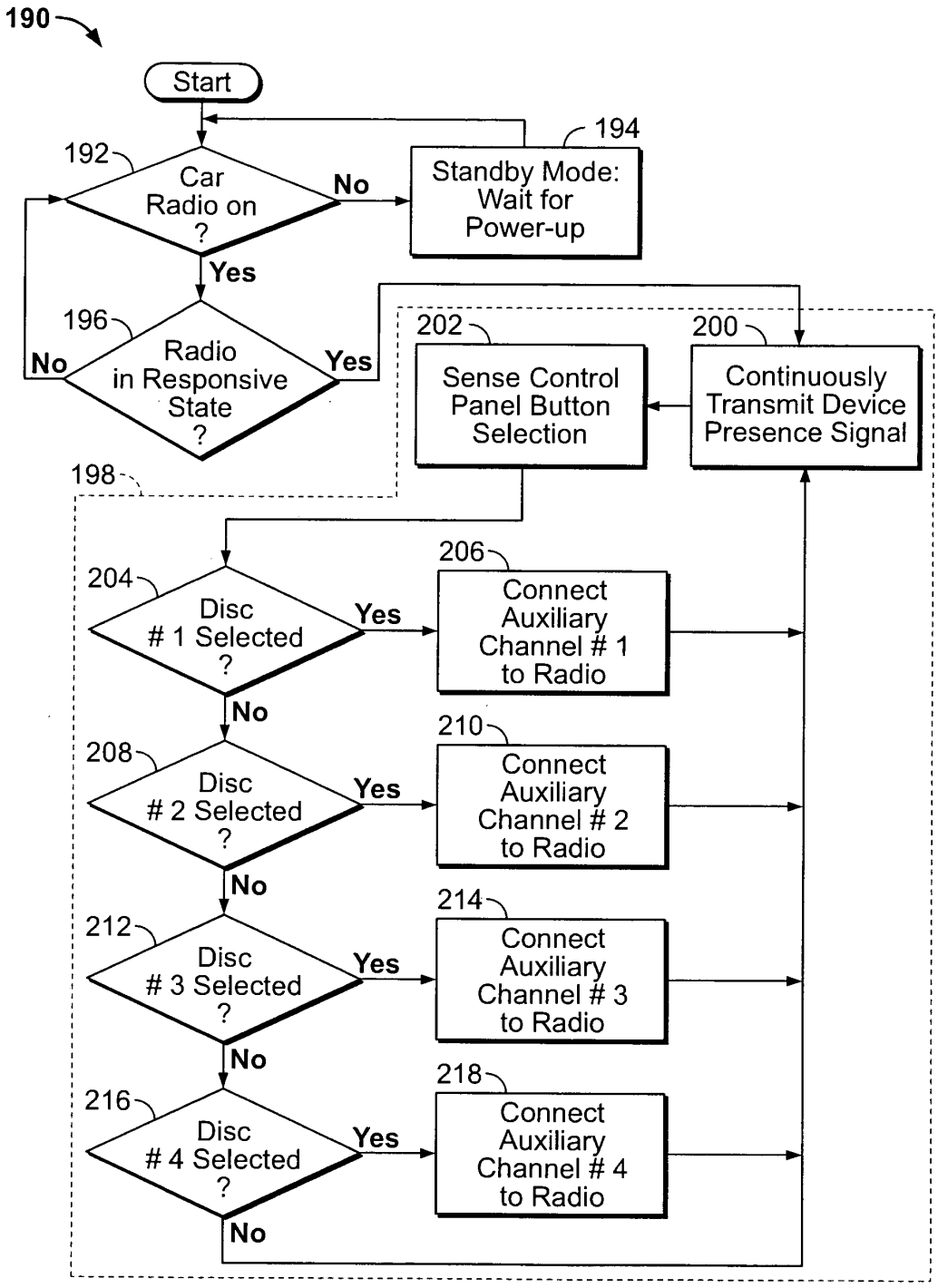

190
Start
192
Car Radio on ?
No
194
Standby Mode: Wait for Power-up
Yes
196
Radio in Responsive State ?
No
Yes
202
Sense Control Panel Button Selection
200
Continuously Transmit Device Presence Signal
198
204
Disc # 1 Selected ?
Yes
206
Connect Auxiliary Channel # 1 to Radio
No
208
Disc # 2 Selected ?
Yes
210
Connect Auxiliary Channel # 2 to Radio
No
212
Disc # 3 Selected ?
Yes
214
Connect Auxiliary Channel # 3 to Radio
No
216
Disc # 4 Selected ?
Yes
218
Connect Auxiliary Channel # 4 to Radio
No

FIG. 4D

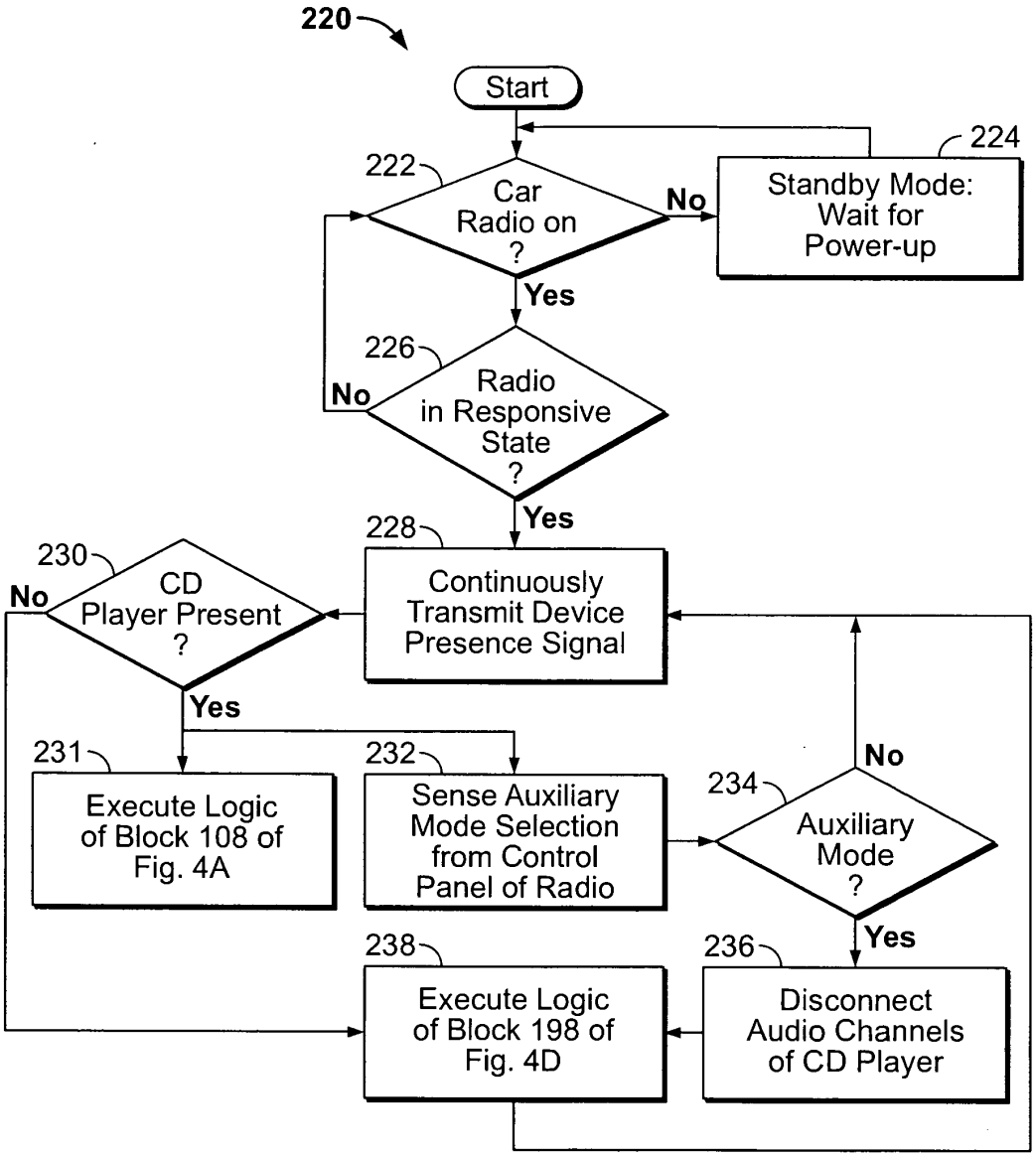

220
Start
222
Car Radio on ?
No
224
Standby Mode: Wait for Power-up
Yes
226
Radio in Responsive State ?
No
Yes
228
Continuously Transmit Device Presence Signal
230
CD Player Present ?
No
Yes
231
Execute Logic of Block 108 of Fig. 4A
232
Sense Auxiliary Mode Selection from Control Panel of Radio
234
Auxiliary Mode ?
No
Yes
236
Disconnect Audio Channels of CD Player
238
Execute Logic of Block 198 of Fig. 4D

FIG. 4E

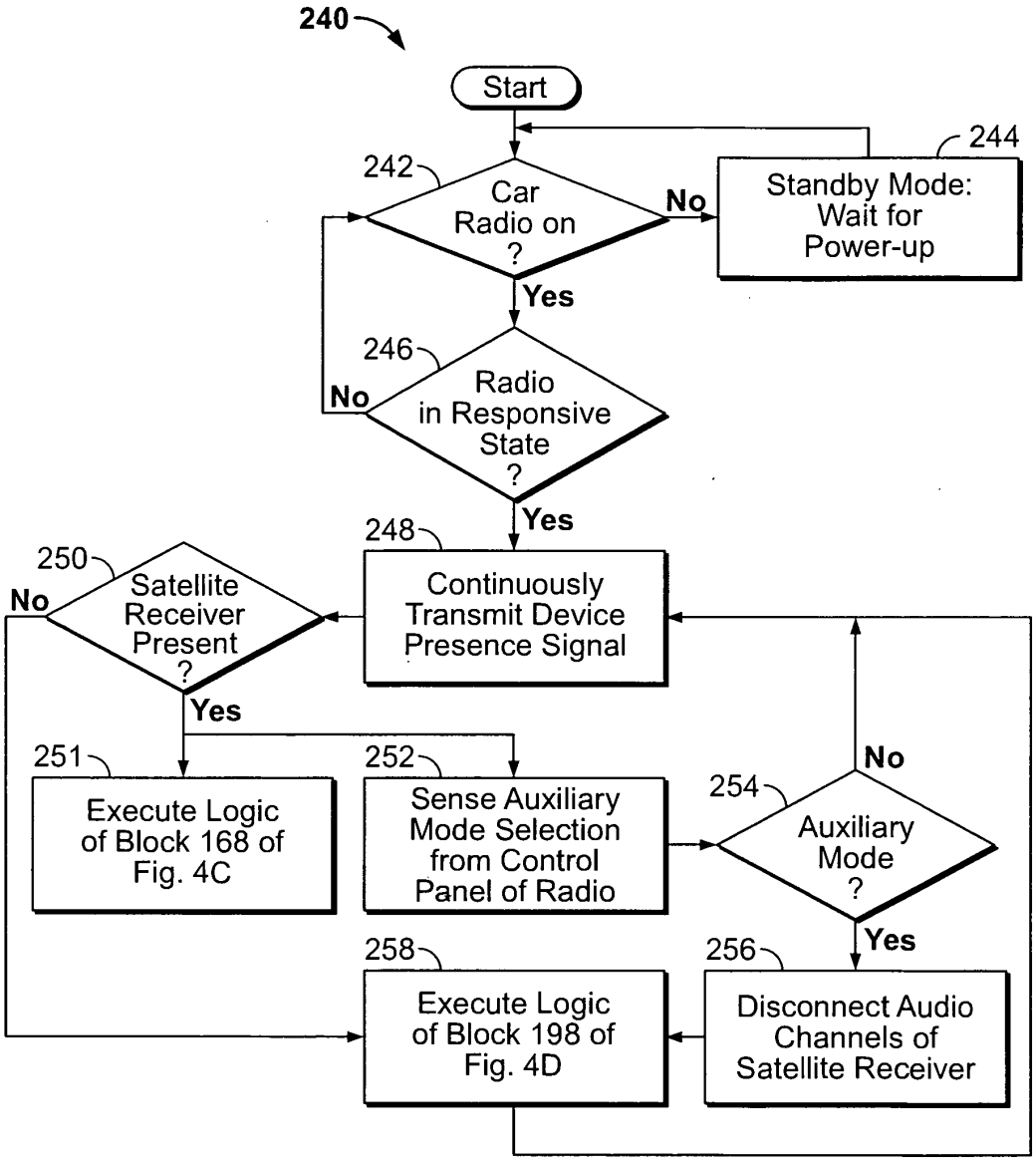

240
Start
242
Car Radio on ?
No
244
Standby Mode: Wait for Power-up
Yes
246
Radio in Responsive State ?
No
Yes
248
Continuously Transmit Device Presence Signal
250
Satellite Receiver Present ?
No
Yes
251
Execute Logic of Block 168 of Fig. 4C
252
Sense Auxiliary Mode Selection from Control Panel of Radio
254
Auxiliary Mode ?
No
Yes
256
Disconnect Audio Channels of Satellite Receiver
258
Execute Logic of Block 198 of Fig. 4D

FIG. 4F

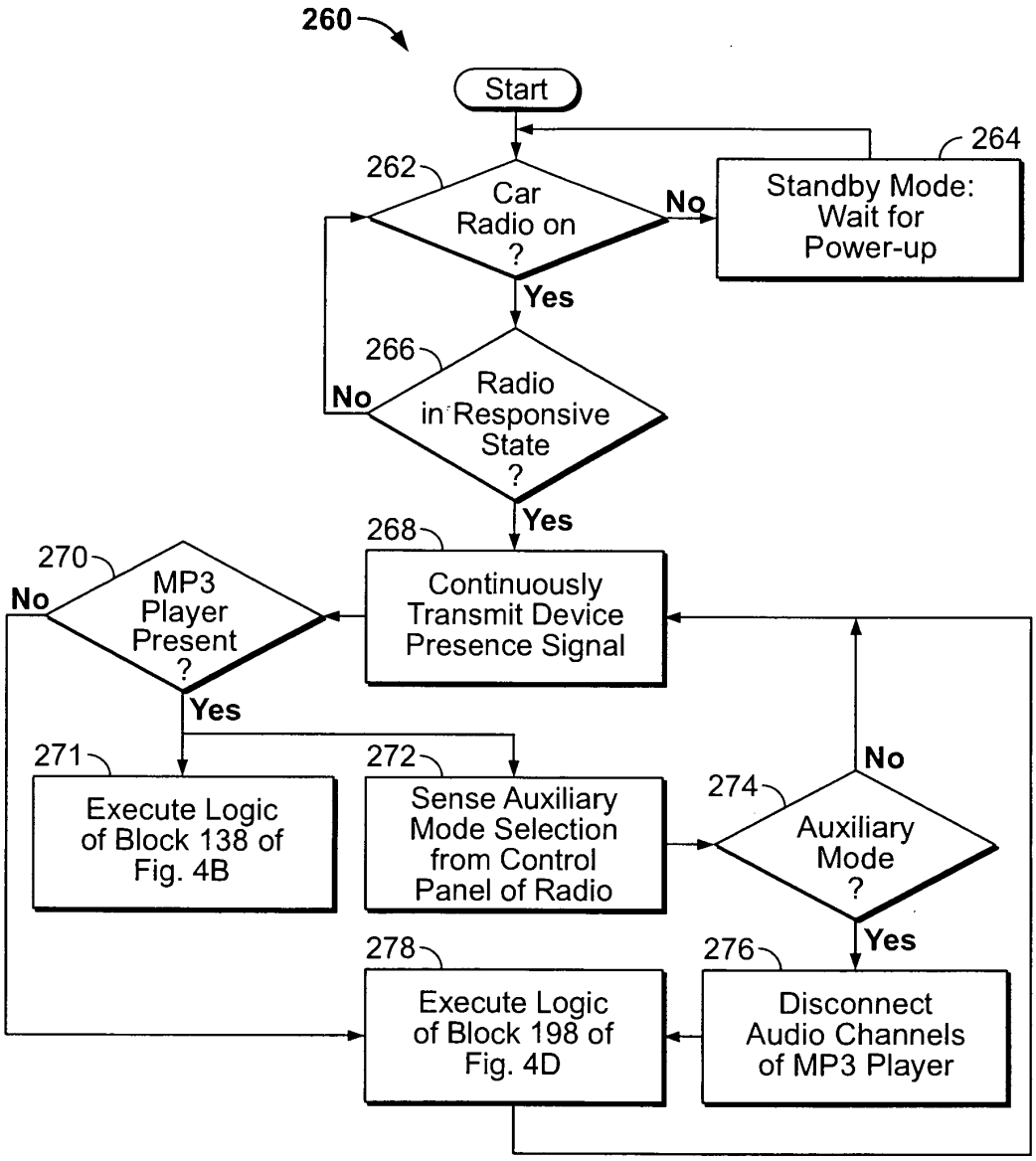

260
Start
262
Car Radio on ?
No
264
Standby Mode: Wait for Power-up
Yes
266
Radio in Responsive State ?
No
Yes
268
Continuously Transmit Device Presence Signal
270
MP3 Player Present ?
No
Yes
271
Execute Logic of Block 138 of Fig. 4B
272
Sense Auxiliary Mode Selection from Control Panel of Radio
274
Auxiliary Mode ?
No
Yes
276
Disconnect Audio Channels of MP3 Player
278
Execute Logic of Block 198 of Fig. 4D

FIG. 4G

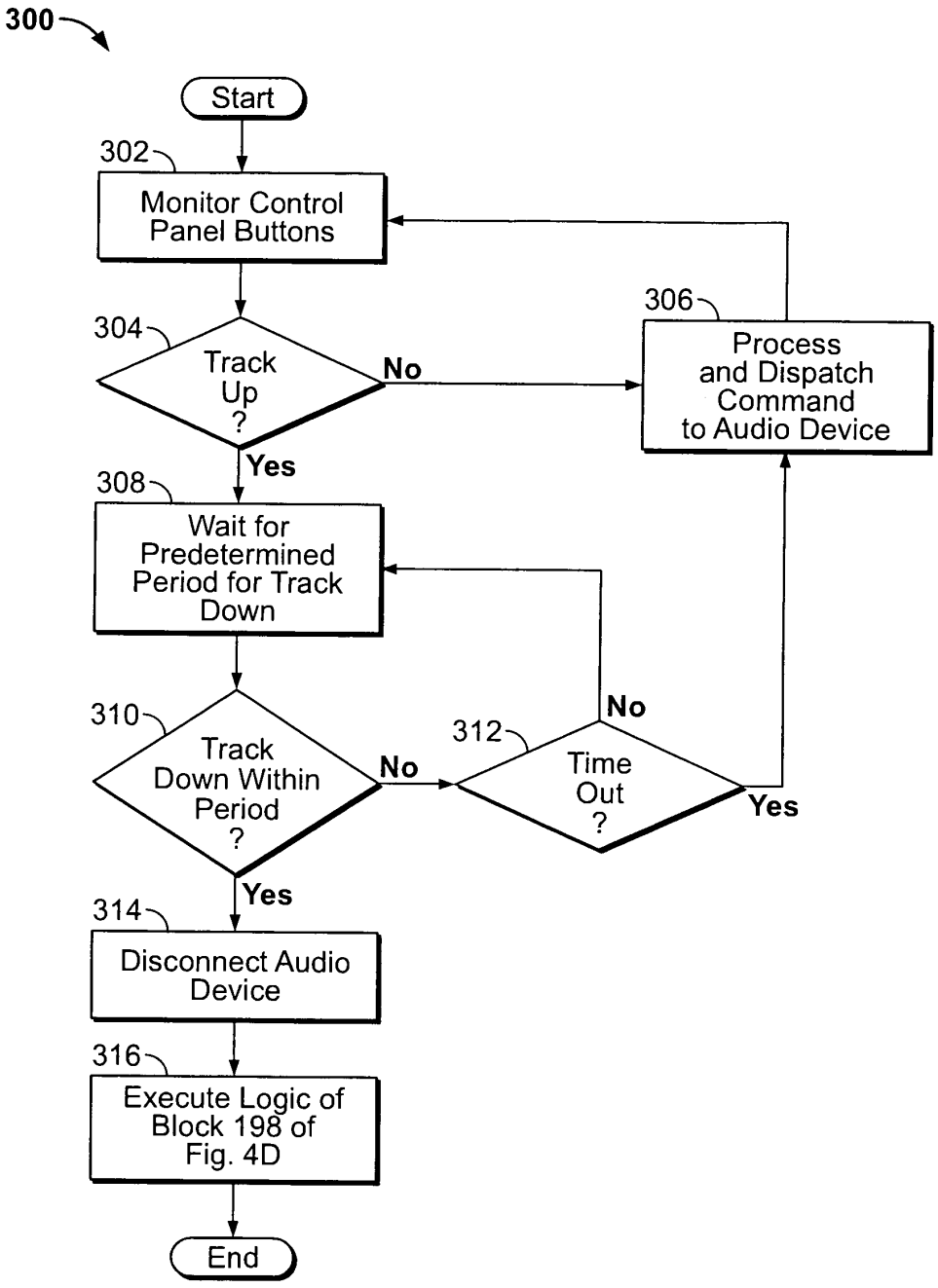

300
Start
302
Monitor Control Panel Buttons
304
Track Up ?
No
306
Process and Dispatch Command to Audio Device
Yes
308
Wait for Predetermined Period for Track Down
310
Track Down Within Period ?
No
312
Time Out ?
No
Yes
Yes
314
Disconnect Audio Device
316
Execute Logic of Block 198 of Fig. 4D
End

FIG. 5

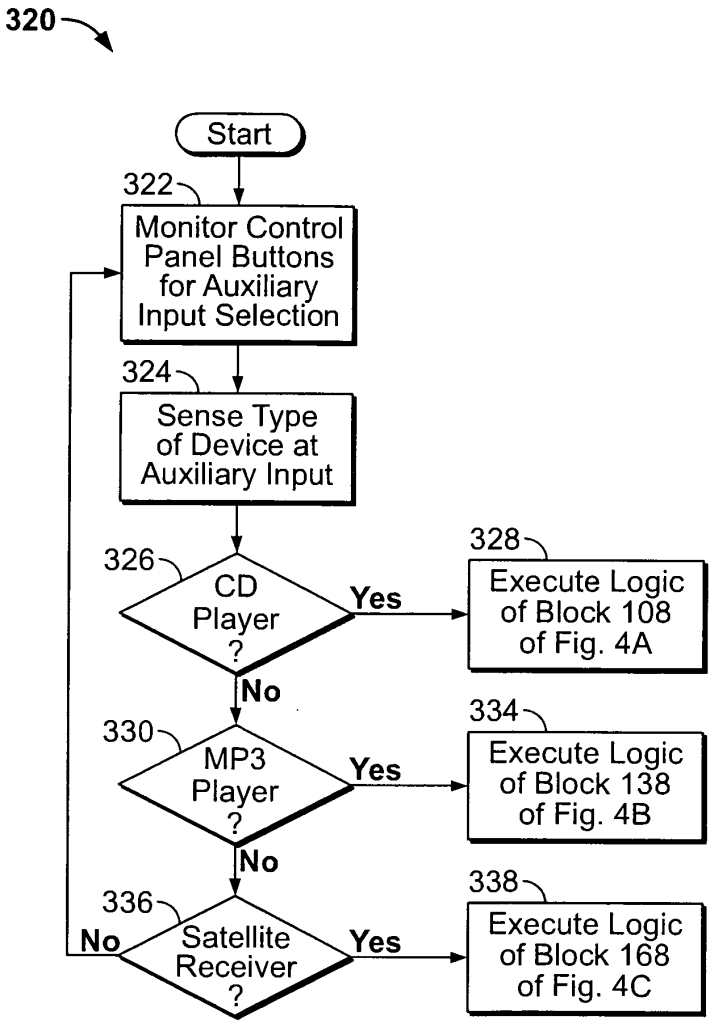

320
Start
322
Monitor Control Panel Buttons for Auxiliary Input Selection
324
Sense Type of Device at Auxiliary Input
326
CD Player ?
Yes
328
Execute Logic of Block 108 of Fig. 4A
No
330
MP3 Player ?
Yes
334
Execute Logic of Block 138 of Fig. 4B
No
336
Satellite Receiver ?
No
Yes
338
Execute Logic of Block 168 of Fig. 4C

FIG. 6

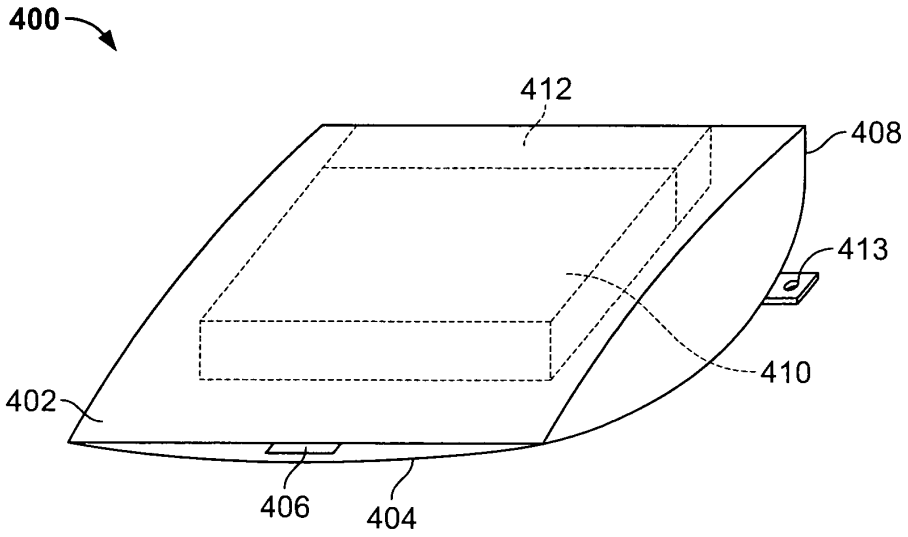


FIG. 7A

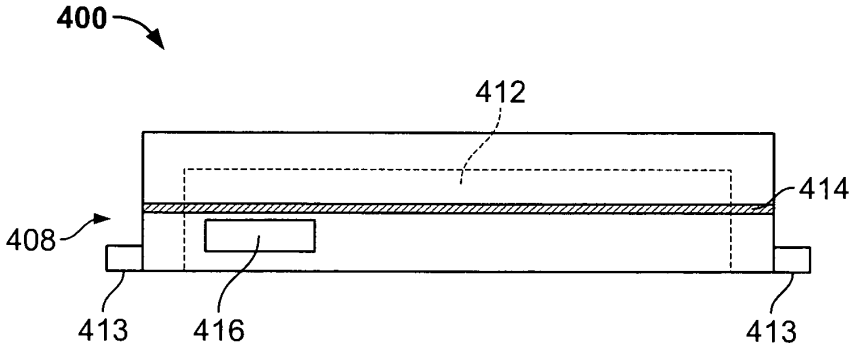


FIG. 7B

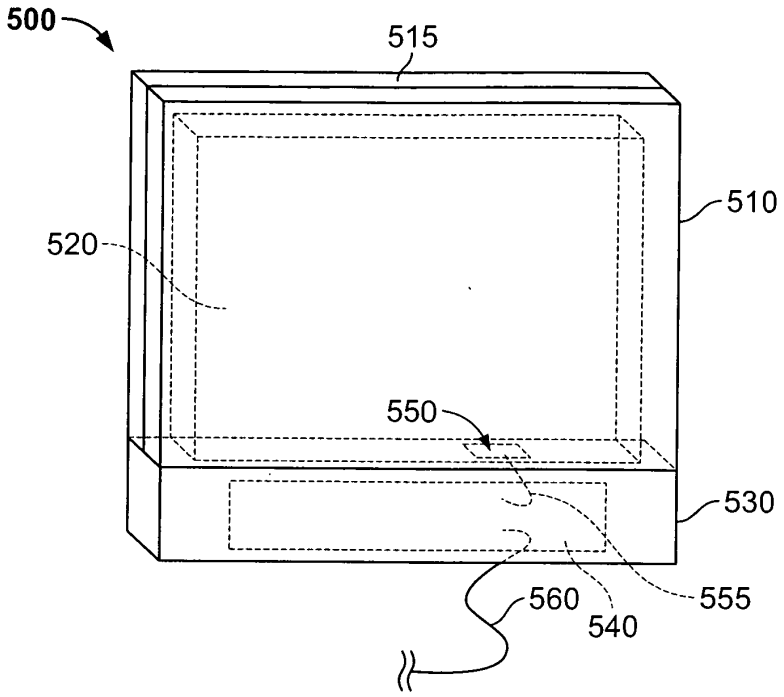


FIG. 8A

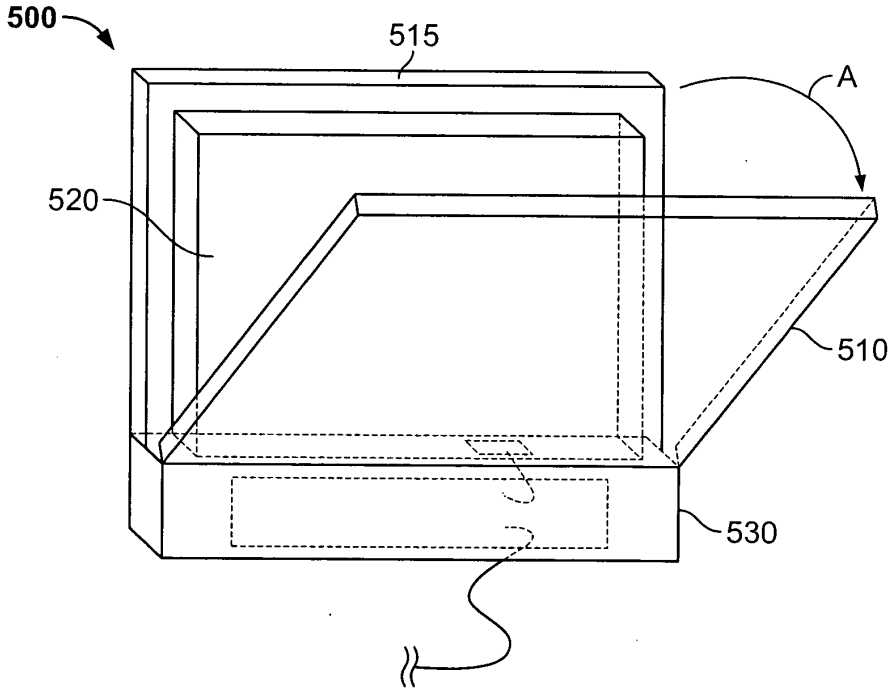


FIG. 8B

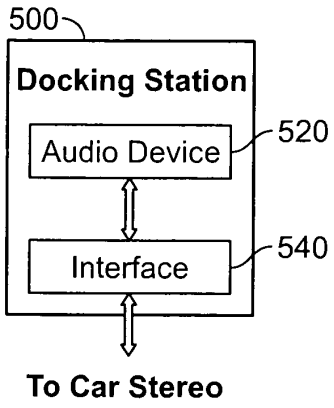

500
Docking Station
Audio Device
520
Interface
540
To Car Stereo

FIG. 9

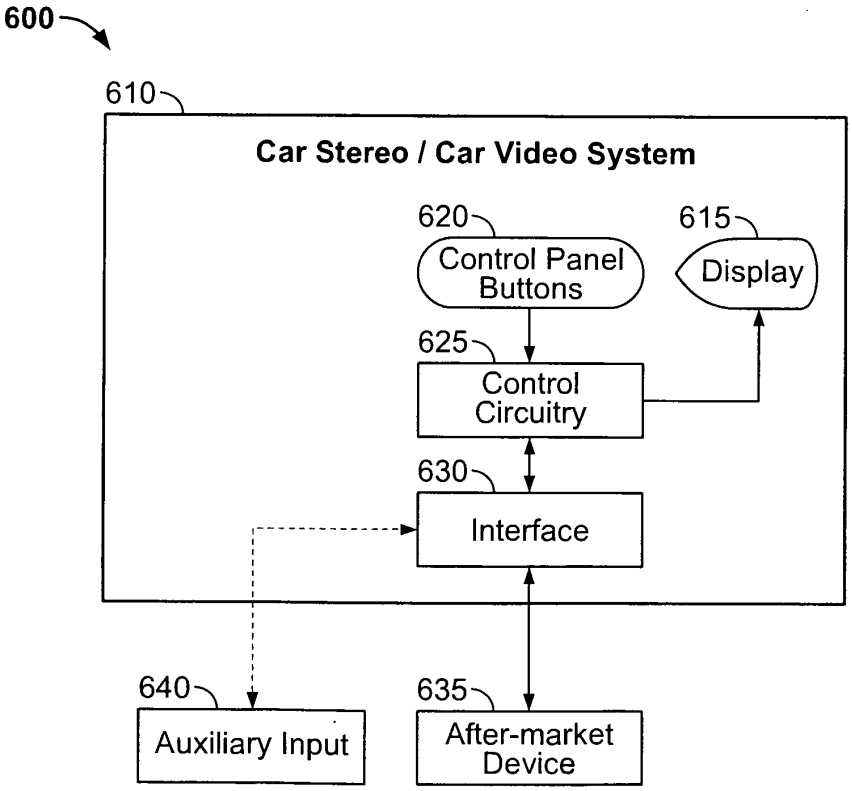

600
610
Car Stereo / Car Video System
620
Control Panel Buttons
615
Display
625
Control Circuitry
630
Interface
640
Auxiliary Input
635
After-market Device

FIG. 10

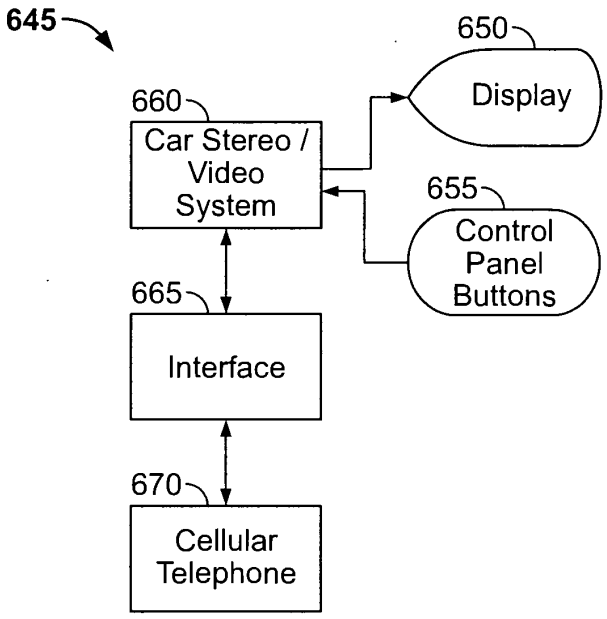

645
650
Display
660
Car Stereo / Video System
655
Control Panel Buttons
665
Interface
670
Cellular Telephone

FIG. 11A

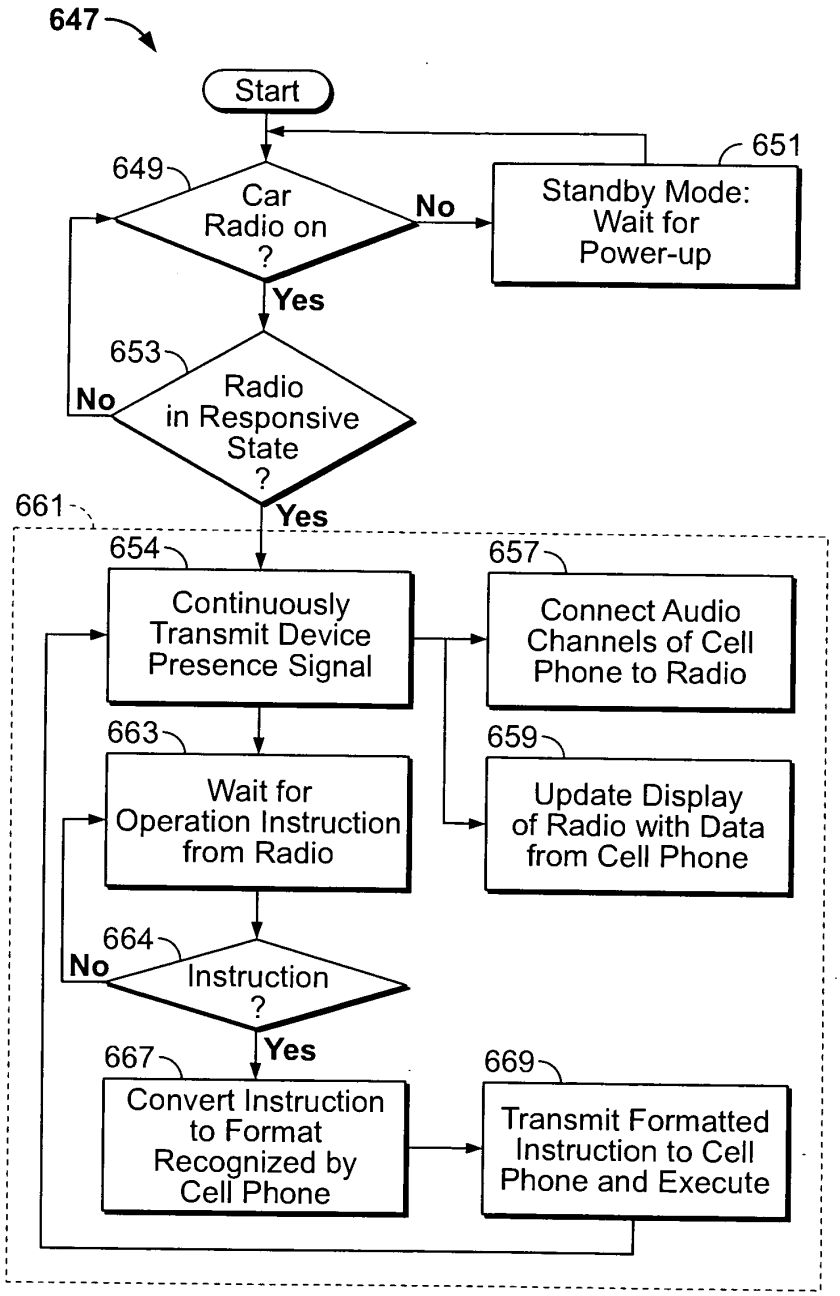

647
Start
649
Car Radio on ?
No
651
Standby Mode: Wait for Power-up
Yes
653
Radio in Responsive State ?
No
Yes
661
654
Continuously Transmit Device Presence Signal
657
Connect Audio Channels of Cell Phone to Radio
663
Wait for Operation Instruction from Radio
659
Update Display of Radio with Data from Cell Phone
664
Instruction ?
No
Yes
667
Convert Instruction to Format Recognized by Cell Phone
669
Transmit Formatted Instruction to Cell Phone and Execute

FIG. 11B

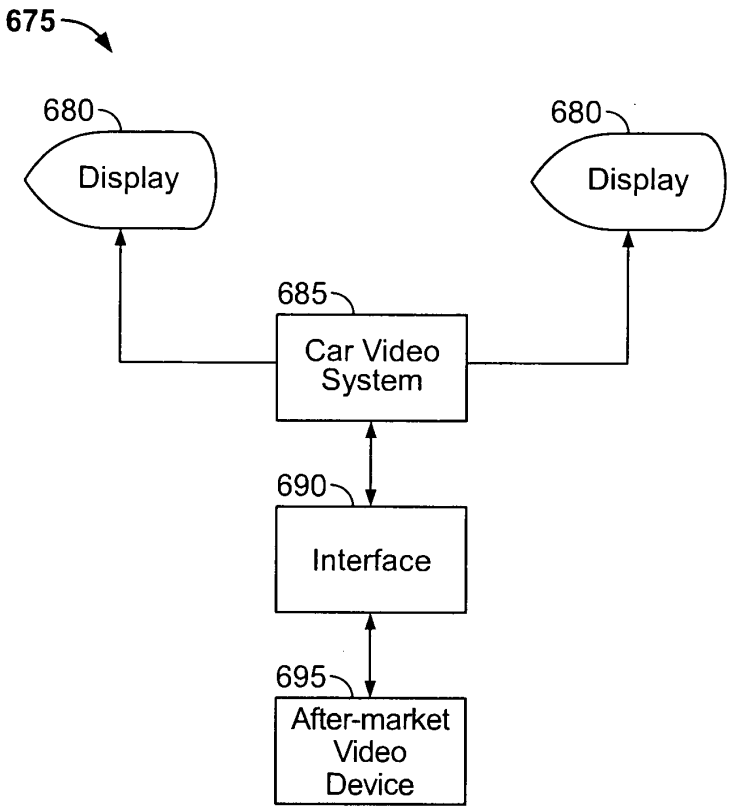

675
680
Display
680
Display
685
Car Video System
690
Interface
695
After-market Video Device

FIG. 12A

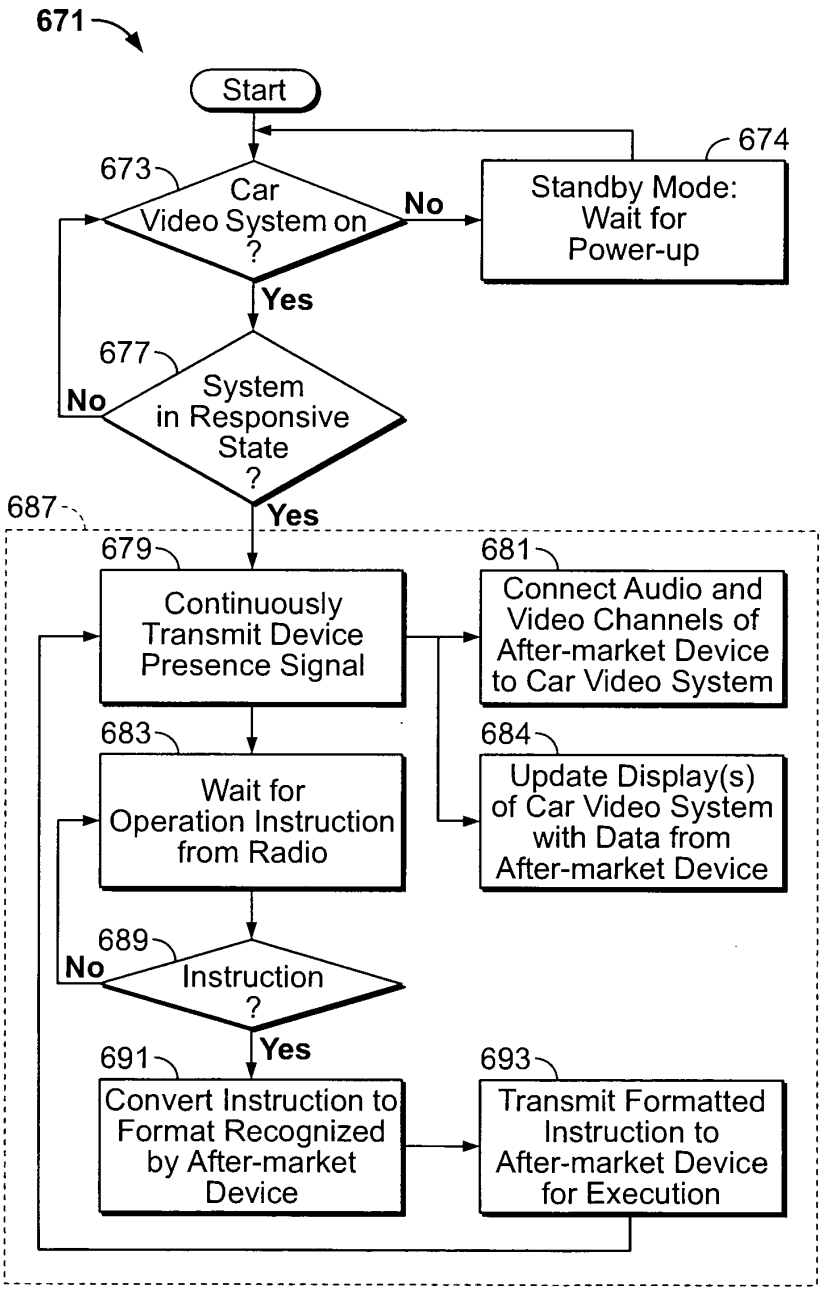

671
Start
673
Car Video System on ?
No
674
Standby Mode: Wait for Power-up
Yes
677
System in Responsive State ?
No
Yes
687
679
Continuously Transmit Device Presence Signal
681
Connect Audio and Video Channels of After-market Device to Car Video System
683
Wait for Operation Instruction from Radio
684
Update Display(s) of Car Video System with Data from After-market Device
689
Instruction ?
No
Yes
691
Convert Instruction to Format Recognized by After-market Device
693
Transmit Formatted Instruction to After-market Device for Execution

FIG. 12B

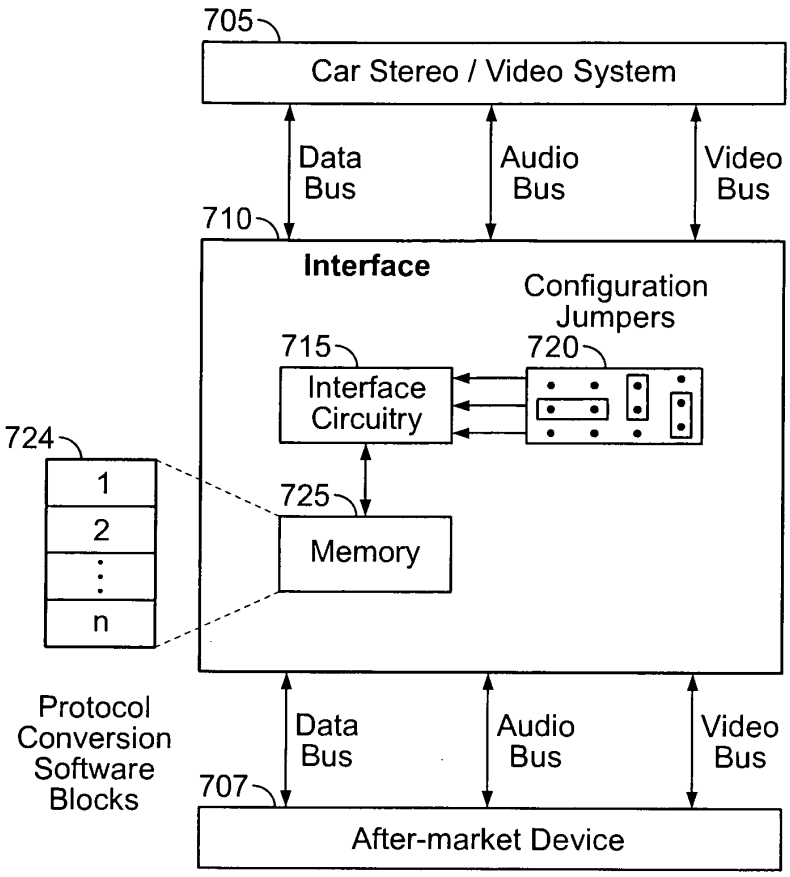


FIG. 13A

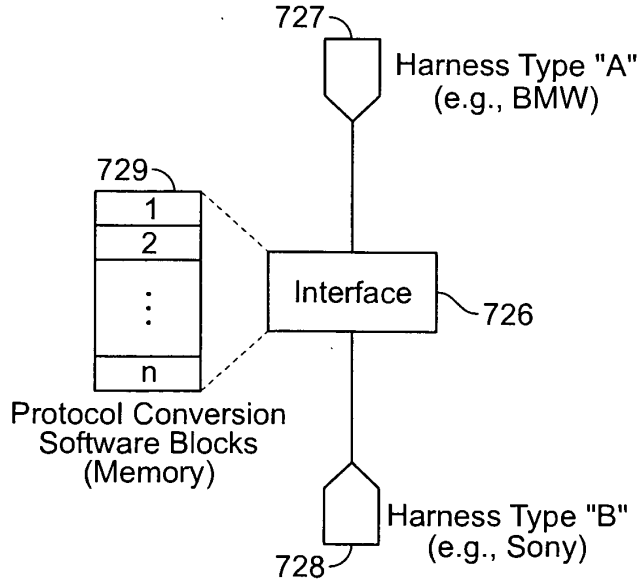


FIG. 13B

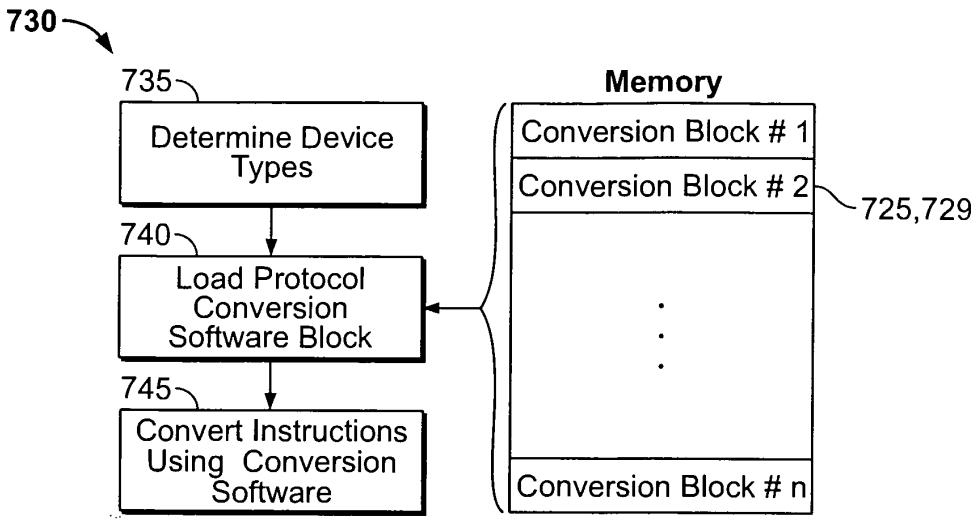

730
735
Determine Device Types
740
Load Protocol Conversion Software Block
745
Convert Instructions Using Conversion Software
Memory
Conversion Block # 1
Conversion Block # 2
725,729
Conversion Block # n

FIG. 14

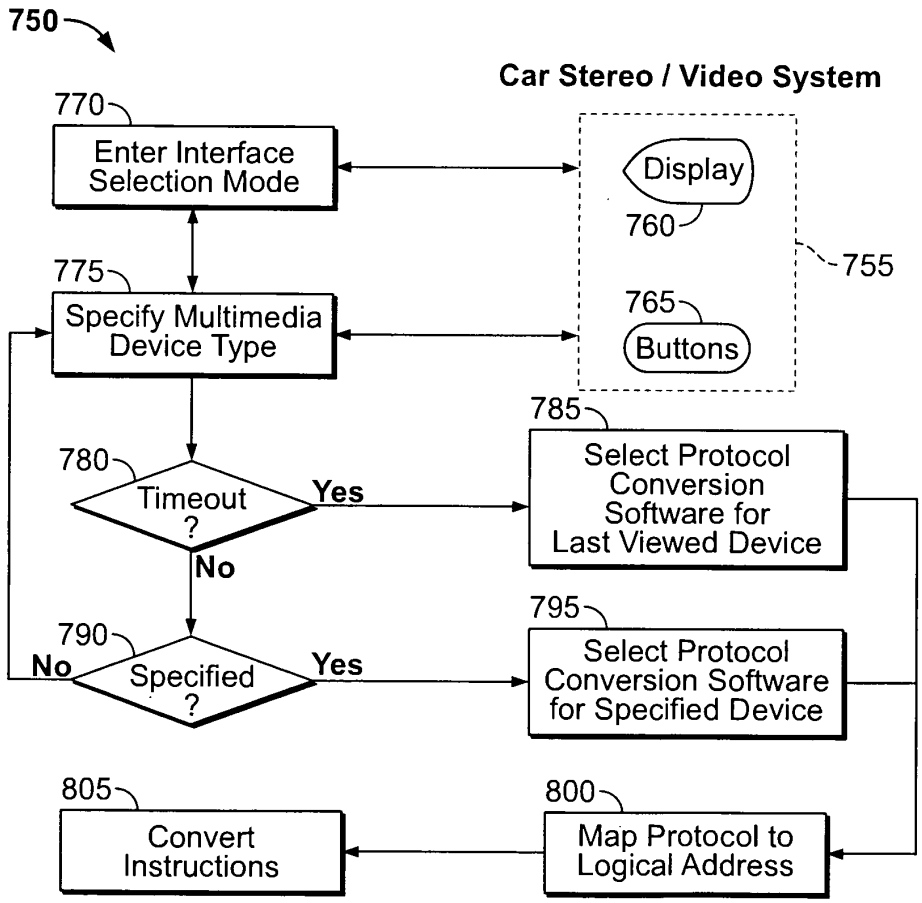

750
Car Stereo / Video System
770
Enter Interface Selection Mode
775
Specify Multimedia Device Type
Display
760
755
765
Buttons
780
Timeout ?
Yes
No
785
Select Protocol Conversion Software for Last Viewed Device
790
No
Specified ?
Yes
795
Select Protocol Conversion Software for Specified Device
805
Convert Instructions
800
Map Protocol to Logical Address

FIG. 15

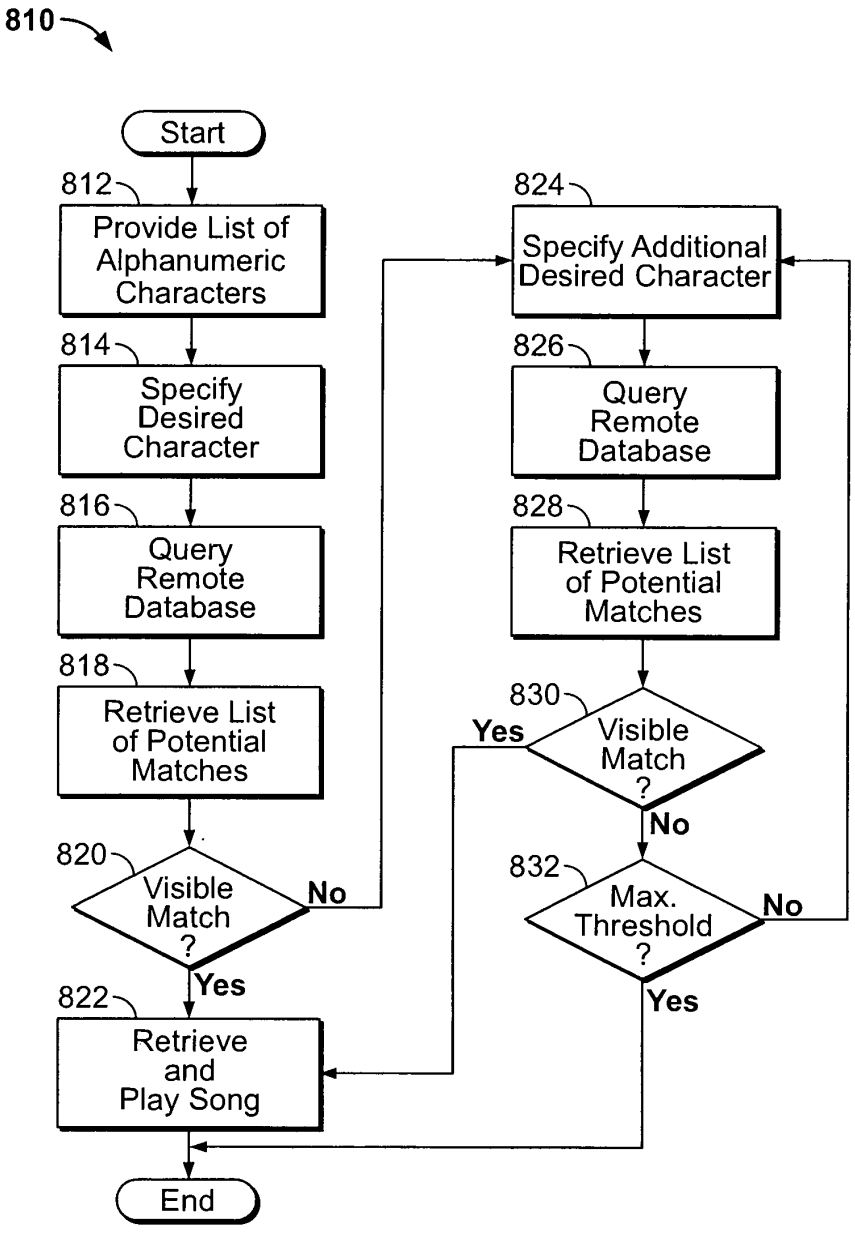

810
Start
812
Provide List of Alphanumeric Characters
814
Specify Desired Character
816
Query Remote Database
818
Retrieve List of Potential Matches
820
Visible Match ?
No
Yes
822
Retrieve and Play Song
End
824
Specify Additional Desired Character
826
Query Remote Database
828
Retrieve List of Potential Matches
830
Visible Match ?
Yes
No
832
Max. Threshold ?
No
Yes

FIG. 16

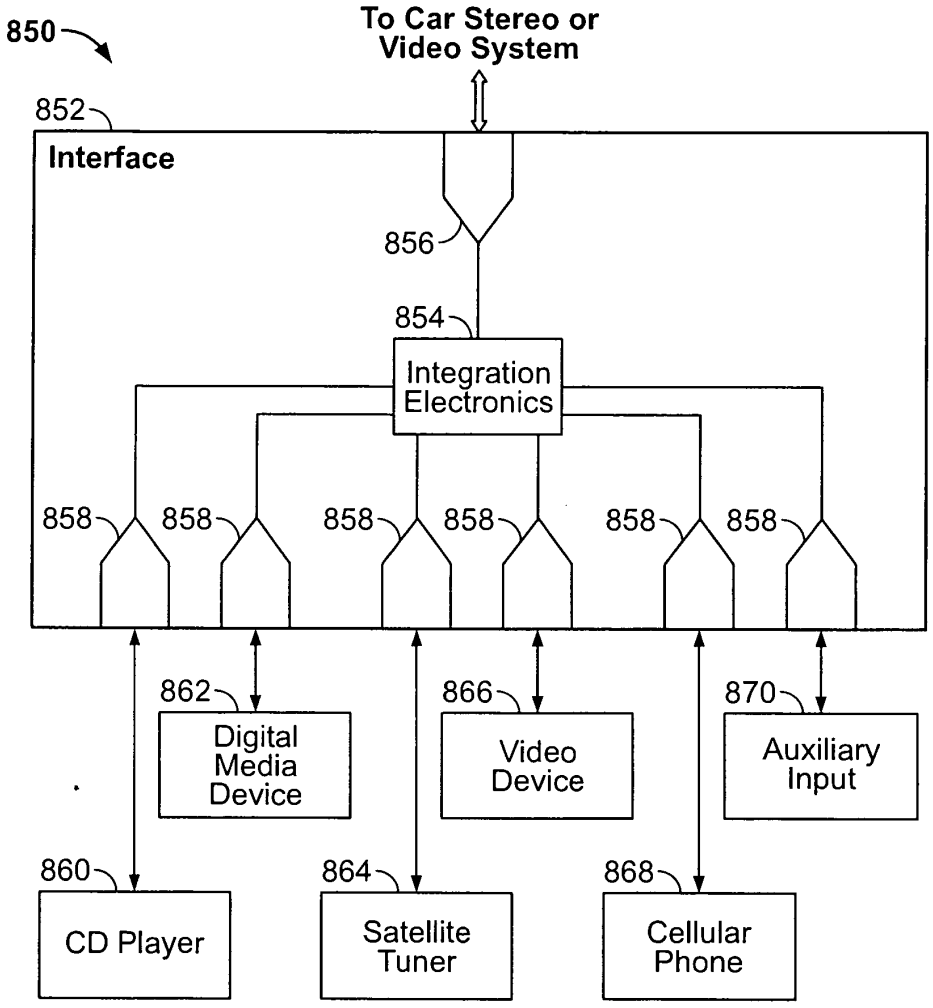

850
To Car Stereo or Video System
852
Interface
856
854
Integration Electronics
858
858
858
858
858
858
862
Digital Media Device
866
Video Device
870
Auxiliary Input
860
CD Player
864
Satellite Tuner
868
Cellular Phone

FIG. 17

FIG. 18

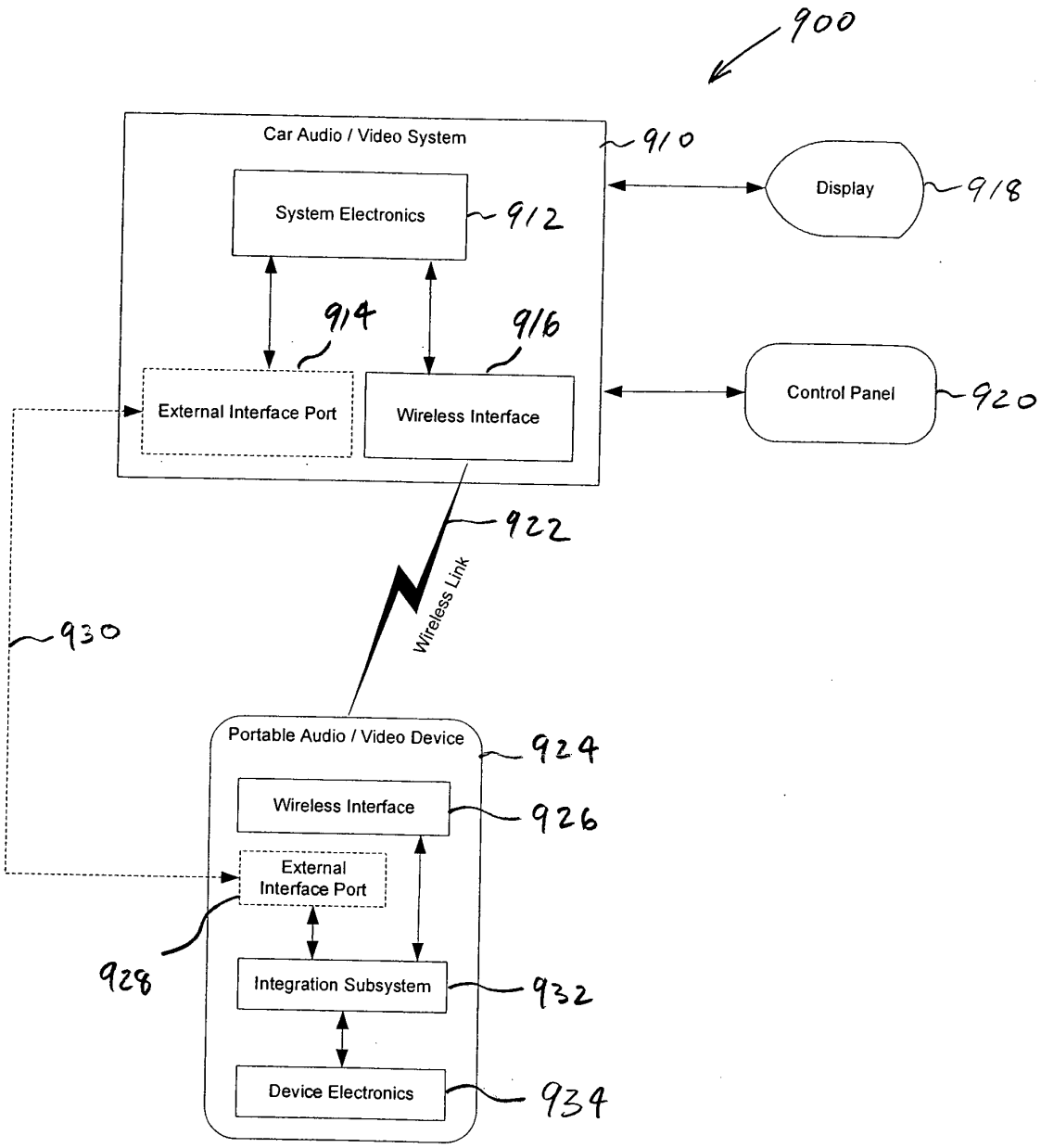

900
Car Audio / Video System
910
System Electronics
912
914
916
External Interface Port
Wireless Interface
Display
918
Control Panel
920
922
Wireless Link
930
Portable Audio / Video Device
924
Wireless Interface
926
External Interface Port
928
Integration Subsystem
932
Device Electronics
934

FIG. 19

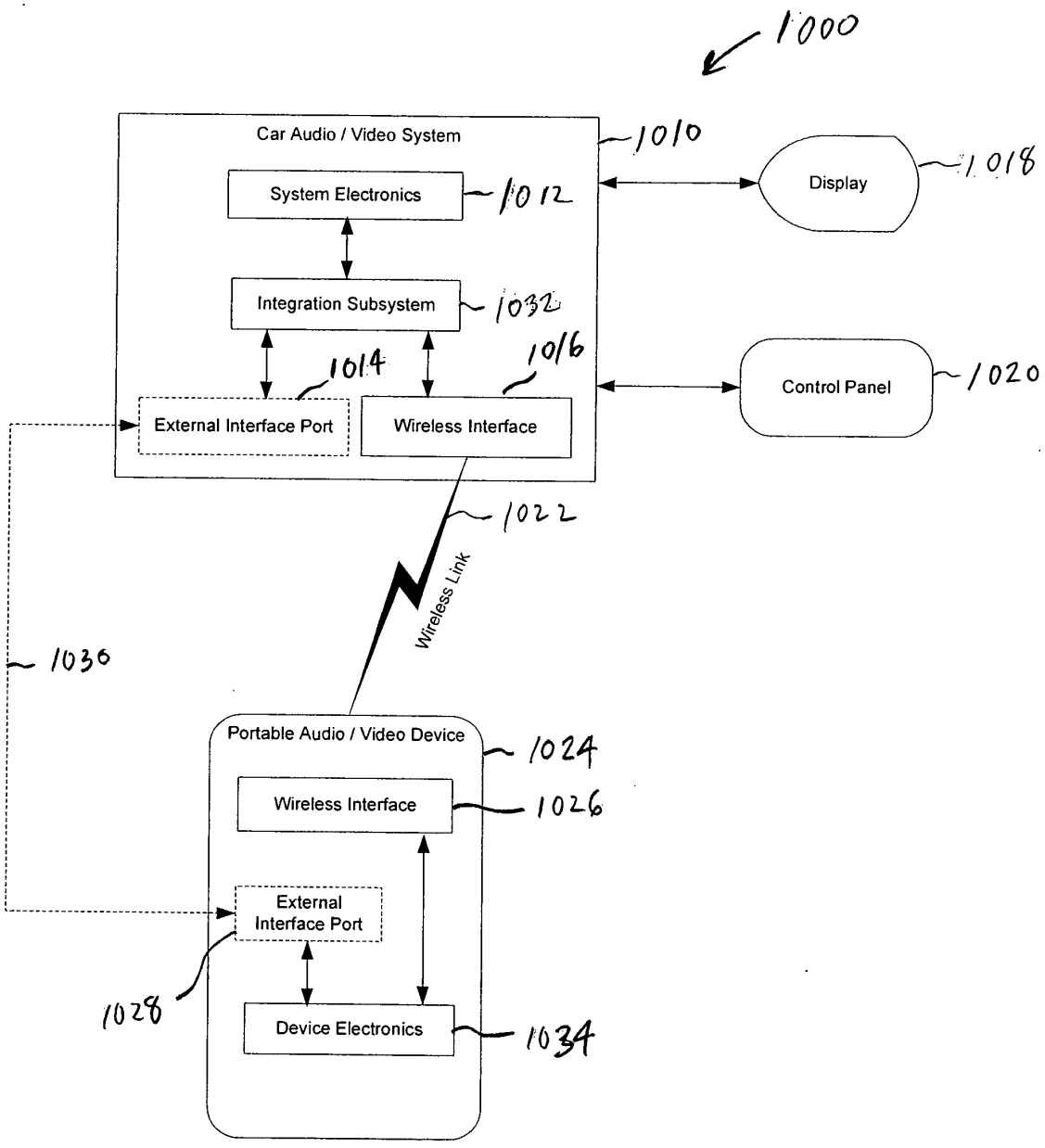

1000
Car Audio / Video System
1010
System Electronics
1012
Integration Subsystem
1032
1014
1016
External Interface Port
Wireless Interface
Display
1018
Control Panel
1020
1022
Wireless Link
1030
Portable Audio / Video Device
1024
Wireless Interface
1026
External Interface Port
1028
Device Electronics
1034

FIG. 20

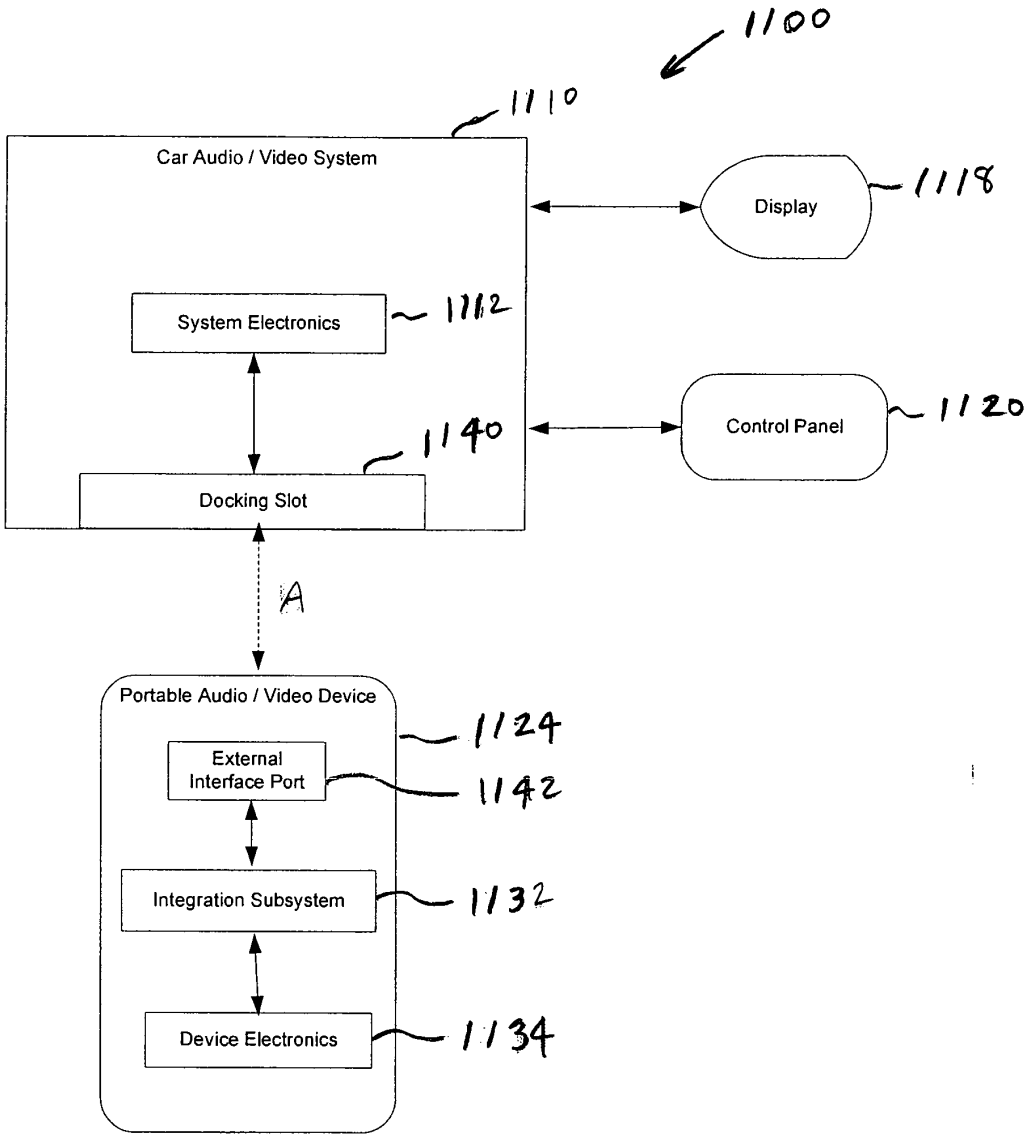

1100
1110
Car Audio / Video System
Display
1118
System Electronics
1112
1140
Control Panel
1120
Docking Slot
A
Portable Audio / Video Device
1124
External Interface Port
1142
Integration Subsystem
1132
Device Electronics
1134

FIG. 21

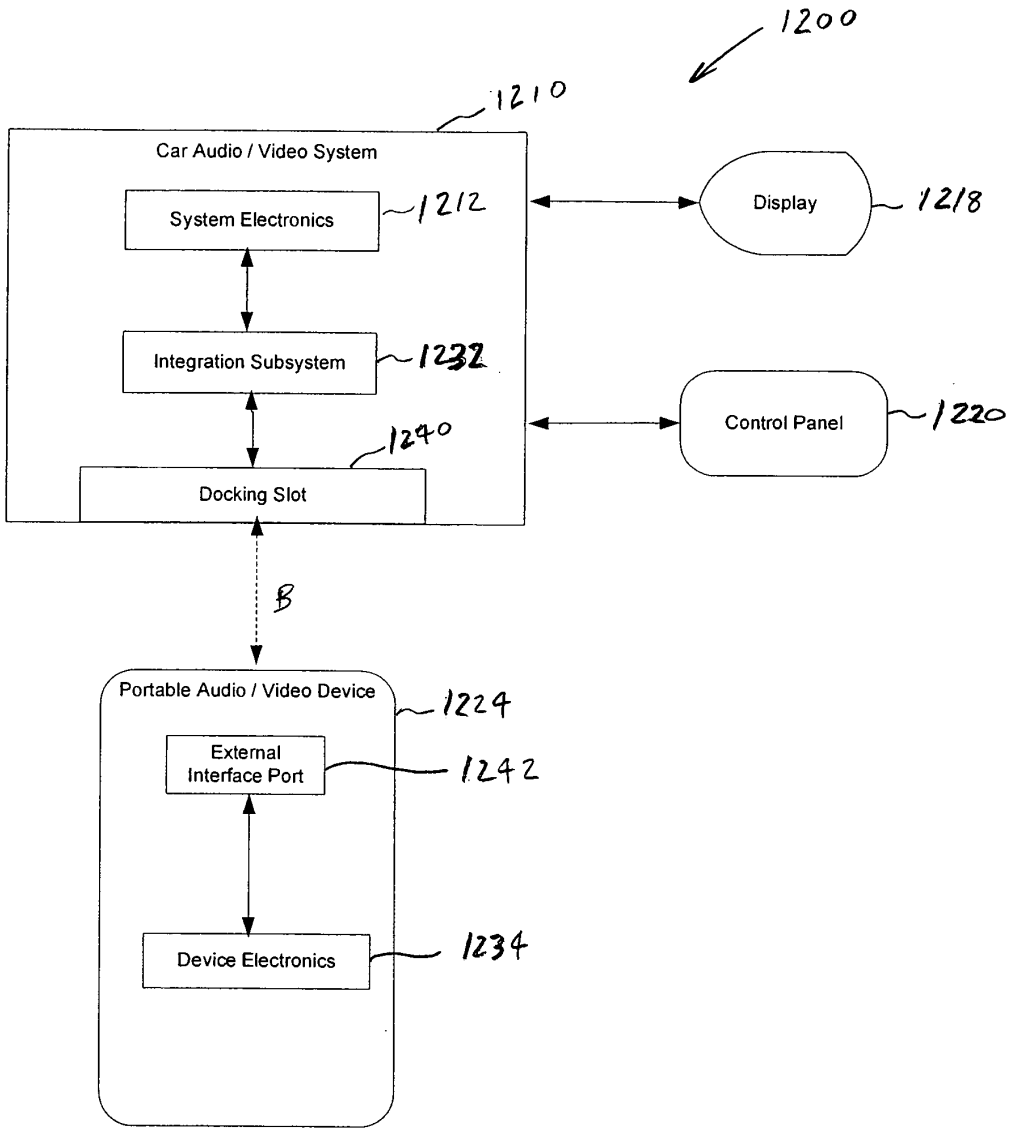

1200
1210
Car Audio / Video System
System Electronics
1212
Integration Subsystem
1232
Docking Slot
1240
Display
1218
Control Panel
1220
B
Portable Audio / Video Device
1224
External Interface Port
1242
Device Electronics
1234

FIG. 22

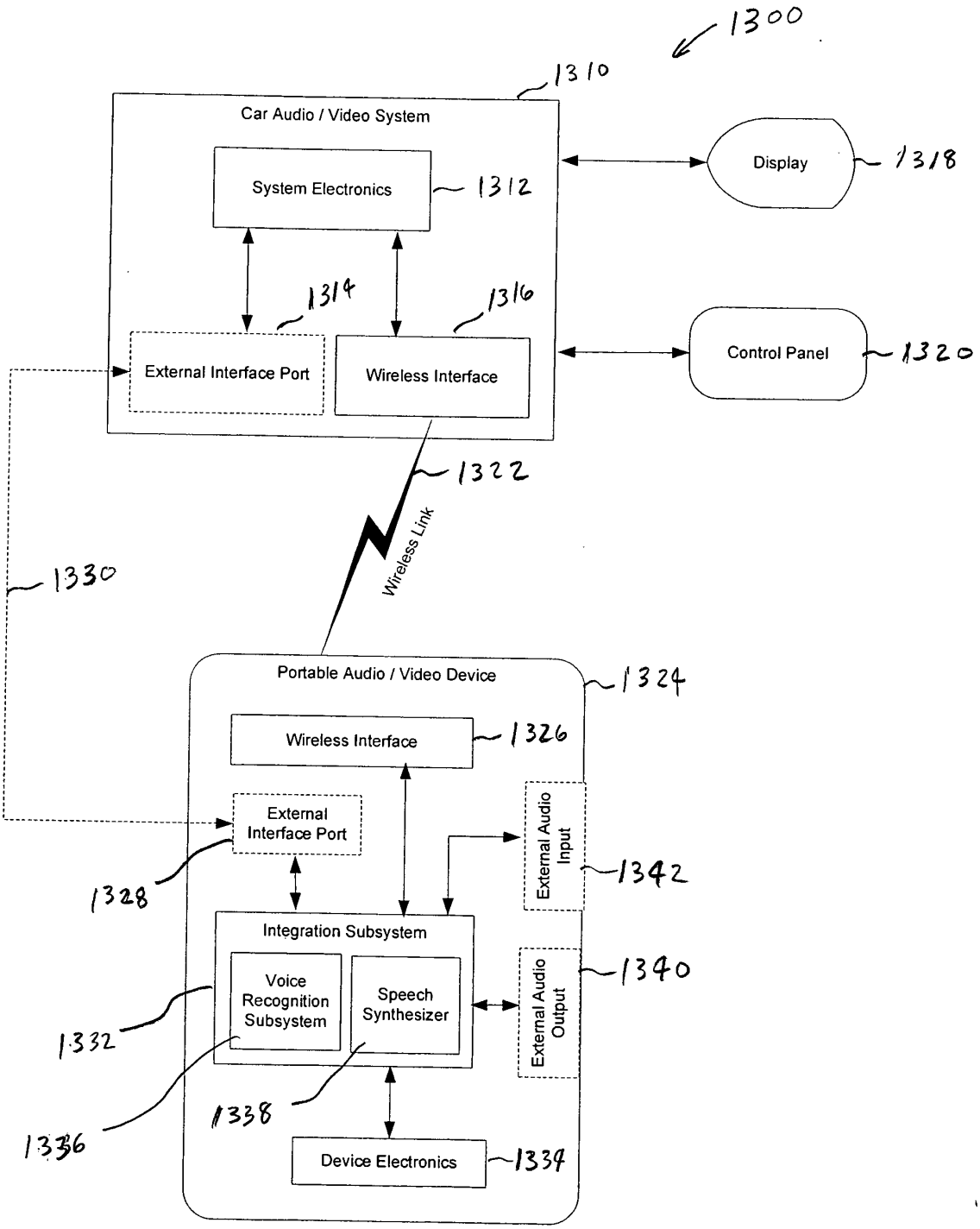

1300
1310
Car Audio / Video System
System Electronics
1312
Display
1318
1314
1316
External Interface Port
Wireless Interface
Control Panel
1320
1322
Wireless Link
1330
Portable Audio / Video Device
1324
Wireless Interface
1326
External Interface Port
1328
External Audio Input
1342
Integration Subsystem
Voice Recognition Subsystem
Speech Synthesizer
External Audio Output
1340
1332
1336
1338
Device Electronics
1334

FIG. 23

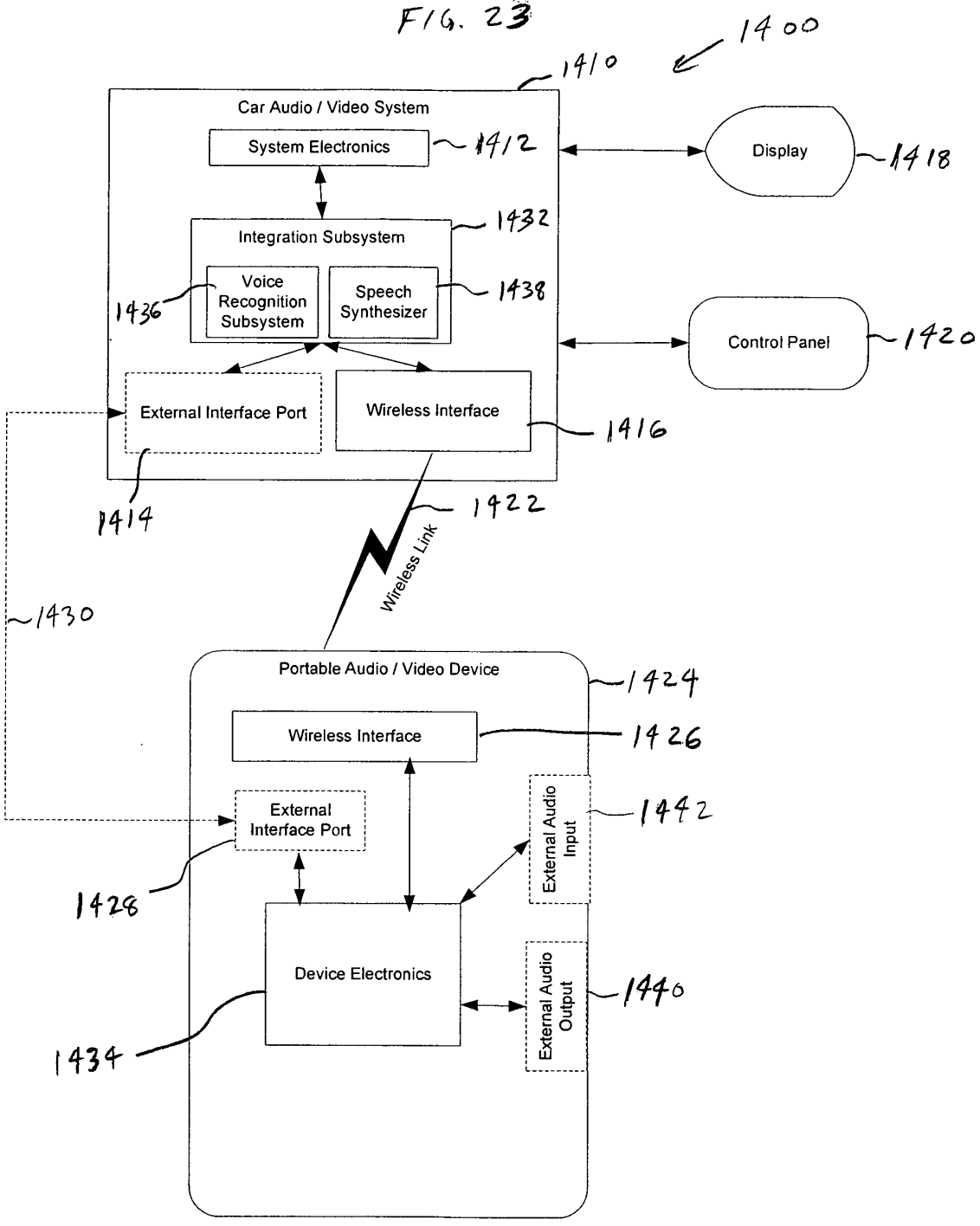
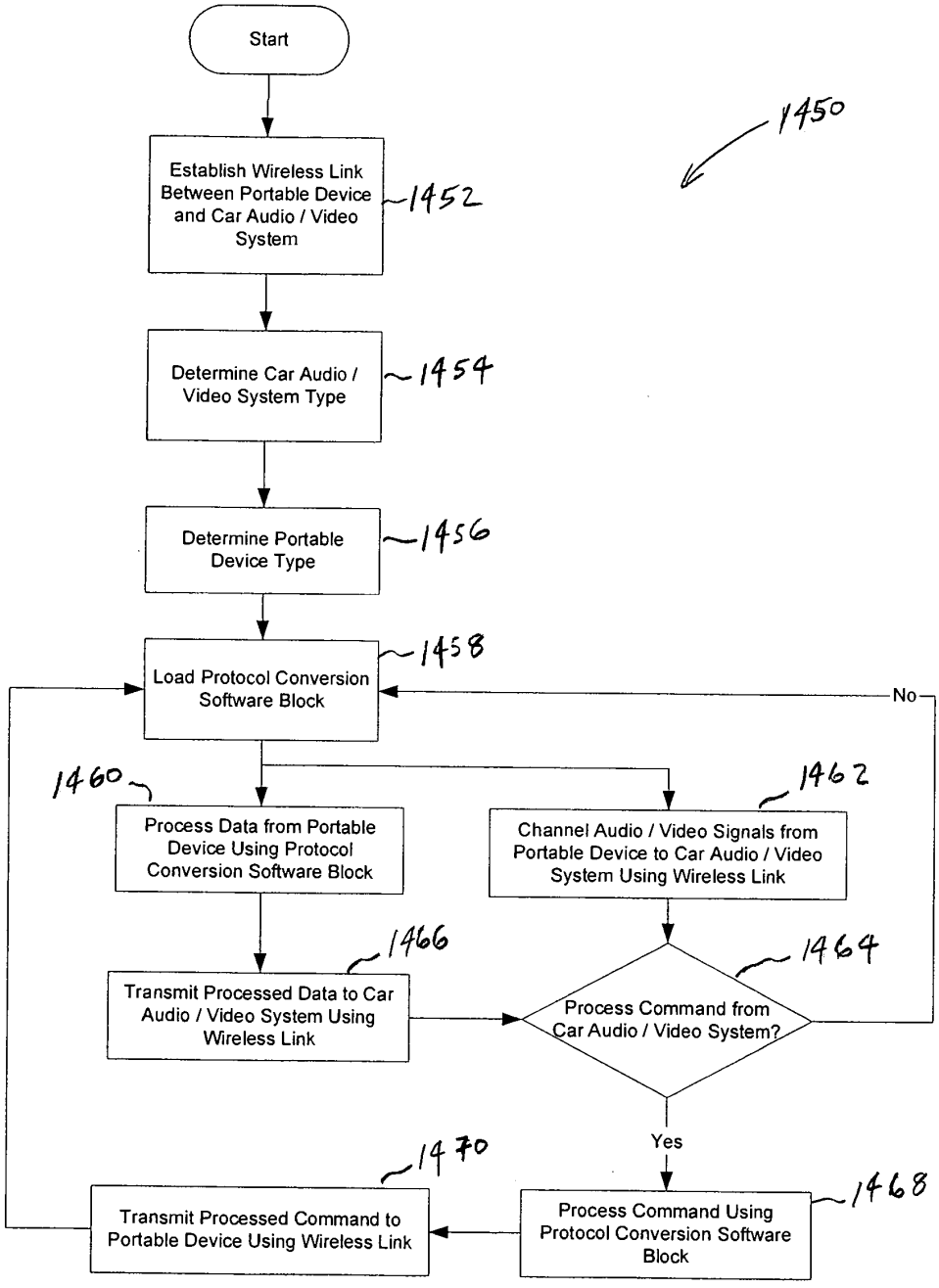

1400
1410
Car Audio / Video System
System Electronics
1412
Display
1418
Integration Subsystem
1432
Voice Recognition Subsystem
1436
Speech Synthesizer
1438
Control Panel
1420
External Interface Port
Wireless Interface
1416
1414
1422
Wireless Link
1430
Portable Audio / Video Device
1424
Wireless Interface
1426
External Interface Port
1428
External Audio Input
1442
Device Electronics
1434
External Audio Output
1440

FIG. 24


Start
1450
Establish Wireless Link Between Portable Device and Car Audio / Video System
1452
Determine Car Audio / Video System Type
1454
Determine Portable Device Type
1456
Load Protocol Conversion Software Block
1458
No
1460
Process Data from Portable Device Using Protocol Conversion Software Block
1462
Channel Audio / Video Signals from Portable Device to Car Audio / Video System Using Wireless Link
1466
Transmit Processed Data to Car Audio / Video System Using Wireless Link
1464
Process Command from Car Audio / Video System?
Yes
1470
Transmit Processed Command to Portable Device Using Wireless Link
Process Command Using Protocol Conversion Software Block
1468

Attorney Docket No.
99879-00026

DECLARATION AND POWER OF ATTORNEY

(Patent, Design or C-I-P Application)

As a below-named inventor, I hereby declare that:
My residence, post office address and citizenship are as stated below next to my name.
I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are stated below) of the subject matter which is claimed and for which a patent is sought on the invention entitled: MULTIMEDIA DEVICE INTEGRATION SYSTEM the specification of which

_X_ is attached hereto
_____ was filed on _____ as Application Serial No. _____ and was amended on _____ (if applicable)

I hereby state that I have reviewed and understand the contents of the above-entitled specification, including the claims, as amended by any amendment referred to above.
I acknowledge the duty to disclose information which is material to patentability as defined in 37 C.F.R. §1.56.
I hereby claim foreign priority benefits under 35 U.S.C. §119(a)-(d) or §365(b) of any foreign application(s) for patent or inventor's certificate, or §365(a) of any PCT International application which designated at least one country other than the United States, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or PCT International application having a filing date before that of the application on which priority is claimed.

PRIOR FOREIGN APPLICATION(S)

COUNTRY	APPLICATION NO.	DATE OF FILING (day, month, year)	PRIORITY CLAIMED UNDER 35 U.S.C. 119
			YES __ NO __
			YES __ NO __

LISTING OF FOREIGN APPLICATIONS CONTINUED ON PAGE 2 HEREOF: YES __ NO __

I hereby claim the benefit under 35 U.S.C. §119(e) of any United States provisional application(s) listed below.

_____ (Application Serial No.) _____ (Filing Date)

I hereby claim the benefit under 35 U.S.C. §120 of any United States application(s), or §365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application or PCT International application in the manner provided by the first page of 35 U.S.C. §112, I acknowledge the duty to disclose material information as defined in 37 C.F.R. §1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

11/071,667 (Application Serial No.)	March 3, 2005 (Filing Date)	Pending (Status: patented, pending, abandoned)
10/732,909 (Application Serial No.)	December 10, 2003 (Filing Date)	Pending (Status: patented, pending, abandoned)
10/316,961 (Application Serial No.)	December 11, 2002 (Filing Date)	Pending (Status: patented, pending, abandoned)

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith: RALPH W. SELITTO, JR., Reg. No. 26,996; MICHAEL R. FRISCIA, Reg. No. 33,884; JOHN K. KIM, Reg. No. 37,002; and all other practitioners associated with Customer Number 27614.

SEND CORRESPONDENCE TO:	Michael R. Friscia McCarter & English, LLP Four Gateway Center 100 Mulberry Street Newark, NJ 07102	DIRECT TELEPHONE CALLS TO: (973) 639-8493

Full Name of Inventor #1	Last Name: **Marlowe**	First Name: **Ira**	Middle Name:
Residence & Citizenship	City: **Fort Lee**	State or Foreign Country: **NJ**	Country of Citizenship: **USA**
Post Office Address	Post Office Address: **6403 Hilltop Court**	City: **Fort Lee**	State or Country and Zip Code: **NJ 07102**
Full Name of Inventor #2	Last Name:	First Name:	Middle Name:
Residence & Citizenship	City:	State or Foreign Country:	Country of Citizenship:
Post Office Address	Post Office Address:	City:	State or Country and Zip Code:

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Signature of Inventor #1	Signature of Inventor #2
Date:	Date:

LISTING OF INVENTORS CONTINUED ON PAGE 2 HEREOF: YES ___ NO _X__

PTO/SB/06 (12-04)
Approved for use through 7/31/2006. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

PATENT APPLICATION FEE DETERMINATION RECORD
Substitute for Form PTO-875

Application or Docket Number: 11,475,847

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY FEE ($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))				150			300
SEARCH FEE (37 CFR 1.16(k), (i), or (m))				250			500
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))				100			200
TOTAL CLAIMS (37 CFR 1.16(i))	91 minus 20 =	71	X$ 25	1775	OR	X$50	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	7 minus 3 =	* 4	X$100	400		X$200	
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR						
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))			180			360	
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	2675		TOTAL	1000

APPLICATION AS AMENDED – PART II

AMENDMENT A		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					180		OR	360	
						TOTAL ADD'T FEE		OR	TOTAL ADD'T FEE	

AMENDMENT B		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					N/A		OR	N/A	
						TOTAL ADD'T FEE		OR	TOTAL ADD'T FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371 (c) DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
11/475,847	06/27/2006	Ira Marlowe	99879-00026

CONFIRMATION NO. 9001

27614
MCCARTER & ENGLISH, LLP
FOUR GATEWAY CENTER
100 MULBERRY STREET
NEWARK, NJ 07102

FORMALITIES LETTER

Date Mailed: 07/25/2006

NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

Filing Date Granted

Items Required To Avoid Abandonment:

An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing. Applicant is given **TWO MONTHS** from the date of this Notice within which to file all required items and pay any fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

- The statutory basic filing fee is missing.
  Applicant must submit $ **150** *to complete the basic filing fee for a small entity.*
- The oath or declaration is unsigned.

The applicant needs to satisfy supplemental fees problems indicated below.

The required item(s) identified below must be timely submitted to avoid abandonment:

- Additional claim fees of $**2175** as a small entity, including any required multiple dependent claim fee, are required. Applicant must submit the additional claim fees or cancel the additional claims for which fees are due.
- To avoid abandonment, a surcharge (for late submission of filing fee, search fee, examination fee or oath or declaration) as set forth in 37 CFR 1.16(f) of $65 for a small entity in compliance with 37 CFR 1.27, must be submitted with the missing items identified in this letter.

SUMMARY OF FEES DUE:

Total additional fee(s) required for this application is $**2865** for a Small Entity

- $**150** Statutory basic filing fee.
- $**65** Surcharge.

- The application search fee has not been paid. Applicant must submit $**250** to complete the search fee.

- The application examination fee has not been paid. Applicant must submit **$100** to complete the examination fee for a small entity in compliance with 37 CFR 1.27
- The specification and drawings contain more than 100 pages. Applicant owes **$125** for **38** pages in excess of **100** pages for a small entity in compliance with 37 CFR 1.27.

- Total additional claim fee(s) for this application is **$2175**
  - **$400** for **4** independent claims over 3.
  - **$1775** for **71** total claims over 20.

Replies should be mailed to: Mail Stop Missing Parts
Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

A copy of this notice MUST be returned with the reply.

Office of Initial Patent Examination (571) 272-4000, or 1-800-PTO-9199, or 1-800-972-6382
PART 3 - OFFICE COPY

IPW/

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371 (c) DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
11/475,847	06/27/2006	Ira Marlowe	99879-00026

CONFIRMATION NO. 9001

27614
MCCARTER & ENGLISH, LLP
FOUR GATEWAY CENTER
100 MULBERRY STREET
NEWARK, NJ 07102

10/02/2006 WASFAW1 00000027 11475847
01 FC:2011 150.00 DP
02 FC:2111 250.00 DP
03 FC:2311 200.00 DP
04 FC:2201 400.00 DP
05 FC:2202 1775.00 DP
06 FC:2051 65.00 DP
07 FC:2081 125.00 DP

FORMALITIES LETTER

Date Mailed: 07/25/2006

NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

Filing Date Granted

Items Required To Avoid Abandonment:

An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing. Applicant is given **TWO MONTHS** from the date of this Notice within which to file all required items and pay any fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

- The statutory basic filing fee is missing.
  Applicant must submit $ **150** *to complete the basic filing fee for a small entity.*
- The oath or declaration is unsigned.

The applicant needs to satisfy supplemental fees problems indicated below.

The required item(s) identified below must be timely submitted to avoid abandonment:

- Additional claim fees of $**2175** as a small entity, including any required multiple dependent claim fee, are required. Applicant must submit the additional claim fees or cancel the additional claims for which fees are due.
- To avoid abandonment, a surcharge (for late submission of filing fee, search fee, examination fee or oath or declaration) as set forth in 37 CFR 1.16(f) of $65 for a small entity in compliance with 37 CFR 1.27, must be submitted with the missing items identified in this letter.

SUMMARY OF FEES DUE:

Total additional fee(s) required for this application is $**2865** for a Small Entity

- $**150** Statutory basic filing fee.
- $**65** Surcharge.

- The application search fee has not been paid. Applicant must submit $**250** to complete the search fee.

- The application examination fee has not been paid. Applicant must submit **$100** to complete the examination fee for a small entity in compliance with 37 CFR 1.27
- The specification and drawings contain more than 100 pages. Applicant owes **$125** for **38** pages in excess of **100** pages for a small entity in compliance with 37 CFR 1.27.

- Total additional claim fee(s) for this application is **$2175**
  - **$400** for **4** independent claims over 3.
  - **$1775** for **71** total claims over 20.

Replies should be mailed to: Mail Stop Missing Parts
Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

A copy of this notice MUST be returned with the reply.

Office of Initial Patent Examination (571) 272-4000, or 1-800-PTO-9199, or 1-800-972-6382
PART 2 - COPY TO BE RETURNED WITH RESPONSE

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Customer No. 27614

Mail Stop Missing Parts
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Examiner: Not Yet Assigned
Art Unit: 2618

Re: Our file: 99879-00026
Applicant: Ira Marlowe
Serial No.: 11/475,847
Filed: 06/27/20006
For: Multimedia Device Integration System

Sir:

Enclosed for filing in the United States Patent and Trademark Office is the following:

1. Response to Notice to File Missing Parts of Application Filing Date Granted
2. Copy of Notice to File Missing Parts
3. Executed Declaration and Power of Attorney
4. Check in the amount of $2,925.00
5. Transmittal Sheet
6. Postcard Receipt

CONDITIONAL PETITION

If any extension of time is required for the submission of the above-identified items, Applicant requests that this be considered a petition therefor. Please charge any additional charges or any other charges relating to this matter, or credit any overpayment, to the Deposit Account of the writer, **Account No. 503571.** A duplicate copy of this letter is enclosed.

Respectfully submitted,

9/27/06
Date

Michael R. Fristia
Registration No. 33,884
McCarter & English, LLP
Four Gateway Center
100 Mulberry Street
Newark, NJ 07102
Tel: (973) 639-8493
Fax: (973) 297-6627

Check One and Complete:

☐ **CERTIFICATE OF MAILING BY EXPRESS MAIL**

I hereby certify that this correspondence is being deposited with the United States Postal Service, postage prepaid, as "Express Mail Post Office to Addressee," Mailing Label No. _____US to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on _____.

By:_____

☒ **CERTIFICATE OF MAILING BY FIRST CLASS MAIL**

I hereby certify that this correspondence is being deposited with the United States Postal Service, First Class Mail, postage prepaid, to Mail Stop Missing Parts, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on 9/27/06.

By: Janelle Fava
Janelle Fava

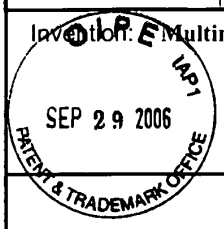
ME1\5864513.1

Response To Notice To File Missing Parts Of Application - Filing Date Granted (PTO-1533)(Small Entity)	Docket No. 99879-00026

In Re Application Of: **Ira Marlowe**

Application No.	Filing Date	Examiner	Customer No.	Group Art Unit	Confirmation No.
11/475,847	06/27/2006	Not Yet Assigned	27614	2618	9001

Invention: **Multimedia Device Integration System**



Mail Stop Missing Parts

COMMISSIONER FOR PATENTS:

This is a response to the Notice to File Missing Parts of Application - Filing Date Granted (PTO-1533) mailed on 07/25/2006 (*Date*).

Enclosed herewith for filing are the following:

- ☒ A copy of the Notice to File Missing Parts of Application - Filing Date Granted (PTO-1533). **(REQUIRED)**
- ☒ An oath or declaration in compliance with 37 CFR 1.63, including residence information and identifying the application by the above Application Number and Filing Date.
- ☒ A properly signed oath or declaration in compliance with 37 CFR 1.63.
- ☐ An oath or declaration in compliance with 37 CFR 1.63 listing the names of all inventors and signed by the omitted inventor(s), identifying this application by the above Application Number and Filing Date.
- ☐ A verified English translation of the non-English language application papers as originally filed. It is requested that this translation be used as the copy for examination purposes in the United States Patent and Trademark Office.
- ☐ _____ verified small entity declaration(s)
  - ☐ is/are attached.
  - ☐ was/were filed on _____
- ☐ A separate request for refund.
- ☒ Other (list):

Transmittal Sheet
Postcard Receipt

10/02/2006 WASFAW1 00000027 11475847
08 FC:2251 60.00 DP

P31SMALL/REV06

Response To Notice To File Missing Parts Of Application Filing Date Granted (PTO-1533)(Small Entity)	Docket No. 99879-00026

In Re Application Of:
Ira Marlowe

Application No.	Filing Date	Examiner	Customer No.	Group Art Unit	Confirmation No.
11/475,847	06/27/2006	Not Yet Assigned	27614	2618	9001

Invention: **Multimedia Device Integration System**

TO THE COMMISSIONER FOR PATENTS:

Mail Stop Missing Parts

☒ Completion of application fees as calculated below:

☒ Utility application basic fee	$150.00
☐ Design application basic fee	
☒ Search Fee	$250.00
☒ Examination Fee	$100.00
☒ Total number of independent claims = 7	$400.00
☒ Total number of claims = 91	$1,775.00
☐ Multiple dependent claims	
☒ Surcharge for late payment of filing fee and/or late filing of original declaration or oath	$65.00
☐ Petition and fee for filing by other than all the inventors or a person not the inventor	
☐ Fee for processing an application filed with a non-English language specification	
☒ Application size fee for total pages in excess of 100 pages	$125.00
Total completion of application fees	$2,865.00

This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a response to the above-identified Notice to File Missing Parts of Application. The requested extension is as follows (check time period desired). If an additional time extension is required, please consider this a petition therefor.

☒ One month ☐ Two months ☐ Three months ☐ Four months ☐ Five months

from: 09/25/2006 *Date* until: 10/25/2006 *Date*

Total time extension fees	$60.00
Total fees due	$2,925.00

P31SMALL/REV06

Response To Notice To File Missing Parts Of Application Filing Date Granted (PTO-1533) (Small Entity)	Docket No. 99879-00026

In Re Application Of: **Ira Marlowe**

Application No.	Filing Date	Examiner	Customer No.	Group Art Unit	Confirmation No.
11/475,847	06/27/2006	Not Yet Assigned	27614	2618	9001

Invention: **Multimedia Device Integration System**

TO THE COMMISSIONER FOR PATENTS:

Mail Stop Missing Parts

The fee of **$2,925.00** is to be paid as follows:

☒ A check in the amount of the fee is enclosed.

☒ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account No. **503571**

☒ If an additional extension of time is required, please consider this a petition therefor and charge any additional fees which may be required to Deposit Account No. **503571**

☐ Payment by credit card. Form PTO-2038 is attached.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

Signature

Dated: 9/27/06

Michael R. Friscia
Registration No. 33,884
McCarter & English, LLP
Four Gateway Center
100 Mulberry Street
Newark, NJ 07102
Tel: (973) 639-8493
Fax: (973) 297-6627

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)] on

9/27/06
(Date)

Signature of Person Mailing Correspondence

Janelle Fava

Typed or Printed Name of Person Mailing Correspondence

cc:

P31SMALL/REV06

OIPE SEP 29 2006 PATENT & TRADEMARK OFFICE

Attorney Docket No. 99879-00026

DECLARATION AND POWER OF ATTORNEY
(Patent, Design or C-I-P Application)

As a below-named inventor, I hereby declare that:
My residence, post office address and citizenship are as stated below next to my name.
I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are stated below) of the subject matter which is claimed and for which a patent is sought on the invention entitled: MULTIMEDIA DEVICE INTEGRATION SYSTEM the specification of which

___ is attached hereto
_X_ was filed on June 27, 2006 as Application Serial No. 11/475,847 and was amended on _____ (if applicable)

I hereby state that I have reviewed and understand the contents of the above-entitled specification, including the claims, as amended by any amendment referred to above.
I acknowledge the duty to disclose information which is material to patentability as defined in 37 C.F.R. §1.56.
I hereby claim foreign priority benefits under 35 U.S.C. §119(a)-(d) or §365(b) of any foreign application(s) for patent or inventor's certificate, or §365(a) of any PCT international application which designated at least one country other than the United States, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or PCT international application having a filing date before that of the application on which priority is claimed.

PRIOR FOREIGN APPLICATION(S)

COUNTRY	APPLICATION NO.	DATE OF FILING (day, month, year)	PRIORITY CLAIMED UNDER 35 U.S.C. 119
			YES __ NO __
			YES __ NO __

LISTING OF FOREIGN APPLICATIONS CONTINUED ON PAGE 2 HEREOF: YES __ NO __

I hereby claim the benefit under 35 U.S.C. §119(e) of any United States provisional application(s) listed below.

_____ (Application Serial No.) _____ (Filing Date)

I hereby claim the benefit under 35 U.S.C. §120 of any United States application(s), or §365(c) of any PCT international application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application or PCT international application in the manner provided by the first page of 35 U.S.C. §112, I acknowledge the duty to disclose material information as defined in 37 C.F.R. §1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

11/071,867 (Application Serial No.)	March 3, 2005 (Filing Date)	Pending (Status: patented, pending, abandoned)
10/732,909 (Application Serial No.)	December 10, 2003 (Filing Date)	Pending (Status: patented, pending, abandoned)
10/316,961 (Application Serial No.)	December 11, 2002 (Filing Date)	Pending (Status: patented, pending, abandoned)

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith: RALPH W. SELITTO, JR., Reg. No. 26,998; MICHAEL R. FRISCIA, Reg. No. 33,884; JOHN K. KIM, Reg. No. 37,002; and all other practitioners associated with Customer Number 27614.

SEND CORRESPONDENCE TO: Michael R. Friscia, McCarter & English, LLP, Four Gateway Center, 100 Mulberry Street, Newark, NJ 07102

DIRECT TELEPHONE CALLS TO: (973) 639-8493

Full Name of Inventor #1	Last Name: Marlowe	First Name: Ira	Middle Name:
Residence & Citizenship	City: Fort Lee	State or Foreign Country: NJ	Country of Citizenship: USA
Post Office Address	Post Office Address: 6403 Hilltop Court	City: Fort Lee	State or Country and Zip Code: NJ 07102
Full Name of Inventor #2	Last Name:	First Name:	Middle Name:
Residence & Citizenship	City:	State or Foreign Country:	Country of Citizenship:
Post Office Address	Post Office Address:	City:	State or Country and Zip Code:

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Signature of Inventor #1	Signature of Inventor #2
Date: 9/22/2006	Date:

LISTING OF INVENTORS CONTINUED ON PAGE 2 HEREOF: YES __ NO _X_

M61\5719898.1

BEST AVAILABLE COPY

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(c) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
11/475,847	06/27/2006	Ira Marlowe	99879-00026

CONFIRMATION NO. 9001

27614
MCCARTER & ENGLISH, LLP
FOUR GATEWAY CENTER
100 MULBERRY STREET
NEWARK, NJ07102

Title: Multimedia device integration system

Publication No. US-2007-0015486-A1
Publication Date: 01/18/2007

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently http://www.uspto.gov/patft/.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Office of Public Records. The Office of Public Records can be reached by telephone at (703) 308-9726 or (800) 972-6382, by facsimile at (703) 305-8759, by mail addressed to the United States Patent and Trademark Office, Office of Public Records, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently http://pair.uspto.gov/. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 703-305-3028.

Pre-Grant Publication Division, 703-605-4283

IFW

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Customer No. 27614

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Examiner: Not Yet Assigned
Art Unit: 2618

Re: Our file: 99879-00026
Applicant: Ira Marlowe
Serial No.: 11/475,847
Filed: 06/27/2006
For: Multimedia Device Integration System

Sir:

Enclosed for filing in the United States Patent and Trademark Office is the following:

1. Transmittal of Information Disclosure Statement
2. Form PTO-1449 (12 pages)
3. Copies of References 10, 11, 21, 22, 32, 33, 40, 41, 47, 48 and 54-120 from Form PTO-1449
4. Transmittal Sheet
5 Postcard Receipt

CONDITIONAL PETITION

If any extension of time is required for the submission of the above-identified items, Applicant requests that this be considered a petition therefor. Please charge any additional charges or any other charges relating to this matter, or credit any overpayment, to the Deposit Account of the writer, **Account No. 503571.** A duplicate copy of this letter is enclosed.

Respectfully submitted,

2/16/07
Date

Michael R. Friscia
Registration No. 33,884
McCarter & English, LLP
Four Gateway Center
100 Mulberry Street
Newark, NJ 07102
Tel: (973) 639-8493
Fax: (973) 297-6627

Check One and Complete:

☐ **CERTIFICATE OF MAILING BY EXPRESS MAIL**

I hereby certify that this correspondence is being deposited with the United States Postal Service, postage prepaid, as "Express Mail Post Office to Addressee," Mailing Label No. _____US to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on _____.

By:_____

☒ **CERTIFICATE OF MAILING BY FIRST CLASS MAIL**

I hereby certify that this correspondence is being deposited with the United States Postal Service, First Class Mail, postage prepaid, to Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on 2/16/07.

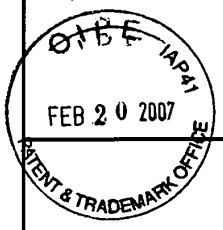
By: _____
Janelle Fava

TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT (Under 37 CFR 1.97(b) or 1.97(c))	Docket No. 99879-00026

In Re Application Of: **Ira Marlowe**

Application No.	Filing Date	Examiner	Customer No.	Group Art Unit	Confirmation No.
11/475,847	06/27/2006	Not Yet Assigned	27614	2618	9001

Title: **Multimedia Device Integration System**



Address to:
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

37 CFR 1.97(b)

1. ☒ The Information Disclosure Statement submitted herewith is being filed within three months of the filing of a national application other than a continued prosecution application under 37 CFR 1.53(d); within three months of the date of entry of the national stage as set forth in 37 CFR 1.491 in an international application; before the mailing of a first Office Action on the merits, or before the mailing of a first Office Action after the filing of a request for continued examination under 37 CFR 1.114.

37 CFR 1.97(c)

2. ☐ The Information Disclosure Statement submitted herewith is being filed after the period specified in 37 CFR 1.97(b), provided that the Information Disclosure Statement is filed before the mailing date of a Final Action under 37 CFR 1.113, a Notice of Allowance under 37 CFR 1.311, or an Action that otherwise closes prosecution in the application, and is accompanied by one of:

   ☐ the statement specified in 37 CFR 1.97(e);

   OR

   ☐ the fee set forth in 37 CFR 1.17(p).

P10A/REV06

TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT (Under 37 CFR 1.97(b) or 1.97(c))	Docket No. 99879-00026

In Re Application of: **Ira Marlowe**

Application No.	Filing Date	Examiner	Customer No.	Group Art Unit	Confirmation No.
11/475,847	06/27/2006	Not Yet Assigned	27614	2618	9001

Title: **Multimedia Device Integration System**

Payment of Fee

(Only complete if Applicant elects to pay the fee set forth in 37 CFR 1.17(p))

☐ A check in the amount of is attached.

☒ The Director is hereby authorized to charge and credit Deposit Account No. 503571 as described below.

- ☐ Charge the amount of
- ☒ Credit any overpayment.
- ☒ Charge any additional fee required.

☐ Payment by credit card. Form PTO-2038 is attached.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

Certificate of Transmission by Facsimile*

I certify that this document and authorization to charge deposit account is being facsimile transmitted to the United States Patent and Trademark Office (Fa:)

(Date)

Signature

Typed or Printed Name of Person Signing Certificate

Certificate of Mailing by First Class Mail

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)] on

2/16/07
(Date)

Signature of Person Mailing Correspondence

Janelle Fava

Typed or Printed Name of Person Mailing Certificate

***This certificate may only be used if paying by deposit account.**

Signature

Dated: 2/16/07

Michael R. Friscia
Registration No. 33,884
McCarter & English, LLP
Four Gateway Center
100 Mulberry Street
Newark, NJ 07102
Tel: (973) 639-8493
Fax: (973) 297-6627

cc:

P10A/REV06

INFORMATION DISCLOSURE CITATION

(Use several sheets if necessary)

Docket Number (Optional)	Application Number
99879-00026	11/475,847
Applicant(s) Ira Marlowe	
Filing Date 06/27/2006	**Group Art Unit** 2618

U.S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	1	6,993,615	01/31/2006	Falcon	710	303	11/15/2002
	2	6,629,164	09/30/2003	Bhogal, et al.	711	111	11/03/2000
	3	6,653,948	11/25/2003	Kunimatsu, et al.	340	995.19	06/05/2000
	4	6,648,661	11/18/2003	Byrne, et al.	439	188	11/08/2002
	5	6,591,085	07/08/2003	Grady	455	42	07/17/2002

U.S. PATENT APPLICATION PUBLICATIONS

*EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	6	US 2005/0239434 A1	10/27/2002	Marlowe	455	345	03/03/2005
	7	US 2004/0151327 A1	08/05/2004	Marlowe	381	86	12/10/2003
	8	US 2004/0091123 A1	05/13/2004	Stark, et al.	381	86	11/08/2002
	9	US 2003/0215102 A1	11/20/2003	Marlowe	381	77	12/11/2002

FOREIGN PATENT DOCUMENTS

	REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation YES	Translation NO

OTHER DOCUMENTS *(Including Author, Title, Date, Pertinent Pages, Etc.)*

	10	VoiceBox Technologies, printout from website http://www.voiceboxtechnologies.com/auto.php (2 pages).
	11	"Video: A Dashboard That is Really a PC," printout from website http://news.com.com/1606-2_3-6052333.html (3 pages).

EXAMINER	DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP Section 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

INFORMATION DISCLOSURE CITATION

(Use several sheets if necessary)

Docket Number (Optional)	Application Number
99879-00026	11/475,847
Applicant(s) Ira Marlowe	
Filing Date 06/27/2006	**Group Art Unit** 2618

U.S. PATENT DOCUMENTS

*EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	12	6,396,164	05/28/2002	Barnea, et al.	307	10.1	10/20/1999
	13	6,389,332	05/14/2002	Hess, et al.	701	1	05/01/2000
	14	6,374,177	04/16/2002	Lee, et al.	701	200	09/20/2000
	15	6,346,917	02/12/2002	Fuchs, et al.	343	713	11/09/2000
	16	6,330,337	12/11/2001	Nicholson, et al.	381	86	01/19/2000

U.S. PATENT APPLICATION PUBLICATIONS

*EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	17	US 2003/0086699 A1	05/08/2003	Benyamin, et al.	386	96	02/15/2002
	18	US 2003/0053638 A1	03/20/2003	Yasuhara	381	86	09/13/2002
	19	US 2003/0007649 A1	01/09/2003	Riggs	381	86	06/14/2002
	20	US 2002/0197954 A1	12/26/2002	Schmitt, et al.	455	41	12/31/2001

FOREIGN PATENT DOCUMENTS

	REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation YES	Translation NO

OTHER DOCUMENTS *(Including Author, Title, Date, Pertinent Pages, Etc.)*

	21	"Blitz Safe Offers XM Cables for Radios," printout from website http://www.twice.com/article/CA190041.html?text=blitz+safe (2 pages)
	22	"Integration Products May Impact Satellite Radio," printout from website http://www.twice.com/article/CA200541.html?text=blitz+safe (3 pages)

EXAMINER	DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP Section 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

INFORMATION DISCLOSURE CITATION

(Use several sheets if necessary)

Docket Number (Optional)	Application Number
99879-00026	11/475,847
Applicant(s) Ira Marlowe	
Filing Date 06/27/2006	**Group Art Unit** 2618

U.S. PATENT DOCUMENTS

*EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	23	6,295,033	09/25/2001	Chatzipetros, et al.	343	713	05/25/1999
	24	6,278,697	08/21/2001	Brody, et al.	370	310	07/29/1997
	25	6,163,079	12/19/2000	Miyazaki, et al.	307	10.1	07/23/1998
	26	6,157,725	12/05/2000	Becker	381	86	12/10/1997
	27	6,058,319	05/02/2000	Sadler	455	569	03/05/1997

U.S. PATENT APPLICATION PUBLICATIONS

*EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	28	US 2002/0180767 A1	12/05/2002	Northway, et al.	345	698	06/04/2001
	29	US 2002/0133610 A1	09/19/2002	Hadland	709	230	05/03/2002
	30	US 2002/0091863 A1	07/11/2002	Schug	709	250	10/19/2001
	31	US 2002/0085730 A1	07/04/2002	Holland	381	334	11/19/2001

FOREIGN PATENT DOCUMENTS

	REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation YES	Translation NO

OTHER DOCUMENTS *(Including Author, Title, Date, Pertinent Pages, Etc.)*

	32	"OEM Integration Poised for Strong Growth," printout from website http://www.twice.com/article/CA200523.html?text=blitz+safe (3 pages)
	33	"Blitzsafe Overview," from Blitzsafe.com website-"The Worldwide Leader in Aftermarket Interfaces and OEM Engineering" (1 page).

EXAMINER	DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP Section 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

INFORMATION DISCLOSURE CITATION

(Use several sheets if necessary)

Docket Number (Optional)	Application Number
99879-00026	11/475,847
Applicant(s) Ira Marlowe	
Filing Date 06/27/2006	**Group Art Unit** 2618

U.S. PATENT DOCUMENTS

*EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	34	6,052,603	04/18/2000	Kinzalow, et al.	455	557	09/18/1997
	35	6,005,488	12/21/1999	Symanov, et al.	340	825.56	12/03/1997
	36	5,794,164	08/11/1998	Beckert, et al.	701	1	11/29/1995
	37	5,410,675	04/25/1995	Shreve, et al.	395	500	09/17/1993
	38	5,339,362	08/16/1994	Harris	381	86	01/07/1992

U.S. PATENT APPLICATION PUBLICATIONS

*EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	39	US 2001/0044664 A1	11/22/2001	Mueller, et al.	700	94	03/23/2001

FOREIGN PATENT DOCUMENTS

	REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation YES	Translation NO

OTHER DOCUMENTS *(Including Author, Title, Date, Pertinent Pages, Etc.)*

	40	"Delphi XM SKYFI(TM) RADIO," product description from XM Satellite Radio website (2 pages).
	41	The New Delphi XM SKYFi Radio Add it to Any Car or Home Audio System, product description from www.xmradio.com (1 page).

EXAMINER	DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP Section 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

INFORMATION DISCLOSURE CITATION

(Use several sheets if necessary)

Docket Number (Optional)	Application Number
99879-00026	11/475,847
Applicant(s) Ira Marlowe	
Filing Date 06/27/2006	**Group Art Unit** 2618

U.S. PATENT DOCUMENTS

*EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	42	4,943,978	07/24/1990	Rice	375	1	01/17/1989
	43	4,817,130	03/28/1989	Frimmel, Jr.	379	88	12/05/1986
	44	Re. 34,536	02/08/1994	Frimmel, Jr.	379	88	06/28/1990
	45	4,772,079	09/20/1988	Douglas, et al.	312	257	09/26/1986
	46	4,562,533	12/31/1985	Hodel, et al.	364	200	08/20/1984

U.S. PATENT APPLICATION PUBLICATIONS

*EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE

FOREIGN PATENT DOCUMENTS

	REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation YES	Translation NO

OTHER DOCUMENTS *(Including Author, Title, Date, Pertinent Pages, Etc.)*

	47	Mobile Electronics: News, "Soundgate to Release New GM and BMW Interfaces," December 2, 2002, ME-Mag.com (1 page).
	48	"Welcome to Ventura Technology," from Venturatechnology.com (2 pages).

EXAMINER	DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP Section 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

INFORMATION DISCLOSURE CITATION

(Use several sheets if necessary)

Docket Number (Optional)	Application Number
99879-00026	11/475,847
Applicant(s)	
Ira Marlowe	
Filing Date	**Group Art Unit**
06/27/2006	2618

U.S. PATENT DOCUMENTS

*EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	49	4,234,919	11/18/1980	Bruce, et al.	364	200	10/31/1978
	50	4,091,455	05/23/1978	Woods, et al.	364	200	12/20/1976
	51	4,068,104	01/10/1978	Werth, et al.	179	175.3	05/14/1976
	52	4,047,162	09/06/1977	Dorey, et al.	364	200	04/28/1975
	53	3,940,743	02/24/1976	Fitzgerald	340	172.5	11/05/1973

U.S. PATENT APPLICATION PUBLICATIONS

*EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE

FOREIGN PATENT DOCUMENTS

	REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation YES	Translation NO

OTHER DOCUMENTS *(Including Author, Title, Date, Pertinent Pages, Etc.)*

	54	Ventura Technology product descriptions from www.venturatechnology.net (1 page).
	55	"Phatnoise Digital Media Players," product description from http:\www.phatnoise.com (2 pages).

EXAMINER	DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP Section 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

INFORMATION DISCLOSURE CITATION

(Use several sheets if necessary)

Docket Number (Optional)	Application Number
99879-00026	11/475,847
Applicant(s) Ira Marlowe	
Filing Date 06/27/2006	**Group Art Unit** 2618

*EXAMINER INITIAL		OTHER DOCUMENTS *(Including Author, Title, Date, Pertinent Pages, Etc.)*
	56	"Automedia," magazine pages from June/July 1996 issue (2 pages).
	57	"Automedia," magazine pages from January 1998 issue (2 pages).
	58	"Automedia," magazine pages from February 1998 issue (2 pages).
	59	"Automedia," magazine pages from July 1998 issue (2 pages).
	60	"Automedia," magazine pages from September 1998 issue (2 pages).
	61	"Automedia," magazine pages from November 1998 issue (12 pages).
	62	"Automedia," magazine pages from February 1999 issue (2 pages).
	63	"Automedia," magazine pages from February 1999 issue (2 pages).
	64	"Car Stereo Review," magazine pages from June 1998 issue (5 pages).
	65	"Car Stereo Review," magazine pages from January 1999 issue (2 pages).
	66	"Car Stereo Review," magazine pages from April 1999 issue (3 pages).
	67	"Car Audio and Electronics," magazine pages from December 1998 issue (2 pages).

EXAMINER	DATE CONSIDERED

*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP Section 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

INFORMATION DISCLOSURE CITATION *(Use several sheets if necessary)*	Docket Number (Optional) 99879-00026	Application Number 11/475,847
	Applicant(s) Ira Marlwe	
	Filing Date 06/27/2006	Group Art Unit 2618

*EXAMINER INITIAL		OTHER DOCUMENTS *(Including Author, Title, Date, Pertinent Pages, Etc.)*
	68	"Car Audio and Electronics," magazine pages from April 1999 issue (2 pages).
	69	"Car Audio and Electronics," magazine pages from June 1999 issue (2 pages).
	70	"Carsound," magazine pages from May/June 1999 issue (3 pages).
	71	"Mobile Electronics Retailer," magazine pages from August 1997 issue (4 pages).
	72	"Mobile Electronics," magazine pages from July 1999 issue (7 pages).
	73	"Mobile Electronics," magazine pages from August 2000 issue (2 pages).
	74	"Cesmobile," magazine pages from January 1999 issue (3 pages).
	75	"The 12 Volt News," magazine pages from March 2002 issue (2 pages).
	76	"P.I.E. Millennium Price Guide Make the Precision Decision," Precision Interface Electronics, Inc. (6 pages).
	77	"PIE 1999 Price Guide," Precision Interface Electronics, Inc. (4 pages).
	78	"Design & Engineering Showcase Award," award presented to Precision Interface Electronics, Inc. for DPX Technology Digital Protocol Converter FRDN/PC-KNW, 2000 International CES (1 page).
	79	"Design & Engineering Showcase Award," award presented to Precision Interface Electronics, Inc. for DPX Technology Digital Protocol Converter GM9/PC-KNW, 2000 International CES (1 page).

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INFORMATION DISCLOSURE CITATION *(Use several sheets if necessary)*	Docket Number (Optional) 99879-00026	Application Number 11/475,847
	Applicant(s) Ira Marlowe	
	Filing Date 06/27/2006	Group Art Unit 2618

*EXAMINER INITIAL		OTHER DOCUMENTS *(Including Author, Title, Date, Pertinent Pages, Etc.)*
	80	Invoice dated January 28, 1998 from Precision Interface Electronics, Inc. for "Ford FCU-Sanyo Protocol," and "Ford RCU Sanyo Protocol" (1 page).
	81	Invoice dated January 29, 1999 from Precision Interface Electronics, Inc. for "Ford NCU-Sanyo Protocol" (1 page).
	82	Invoice dated April 26, 1999 from Precision Interface Electronics, Inc. for "9 Pin GM-Kenwood Protocol," and "10 Pin GM-Kenwood Protocol" (1 page).
	83	Invoice dated April 27, 1999 from Precision Interface Electronics, Inc. for "9 Pin GM-Kenwood Protocol" (1 page).
	84	Invoice dated May 27, 1999 from Precision Interface Electronics, Inc. for "10 Pin GM-Kenwood Protocol," and "9 Pin GM-Kenwood Protocol" (1 page).
	85	Invoice dated March 20, 2000 from Precision Interface Electronics, Inc. for "98-2000 Pre-Wired VW 6 DIS" (1 page).
	86	Invoice dated March 20, 2000 from Precision Interface Electronics, Inc. for "98-2000 Pre-Wired VW 8 DIS," and "1998-2000 Audi to Pan 8 PC" (1 page).
	87	Invoice dated December 17, 2001 from Precision Interface Electronics, Inc. for "98-02 Ford/Lincoln/Mercury" (1 page).
	88	Invoice dated December 17, 2001 from Precision Interface Electronics, Inc. for "98-02 Ford/Lincoln/Mercury" (1 page).
	89	Invoice dated May 29, 2002 from Precision Interface Electronics, Inc. for "95-01 GMC/Chev/Pontiac AUX," and "98-02 Ford/Lincoln/Merc AU" (1 page).
	90	Toyota/Avox Interface Rev. Eng., Peripheral Model TIAS, created February 15, 1998 (1 page).
	91	GM/Kenwood Translator diagram, created February 4, 1999 (2 pages).

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	Applicant(s) Ira Marlowe	
	Filing Date 06/27/2006	Group Art Unit 2618

*EXAMINER INITIAL		OTHER DOCUMENTS *(Including Author, Title, Date, Pertinent Pages, Etc.)*
	92	Ford/Audiovox Translator diagram, created December 29, 1997 (2 pages).
	93	Component Side Silkscreen, created December 31, 1997 (2 pages).
	94	Component Xray, created February 4, 1992 (2 pages).
	95	"SoundGate, Ventura Announce Sophisticated OEM-Integration Interfaces," article from The 12 Volt News, December 2002 (1 page).
	96	"XMDirect Smart Digital Adapter," product description (3 pages).
	97	"Breaking Protocol A Look at BlitzSafe's New DMX Protocol Converter Technology," November 1998 printout from http://www.blitzsafe.com/blitz_news/news101998/body_news101998.html (2 pages).
	98	"PIE Virtual Catalog," printout from http://web.archive.org/web/19981205005802/http:/www.pie.net/sec12sbl.htm (2 pages).
	99	"The UniLink Project," printout from website (2 pages).
	100	"CD Changer Interfaces, "printout from http://web.archive.org/web/19991012021952/soundgate.com/cd-inter.html (1 page).
	101	"Digital Obsessions A Spotlight on Audio Gadgetry, ZDNet Music: The PhatNoise Car Audio System," printout from http://web.archive.org/web/20000815203327/music.zdnet.com/features/phatnoise (3 pages).
	102	"Bypassing and Switching With the CD4053 CMOS Analog MUX," printout from website (4 pages).
	103	"Device Profile: PhatNoise PhatBox Car MP3 Player," November 1, 2000, printout from http://techupdate.zdnet.com/techupdate/stories/main/0,14179,2649276,00.htm (4 pages).

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99879-00026	11/475,847
Applicant(s) Ira Marlowe	
Filing Date 06/27/2006	**Group Art Unit** 2618

*EXAMINER INITIAL		OTHER DOCUMENTS *(Including Author, Title, Date, Pertinent Pages, Etc.)*
	104	"The EZ Protoboard," printout from http://web.archive.org/web/20010613095105/http:/www.ajusd.org/~edward/ezproto (2 pages).
	105	"TDIClub Forums: Reverse Engineering CD Changer Progress,," April 3, 2001, printout from website (3 pages).
	106	"TDIClub Forums: Reverse Engineering CD Changer Progress Reports,," April 5, 2001, printout from website (8 pages).
	107	"Multi Technology Equipment - Home of the Neo MP3 Player," printout from http://web.archive.org/web/20010413222617/ssiamerica.com/products/neo35/ (1 page).
	108	"TDIClub Forums: Reverse Engineering CD Changer Protocol Update," April 18, 2001, printout from website (3 pages).
	109	"The Car CD Changer Interface Page," printout from website (10 pages).
	110	"SourceForge.net: Project Info - GNUlink," printout from http://sourceforge.net/projects/gnunilink/ (3 pages).
	111	"EZ Protoboard News," printout from website (3 pages).
	112	"GNUnilink - For All Your AUX-IN Needs...., "printout from http://gnunilink.sourceforge.net/ (4 pages).
	113	"VWCDPIC News, "printout from http://web.archive.org/web/20020701101541/http:/www.ajusd.org/~edward/vwcdpic/ (8 pages).
	114	"VWCDPIC News, "printout from http://web.archive.org/web/20021009014959/http:/www.ajusd.org/~edward/vwcdpic/ (10 pages).
	115	"Neo Car Jukebox MP3 Player," printout from website (3 pages).

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Applicant(s) Ira Marlowe	
Filing Date 06/27/2006	**Group Art Unit** 2618

*EXAMINER INITIAL		OTHER DOCUMENTS *(Including Author, Title, Date, Pertinent Pages, Etc.)*
	116	"Mobile Electronic E-Newsletter" dated January 13, 2005 (4 pages)
	117	"Axxess Introduces Two iPod Integration Units" product description dated January 19, 2005 (1 page).
	118	"Even More iPod Adapters On the Way," printout from twice.com website (2 pages).
	119	"Alpine Showing First MOST-Ready Product," printout from twice.com website (2 pages).
	120	"Bluetooth Gradually Enters Car Audio," prinout from twice.com website (2 pages).

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P09B/REV04

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/475,847	06/27/2006	Ira Marlowe	99879-00026	9001

27614 7590 09/09/2008

MCCARTER & ENGLISH, LLP
FOUR GATEWAY CENTER
100 MULBERRY STREET
NEWARK, NJ 07102

EXAMINER	
KURR, JASON RICHARD	
ART UNIT	PAPER NUMBER
2615	
MAIL DATE	DELIVERY MODE
09/09/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	11/475,847	MARLOWE, IRA	
	Examiner	Art Unit	
	JASON R. KURR	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *1* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 June 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-91* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-91* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-90, drawn to a system and method of integrating a portable device with a car audio/video system, classified in class 381, subclass 86.

II. Claim 91, drawn to a docking station comprising a base portion, a bottom member and a top member, classified in class 710, subclass 303.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination (I) as claimed does not require the particulars of the subcombination (II) as claimed because the communication between the portable device and the car audio/video system is not solely based on a docking station having the structure described in the subcombination. The combination describes other means of communication such as wireless communication or a docking slot within the car audio/video system. The subcombination has separate utility such as providing power to a portable device.

The examiner has required restriction between combination and subcombination inventions. Where applicant elects a subcombination, and claims thereto are

subsequently found allowable, any claim(s) depending from or otherwise requiring all the limitations of the allowable subcombination will be examined for patentability in accordance with 37 CFR 1.104. See MPEP § 821.04(a). Applicant is advised that if any claim presented in a continuation or divisional application is anticipated by, or includes all the limitations of, a claim that is allowable in the present application, such claim may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application.

Restriction for examination purposes as indicated is proper because all these inventions listed in this action are independent or distinct for the reasons given above and there would be a serious search and examination burden if restriction were not required because one or more of the following reasons apply:

(a) the inventions have acquired a separate status in the art in view of their different classification;

(b) the inventions have acquired a separate status in the art due to their recognized divergent subject matter;

(c) the inventions require a different field of search (for example, searching different classes/subclasses or electronic resources, or employing different search queries);

(d) the prior art applicable to one invention would not likely be applicable to another invention;

(e) the inventions are likely to raise different non-prior art issues under 35 U.S.C. 101 and/or 35 U.S.C. 112, first paragraph.

This application contains claims directed to the following patentably distinct species of the claimed invention. If an election of group I is made, a further election of a related species must also be made.

Group I: Species 1 is drawn to the use of a first and second wireless interface as the communication means between the car audio/video system and the portable device, as in figures 18-19 and 22-23, claims 1-38 and 71-90.

Group I: Species 2 is drawn to the use of a docking slot as the communication means between the car audio/video system and the portable device, as in figures 20-21, claims 39-70.

Applicant is advised that the reply to this requirement to be complete must include (i) an election of a invention to be examined even though the requirement may be traversed (37 CFR 1.143) **and (ii) identification of the claims encompassing the elected invention**.

The election of an invention may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse. Traversal must be presented at the time of election in order to be considered timely. Failure to timely traverse the requirement will result in the loss of right to petition under 37 CFR 1.144. If claims are added after the election, applicant must indicate which of these claims are readable on the elected invention.

If claims are added after the election, applicant must indicate which of these claims are readable upon the elected invention.

Should applicant traverse on the ground that the inventions are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JASON R. KURR whose telephone number is (571)272-0552. The examiner can normally be reached on M-F 10:00am to 6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on (571) 273-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jason R Kurr/
Examiner, Art Unit 2615

/Vivian Chin/
Supervisory Patent Examiner, Art Unit 2615

Index of Claims

Application/Control No.	Applicant(s)/Patent under Reexamination
11/475,847	MARLOWE, IRA
Examiner	**Art Unit**
JASON R. KURR	2615

√	Rejected	–	(Through numeral) Cancelled	N	Non-Elected	A	Appeal
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Application Number	Application/Control No.	Applicant(s)/Patent under Reexamination	
	11/475,847	MARLOWE, IRA	
	Examiner	Art Unit	
	JASON R. KURR	2615	

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Ira Marlowe

Serial No.: 11/475,847

Filed: 06/27/2006

Title: Multimedia Device Integration System

Examiner: Kurr, Jason R.

Art Unit: 2614

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE

Sir:

This is a response to the outstanding Restriction Requirement mailed September 9, 2008. The time period for response is extendible to and including March 9, 2009.

Amendments to the Claims begin on page 2 of this response.

Remarks begin on page 22 of this response.

AMENDMENTS TO THE CLAIMS

1. (Original) A multimedia device integration system comprising:

a car audio system having a display associated therewith;

a portable device external to the car audio system;

a first wireless interface in communication with the car audio system;

a second wireless interface in communication with the portable device, the first and second wireless interfaces establishing a wireless communications link between the car audio system and the portable device; and

an integration subsystem for generating a device presence signal for maintaining the car audio system in a state responsive to the portable device, wherein the integration subsystem transmits the device presence signal to the car audio system, channels audio from the portable device to the car audio system using the wireless communications link, processes video information generated by the portable device into a format compatible with the car audio system, and transmits the processed video information to the car audio system using the wireless communications link for displaying the processed video information on the display of the car audio system.

2. (Original) The system of Claim 1, wherein the integration subsystem processes data generated by the portable device into a format compatible with the car audio system and displays the processed data on the display of the car audio system.

3. (Original) The system of Claim 1, wherein the integration subsystem receives control commands issued at the car audio system and transmitted over the wireless communications link, processes the commands into a format compatible with the portable device, and dispatches the processed commands to the portable device for execution thereby.

4. (Original) The system of Claim 1, wherein the integration subsystem further comprises a voice recognition subsystem for processing spoken control commands issued by a user.

5. (Original) The system of Claim 4, wherein the integration subsystem retrieves an audio file or a video file from the portable device in response to a spoken command.

6. (Original) The system of Claim 4, wherein the integration subsystem further comprises a speech synthesizer for generating synthesized speech corresponding to data generated by the portable device.

7. (Original) The system of Claim 1, wherein the car audio system comprises an OEM car audio system.

8. (Original) The system of Claim 1, wherein the car audio system comprises an after-market car audio system.

9. (Original) The system of Claim 1, wherein the portable device comprises a portable receiver.

10. (Original) The system of Claim 10, wherein the portable receiver comprises a digital audio broadcast (DAB) receiver, a high-definition (HD) radio receiver, or a satellite receiver.

11. (Original) The system of Claim 1, wherein the portable device comprises a portable digital media player.

12. (Original) The system of Claim 11, wherein the portable digital media player comprises a video device, a portable media center, a portable media player, an MP3 player, an MP4 player, a WMV player, an Apple iPod, or an Apple video iPod.

13. (Original) The system of Claim 1, wherein the portable device comprises a cellular telephone.

14. (Original) The system of Claim 1, further comprising a non-wireless connection established between the car audio system and the portable device for exchanging data, commands, audio and video signals between the car audio system and the portable device.

15. (Original) The system of Claim 1, wherein the integration subsystem is positioned within the portable device.

16. (Original) The system of Claim 1, wherein the integration subsystem is positioned within the car audio system.

17. (Original) The system of Claim 1, wherein the video information comprises a video file stored on the portable device.

18. (Original) The system of Claim 1, wherein the video information comprises a picture stored on the portable device.

19. (Original) The system of Claim 1, wherein the video information comprises a television signal received by the portable device.

20. (Original) A multimedia device inte gration system comprising:

a car video system having a display associated therewith;

a portable device external to the car video system;

a first wireless interface in communication with the car video system;

a second wireless interface in communication with the portable device, the first and second wireless interfaces establishing a wireless communications link between the car video system and the portable device; and

an integration subsystem for generating a device presence signal for maintaining the car video system in a state responsive to the portable device, wherein the integration subsystem transmits the device presence signal to the car video system, channels audio from the portable device to the car video system using the wireless communications link, processes video information generated by the portable device into a format compatible with the car video system, and transmits the processed video information to the car video system using the wireless communications link for displaying the processed video information on the display of the car video system.

21. (Original) The system of Claim 20, wherein the integration subsystem processes data generated by the portable device into a format compatible with the car video system and displays the processed data on the display of the car video system.

22. (Original) The system of Claim 20, wherein the integration subsystem receives control commands issued at the car video system and transmitted over the wireless communications link, processes the commands into a format compatible with the portable device, and dispatches the processed commands to the portable device for execution thereby.

23. (Original) The system of Claim 20, wherein the integration subsystem further comprises a voice recognition subsystem for processing spoken control commands issued by a user.

24. (Original) The system of Claim 23, wherein the integration subsystem retrieves an audio file or a video file from the portable device in response to a spoken command.

25. (Original) The system of Claim 23, wherein the integration subsystem further comprises a speech synthesizer for generating synthesized speech corresponding to data generated by the portable device.

26. (Original) The system of Claim 20, wherein the car video system comprises an OEM car video system.

27. (Original) The system of Claim 20, wherein the car video system comprises an after-market car video system.

28. (Original) The system of Claim 20, wherein the portable device comprises a portable receiver.

29. (Original) The system of Claim 28, wherein the portable receiver comprises a digital audio broadcast (DAB) receiver, a high-definition (HD) radio receiver, or a satellite receiver.

30. (Original) The system of Claim 20, wherein the portable device comprises a portable digital media player.

31. (Original) The system of Claim 30, wherein the portable digital media player comprises a video device, a portable media center, a portable media player, an MP3 player, an MP4 player, a WMV player, an Apple iPod, or an Apple video iPod.

32. (Original) The system of Claim 20, wherein the portable device comprises a cellular telephone.

33. (Original) The s ystem of Claim 20, further comprising a non-wireless connection established between the car video system and the portable device for exchanging data, commands, audio and video signals between the car video system and the portable device.

34. (Original) The system of Claim 20, wherein the integration subsystem is positioned within the portable device.

35. (Original) The system of Claim 20, wherein the integration subsystem is positioned within the car video system.

36. (Original) The system of Claim 20, wherein the video information comprises a video file stored on the portable device.

37. (Original) The s ystem of Claim 20, wherein the video information comprises a picture stored on the portable device.

38. (Original) The system of Claim 20, wherein the video information comprises a television signal received by the portable device.

39. (Original) A multimedia device inte gration system comprising:

a car audio system;

a portable device external to the car audio system;

a docking slot formed in the car audio system for receiving the portable device and establishing electrical communication between the car audio system and the portable device; and

an integration subsystem for generating a device presence signal for maintaining the car audio system in a state responsive to the portable device, wherein the integration subsystem receives data generated by the portable device, processes the data into a format compatible with the car audio system, and transmits the processed data, the device presence signal, and audio signals to the car audio system.

40. (Original) The system of Claim 39, wherein the processed data is displayed on a display of the car audio system.

41. (Original) The system of Claim 39, wherein the integration subsystem processes a video file stored on the portable device into a format compatible with the car audio system and transmits the video file to the car audio system for displaying the video file on a display of the car audio system.

42. (Original) The system of Claim 39, wherein the integration subsystem receives control commands issued at the car audio system, processes the commands into a format compatible with the portable device, and dispatches the processed commands to the portable device for execution thereby.

43. (Original) The system of Claim 39, wherein the integration subsystem further comprises a voice recognition subsystem for processing spoken control commands issued by a user.

44. (Original) The system of Claim 43, wherein the integration subsystem retrieves an audio file or a video file from the portable device in response to a spoken command.

45. (Original) The system of Claim 43, wherein the integration subsystem further comprises a speech synthesizer for generating synthesized speech corresponding to data generated by the portable device.

46. (Original) The system of Claim 39, wherein the car audio system comprises an OEM car audio system.

47. (Original) The system of Claim 39, wherein the car audio system comprises an after-market car audio system.

48. (Original) The system of Claim 39, wherein the portable device comprises a portable receiver.

49. (Original) The system of Claim 48, wherein the portable receiver comprises a digital audio broadcast (DAB) receiver, a high-definition (HD) radio receiver, or a satellite receiver.

50. (Original) The system of Claim 39, wherein the portable device comprises a portable digital media player.

51. (Original) The system of Claim 50, wherein the portable digital media player comprises a video device, a portable media center, a portable media player, an MP3 player, an MP4 player, a WMV player, an Apple iPod, or an Apple video iPod.

52. (Original) The system of Claim 39, wherein the portable device comprises a cellular telephone.

53. (Original) The system of Claim 39, wherein the integration subsystem is positioned within the portable device.

54. (Original) The system of Claim 39, wherein the integration subsystem is positioned within the car audio system.

55. (Original) A multimedia device inte gration system comprising:

a car video system;

a portable device external to the car video system;

a docking slot formed in the car video system for receiving the portable device and establishing electrical communication between the car video system and the portable device; and

an integration subsystem for generating a device presence signal for maintaining the car video system in a state responsive to the portable device, wherein the integration subsystem receives data generated by the portable device, processes the data into a format compatible with the car video system, and transmits the processed data, the device presence signal, audio signals, and video signals to the car video system.

56. (Original) The system of Claim 55, wherein the processed data is displayed on a display of the car video system.

57. (Original) The system of Claim 55, wherein the integration subsystem processes a video file stored on the portable device into a format compatible with the car video system and transmits

the video file to the car video system for displaying the video file on a display of the car video system.

58. (Original) The system of Claim 55, wherein the integration subsystem receives control commands issued at the car video system, processes the commands into a format compatible with the portable device, and dispatches the processed commands to the portable device for execution thereby.

59. (Original) The system of Claim 55, wherein the integration subsystem further comprises a voice recognition subsystem for processing spoken control commands issued by a user.

60. (Original) The system of Claim 59, wherein the integration subsystem retrieves an audio file or a video file from the portable device in response to a spoken command.

61. (Original) The system of Claim 59, wherein the integration subsystem further comprises a speech synthesizer for generating synthesized speech corresponding to data generated by the portable device.

62. (Original) The system of Claim 55, wherein the car video system comprises an OEM car video system.

63. (Original) The system of Claim 55, wherein the car video system comprises an after-market car video system.

64. (Original) The system of Claim 55, wherein the portable device comprises a portable receiver.

65. (Original) The system of Claim 64, wherein the portable receiver comprises a digital audio broadcast (DAB) receiver, a high-definition (HD) radio receiver, or a satellite receiver.

66. (Original) The system of Claim 55, wherein the portable device comprises a portable digital media player.

67. (Original) The system of Claim 66, wherein the portable digital media player comprises a video device, a portable media center, a portable media player, an MP3 player, an MP4 player, a WMV player, an Apple iPod, or an Apple video iPod.

68. (Original) The system of Claim 55, wherein the portable device comprises a cellular telephone.

69. (Original) The system of Claim 55, wherein the integration subsystem is positioned within the portable device.

70. (Original) The system of Claim 55, wherein the integration subsystem is positioned within the car video system.

71. (Original) A method for wirelessly integrating a portable device for use with a car audio system comprising:

establishing a wireless communications link between the car audio system and the portable device;

generating a device presence signal for maintaining the car audio system in a state responsive to the portable device;

transmitting the device presence signal to the car audio system over the wireless communications link;

processing video information generated by the portable device into a format compatible with the car audio system;

transmitting the processed video information and audio signals generated by the portable device to the car audio system over the wireless communications link;

displaying the processed video information on a display of the car audio system; and

playing the audio signals over the car audio system.

72. (Original) The method of Claim 71, further comprising processing data generated by the portable device into a format compatible with the car audio system.

73. (Original) The method of Claim 72, further comprising transmitting the processed data over the wireless communications link to the car audio system.

74. (Original) The method of Claim 73, further comprising displaying the processed data on a display of the car audio system.

75. (Original) The method of Claim 71, further comprising transmitting control commands issued by a user at the car audio system over the wireless communications link.

76. (Original) The method of Claim 75, further comprising receiving the control commands at the portable device and processing the control commands into a format compatible with the portable device.

77. (Original) The method of Claim 76, further comprising dispatching the processed control commands to the portable device for execution thereby.

78. (Original) The method of Claim 71, further comprising receiving spoken control commands with a voice recognition subsystem and processing the spoken control commands into a format compatible with the portable device.

79. (Original) The method of Claim 78, further comprising dispatching the processed control commands to the portable device for execution thereby.

80. (Original) The method of Claim 71, further comprising generating synthesized speech corresponding to data generated by the portable device.

81. (Original) A method for wirelessly integrating a portable device for use with a car video system comprising:

establishing a wireless communications link between the car video system and the portable device;

generating a device presence signal for maintaining the car video system in a state responsive to the portable device;

transmitting the device presence signal to the car video system over the wireless communications link;

processing video information generated by the portable device into a format compatible with the car video system;

transmitting the processed video information and audio signals generated by the portable device to the car video system over the wireless communications link;

displaying the processed video information on a display of the car video system; and

playing the audio signals over the car video system.

82. (Original) The method of Claim 81, further comprising processing data generated by the portable device into a format compatible with the car video system.

83. (Original) The method of Claim 82, further comprising transmitting the processed data over the wireless communications link to the car video system.

84. (Original) The method of Claim 83, further comprising displaying the processed data on a display of the car video system.

85. (Original) The method of Claim 81, further comprising transmitting control commands issued by a user at the car video system over the wireless communications link.

86. (Original) The method of Claim 85, further comprising receiving the control commands at the portable device and processing the control commands into a format compatible with the portable device.

87. (Original) The method of Claim 86, further comprising dispatching the processed control commands to the portable device for execution thereby.

88. (Original) The method of Claim 81, further comprising receiving spoken control commands with a voice recognition subsystem and processing the spoken control commands into a format compatible with the portable device.

89. (Original) The method of Claim 88, further comprising dispatching the processed control commands to the portable device for execution thereby.

90. (Original) The method of Claim 81, further comprising generating synthesized speech corresponding to data generated by the portable device.

91. (Original) A docking station for docking and integrating a portable device for use with a car stereo, comprising:

a base portion;

a bottom member connected to the base portion;

a top member removably connected to the base portion, the base portion, bottom member, and top member defining a cavity for receiving a portable device; and

an integration device connected to the base portion for integrating the portable device with a car stereo.

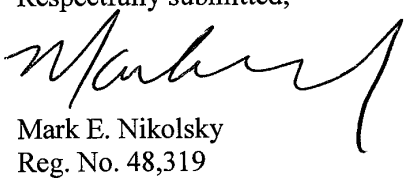
REMARKS

Attorney for Applicant has carefully reviewed the outstanding Restriction Requirement on the above-identified application.

In response to the Restriction Requirement, Applicant provisionally elects, without traverse, to prosecute the claims of Invention I drawn to a system and method of integrating a portable device with a car audio/video system. Applicants respectfully submits that claims 1-90 read on Invention I. Applicant further provisionally elects, without traverse, to prosecute Species 1, drawn to first and second wireless interfaces between a car audio/video system and a portable device. Applicant makes these elections to advance prosecution of this matter, and makes no representations as to the merits of the Restriction Requirement.

All issues raised in the Restriction Requirement are believed to have been addressed. Applicants respectfully submit that the pending claims are directed to the same invention and are in condition for allowance. Examination is requested and favorable action solicited.

Respectfully submitted,



Date: 3/9/2009

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PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a) (Small Entity)	Docket No. 99843-00011

In Re Application Of: **Fernando J. Muzzio, Lev Tsygan and Semen Dukler**

Application No.	Filing Date	Examiner	Customer No.	Group Art Unit	Confirmation No.
11/267,039	11/04/2005	Miller, Bena B.	27614	3725	8145

Invention: **Uniform Shear Application System and Methods Relating Thereto**

COMMISSIONER FOR PATENTS:

This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a response to the Office Action of 09/09/2008 (Date) in the above-identified application.

The requested extension is as follows (check time period desired):

☐ One month ☐ Two months ☒ Three months ☐ Four months ☐ Five months

from: 12/09/2008 (Date) until: 03/09/2009 (Date)

☒ Applicant claims small entity status. See 37 CFR 1.27

The fee for the extension of time is $555 and is to be paid as follows:

☐ A check in the amount of the fee is enclosed.

☒ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account No. 503571

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Dated: 3/9/09

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P12SMALL/REV09

PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a) (Small Entity)	Docket No. 99843-00011

In Re Application Of: **Fernando J. Muzzio, Lev Tsygan and Semen Dukler**

Application No.	Filing Date	Examiner	Customer No.	Group Art Unit	Confirmation No.
11/267,039	11/04/2005	Miller, Bena B.	27614	3725	8145

Invention: **Uniform Shear Application System and Methods Relating Thereto**

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P12SMALL/REV09

TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT (Under 37 CFR 1.97(b) or 1.97(c))	Docket No. 99879-00026

In Re Application Of: **Ira Marlowe**

Application No.	Filing Date	Examiner	Customer No.	Group Art Unit	Confirmation No.
11/475,847	06/27/2006	Kurr, Jason R.	27614	2614	9001

Title: **Multimedia Device Integration System**

Address to:
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

37 CFR 1.97(b)

1. ☒ The Information Disclosure Statement submitted herewith is being filed within three months of the filing of a national application other than a continued prosecution application under 37 CFR 1.53(d); within three months of the date of entry of the national stage as set forth in 37 CFR 1.491 in an international application; before the mailing of a first Office Action on the merits, or before the mailing of a first Office Action after the filing of a request for continued examination under 37 CFR 1.114.

37 CFR 1.97(c)

2. ☐ The Information Disclosure Statement submitted herewith is being filed after the period specified in 37 CFR 1.97(b), provided that the Information Disclosure Statement is filed before the mailing date of a Final Action under 37 CFR 1.113, a Notice of Allowance under 37 CFR 1.311, or an Action that otherwise closes prosecution in the application, and is accompanied by one of:

   ☐ the statement specified in 37 CFR 1.97(e);

   OR

   ☐ the fee set forth in 37 CFR 1.17(p).

P10A/REV06

TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT (Under 37 CFR 1.97(b) or 1.97(c))	Docket No. 99879-00026

In Re Application of: **Ira Marlowe**

Application No.	Filing Date	Examiner	Customer No.	Group Art Unit	Confirmation No.
11/475,847	06/27/2006	Kurr, Jason R.	27614	2614	9001

Title: **Multimedia Device Integration System**

Payment of Fee

(Only complete if Applicant elects to pay the fee set forth in 37 CFR 1.17(p))

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☒ The Director is hereby authorized to charge and credit Deposit Account No. 503571 as described below.

- ☐ Charge the amount of
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Signature

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P10A/REV06

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 1 of 7

Complete if Known	
Application Number	11/475,847
Filing Date	06/27/2006
First Named Inventor	Ira Marlowe
Art Unit	2614
Examiner Name	Kurr, Jason R.
Attorney Docket Number	99879-00026

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	US- 6,608,399	08/19/2003	McConnell, et al.	
	2	US- 6,629,197	09/30/2003	Bhogal, et al.	
	3	US- 6,529,804	03/04/2003	Draggon, et al.	
	4	US- 6,175,789	01/16/2001	Beckert, et al.	
	5	US- 2007/0293183	12/20/2007	Marlowe	
	6	US- 2004/0145457	07/29/2004	Schofield, et al.	
	7	US- 2004/0266336	12/30/2004	Patsiokas, et al.	
	8	US- 2003/0026440	02/03/2003	Lazzeroni, et al.	
	9	US- 2002/0084910	07/04/2002	Owens, et al.	
	10	US- 7,489,786	02/10/2009	Marlowe	
	11	US- 7,288,918	10/30/2007	DiStefano	
	12	US- 6,622,083	09/16/2003	Knockeart, et al.	
	13	US- 6,389,560	05/14/2002	Chew	
	14	US- 5,859,628	01/12/1999	Ross, et al.	
	15	US- 5,808,373	09/15/1998	Hamanishi, et al.	
	16	US- 2008/0125031 A1	05/29/2008	Fadell, et al.	
	17	US- 2008/0123285 A1	05/29/2008	Fadell, et al.	
	18	US- 2005/0172001 A1	08/04/2005	Zaner, et al.	
	19	US- 2003/0156200 A1	08/21/2003	Romano, et al.	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]-Number[4]-Kind Code[5] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T[6]
	20	WO 2008/002954	01/03/2008	Ira Marlowe		
	21	WO 2006/094281	09/08/2006	Ira Marlowe		
	22	WO 2004/053722	06/24/2004	BlitzSafe of America, Inc		
	23	KR 1020010035788 English Abstract	05/07/2001	Gyu Jin Park		
	24	KR 1020010059192 English Abstract	07/06/2001	Hyundai Motor Company		
	25	JP 2000-286874 with English translation	10/13/2000	Suzuki Motor Corp.		

Examiner Signature		Date Considered	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 2 of 7

Complete if Known	
Application Number	11/475,847
Filing Date	06/27/2006
First Named Inventor	Ira M. Marlowe
Art Unit	2614
Examiner Name	Kurr, Jason R.
Attorney Docket Number	99879-00026

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	26	US- 6,539,358	03/25/2003	Coon, et al.	
	27	US- 5,897,155	04/27/1999	Kerner, et al.	
	28	US- 6,397,086	05/28/2002	Chen	
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	29	JP 11-273321 with English Translation	10/08/1999	Clarion Co. Ltd.		

Examiner Signature		Date Considered	

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This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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Sheet 3 of 7

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Application Number	11/475,847
Filing Date	06/27/2006
First Named Inventor	Ira Marlowe
Art Unit	2614
Examiner Name	Kurr, Jason R.
Attorney Docket Number	99879-00026

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
	30	Gilroy, Amy, "Blitz Safe Bows New SkyLink," This Week in Consumer Electronics (TWICE), November 24, 2003 (1 page)	
	31	Gilroy, Amy, "XM Exceeds Forecasts," This Week in Consumer Electronics (TWICE), November 24, 2003 (2 pages)	
	32	"BlitzSafe News," http://www.blitzsafe.com/blitz_news/news031124/body_news031124.html, November 24, 2003 (1 page)	
	33	"XM Satellite Radio Introduces XM Direct," http://www.blitzsafe.com/blitz_news/news031117/body_news031117.html, November 17, 2003 (3 pages)	
	34	"Digital Audio Radio," http://www.blitzsafe.com/blitz_news/news052003a/body_news052003a.html, 2003 (4 pages)	
	35	"BlitzSafe Winner of 2003 Autosound Grand Prix Accessories Supplier of the Year," Audiovideo Magazine, March 3, 2003 (1 page)	
	36	"BlitzSafe Releases World's First XM Satellite Radio, Auxiliary and CD Interfaces for Landrover Freelander 2003," http://www.blitzsafe.com/blitz_news/news092002b/body_news09002b.html, September 16, 2002 (1 page)	
	37	"BlitzSafe Releases World's First XM Satellite Radio, Auxiliary and CD Interfaces for Lexus," http://www.blitzsafe.com/blitz_news/news092002a/body_news09002a.html, September 14, 2002 (1 page)	
	38	Pohlmann, et al. "Satellite Radio A to Z," http://www.blitzsafe.com/blitz_news/news072002a/body_news072002a.html, 2002 (7 pages)	
	39	"BlitzSafe Launches XM and Six Interfaces for the 'Mini Cooper'," http://www.blitzsafe.com/blitz_news/news062002a/body_news062002a.html, June 25, 2002 (1 page)	

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Sheet 4 of 7

Complete if Known	
Application Number	11/475,847
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First Named Inventor	Ira Marlowe
Art Unit	2614
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NON PATENT LITERATURE DOCUMENTS

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	40	"Digital Connect," Mobile Electronics, May, 2002 (1 page)	
	41	Solomon, Brett, "Selling 12V: OEM Integration," Dealerscope, May, 2002 (1 page)	
	42	"XM Xtra:," Mobile Entertainment, April/May, 2002 (1 page)	
	43	"Blitzsafe Introduces New Line of XM Digital Connect Cables," The 12 Volt News, February 20, 2002 (2 pages)	
	44	"XM Radio Losses Mount As Do Subscribers," http://www.blitzsafe.com/blitz_news/news012002d/body_news012002d.html, January 24, 2002 (3 pages)	
	45	"Blitzsafe Expects 3 Mil. XM Subscribers Within Three Years," http://www.blitzsafe.com/blitz_news/news012002c/body_news012002c.html., January, 2002 (1 page)	
	46	"XM Signs Over 30,000 Subscribers in First 8 Weeks," XM Radio, January 7, 2002 (4 pages)	
	47	"BlitzSafe Unveils the First DVD Interface," Automedia, February, 1999 (1 page)	
	48	"MBALP V.2A2 CD Changer Converter Mercedes Benz Model for 1997 and 1996," http://www.blitzsafe.com/blitz_news/pr02111996/body_pr02111996.html, June 11, 1996 (1 page)	
	49	"CD Changer Converter - Porsche Model Year 1996," http://www.blitzsafe.com/blitz_news/pr02071996/body_pr02071996.html, February 7, 1996 (1 page)	

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	50	"CD Changer Converter - Mercedes Benz 1996 MY," http://www.blitzsafe.com/blitz_news/pr08231995/body_pr08231995.html, August 23, 1995 (1 page)	
	51	Copy of Office Action dated June 5, 2006, from co-pending Application Serial No.: 10/316,961 (40 pages)	
	52	Copy of Office Action dated November 14, 2006, from co-pending Application Serial No.: 10/316,961 (51 pages)	
	53	Copy of Office Action dated April 19, 2007, from co-pending Application Serial No.: 10/316,961 (69 pages)	
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	63	Copy of Interview Summary dated October 26, 2007, from co-pending Application Serial No.: 10/732,909 (3 pages)	
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	68	Russian Official Action with translation, issued by the Patent Office of the Russian Federation on Dec. 24, 2007, in connection with Russian App. No. 2006101060 (21 pages)	
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(54) Title: MULTIMEDIA DEVICE INTEGRATION SYSTEM

(57) Abstract: A multimedia device integration system is provided. One or more after-market audio or video devices, such as a CD player, CD changer, digital media device, satellite receiver, DAB receiver, video device, digital camera, cellular telephone, portable navigation device, or any other device or combinations thereof, is integrated for use with an existing OEM or after-market car stereo or video system, wherein control commands can be issued at the car stereo or video system and data from the after-market device can be displayed on the car stereo or video system. Instructions generated at the car stereo or video system are received, processed, converted into a format recognizable by the after- market device, and dispatched to the after-market device for execution. Information from the after-market device is converted into a format recognizable by the car stereo or video system, and dispatched to the car stereo or video system for display thereon. The integration subsystem could be provided as an integrated circuit that can be installed in a car audiovisual system or a portable audiovisual device. A wireless or inductive battery charging circuit could be provided for wirelessly or inductively charging a battery of a portable after-market device.

WO 2008/002954 A2

MULTIMEDIA DEVICE INTEGRATION SYSTEM

SPECIFICATION

BACKGROUND OF THE INVENTION

FIELD OF THE INVENTION

The present invention relates to a multimedia device integration system. More specifically, the present invention relates to a multimedia device integration system for integrating after-market components such as satellite receivers, CD players, CD changers, digital media devices (*e.g.*, MP3 players, MP4 players, WMV players, Apple iPod devices, portable media centers, and other devices), Digital Audio Broadcast (DAB) receivers, auxiliary audio sources, video devices (*e.g.*, DVD players), cellular telephones, and other devices for use with factory-installed (OEM) or after-market car stereo and video systems.

RELATED ART

Automobile audio systems have continued to advance in complexity and the number of options available to automobile purchasers. Early audio systems offered a simple AM and/or FM tuner, and perhaps an analog tape deck for allowing cassettes, 8-tracks, and other types of tapes to be played while driving. Such early systems were closed, in that external devices could not be easily integrated therewith.

With advances in digital technology, CD players have been included with automobile audio systems. Original Equipment Manufacturers (OEMs) often produce car stereos having CD players and/or changers for allowing CDs to be played while driving. However, such systems often include proprietary buses and protocols that do not allow after-market audio systems, such as satellite receivers (e.g., XM satellite tuners), digital audio broadcast (DAB) receivers, digital media players (*e.g.*, Apple iPod, MP3, MP4, WMV, etc.), CD changers, auxiliary input sources, video devices (*e.g.*, DVD players), cellular telephones, and the like, to be easily integrated therewith. Thus, automobile purchasers are frequently forced to either entirely replace the OEM audio system, or use same throughout the life of the vehicle or the duration of ownership. Even if the OEM radio is replaced with an after-market radio, the after-market radio also frequently is not operable with an external device.

A particular problem with integrating after-market audio and video systems with existing car stereo and video systems is that signals generated by both systems are in proprietary formats, and are not capable of being processed by the after-market system. Additionally, signals generated by the after-market system are also in a proprietary format that is not recognizable by the car stereo or video system. Thus, in order to integrate after-market systems with existing car stereo and video systems, it is necessary to convert signals between such systems.

It known in the art to provide one or more expansion modules for OEM and after-market car stereos for allowing external audio products to be integrated with the car stereo. However, such expansion modules only operate with and allow integration of external audio products manufactured by the same manufacturer as the OEM / after-market car stereo. For example, a satellite receiver manufactured by PIONEER, Inc., cannot be integrated with an OEM car radio manufactured by TOYOTA or an after-market car radio manufactured by CLARION, Inc. Thus, existing expansion modules only serve the limited purpose of integrating equipment by the same manufacturer as the car stereo. Thus, it would be desirable to provide an integration system that allows any audio device of any manufacture to be integrated with any OEM or after-market radio system. Further, radio-frequency (RF) transmitters and cassette tape adapters have been developed for allowing music from a device external to a car radio, such as a portable CD player, to be played through the car radio using the FM receiver or the cassette deck of the radio. However, such systems are often prone to interference, and do not provide high fidelity.

Moreover, it would be desirable to provide an integration system that not only achieves integration of various audio and video devices that are alien to a given OEM or after-market car stereo or video system, but also allows for information to be exchanged between the after-market device and the car stereo or video system. For example, it would be desirable to provide a system wherein station, track, time, and song information can be retrieved from the after-market device, formatted, and transmitted to the car stereo or video system for display thereby, such as at an LCD panel of the car stereo or on one or more display panels of a car video system. Such information could be transmitted and displayed on both hardwired car stereo and video systems (*e.g.*, radios installed in dashboards or at other locations within the car), or integrated for display on one or more software or graphically-driven radio systems operable with graphical display panels.

Additionally, it would be desirable to provide a multimedia device integration system that allows a user to control more than one device, such as a CD or satellite receiver and one or more auxiliary sources, and to quickly and conveniently switch between same using the existing controls of the car stereo or video system. Still further, it would be desirable to provide a multimedia device integration system that allows for wireless integration of portable devices for use with car audio and/or video systems, wherein full remote control of the portable device is provided at the controls of the car system.

Accordingly, the present invention addresses these needs by providing a multimedia device integration system that allows a plurality of after-market devices, such as CD players, CD changers, digital media devices (*e.g.*, MP3 players, MP4 players, Apple iPod, WMV players, portable media centers, and other devices), satellite receivers, DAB receivers, auxiliary input sources, video devices (*e.g.*, DVD players), cellular telephones, digital cameras, portable navigation devices, or any combination thereof, to be integrated into existing car stereo and video systems while allowing information to be displayed on, and control to be provided from, the car stereo or video system.

SUMMARY OF THE INVENTION

The present invention relates to a multimedia device integration system. One or more after-market audio devices, such as CD players, CD changers, digital media devices (*e.g.*, MP3 players, MP4 players, WMV players, Apple iPod devices, portable media centers), digital cameras, satellite receivers (*e.g.*, XM or Sirius receivers), digital audio broadcast (DAB) receivers, portable navigation devices, or auxiliary input sources, can be connected to and operate with an existing stereo system in an automobile, such as an OEM car stereo system or an after-market car stereo system installed in the automobile. The integration system connects to and interacts with the car stereo at any available port of the car stereo, such as a CD input port, a satellite input, or other known type of connection. If the car stereo system is an after-market car stereo system, the present invention generates a signal that is sent to the car stereo to keep same in an operational state and responsive to external data and signals. Commands generated at the control panel are received by the present invention and converted into a format recognizable by the after-market device. The formatted commands are executed by the after-market device, and audio therefrom is channeled to the car stereo. Information from the after-market device is received by the present invention, converted into a format recognizable by the car stereo, and forwarded to the car stereo for display thereby. The formatted information could include information relating to a CD or MP3 track being played, channel, song, and artist information from a satellite receiver or DAB receiver, or video information from one or more external devices connected to the present invention. The information can be presented as one or more menus, textual, or graphical prompts for display on an LCD display of the radio, allowing interaction with the user at the radio. A docking port may be provided for allowing portable external audio devices to be connected to the interface of the present invention.

In an embodiment of the present invention, a dual-input device is provided for integrating both an external audio device and an auxiliary input with an OEM or after-market car stereo. The user can select between the external audio device and the auxiliary input using the controls of the car stereo. The invention can automatically detect the type of device connected to the auxiliary input, and integrate same with the car stereo.

In another embodiment of the present invention, an interface is provided for integrating a plurality of auxiliary input sources with an existing car stereo system. A user can select between the auxiliary sources using the control panel of the car stereo. One or

more after-market audio devices can be integrated with the auxiliary input sources, and a user can switch between the audio device and the auxiliary input sources using the car stereo. Devices connected to the auxiliary input sources are inter-operable with the car stereo, and are capable of exchanging commands and data via the interface.

In another embodiment of the present invention, an interface is provided for integrating an external device for use with a car stereo or video system, wherein the interface is positioned within the car stereo or video system. The system comprises a car stereo or video system; an after-market device external to the car stereo or video system; an interface positioned within the car stereo or video system and connected between the car stereo or video system and the after-market device for exchanging data and audio or video signals between the car stereo or video system and the after-market device; means for processing and dispatching commands for controlling the after-market device from the car stereo or video system in a format compatible with the after-market device; and means for processing and displaying data from the after-market device on a display of the car stereo or video system in a format compatible with the car stereo or video system. The after-market device could comprise one or more of a CD changer, CD player, satellite receiver (*e.g.*, XM or Sirius), digital media device (*e.g.*, MP3, MP4, WMV, or Apple iPod device), video device (*e.g.*, DVD player), cellular telephone, or any combination thereof.

In another embodiment of the present invention, an interface is provided for integrating a cellular telephone for use with a car stereo or video system. The system comprises a car stereo or video system; a cellular telephone external to the car stereo or video system; an interface connected between the car stereo or video system and the cellular telephone for exchanging data and audio or video signals between the car stereo or video system and the cellular telephone; means for processing and dispatching commands for controlling the cellular telephone from the car stereo or video system in a format compatible with the cellular telephone; and means for processing and displaying data from the cellular telephone on a display of the car stereo or video system in a format compatible with the car stereo or video system.

In another embodiment of the present invention, an interface is provided for integrating an external video system for use with a car video system. The system comprises a car video system; an after-market video device external to the car video

system; an interface connected between the car video system and the after-market video device for exchanging data, audio, and video signals between the car video system and the after-market video device; means for processing and dispatching commands for controlling the after-market video device from the car video system in a format compatible with the after-market video device; and means for processing and displaying data from the after-market video device on a display of the car video system in a format compatible with the car video system.

The present invention also provides an interface for integrating a plurality of after-market devices for use with a car stereo or video system using a single interface. In one embodiment, the system comprises an interface in electrical communication with a car stereo or video system and an after-market device; a plurality of configuration jumpers in the interface for specifying a first device type corresponding to the car stereo or video system and a second device type corresponding to the after-market device; and a plurality of protocol conversion software blocks stored in memory in the interface for converting signals from the after-market device into a first format compatible with the car stereo or video system and for converting signals from the car stereo or video system into a second format compatible with the after-market device, wherein at least one of the protocol conversion software blocks are selected by the interface using settings of the plurality of configuration jumpers. In another embodiment, the system comprises an interface in electrical communication with a car stereo or video system and an after-market device; first and second wiring harnesses attached to the interface, wherein the first wiring harness includes a first electrical configuration corresponding to the car stereo or video system and the second wiring harness includes a second electrical configuration corresponding to the after-market device; and a plurality of protocol conversion software blocks stored in memory in the interface for converting signals from the after-market device into a first format compatible with the car stereo or video system and for converting signals from the car stereo or video system into a second format compatible with the after-market device, wherein at least one of the protocol conversion software blocks are selected by the interface using the first and second electrical configurations of the first and second wiring harnesses. A plurality of wiring harnesses can be provided for integrating a plurality of devices.

The present invention also provides a method for integrating an after-market device for use with a car stereo or video system, comprising the steps of interconnecting the car stereo or video system and the after-market device with an interface; determining a first device type corresponding to the car stereo or video system and a second device type corresponding to the after-market device; loading a protocol conversion software block from memory in the interface using the first and second device types; converting signals from the after-market device into a first format compatible with the car stereo or video system using the protocol conversion software block; and converting signals from the car stereo or video system into a second format compatible with the after-market device using the protocol conversion software block.

The present invention further provides a multimedia device integration system that allows for the wireless integration of a portable audio and/or video device with a car audio and/or video system. The portable device could comprise a CD changer, CD player, satellite receiver (*e.g.*, XM or Sirius), digital media device (*e.g.*, MP3, MP4, WMV, or Apple iPod device), video device (*e.g.*, DVD player), or a cellular telephone. The portable device includes a wireless interface and an integration subsystem positioned within the portable device. The wireless interface establishes a wireless communications channel between the portable device and the car system, and allows for the wireless exchange of control commands, data, video, and audio signals between the portable device and the car system. The integration module receives control commands issued at the car system and transmitted over the wireless channel, processes same into a format compatible with the portable device, and dispatches same to the portable device for execution thereby. The integration module also receives data from the portable device (including, but not limited to, track information, song information, artist information, time information, and other related information), processes the data into a format compatible with the car system, and transmits same over the wireless channel to the car system for display thereon. Optionally, the integration module could be positioned within the car system.

The integration module could also include a voice recognition subsystem for acquiring spoken commands from a user, converting same into control commands compatible with the portable device, and dispatching the processed control commands to the portable device for execution thereby. The voice commands could be received at the

car audio and/or video system (i.e., using a microphone connected to the car audio and/or video system or some other vehicle component), or at the portable device (i.e., using a microphone connected to or forming a part of the portable device). Additionally, the integration module could include a speech synthesizer for generating synthesized speech for conveying data generated by the portable device to a user. The synthesized speech could be channeled to the car audio and/or video system by the integration module to be played through the car audio and/or video system.

The present invention further provides a multimedia device integration system that allows for the integration of a portable audio and/or video device with a car audio and/or video system using a docking slot provided in the car system. The portable device includes an integration module positioned within the portable device and an external interface for allowing electrical communication with the car system via the docking slot. Optionally, the integration module could be positioned within the car audio or video system. The integration module could also include a voice recognition subsystem for acquiring spoken commands from a user, converting same into control commands compatible with the portable device, and dispatching the processed control commands to the portable device for execution thereby. Additionally, the integration module could include a speech synthesizer for generating synthesized speech for conveying data generated by the portable device to a user.

The present invention also provides a multimedia device integration system which allows a digital camera, such as a still digital camera or a digital video camera, to be integrated for use with an existing car audiovisual system. Data, video, and/or audio from the digital camera is received by the interface, processed into a format compatible with the car audiovisual system, and transmitted thereto for display on and/or playing through the car audiovisual system. Control commands for controlling the digital camera, which can be issued at the car audiovisual system, are received by the interface, processed into a format compatible with the digital camera, and transmitted thereto for execution by the digital camera.

The present invention also provides a multimedia device integration system which allows a portable navigation device, such as a portable GPS receiver, to be integrated for use with an existing car audiovisual system. Data, video, and/or audio from the portable navigation device is received by the interface, processed into a format compatible with the

car audiovisual system, and transmitted thereto for display on and/or playing through the car audiovisual system. Control commands for controlling the portable navigation device, which can be issued at the car audiovisual system, are received by the interface, processed into a format compatible with the portable navigation device, and transmitted thereto for execution by the portable navigation device.

The present invention also provides an interface integrated circuit that allows for the integration of an external portable audio and/or video device with a car audiovisual system, and which can be installed within the car audiovisual system. The interface integrated circuit could communicate with the portable audio and/or video device using one or more communications ports or a wireless transceiver. A manufacturer of a car audiovisual system could be provided with the interface integrated circuit and an electrical schematic for installing same. The interface integrated circuit could be provided with pre-installed firmware for converting data, audio, and/or video signals generated by the portable audio and/or video device into a format compatible with the car audiovisual system, and for converting control commands issued by the car audiovisual system into a format compatible with the portable audio and/or video device for execution thereby. The integrated circuit could also be installed in the portable audio and/or video device, or it could be embodied as a software product which is functionally equivalent to the integrated circuit and which is executed by an existing microprocessor of either the car audiovisual system or the portable audio and/or video device.

BRIEF DESCRIPTION OF THE DRAWINGS

These and other important features of the present invention will be apparent from the following Detailed Description of the Invention, taken in connection with the accompanying drawings, in which:

FIG. 1 is a block diagram showing the multimedia device integration system of the present invention.

FIG. 2A is a block diagram showing an alternate embodiment of the multimedia device integration system of the present invention, wherein a CD player is integrated with a car radio.

FIG. 2B is a block diagram showing an alternate embodiment of the multimedia device integration system of the present invention, wherein a MP3 player is integrated with a car radio.

FIG. 2C is a block diagram showing an alternate embodiment of the multimedia device integration system of the present invention, wherein a satellite or DAB receiver is integrated with a car radio.

FIG. 2D is a block diagram showing an alternate embodiment of the multimedia device integration system of the present invention, wherein a plurality of auxiliary input sources are integrated with a car radio.

FIG. 2E is a block diagram showing an alternate embodiment of the multimedia device integration system of the present invention, wherein a CD player and a plurality of auxiliary input sources are integrated with a car radio.

FIG. 2F is a block diagram showing an alternate embodiment of the present invention, wherein a satellite or DAB receiver and a plurality of auxiliary input source are integrated with a car radio.

FIG. 2G is a block diagram showing an alternate embodiment of the present invention, wherein a MP3 player and a plurality of auxiliary input sources are integrated with a car radio.

FIG. 2H is a block diagram showing an alternate embodiment of the present invention, wherein a plurality of auxiliary interfaces and an audio device are integrated with a car stereo.

FIG. 3A is a circuit diagram showing a device according to the present invention for integrating a CD player or an auxiliary input source with a car radio.

FIG. 3B is a circuit diagram showing a device according to the present invention for integrating both a CD player and an auxiliary input source with a car radio, wherein the CD player and the auxiliary input are switchable by a user.

FIG. 3C is a circuit diagram showing a device according to the present invention for integrating a plurality of auxiliary input sources with a car radio.

FIG. 3D is a circuit diagram showing a device according to the present invention for integrating a satellite or DAB receiver with a car radio.

FIG. 4A is a flowchart showing processing logic according to the present invention for integrating a CD player with a car radio.

FIG. 4B is a flowchart showing processing logic according to the present invention for integrating a MP3 player with a car radio.

FIG. 4C is a flowchart showing processing logic according to the present invention for integrating a satellite receiver with a car radio.

FIG. 4D is a flowchart showing processing logic according to the present invention for integrating a plurality of auxiliary input sources with a car radio.

FIG. 4E is a flowchart showing processing logic according to the present invention for integrating a CD player and one or more auxiliary input sources with a car radio.

FIG. 4F is a flowchart showing processing logic according to the present invention for integrating a satellite or DAB receiver and one or more auxiliary input sources with a car radio.

FIG. 4G is a flowchart showing processing logic according to the present invention for integrating a MP3 player and one or more auxiliary input sources with a car stereo.

FIG. 5 is a flowchart showing processing logic according to the present invention for allowing a user to switch between an after-market audio device and one or more auxiliary input sources.

FIG. 6 is a flowchart showing processing logic according to the present invention for determining and handling various device types connected to the auxiliary input ports of the invention.

FIG. 7A is a perspective view of a docking station according to the present invention for retaining an audio device within a car.

FIG. 7B is an end view of the docking station of **FIG. 7A**.

FIGS. 8A-8B are perspective views of another embodiment of the docking station of the present invention, which includes the multimedia device integration system of the present invention incorporated therewith.

FIG. 9 is a block diagram showing the components of the docking station of **FIGS. 8A-8B**.

FIG. 10 is a block diagram showing an alternate embodiment of the multimedia device integration system of the present invention, wherein the interface is incorporated within a car stereo or car video system.

FIG. 11A is a diagram showing an alternate embodiment of the multimedia device integration system of the present invention for integrating a cellular telephone for use with a car stereo or video system; **FIG. 11b** is a flowchart showing processing logic for integrating a cellular telephone for use with a car stereo or video system.

FIG. 12A is a diagram showing an alternate embodiment of the multimedia device integration system of the present invention for integrating an after-market video device for use with a car video system; **FIG. 12B** is a flowchart showing processing logic for integrating an after-market video device for use with a car video system.

FIG. 13A is a block diagram showing an alternate embodiment of the multimedia device integration system of the present invention, wherein configuration jumpers and protocol conversion software blocks are provided for integrating after-market devices of various types using a single interface.

FIG. 13B is a block diagram showing an alternate embodiment of the multimedia device integration system of the present invention, wherein wiring harnesses and protocol conversion software blocks are provided for integrating after-market devices of various types using a single interface.

FIG. 14 is a flowchart showing processing logic of the multimedia device integration system of the present invention for integrating after-market devices of various types using a single interface.

FIG. 15 is a flowchart showing processing logic of the multimedia device integration system of the present invention for allowing a user to specify one or more after-market device types for integration using a single interface.

FIG. 16 is a flowchart showing processing logic of the multimedia device integration system of the present invention for allowing a user to quickly navigate through

a list of songs on one or more after-market devices using the controls of a car stereo or video system.

FIG. 17 is a diagram showing another embodiment of the present invention, wherein a plurality of external devices are integrated using a single interface.

FIG. 18 is a diagram showing another embodiment of the present invention, wherein wireless integration is provided between a car audio and/or video system and a portable audio and/or video device using a wireless transceiver and an integration module positioned within the portable device.

FIG. 19 is a diagram showing another embodiment of the present invention, wherein wireless integration is provided between a car audio and/or video system and a portable audio and/or video device using a wireless transceiver and an integration module positioned within the car audio and/or video system.

FIG. 20 is a diagram showing another embodiment of the present invention, wherein a docking slot is provided in a car audio and/or video system for receiving a portable audio and/or video device, and an integration module is positioned within the portable device.

FIG. 21 is a diagram showing another embodiment of the present invention, wherein a docking slot is provided in a car audio and/or video system for receiving a portable audio and/or video device, and an integration module is positioned within the car audio and/or video system.

FIG. 22 is a diagram showing another embodiment of the present invention, wherein wireless integration is provided between a car audio and/or video system and a portable audio and/or video device, and the portable device includes an integration module having speech synthesis and recognition capabilities.

FIG. 23 is a diagram showing another embodiment of the present invention, wherein wireless integration is provided between a car audio and/or video system and a portable audio and/or video device, and the car audio and/or video system includes an integration module having speech synthesis and recognition capabilities.

FIG. 24 is a flowchart showing processing logic according to the present invention for wirelessly integrating a portable audio and/or video device for use with a car audio or video system.

FIG. 25A is a diagram showing another embodiment of the multimedia device integration system of the present invention for integrating a digital camera for use with a car audiovisual system; **FIG. 25B** is a flowchart showing processing logic for integrating the digital camera for use with the car audiovisual system.

FIG. 26A is a diagram showing another embodiment of the multimedia device integration system of the present invention for integrating a portable navigation device for use with a car audiovisual system; **FIG. 26B** is a flowchart showing processing logic for integrating the portable navigation device for use with the car audiovisual system.

FIG. 27 is a diagram showing another embodiment of the multimedia device integration system of the present invention, wherein the integration system is provided as an integrated circuit installed within a car audiovisual system.

DETAILED DESCRIPTION OF THE INVENTION

The present invention relates to a multimedia device integration system. One or more after-market devices, such as a CD player, CD changer, digital media player (*e.g.*, MP3 player, MP4 player, WMV player, Apple iPod, portable media center, or other device), satellite receiver, digital audio broadcast (DAB) receiver, video device (*e.g.*, DVD player), cellular telephone, or the like, can be integrated with an existing car radio or car video device, such as an OEM or after-market car stereo or video system. Control of the after-market device is enabled using the car stereo or car video system, and information from the after-market device, such as channel, artist, track, time, song, and other information, is retrieved form the after-market device, processed, and forwarded to the car stereo or car video system for display thereon. The information channeled to the car stereo or video system can include video from the external device, as well as graphical and menu-based information. A user can review and interact with information via the car stereo. Commands from the car stereo or video system are received, processed by the present invention into a format recognizable by the after-market device, and transmitted thereto for execution. One or more auxiliary input channels can be integrated by the present invention with the car stereo or video system. The user can switch between one or more after-market devices and one or more auxiliary input channels using the control panel buttons of the car stereo or video system.

As used herein, the term "integration" or "integrated" is intended to mean connecting one or more external devices or inputs to an existing car stereo or video system via an interface, processing and handling signals, audio, and/or video information, allowing a user to control the devices via the car stereo or video system, and displaying data from the devices on the car stereo or video system. Thus, for example, integration of a CD player with a car stereo system allows for the CD player to be remotely controlled via the control panel of the stereo system, and data from the CD player to be sent to the display of the stereo. Of course, control of after-market devices can be provided at locations other than the control panel of the car stereo or video system without departing from the spirit or scope of the present invention. Further, as used herein, the term "inter-operable" is intended to mean allowing the external audio or video device to receive and process commands that have been formatted by the interface of the present invention, as well as allowing a car stereo or video system to display information that is generated by

the external audio or video device and processed by the present invention. Additionally, by the term "inter-operable," it is meant allowing a device that is alien to the environment of an existing OEM or after-market car stereo or video system to be utilized thereby.

Also, as used herein, the terms "car stereo" and "car radio" are used interchangeably and are intended to include all presently existing car stereos, radios, video systems, such as physical devices that are present at any location within a vehicle, in addition to software and/or graphically- or display-driven receivers. An example of such a receiver is a software-driven receiver that operates on a universal LCD panel within a vehicle and is operable by a user via a graphical user interface displayed on the universal LCD panel. Further, any future receiver, whether a hardwired or a software/graphical receiver operable on one or more displays, is considered within the definition of the terms "car stereo" and "car radio," as used herein, and is within the spirit and scope of the present invention. Moreover, the term "car" is not limited to any specific type of automobile, but rather, includes all automobiles. Additionally, by the term "after-market," it is meant any device not installed by a manufacturer at the time of sale of the car.

FIG. 1 is a block diagram showing the multimedia device integration (or interface) system of the present invention, generally indicated at **20**. A plurality of devices and auxiliary inputs can be connected to the interface **20**, and integrated with an OEM or after-market car radio **10**. A CD player or changer **15** can be integrated with the radio **10** via interface **20**. A satellite radio or DAB receiver **25**, such as an XM or Sirius radio satellite receiver or DAB receiver known in the art, could be integrated with the radio **10**, via the interface **20**. Further, an MP3 player **30** could also be integrated with the radio **10** via interface **20**. The MP3 player **30** could be any known digital media device, such as an Apple iPod or any other digital media device. Moreover, a plurality of auxiliary input sources, illustratively indicated as auxiliary input sources **35** (comprising input sources 1 through *n*, *n* being any number), could also be integrated with the car radio **10** via interface **20**. Optionally, a control head **12**, such as that commonly used with after-market CD changers and other similar devices, could be integrated with the car radio **10** via interface **20**, for controlling any of the car radio **10**, CD player/changer **15**, satellite/DAB receiver **25**, MP3 player **30**, and auxiliary input sources **35**. Thus, as can be readily appreciated, the interface **20** of the present invention allows for the integration of a multitude of devices and inputs with an OEM or after-market car radio or stereo.

FIG. 2A is a block diagram of an alternate embodiment of the multimedia device interface system of the present invention, wherein a CD player/changer **15** is integrated with an OEM or after-market car radio **10**. The CD player **15** is electrically connected with the interface **20**, and exchanges data and audio signals therewith. The interface **20** is electrically connected with the car radio **10**, and exchanges data and audio signals therewith. In a preferred embodiment of the present invention, the car radio **10** includes a display **13** (such as an alphanumeric, electroluminescent display) for displaying information, and a plurality of control panel buttons **14** that normally operate to control the radio **10**. The interface **20** allows the CD player **15** to be controlled by the control buttons **14** of the radio **10**. Further, the interface **20** allows information from the CD player **15**, such as track, disc, time, and song information, to be retrieved therefrom, processed and formatted by the interface **20**, sent to the display **13** of the radio **10**.

Importantly, the interface **20** allows for the remote control of the CD player **15** from the radio **10** (e.g., the CD player **15** could be located in the trunk of a car, while the radio **10** is mounted on the dashboard of the car). Thus, for example, one or more discs stored within the CD player **15** can be remotely selected by a user from the radio **10**, and tracks on one or more of the discs can be selected therefrom. Moreover, standard CD operational commands, such as pause, play, stop, fast forward, rewind, track forward, and track reverse (among other commands) can be remotely entered at the control panel buttons **14** of the radio **10** for remotely controlling the CD player **15**.

FIG. 2B is a block diagram showing an alternate embodiment of the present invention, wherein an MP3 player **30** is integrated with an OEM or after-market car radio **10** via interface **20**. As mentioned earlier, the interface **20** of the present invention allows for a plurality of disparate audio devices to be integrated with an existing car radio for use therewith. Thus, as shown in **FIG. 2B**, remote control of the MP3 player **30** via radio **10** is provided for via interface **20**. The MP3 player **30** is electronically interconnected with the interface **20**, which itself is electrically interconnected with the car radio **10**. The interface **20** allows data and audio signals to be exchanged between the MP3 player **30** and the car radio **10**, and processes and formats signals accordingly so that instructions and data from the radio **10** are processable by the MP3 player **30**, and vice versa. Operational commands, such as track selection, pause, play, stop, fast forward, rewind, and other commands, are entered via the control panel buttons **14** of car radio **10**, processed by the

interface **20**, and formatted for execution by the MP3 player **30**. Data from the MP3 player, such as track, time, and song information, is received by the interface **20**, processed thereby, and sent to the radio **10** for display on display **13**. Audio from the MP3 player **30** is selectively forwarded by the interface **20** to the radio **10** for playing.

FIG. 2C is a block diagram showing an alternate embodiment of the present invention, wherein a satellite receiver or DAB receiver **25** is integrated with an OEM or after-market car radio **10** via the interface **20**. Satellite/DAB receiver **25** can be any satellite radio receiver known in the art, such as XM or Sirius, or any DAB receiver known in the art. The satellite/DAB receiver **25** is electrically interconnected with the interface **20**, which itself is electrically interconnected with the car radio **10**. The satellite/DAB receiver **25** is remotely operable by the control panel buttons **14** of the radio **10**. Commands from the radio **10** are received by the interface **20**, processed and formatted thereby, and dispatched to the satellite/DAB receiver **25** for execution thereby. Information from the satellite/DAB receiver **25**, including time, station, and song information, is received by the interface **20**, processed, and transmitted to the radio **10** for display on display **13**. Further, audio from the satellite/DAB receiver **25** is selectively forwarded by the interface **20** for playing by the radio **10**.

FIG. 2D is a block diagram showing an alternate embodiment of the present invention, wherein one or more auxiliary input sources **35** are integrated with an OEM or after-market car radio **10**. The auxiliary inputs **35** can be connected to analog sources, or can be digitally coupled with one or more audio devices, such as after-market CD players, CD changers, MP3 players, satellite receivers, DAB receivers, and the like, and integrated with an existing car stereo. Preferably, four auxiliary input sources are connectable with the interface **20**, but any number of auxiliary input sources could be included. Audio from the auxiliary input sources **35** is selectively forwarded to the radio **10** under command of the user. As will be discussed herein in greater detail, a user can select a desired input source from the auxiliary input sources **35** by depressing one or more of the control panel buttons **14** of the radio **10**. The interface **20** receives the command initiated from the control panel, processes same, and connects the corresponding input source from the auxiliary input sources **35** to allow audio therefrom to be forwarded to the radio **10** for playing. Further, the interface **20** determines the type of audio devices connected to the auxiliary input ports **35**, and integrates same with the car stereo **10**.

As mentioned previously, the present invention allows one or more external audio devices to be integrated with an existing OEM or after-market car stereo, along with one or more auxiliary input sources, and the user can select between these sources using the controls of the car stereo. Such "dual input" capability allows operation with devices connected to either of the inputs of the device, or both. Importantly, the device can operate in "plug and play" mode, wherein any device connected to one of the inputs is automatically detected by the present invention, its device type determined, and the device automatically integrated with an existing OEM or after-market car stereo. Thus, the present invention is not dependent any specific device type to be connected therewith to operate. For example, a user can first purchase a CD changer, plug same into a dual interface, and use same with the car stereo. At a point later in time, the user could purchase an XM tuner, plug same into the device, and the tuner will automatically be detected and integrated with the car stereo, allowing the user to select from and operate both devices from the car stereo. It should be noted that such plug and play capability is not limited to a dual input device, but is provided for in every embodiment of the present invention. The dual-input configuration of the preset invention is illustrated in **FIGS. 2E-2H** and described below.

FIG. 2E is a block diagram showing an alternate embodiment of the present invention, wherein an external CD player/changer **15** and one or more auxiliary input sources **35** are integrated with an OEM or after-market car stereo **10**. Both the CD player **15** and one or more of the auxiliary input sources **35** are electrically interconnected with the interface **20**, which, in turn, is electrically interconnected to the radio **10**. Using the controls **14** of the radio **10**, a user can select between the CD player **15** and one or more of the inputs **35** to selectively channel audio from these sources to the radio. The command to select from one of these sources is received by the interface **20**, processed thereby, and the corresponding source is channeled to the radio **10** by the interface **20**. As will be discussed later in greater detail, the interface **20** contains internal processing logic for selecting between these sources.

FIG. 2F is a block diagram of an alternate embodiment of the present invention, wherein a satellite receiver or DAB receiver and one or more auxiliary input sources are integrated by the interface **20** with an OEM or after-market car radio **10**. Similar to the embodiment of the present invention illustrated in **FIG. 2E** and described earlier, the

interface **20** allows a user to select between the satellite/DAB receiver **25** and one or more of the auxiliary input sources **35** using the controls **14** of the radio **10**. The interface **20** contains processing logic, described in greater detail below, for allowing switching between the satellite/DAB receiver **25** and one or more of the auxiliary input sources **35**.

FIG. 2G is a block diagram of an alternate embodiment of the present invention, wherein a MP3 player **30** and one or more auxiliary input sources **35** are integrated by the interface **20** with an OEM or after-market car radio **10**. Similar to the embodiments of the present invention illustrated in **FIGS. 2E** and **2F** and described earlier, the interface **20** allows a user to select between the MP3 player **30** and one or more of the auxiliary input sources **35** using the controls **14** of the radio **10**. The interface **20** contains processing logic, as will be discussed later in greater detail, for allowing switching between the MP3 player **30** and one or more of the auxiliary input sources **35**.

FIG. 2H is a block diagram showing an alternate embodiment of the present invention, wherein a plurality of auxiliary interfaces **40** and **44** and an audio device **17** are integrated with an OEM or after-market car stereo **10**. Importantly, the present invention can be expanded to allow a plurality of auxiliary inputs to be connected to the car stereo **10** in a tree-like fashion. Thus, as can be seen in **FIG. 2H**, a first auxiliary interface **40** is connected to the interface **20**, and allows data and audio from the ports **42** to be exchanged with the car radio **10**. Connected to one of the ports **42** is another auxiliary interface **44**, which, in turn, provides a plurality of input ports **46**. Any device connected to any of the ports **42** or **46** can be integrated with the car radio **10**. Further, any device connected to the ports **42** or **46** can be inter-operable with the car radio **10**, allowing commands to be entered from the car radio **10** (*e.g.*, such as via the control panel **14**) for commanding the device, and information from the device to be displayed by the car radio **10**. Conceivably, by configuring the interfaces **40**, **44**, and successive interfaces in a tree configuration, any number of devices can be integrated using the present invention.

The various embodiments of the present invention described above and shown in **FIGS. 1** through **2H** are illustrative in nature and are not intended to limit the spirit or scope of the present invention. Indeed, any conceivable audio device or input source, in any desired combination, can be integrated by the present invention into existing car stereo systems. Further, it is conceivable that not only can data and audio signals be exchanged between the car stereo and any external device, but also video information that can be

captured by the present invention, processed thereby, and transmitted to the car stereo for display thereby and interaction with a user thereat.

Various circuit configurations can be employed to carry out the present invention. Examples of such configurations are described below and shown in **FIGS. 3A-3D**.

FIG. 3A is an illustrative circuit diagram according to the present invention for integrating a CD player or an auxiliary input source with an existing car stereo system. A plurality of ports **J1C1, J2A1, X2, RCH,** and **LCH** are provided for allowing connection of the interface system of the present invention between an existing car radio, an after-market CD player or changer, or an auxiliary input source. Each of these ports could be embodied by any suitable electrical connector known in the art. Port **J1C1** connects to the input port of an OEM car radio, such as that manufactured by TOYOTA, Inc. Conceivably, port **J1C1** could be modified to allow connection to the input port of an after-market car radio. Ports **J2A1, X2, RCH,** and **LCH** connect to an after-market CD changer, such as that manufactured by PANASONIC, Inc., or to an auxiliary input source.

Microcontroller **U1** is in electrical communication with each of the ports **J1C1**, **J2A1**, and **X2**, and provides functionality for integrating the CD player or auxiliary input source connected to the ports **J2A1, X2, RCH,** and **LCH**. For example, microcontroller **U1** receives control commands, such as button or key sequences, initiated by a user at control panel of the car radio and received at the connector **J1C1**, processes and formats same, and dispatches the formatted commands to the CD player or auxiliary input source via connector **J2A1**. Additionally, the microcontroller **U1** receives information provided by the CD player or auxiliary input source via connector **J2A1**, processes and formats same, and transmits the formatted data to the car stereo via connector **J1C1** for display on the display of the car stereo. Audio signals provided at the ports **J2A1, X2, RCH** and **LCH** is selectively channeled to the car radio at port **J1C1** under control of one or more user commands and processing logic, as will be discussed in greater detail, embedded within microcontroller **U1**.

In a preferred embodiment of the present invention, the microcontroller **U1** comprises the 16F628 microcontroller manufactured by MICROCHIP, Inc. The 16F628 chip is a CMOS, flash-based, 8-bit microcontroller having an internal, 4 MHz internal oscillator, 128 bytes of EEPROM data memory, a capture/compare/PWM, a USART, 2 comparators, and a programmable voltage reference. Of course, any suitable

microcontroller known in the art can be substituted for microcontroller **U1** without departing from the spirit or scope of the present invention.

A plurality of discrete components, such as resistors **R1** through **R13**, diodes **D1** through **D4**, capacitors **C1** and **C2**, and oscillator **Y1**, among other components, are provided for interfacing the microcontroller **U1** with the hardware connected to the connectors **J1C1, J2A1, X2, RCH**, and **LCH**. These components, as will be readily appreciated to one of ordinary skill in the art, can be arranged as desired to accommodate a variety of microcontrollers, and the numbers and types of discrete components can be varied to accommodate other similar controllers. Thus, the circuit shown in **FIG. 3A** and described herein is illustrative in nature, and modifications thereof are considered to be within the spirit and scope of the present invention.

FIG. 3B is a diagram showing an illustrative circuit configuration according to the present invention, wherein one or more after-market CD changers / players and an auxiliary input source are integrated with an existing car stereo, and wherein the user can select between the CD changer/player and the auxiliary input using the controls of the car stereo. A plurality of connectors are provided, illustratively indicated as ports **J4A**, **J4B**, **J3**, **J5L1**, **J5R1**, **J1,** and **J2**. Ports **J4A, J4B,** and **J3** allow the audio device interface system of the present invention to be connected to one or more existing car stereos, such as an OEM car stereo or an after-market car stereo. Each of these ports could be embodied by any suitable electrical connector known in the art. For example, ports **J4A** and **J4B** can be connected to an OEM car stereo manufactured by BMW, Inc. Port **J3** can be connected to a car stereo manufactured by LANDROVER, Inc. Of course, any number of car stereos, by any manufacturer, could be provided. Ports **J1** and **J2** allow connection to an after-market CD changer or player, such as that manufactured by ALPINE, Inc., and an auxiliary input source. Optionally, ports **J5L1** and **J5R1** allow integration of a standard analog (line-level) source. Of course, a single standalone CD player or auxiliary input source could be connected to either of ports **J1** or **J2**.

Microcontroller **DD1** is in electrical communication with each of the ports **J4A**, **J4B**, **J3**, **J5L1, J5R1, J1,** and **J2**, and provides functionality for integrating the CD player and auxiliary input source connected to the ports **J1** and **J2** with the car stereo connected to the ports **J4A** and **J4B** or **J3**. For example, microcontroller **DD1** receives control commands, such as button or key sequences, initiated by a user at control panel of the car

radio and received at the connectors **J4A** and **J4B** or **J3**, processes and formats same, and dispatches the formatted commands to the CD player and auxiliary input source via connectors **J1** or **J2**. Additionally, the microcontroller **DD1** receives information provided by the CD player and auxiliary input source via connectors **J1** or **J2**, processes and formats same, and transmits the formatted data to the car stereo via connectors **J4A** and **J4B** or **J3** for display on the display of the car stereo. Further, the microcontroller **DD1** controls multiplexer **DA3** to allow selection between the CD player/changer and the auxiliary input. Audio signals provided at the ports **J1, J2, J5L1** and **J5R1** is selectively channeled to the car radio at ports **J4A** and **J4B** or **J3** under control of one or more user commands and processing logic, as will be discussed in greater detail, embedded within microcontroller **DD1**.

In a preferred embodiment of the present invention, the microcontroller **DD1** comprises the 16F872 microcontroller manufactured by MICROCHIP, Inc. The 16F872 chip is a CMOS, flash-based, 8-bit microcontroller having 64 bytes of EEPROM data memory, self-programming capability, an ICD, 5 channels of 10 bit Analog-to-Digital (A/D) converters, 2 timers, capture/compare/PWM functions, a USART, and a synchronous serial port configurable as either a 3-wire serial peripheral interface or a 2-wire inter-integrated circuit bus. Of course, any suitable microcontroller known in the art can be substituted for microcontroller **DD1** without departing from the spirit or scope of the present invention. Additionally, in a preferred embodiment of the present invention, the multiplexer **DA3** comprises the CD4053 triple, two-channel analog multiplexer/demultiplexer manufactured by FAIRCHILD SEMICONDUCTOR, Inc. Any other suitable multiplexer can be substituted for **DA3** without departing from the spirit or scope of the present invention.

A plurality of discrete components, such as resistors **R1** through **R18**, diodes **D1** through **D3**, capacitors **C1-C11,** and **G1-G3**, transistors **Q1-Q3,** transformers **T1** and **T2**, amplifiers **LCH:A** and **LCH:B,** oscillator **XTAL1**, among other components, are provided for interfacing the microcontroller **DD1** and the multiplexer **DA3** with the hardware connected to the connectors **J4A, J4B, J3, J5L1, J5R1, J1,** and **J2**. These components, as will be readily appreciated to one of ordinary skill in the art, can be arranged as desired to accommodate a variety of microcontrollers and multiplexers, and the numbers and types of discrete components can be varied to accommodate other similar

controllers and multiplexers. Thus, the circuit shown in **FIG. 3B** and described herein is illustrative in nature, and modifications thereof are considered to be within the spirit and scope of the present invention.

FIG. 3C is a diagram showing an illustrative circuit configuration for integrating a plurality of auxiliary inputs using the controls of the car stereo. A plurality of connectors are provided, illustratively indicated as ports **J1**, **RCH1**, **LCH1**, **RCH2**, **LCH2**, **RCH3, LCH3, RCH4,** and **LCH4**. Port **J1** allows the multimedia device integration system of the present invention to be connected to one or more existing car stereos. Each of these ports could be embodied by any suitable electrical connector known in the art. For example, port **J1** could be connected to an OEM car stereo manufactured by HONDA, Inc., or any other manufacturer. Ports **RCH1**, **LCH1**, **RCH2**, **LCH2**, **RCH3, LCH3, RCH4,** and **LCH4** allow connection with the left and right channels of four auxiliary input sources. Of course, any number of auxiliary input sources and ports/connectors could be provided.

Microcontroller **U1** is in electrical communication with each of the ports **J1**, **RCH1**, **LCH1**, **RCH2**, **LCH2**, **RCH3, LCH3, RCH4,** and **LCH4**, and provides functionality for integrating one or more auxiliary input sources connected to the ports **RCH1**, **LCH1**, **RCH2**, **LCH2**, **RCH3, LCH3, RCH4,** and **LCH4** with the car stereo connected to the port **J1**. Further, the microcontroller **U1** controls multiplexers **DA3** and **DA4** to allow selection amongst any of the auxiliary inputs using the controls of the car stereo. Audio signals provided at the ports **RCH1**, **LCH1**, **RCH2**, **LCH2**, **RCH3, LCH3, RCH4,** and **LCH4** are selectively channeled to the car radio at port **J1** under control of one or more user commands and processing logic, as will be discussed in greater detail, embedded within microcontroller **U1**. In a preferred embodiment of the present invention, the microcontroller **U1** comprises the 16F872 microcontroller discussed earlier. Additionally, in a preferred embodiment of the present invention, the multiplexers **DA3** and **DA4** comprises the CD4053 triple, two-channel analog multiplexer/demultiplexer, discussed earlier. Any other suitable microcontroller and multiplexers can be substituted for **U1, DA3,** and **DA4** without departing from the spirit or scope of the present invention.

A plurality of discrete components, such as resistors **R1** through **R15**, diodes **D1** through **D3**, capacitors **C1-C5,** transistors **Q1-Q2,** amplifiers **DA1:A** and **DA1:B,** and oscillator **Y1**, among other components, are provided for interfacing the microcontroller

U1 and the multiplexers **DA3** and **DA4** with the hardware connected to the ports **J1**, **RCH1**, **LCH1**, **RCH2**, **LCH2**, **RCH3, LCH3, RCH4,** and **LCH4**. These components, as will be readily appreciated to one of ordinary skill in the art, can be arranged as desired to accommodate a variety of microcontrollers and multiplexers, and the numbers and types of discrete components can be varied to accommodate other similar controllers and multiplexers. Thus, the circuit shown in **FIG. 3C** and described herein is illustrative in nature, and modifications thereof are considered to be within the spirit and scope of the present invention.

FIG. 3D is an illustrative circuit diagram according to the present invention for integrating a satellite receiver with an existing OEM or after-market car stereo system. Ports **J1** and **J2** are provided for allowing connection of the integration system of the present invention between an existing car radio and a satellite receiver. These ports could be embodied by any suitable electrical connector known in the art. Port **J2** connects to the input port of an existing car radio, such as that manufactured by KENWOOD, Inc. Port **1** connects to an after-market satellite receiver, such as that manufactured by PIONEER, Inc.

Microcontroller **U1** is in electrical communication with each of the ports **J1** and **J2**, and provides functionality for integrating the satellite receiver connected to the port **J1** with the car stereo connected to the port **J2**. For example, microcontroller **U1** receives control commands, such as button or key sequences, initiated by a user at control panel of the car radio and received at the connector **J2**, processes and formats same, and dispatches the formatted commands to the satellite receiver via connector **J2**. Additionally, the microcontroller **U1** receives information provided by the satellite receiver via connector **J1**, processes and formats same, and transmits the formatted data to the car stereo via connector **J2** for display on the display of the car stereo. Audio signals provided at the port **J1** is selectively channeled to the car radio at port **J2** under control of one or more user commands and processing logic, as will be discussed in greater detail, embedded within microcontroller **U1**.

In a preferred embodiment of the present invention, the microcontroller **U1** comprises the 16F873 microcontroller manufactured by MICROCHIP, Inc. The 16F873 chip is a CMOS, flash-based, 8-bit microcontroller having 128 bytes of EEPROM data memory, self-programming capability, an ICD, 5 channels of 10 bit Analog-to-Digital (A/D) converters, 2 timers, 2 capture/compare/PWM functions, a synchronous serial port

that can be configured as a either a 3-wire serial peripheral interface or a 2-wire inter-integrated circuit bus, and a USART. Of course, any suitable microcontroller known in the art can be substituted for microcontroller **U1** without departing from the spirit or scope of the present invention.

A plurality of discrete components, such as resistors **R1** through **R7**, capacitors **C1** and **C2**, and amplifier **A1**, among other components, are provided for interfacing the microcontroller **U1** with the hardware connected to the connectors **J1** and **J2**. These components, as will be readily appreciated to one of ordinary skill in the art, can be arranged as desired to accommodate a variety of microcontrollers, and the numbers and types of discrete components can be varied to accommodate other similar controllers. Thus, the circuit shown in **FIG. 3D** and described herein is illustrative in nature, and modifications thereof are considered to be within the spirit and scope of the present invention.

FIGS. 4A through **6** are flowcharts showing processing logic according to the present invention. Such logic can be embodied as software and/or instructions stored in a read-only memory circuit (*e.g.*, and EEPROM circuit), or other similar device. In a preferred embodiment of the present invention, the processing logic described herein is stored in one or more microcontrollers, such as the microcontrollers discussed earlier with reference to **FIGS. 3A-3D**. Of course, any other suitable means for storing the processing logic of the present invention can be employed.

FIG. 4A is a flowchart showing processing logic, indicated generally at **100**, for integrating a CD player or changer with an existing OEM or after-market car stereo system. Beginning in step **100**, a determination is made as to whether the existing car stereo is powered on. If a negative determination is made, step **104** is invoked, wherein the present invention enters a standby mode and waits for the car stereo to be powered on. If a positive determination is made, step **106** is invoked, wherein a second determination is made as to whether the car stereo is in a state responsive to signals external to the car stereo. If a negative determination is made, step **106** is re-invoked.

If a positive determination is made in step **106**, a CD handling process, indicated as block **108**, is invoked, allowing the CD player/changer to exchange data and audio signals with any existing car stereo system. Beginning in step **110**, a signal is generated by the present invention indicating that a CD player/changer is present, and the signal is

continuously transmitted to the car stereo. Importantly, this signal prevents the car stereo from shutting off, entering a sleep mode, or otherwise being unresponsive to signals and/or data from an external source. If the car radio is an OEM car radio, the CD player presence signal need not be generated. Further, the signal need not be limited to a CD player device presence signal, but rather, could be any type of device presence signal (*e.g.*, MP3 player device presence signal, satellite receiver presence signal, video device presence signal, cellular telephone presence signal, or any other type of device presence signal). Concurrently with step **110**, or within a short period of time before or after the execution of step **110**, steps **112** and **114** are invoked. In step **112**, the audio channels of the CD player/changer are connected (channeled) to the car stereo system, allowing audio from the CD player/changer to be played through the car stereo. In step **114**, data is retrieved by the present invention from the CD player/changer, including track and time information, formatted, and transmitted to the car stereo for display by the car stereo. Thus, information produced by the external CD player/changer can be quickly and conveniently viewed by a driver by merely viewing the display of the car stereo. After steps **110**, **112**, and **114** have been executed, control passes to step **116**.

In steps **116**, the present invention monitors the control panel buttons of the car stereo for CD operational commands. Examples of such commands include track forward, track reverse, play, stop, fast forward, rewind, track program, random track play, and other similar commands. In step **118**, if a command is not detected, step **116** is re-invoked. Otherwise, if a command is received, step **118** invokes step **120**, wherein the received command is converted into a format recognizable by the CD player/changer connected to the present invention. For example, in this step, a command issued from a GM car radio is converted into a format recognizable by a CD player/changer manufactured by ALPINE, Inc. Any conceivable command from any type of car radio can be formatted for use by a CD player/changer of any type or manufacture. Once the command has been formatted, step **122** is invoked, wherein the formatted command is transmitted to the CD player/changer and executed. Step **110** is then re-invoked, so that additional processing can occur.

FIG. 4B is a flowchart showing processing logic, indicated generally at **130**, for integrating an MP3 player with an existing car stereo system. Examples of MP3 players that can be integrated by the present invention include, but are not limited to, the Apple

iPod and other types of digital media devices. Beginning in step **132**, a determination is made as to whether the existing car stereo is powered on. If a negative determination is made, step **134** is invoked, wherein the present invention enters a standby mode and waits for the car stereo to be powered on. If a positive determination is made, step **136** is invoked, wherein a second determination is made as to whether the car stereo is in a state responsive to signals external to the car stereo. If a negative determination is made, step **136** is re-invoked.

If a positive determination is made in step **136**, an MP3 handling process, indicated as block **138**, is invoked, allowing the MP3 player to exchange data and audio signals with any existing car stereo system. Beginning in step **140**, a signal is generated by the present invention indicating that an MP3 player is present, and the signal is continuously transmitted to the car stereo. Importantly, this signal prevents the car stereo from shutting off, entering a sleep mode, or otherwise being unresponsive to signals and/or data from an external source. In step **142**, the audio channels of the MP3 player are connected (channeled) to the car stereo system, allowing audio from the MP3 player to be played through the car stereo. In step **144**, data is retrieved by the present invention from the MP3 player, including track, time, title, and song information, formatted, and transmitted to the car stereo for display by the car stereo. Thus, information produced by the MP3 player can be quickly and conveniently viewed by a driver by merely viewing the display of the car stereo. After steps **140**, **142**, and **144** have been executed, control passes to step **146**.

In steps **146**, the present invention monitors the control panel buttons of the car stereo for MP3 operational commands. Examples of such commands include track forward, track reverse, play, stop, fast forward, rewind, track program, random track play, and other similar commands. In step **148**, if a command is not detected, step **146** is re-invoked. Otherwise, if a command is received, step **148** invokes step **150**, wherein the received command is converted into a format recognizable by the MP3 player connected to the present invention. For example, in this step, a command issued from a HONDA car radio is converted into a format recognizable by an MP3 player manufactured by PANASONIC, Inc. Any conceivable command from any type of car radio can be formatted for use by an MP3 player of any type or manufacture. Once the command has been formatted, step **152** is invoked, wherein the formatted command is transmitted to the

MP3 player and executed. Step **140** is then re-invoked, so that additional processing can occur.

FIG. 4C is a flowchart showing processing logic, indicated generally at **160**, for integrating a satellite receiver or a DAB receiver with an existing car stereo system. Beginning in step **162**, a determination is made as to whether the existing car stereo is powered on. If a negative determination is made, step **164** is invoked, wherein the present invention enters a standby mode and waits for the car stereo to be powered on. If a positive determination is made, step **166** is invoked, wherein a second determination is made as to whether the car stereo is in a state responsive to signals external to the car stereo. If a negative determination is made, step **166** is re-invoked.

If a positive determination is made in step **166**, a satellite/DAB receiver handling process, indicated as block **168**, is invoked, allowing the satellite/DAB receiver to exchange data and audio signals with any existing car stereo system. Beginning in step **170**, a signal is generated by the present invention indicating that a satellite or DAB receiver is present, and the signal is continuously transmitted to the car stereo. Importantly, this signal prevents the car stereo from shutting off, entering a sleep mode, or otherwise being unresponsive to signals and/or data from an external source. In step **172**, the audio channels of the satellite/DAB receiver are connected (channeled) to the car stereo system, allowing audio from the satellite receiver or DAB receiver to be played through the car stereo. In step **174**, data is retrieved by the present invention from the satellite/DAB receiver, including channel number, channel name, artist name, song time, and song title, formatted, and transmitted to the car stereo for display by the car stereo. The information could be presented in one or more menus, or via a graphical interface viewable and manipulable by the user at the car stereo. Thus, information produced by the receiver can be quickly and conveniently viewed by a driver by merely viewing the display of the car stereo. After steps **170**, **172**, and **174** have been executed, control passes to step **176**.

In steps **176**, the present invention monitors the control panel buttons of the car stereo for satellite/DAB receiver operational commands. Examples of such commands include station up, station down, station memory program, and other similar commands. In step **178**, if a command is not detected, step **176** is re-invoked. Otherwise, if a command is received, step **178** invokes step **180**, wherein the received command is

converted into a format recognizable by the satellite/DAB receiver connected to the present invention. For example, in this step, a command issued from a FORD car radio is converted into a format recognizable by a satellite receiver manufactured by PIONEER, Inc. Any conceivable command from any type of car radio can be formatted for use by a satellite/DAB receiver of any type or manufacture. Once the command has been formatted, step **182** is invoked, wherein the formatted command is transmitted to the satellite/DAB receiver and executed. Step **170** is then re-invoked, so that additional processing can occur.

FIG. 4D is a flowchart showing processing logic, indicated generally at **190**, for integrating a plurality of auxiliary input sources with a car radio. Beginning in step **192**, a determination is made as to whether the existing car stereo is powered on. If a negative determination is made, step **194** is invoked, wherein the present invention enters a standby mode and waits for the car stereo to be powered on. If a positive determination is made, step **196** is invoked, wherein a second determination is made as to whether the car stereo is in a state responsive to signals external to the car stereo. If a negative determination is made, step **196** is re-invoked.

If a positive determination is made in step **196**, an auxiliary input handling process, indicated as block **198**, is invoked, allowing one or more auxiliary inputs to be connected (channeled) to the car stereo. Further, if a plurality of auxiliary inputs exist, the logic of block **198** allows a user to select a desired input from the plurality of inputs. Beginning in step **200**, a signal is generated by the present invention indicating that an external device is present, and the signal is continuously transmitted to the car stereo. Importantly, this signal prevents the car stereo from shutting off, entering a sleep mode, or otherwise being unresponsive to signals and/or data from an external source. Then, in step **202**, the control panel buttons of the car stereo are monitored.

In a preferred embodiment of the present invention, each of the one or more auxiliary input sources are selectable by selecting a CD disc number on the control panel of the car radio. Thus, in step **204**, a determination is made as to whether the first disc number has been selected. If a positive determination is made, step **206** is invoked, wherein the first auxiliary input source is connected (channeled) to the car stereo. If a negative determination is made, step **208** is invoked, wherein a second determination is made as to whether the second disc number has been selected. If a positive determination

is made, step **210** is invoked, wherein the second auxiliary input source is connected (channeled) to the car stereo. If a negative determination is made, step **212** is invoked, wherein a third determination is made as to whether the third disc number has been selected. If a positive determination is made, step **214** is invoked, wherein the third auxiliary input source is connected (channeled) to the car stereo. If a negative determination is made, step **216** is invoked, wherein a fourth determination is made as to whether the fourth disc number has been selected. If a positive determination is made, step **218** is invoked, wherein the fourth auxiliary input source is connected (channeled) to the car stereo. If a negative determination is made, step **200** is re-invoked, and the process disclosed for block **198** repeated. Further, if any of steps **206**, **210**, **214**, or **218** are executed, then step **200** is re-invoked and block **198** repeated.

The process disclosed in block **198** allows a user to select from one of four auxiliary input sources using the control buttons of the car stereo. Of course, the number of auxiliary input sources connectable with and selectable by the present invention can be expanded to any desired number. Thus, for example, 6 auxiliary input sources could be provided and switched using corresponding selection key(s) or keystroke(s) on the control panel of the radio. Moreover, any desired keystroke, selection sequence, or button(s) on the control panel of the radio, or elsewhere, can be utilized to select from the auxiliary input sources without departing from the spirit or scope of the present invention.

FIG. 4E is a flowchart showing processing logic, indicated generally at **220**, for integrating a CD player and one or more auxiliary input sources with a car radio. Beginning in step **222**, a determination is made as to whether the existing car stereo is powered on. If a negative determination is made, step **224** is invoked, wherein the present invention enters a standby mode and waits for the car stereo to be powered on. If a positive determination is made, step **226** is invoked, wherein a second determination is made as to whether the car stereo is in a state responsive to signals external to the cars stereo. If a negative determination is made, step **226** is re-invoked.

If a positive determination is made in step **226**, then step **228** is invoked, wherein a signal is generated by the present invention indicating that an external device is present, and the signal is continuously transmitted to the car stereo. Importantly, this signal prevents the car stereo from shutting off, entering a sleep mode, or otherwise being unresponsive to signals and/or data from an external source. Then, in step **230**, a

determination is made as to whether a CD player is present (*i.e.*, whether an external CD player or changer is connected to the multimedia device integration system of the present invention). If a positive determination is made, steps **231** and **232** are invoked. In step **231**, the logic of block **108** of **FIG. 4A** (the CD handling process), described earlier, is invoked, so that the CD player/changer can be integrated with the car stereo and utilized by a user. In step **232**, a sensing mode is initiated, wherein the present invention monitors for a selection sequence (as will be discussed in greater detail) initiated by the user at the control panel of the car stereo for switching from the external CD player/changer to one or more auxiliary input sources. Step **234** is then invoked, wherein a determination is made as to whether such a sequence has been initiated. If a negative determination is made, step **234** re-invokes step **228**, so that further processing can occur. Otherwise, if a positive determination is made (*i.e.*, the user desires to switch from the external CD player/changer to one of the auxiliary input sources), step **236** is invoked, wherein the audio channels of the CD player/changer are disconnected from the car stereo. Then, step **238** is invoked, wherein the logic of block **198** of **FIG. 4D** (the auxiliary input handling process), discussed earlier, is executed, allowing the user to select from one of the auxiliary input sources. In the event that a negative determination is made in step **230** (no external CD player/changer is connected to the present invention), then step **238** is invoked, and the system goes into auxiliary mode. The user can then select from one or more auxiliary input sources using the controls of the radio.

FIG. 4F is a flowchart showing processing logic, indicated generally at **240**, for integrating a satellite receiver or DAB receiver and one or more auxiliary input sources with a car radio. Beginning in step **242**, a determination is made as to whether the existing car stereo is powered on. If a negative determination is made, step **244** is invoked, wherein the present invention enters a standby mode and waits for the car stereo to be powered on. If a positive determination is made, step **246** is invoked, wherein a second determination is made as to whether the car stereo is in a state responsive to signals external to the car stereo. If a negative determination is made, step **246** is re-invoked.

If a positive determination is made in step **246**, then step **248** is invoked, wherein a signal is generated by the present invention indicating that an external device is present, and the signal is continuously transmitted to the car stereo. Importantly, this signal prevents the car stereo from shutting off, entering a sleep mode, or otherwise being

unresponsive to signals and/or data from an external source. Then, in step **250**, a determination is made as to whether a satellite receiver or DAB receiver is present (*i.e.*, whether an external satellite receiver or DAB receiver is connected to the multimedia device integration system of the present invention). If a positive determination is made, steps **251** and **252** are invoked. In step **251**, the logic of block **168** of **FIG. 4C** (the satellite/DAB receiver handling process), described earlier, is invoked, so that the satellite receiver can be integrated with the car stereo and utilized by a user. In step **252**, a sensing mode is initiated, wherein the present invention monitors for a selection sequence (as will be discussed in greater detail) initiated by the user at the control panel of the car stereo for switching from the external satellite receiver to one or more auxiliary input sources. Step **254** is then invoked, wherein a determination is made as to whether such a sequence has been initiated. If a negative determination is made, step **254** re-invokes step **258**, so that further processing can occur. Otherwise, if a positive determination is made (*i.e.*, the user desires to switch from the external satellite/DAB receiver to one of the auxiliary input sources), step **256** is invoked, wherein the audio channels of the satellite receiver are disconnected from the car stereo. Then, step **258** is invoked, wherein the logic of block **198** of **FIG. 4D** (the auxiliary input handling process), discussed earlier, is executed, allowing the user to select from one of the auxiliary input sources. In the event that a negative determination is made in step **250** (no external satellite/DAB receiver is connected to the present invention), then step **258** is invoked, and the system goes into auxiliary mode. The user can then select from one or more auxiliary input sources using the controls of the radio.

FIG. 4G is a flowchart showing processing logic according to the present invention for integrating an MP3 player and one or more auxiliary input sources with a car stereo. Beginning in step **262**, a determination is made as to whether the existing car stereo is powered on. If a negative determination is made, step **264** is invoked, wherein the present invention enters a standby mode and waits for the car stereo to be powered on. If a positive determination is made, step **266** is invoked, wherein a second determination is made as to whether the car stereo is in a state responsive to signals external to the car stereo. If a negative determination is made, step **266** is re-invoked.

If a positive determination is made in step **266**, then step **268** is invoked, wherein a signal is generated by the present invention indicating that an external device is present,

and the signal is continuously transmitted to the car stereo. Importantly, this signal prevents the car stereo from shutting off, entering a sleep mode, or otherwise being unresponsive to signals and/or data from an external source. Then, in step **270**, a determination is made as to whether an MP3 player is present (*i.e.*, whether an external MP3 player is connected to the multimedia device integration system of the present invention). If a positive determination is made, steps **271** and **272** are invoked. In step **271**, the logic of block **138** of **FIG. 4B** (the MP3 handling process), described earlier, is invoked, so that the CD player/changer can be integrated with the car stereo and utilized by a user. In step **272**, a sensing mode is initiated, wherein the present invention monitors for a selection sequence (as will be discussed in greater detail) initiated by the user at the control panel of the car stereo for switching from the external CD player/changer to one or more auxiliary input sources. Step **274** is then invoked, wherein a determination is made as to whether such a sequence has been initiated. If a negative determination is made, step **274** re-invokes step **278**, so that further processing can occur. Otherwise, if a positive determination is made (*i.e.*, the user desires to switch from the external MP3 player to one of the auxiliary input sources), step **276** is invoked, wherein the audio channels of the MP3 player are disconnected from the car stereo. Then, step **278** is invoked, wherein the logic of block **198** of **FIG. 4D** (the auxiliary input handling process), discussed earlier, is executed, allowing the user to select from one of the auxiliary input sources. In the event that a negative determination is made in step **270** (no external MP3 player is connected to the present invention), then step **278** is invoked, and the system goes into auxiliary mode. The user can then select from one or more auxiliary input sources using the controls of the radio.

As mentioned previously, to enable integration, the present invention contains logic for converting command signals issued from an after-market or OEM car stereo into a format compatible with one or more external audio devices connected to the present invention. Such logic can be applied to convert any car stereo signal for use with any external device. For purposes of illustration, a sample code portion is shown in **Table 1**, below, for converting control signals from a BMW car stereo into a format understandable by a CD changer:

Table 1

```
;      ================================================
;      Radio requests changer to STOP (exit PLAY mode)
;      Decoding 6805183801004C message
;      ================================================

Encode_RD_stop_msg:

       movlw 0x68
       xorwf BMW_Recv_buff,W
       skpz
       return

       movlw 0x05
       xorwf BMW_Recv_buff+1,W
       skpz
       return

       movlw 0x18
       xorwf BMW_Recv_buff+2,W
       skpz
       return

       movlw 0x38
       xorwf BMW_Recv_buff+3,W
       skpz
       return

       movlw 0x01
       xorwf BMW_Recv_buff+4,W
       skpz
       return

       tstf  BMW_Recv_buff+5
       skpz
       return

       movlw 0x4C
       xorwf BMW_Recv_buff+6,W
```

```
skpz
return

bsf   BMW_Recv_STOP_msg
return
```

The code portion shown in **Table 1** receives a STOP command issued by a BMW stereo, in a format proprietary to BMW stereos. Preferably, the received command is stored in a first buffer, such as BMW_Recv_buff. The procedure "Encode_RD_stop_msg" repetitively applies an XOR function to the STOP command, resulting in a new command that is in a format compatible with the after-market CD player. The command is then stored in an output buffer for dispatching to the CD player.

Additionally, the present invention contains logic for retrieving information from an after-market audio device, and converting same into a format compatible with the car stereo for display thereby. Such logic can be applied to convert any data from the external device for display on the car stereo. For purposes of illustration, a sample code portion is shown in **Table 2**, below, for converting data from a CD changer into a format understandable by a BMW car stereo:

Table 2

```
;     ========================================
;     Changer replies with STOP confirmation
;     Encoding 180A68390002003F0001027D message
;     ========================================

Load_CD_stop_msg:
      movlw 0x18
      movwf BMW_Send_buff

      movlw 0x0A
      movwf BMW_Send_buff+1

      movlw 0x68
      movwf BMW_Send_buff+2

      movlw 0x39
      movwf BMW_Send_buff+3

      movlw 0x00              ;current status_XX=00, power off
      movwf BMW_Send_buff+4

      movlw 0x02              ;current status_YY=02, power off
      movwf BMW_Send_buff+5

      clrf  BMW_Send_buff+6   ;separate field, always =0

      movfw BMW_MM_stat       ;current status_MM , magazine config
      movwf BMW_Send_buff+7

      clrf  BMW_Send_buff+8   ;separate field, always =0

      movfw BMW_DD_stat       ;current status_DD , current disc
      movwf BMW_Send_buff+9

      movfw BMW_TT_stat       ;current status_TT , current track
      movwf BMW_Send_buff+10

      xorwf BMW_Send_buff+9,W ;calculate check sum
      xorwf BMW_Send_buff+8,W
      xorwf BMW_Send_buff+7,W
      xorwf BMW_Send_buff+6,W
      xorwf BMW_Send_buff+5,W
      xorwf BMW_Send_buff+4,W
      xorwf BMW_Send_buff+3,W
      xorwf BMW_Send_buff+2,W
      xorwf BMW_Send_buff+1,W
      xorwf BMW_Send_buff,W

      movwf BMW_Send_buff+11  ;store check sum
      movlw D'12'             ;12 bytes total
      movwf BMW_Send_cnt
      bsf   BMW_Send_on       ;ready to send
      return
```

The code portion shown in **Table 2** receives a STOP confirmation message from the CD player, in a format proprietary to the CD player. Preferably, the received command is stored in a first buffer, such as BMW_Send_buff. The procedure "Load_CD_stop_msg" retrieves status information, magazine information, current disc, and current track information from the CD changer, and constructs a response containing this information. Then, a checksum is calculated and stored in another buffer. The response and checksum are in a format compatible with the BMW stereo, and are ready for dispatching to the car stereo.

The present invention also includes logic for converting signals from an OEM car stereo system for use with a digital media device such as an MP3, MP4, or Apple iPod player. Shown below are code samples for allowing commands and data to be exchanged between a Ford car stereo and an Apple iPod device:

Table 3

```
//decoding Ford "play" command :41-C0-80-CA-01+

        if ( ACP_rx_ready == ON ) {
                ACP_rx_ready = OFF;
                ACP_rx_taddr = ACP_rx_buff[1];
                ACP_rx_saddr = ACP_rx_buff[2];
                ACP_rx_data1 = ACP_rx_buff[3];
                ACP_rx_data2 = ACP_rx_buff[4];
                ACP_rx_data3 = ACP_rx_buff[5];
                if ( (ACP_rx_saddr == 0x80) ) {
                        switch ( ACP_rx_taddr ) {
                                case 0xC0:
                                        if ( ACP_rx_data1 == 0xCA) {
                                                if ( ACP_rx_data2 ==
0x01 ) {
                                                        flags.ACP_play_req
= 1;
                                                }
                                                break;
                                        }
                                        break;
                        }
                }
```

In the code portion shown in **Table 3**, a "Play" command selected by a user at the controls of a Ford OEM car stereo is received, and portions of the command are stored in one or more buffer arrays. Then, as shown below in **Table 4**, the decoded portions of the

command stored in the one or more buffer arrays are used to construct a "Play/Pause" command in a format compatible with the Apple iPod device, and the command is sent to the Apple iPod for execution thereby:

Table 4

```
// encoding iPod "play/pause" command 0xFF 0x55 0x03 0x02 0x00 0x01 0xFA

        if ( iPod_play_req == ON ) {
                iPod_play_req = OFF;
                iPod_tx_data[0] = 0x55;
                iPod_tx_data[1] = 0x03;
                iPod_tx_data[2] = 0x02;
                iPod_tx_data[3] = 0x00;
                iPod_tx_data[4] = 0x01;
                iPod_tx_counter = 5;
                iPod_tx_ready = ON;
        }
```

While the code portions shown in **Tables 1-2** are implemented using assembler language, and the code portions shown in **Tables 3-4** are implemented using the C programming language, it is to be expressly understood that any low or high level language known in the art could be utilized without departing from the spirit or scope of the invention. It will be appreciated that various other code portions can be developed for converting signals from any after-market or OEM car stereo for use by an after-market external audio device, and vice versa.

FIG. 5 is a flowchart showing processing logic, indicated generally at **300** for allowing a user to switch between an after-market audio device, and one or more auxiliary input sources. As was discussed earlier, the present invention allows a user to switch from one or more connected audio devices, such as an external CD player/changer, MP3 player, satellite receiver, DAB receiver, or the like, and activate one or more auxiliary input sources. A selection sequence, initiated by the user at the control panel of the car stereo, allows such switching. Beginning in step **302**, the buttons of the control panel are monitored. In step **304**, a determination is made as to whether a "Track Up" button or sequence has been initiated by the user. The "Track Up" button or sequence can for a CD player, MP3 player, or any other device. If a negative determination is made, step **306** is invoked, wherein the sensed button or sequence is processed in accordance with the present invention and dispatched to the external audio device for execution. Then, step **302** is re-invoked, so that additional buttons or sequences can be monitored.

In the event that a positive determination is made in step **304**, step **308** is invoked, wherein the present invention waits for a predetermined period of time while monitoring the control panel buttons for additional buttons or sequences. In a preferred embodiment of the present invention, the predetermined period of time is 750 milliseconds, but of course, other time durations are considered within the spirit and scope of the present invention. In step **310**, a determination is made as to whether the user has initiated a "Track Down" button or sequence at the control panel of the car stereo within the predetermined time period. These sequences can be used for a CD player, MP3 player, or any other device. If a negative determination is made, step **312** is invoked. In step **312**, a determination is made as to whether a timeout has occurred (*e.g.*, whether the predetermined period of time has expired). If a negative determination is made, step **308** is re-invoked. Otherwise, is a positive determination is made, step **312** invokes step **306**, so that any buttons or key sequences initiated by the user that are not a "Track Down" command are processed in accordance with the present invention and dispatched to the audio device for execution.

In the event that a positive determination is made in step **310** (a "Track Down" button or sequence has been initiated within the predetermined time period), then step **314** is invoked. In step **314**, the audio channels of the audio device are disconnected, and then step **316** is invoked. In step **316**, the logic of block **198** of **FIG. 4D** (the auxiliary input handling process), discussed earlier, is invoked, so that the user can select from one of the auxiliary input sources in accordance with the present invention. Thus, at this point in time, the system has switched, under user control, from the audio device to a desired auxiliary input. Although the foregoing description of the process **300** has been described with reference to "Track Up" and "Track Down" buttons or commands initiated by the user, it is to be expressly understood that any desired key sequence, keystroke, button depress, or any other action, can be sensed in accordance with the present invention and utilized for switching modes.

When operating in auxiliary mode, the present invention provides an indication on the display of the car stereo corresponding to such mode. For example, the CD number could be displayed as "1", and the track number displayed as "99," thus indicating to the user that the system is operating in auxiliary mode and that audio and data is being supplied from an auxiliary input source. Of course, any other indication could be

generated and displayed on the display of the car stereo, such as a graphical display (*e.g.*, an icon) or textual prompt.

FIG. 6 is a flowchart showing processing logic, indicated generally at **320**, for determining and handling various device types connected to the auxiliary input ports of the invention. The present invention can sense device types connected to the auxiliary input ports, and can integrate same with the car stereo using the procedures discussed earlier. Beginning in step **322**, the control panel buttons of the car stereo are monitored for a button or sequence initiated by the user corresponding to an auxiliary input selection (such as the disc number method discussed earlier with reference to **FIG. 4D**). In response to an auxiliary input selection, step **324** is invoked, wherein the type of device connected to the selected auxiliary input is sensed by the present invention. Then, step **326** is invoked.

In step **326**, a determination is made as to whether the device connected to the auxiliary input is a CD player/changer. If a positive determination is made, step **328** is invoked, wherein the logic of block **108** of **FIG. 4A** (the CD handling process), discussed earlier, is executed, and the CD player is integrated with the car stereo. If a negative determination is made in step **326**, then step **330** is invoked. In step **330**, a determination is made as to whether the device connected to the auxiliary input is an MP3 player. If a positive determination is made, step **334** is invoked, wherein the logic of block **138** if **FIG. 4B** (the MP3 handling process), discussed earlier, is executed, and the MP3 player is integrated with the car stereo. If a negative determination is made in step **330**, then step **336** is invoked. In step **336**, a determination is made as to whether the device connected to the auxiliary input is a satellite receiver or a DAB receiver. If a positive determination is made, step **338** is invoked, wherein the logic of block **168** of **FIG. 4C** (the satellite/DAB receiver handling process), discussed earlier, is executed, and the satellite receiver is integrated with the car stereo. If a negative determination is made in step **336**, step **322** is re-invoked, so that additional auxiliary input selections can be monitored and processed accordingly. Of course, process **320** can be expanded to allow other types of devices connected to the auxiliary inputs of the present invention to be integrated with the car stereo.

The present invention can be expanded for allowing video information generated by an external device to be integrated with the display of an existing OEM or after-market car stereo. In such a mode, the invention accepts RGB (red/green/blue) input signals from

the external device, and converts same to composite signals. The composite signals are then forwarded to the car stereo for display thereby, such as on an LCD panel of the stereo. Additionally, the present invention can accept composite input signals from an external device, and convert same to RGB signals for display on the car stereo. Further, information from the external device can be formatted and presented to the user in one or more graphical user interfaces or menus capable of being viewed and manipulated on the car stereo.

FIG. 7A is a perspective view of a docking station **400** according to the present invention for retaining an audio device within a car. Importantly, the present invention can be adapted to allow portable audio devices to be integrated with an existing car stereo. The docking station **400** allows such portable devices to be conveniently docked and integrated with the car stereo. The docking station **400** includes a top portion **402** hingedly connected at a rear portion **408** to a bottom portion **404**, preferably in a clam-like configuration. A portable audio device **410**, such as the SKYFI radio distributed by DELPHI, Inc., is physically and electrically connected with the docking portion **412**, and contained within the station **100**. A clasp **406** can be provided for holding the top and bottom portions in a closed position to retain the device **410**. Optionally, a video device could also be docked using the docking station **400**, and tabs **413** can be provided for holding the docking station **400** in place against a portion of a car. Conceivably, the docking station **400** could take any form, such as a sleeve-like device for receiving and retaining a portable audio device and having a docking portion for electrically and mechanically mating with the audio device. It should be noted that the docking station **400** could be formed without the top portion **402.**

FIG. 7B is an end view showing the rear portion **408** of the docking station **400** of **FIG. 7A**. A hinge **414** connects the top portion and the bottom portions of the docking station **400**. A data port **416** is provided for interfacing with the audio device docked within the station **400**, and is in electrical communication therewith. In a preferred embodiment of the present invention, the data port **416** is an RS-232 serial or USB data port that allows for the transmission of data with the audio device, and which connects with the multimedia device integration system of the present invention for integrating the audio device with an OEM or after-market car stereo. Any known bus technology can be utilized to interface with any portable audio or video device contained within the docking

station **400**, such as FIREWIRE, D2B, MOST, CAN, USB/USB2, IE Bus, T Bus, I Bus, or any other bus technology known in the art. It should be noted that the present invention can be operated without a docking station, *i.e.*, a portable audio or video device can be plugged directly into the present invention for integration with a car stereo or video system.

FIGS. 8A-8B are perspective views of another embodiment of the docking station of the present invention, indicated generally at **500**, which includes the multimedia device integration system of the present invention, indicated generally at **540**, incorporated therewith. As shown in **FIG. 8A**, the docking station **500** includes a base portion **530**, a bottom member **515** interconnected with the base portion **530** at an edge thereof, and a top member **510** hingedly interconnected at an edge to the base portion **530**. The top member **510** and the bottom member **515** define a cavity for docking and storing a portable audio device **520**, which could be a portable CD player, MP3 player, satellite (*e.g.*, XM, SIRIUS, or other type) tuner, or any other portable audio device. The docking station **500** would be configured to accommodate a specific device, such as an IPOD from Apple Computer, Inc., or any other portable device.

The multimedia device integration system **540**, in the form of a circuit board, is housed within the base portion **530** and performs the integration functions discussed herein for integrating the portable device **520** with an existing car stereo or car video system. The integration system **540** is in communication with the portable device **520** via a connector **550**, which is connected to a port on the device **520**, and a cable **555** interconnected between the connector **550** and the integration system **540**. The connector **550** could be any suitable connector and can vary according to the device type. For example, a MOLEX, USB, or any other connector could be used, depending on the portable device. The integration system **540** is electrically connected with a car stereo or car video system by cable **560**. Alternatively, the integration system could wirelessly communicate with the car stereo or car video system. A transmitter could be used at the integration system to communicate with a receiver at the car stereo or car video system. Where automobiles include Bluetooth systems, such systems can be used to communicate with the integration system. As can be readily appreciated, the docking station **500** provides a convenient device for docking, storing, and integrating a portable device for use

with a car stereo. Further, the docking station **500** could be positioned at any desired location within a vehicle, including, but not limited to, the vehicle trunk.

As shown in **FIG. 8B**, the top member **510** can be opened in the general direction indicated by arrow **A** to allow for access to the portable audio device **520**. In this fashion, the device **520** can be quickly accessed for any desired purpose, such as for inserting and removing the device **520** from the docking station **500**, as well as for providing access to the controls of the device **520**.

FIG. 9 is a block diagram showing the components of the docking station of **FIGS. 8A-8B**. The docking station **500** houses both a portable audio or video device **520** and a multimedia device integration system (or interface) **540**. The shape and configuration of the docking station **500** can be varied as desired without departing from the spirit or scope of the present invention.

The integration system of the present invention provides for control of a portable audio or video device, or other device, through the controls of the car stereo or video system system. As such, controls on the steering wheel, where present, may also be used to control the portable audio device or other device. Further, in all embodiments of the present invention, communication between the after-market device and a car stereo or video system can be accomplished using known wireless technologies, such as Bluetooth.

FIG. 10 is a block diagram showing an alternate embodiment of the multimedia device integration system of the present invention, indicated generally at **600**, wherein the interface **630** is incorporated within a car stereo or car video system **610**. The interface **630** is in electrical communication with the control panel buttons **620**, display **615**, and associated control circuitry **625** of the car stereo or video system **610**. The interface **630** could be manufactured on a separate printed circuit board positioned within the stereo or video system **610**, or on one or more existing circuit boards of the stereo or video system **610**. An after-market device **635** can be put into electrical communication with the interface **630** via a port or connection on the car stereo or video system **610**, and integrated for use with the car stereo or video system **610**.

The device **635** can be controlled using the control panel buttons **620** of the car stereo or video system **610**, and information from the device **635** is formatted by the interface **630** and displayed in the display **615** of the car stereo or video system **610**. Additionally, control commands generated at the car stereo or car video device **610** are

converted by the interface **630** into a format (protocol) compatible with the multimedia device **635**, and are dispatched thereto for execution. A plurality of multimedia devices could be integrated using the interface **630**, as well as one or more auxiliary input sources **640**. The after-market device **635** could comprise any audio, video, or telecommunications device, including, but not limited to, a CD player, CD changer, digital media player (*e.g.*, MP3 player, MP4 player, WMV player, Apple iPod, or any other player), satellite radio (*e.g.*, XM, Sirius, Delphi, etc.), video device (*e.g.*, DVD player), cellular telephone, or any other type of device or combinations thereof. Additionally, one or more interfaces could be connected to the interface **630** ("daisy-chained") to allow multiple products to be integrated. The device **600** could include one or more of the circuits disclosed in **FIGS. 3A-3D** and modified depending upon the type of the after-market device **635**.

FIG. 11A is a diagram showing an alternate embodiment of the present invention, indicated generally at **645**, wherein a cellular telephone **670** is integrated for use with a car stereo. The telephone **670** is in electrical communication with the interface **665**, which receives data from the cellular telephone and formats same for displaying on the display **650** of the car stereo or video system **660**. Commands for controlling the telephone **670** can be entered using the control panel buttons **655** of the car stereo or video system **660**. The commands are processed by the interface **665**, converted into a format (protocol) compatible with the telephone **670**, and transmitted to the telephone **670** for processing thereby.

Additionally, audio and video from the telephone **670** can be channeled to the car stereo or video system **660** via the interface **665** and played through the speakers and/or display **650** of the car stereo or video system **660**. For example, if the telephone **670** is provided with the ability to download songs or music, such songs or music can be selected using the car stereo or video system **660** and played therethrough using the interface **665**. Further, the telephone **670** could be provided with the ability to receive live and/or streamed audio and/or video signals (*e.g.*, via QuickTime or RealSystem streaming files, or a live radio signal received by the telephone), satellite audio (*e.g.*, XM or SIRIUS satellite radio signals, received by a satellite-capable cellular telephone), mobile television (*e.g.*, "amp'd" mobile), or navigational information (*e.g.*, via the Global Positioning System (GPS)), which can be selected using the car stereo or video system **660** and played

thereon (both audio and video) using the interface **665**. For example, if the telephone **670** is equipped to receive SIRIUS satellite digital audio signals, a user could be presented with a menu of available channels that can be displayed and selected using the car stereo or video system **660**, which causes corresponding audio signals to be played through speakers of the car stereo or video system **660.** It is also noted that navigational and map data received by the telephone **670**, including, but not limited to, Global Positioning System (GPS) maps and road / driving maps (e.g., Google driving / road maps, Telnav maps, etc.), can be displayed on the car stereo or video system **660**. Additionally, other types of data, such as restaurant menus accessed by the telephone **670**, could be displayed on the car stereo or video system **660**.

It should be noted that control of the cellular telephone could be provided using one or more displays (*e.g.*, LCD) of a car video system. Moreover, control of the cellular telephone **670** is not limited to the use of buttons on the car stereo or video system **660**, and indeed, a software or graphically-driven menu or interface can be used to control the cellular telephone. The device **645** could include one or more of the circuits disclosed in **FIGS. 3A-3D** and modified for use with the cellular telephone **670**.

FIG. 11b is a flowchart showing processing logic, indicated generally at **647**, for integrating a cellular telephone with a car radio. Beginning in step **649**, a determination is made as to whether the existing car stereo is powered on. If a negative determination is made, step **651** is invoked, wherein the present invention enters a standby mode and waits for the car stereo to be powered on. If a positive determination is made, step **653** is invoked, wherein a second determination is made as to whether the car stereo is in a state responsive to signals external to the car stereo. If a negative determination is made, step **649** is re-invoked.

If a positive determination is made in step **653**, a cellular telephone handling process, indicated as block **661**, is invoked. Beginning in step **654**, a signal is generated by the present invention indicating that a cellular telephone is present, and the signal is continuously transmitted to the car stereo. Importantly, this signal prevents the car stereo from shutting off, entering a sleep mode, or otherwise being unresponsive to signals and/or data from an external source. In step **657**, the audio channels of the cellular telephone are connected (channeled) to the car stereo system, allowing audio from the cellular telephone to be played through the car stereo. Video signals from the cellular telephone could also

be processed in accordance with the present invention (e.g., RGB to composite signal conversion, or vice-versa), and the processed video could be sent by the interface to the car stereo system for display thereby. In step **659**, data is retrieved by the present invention from the cellular telephone, such as song information corresponding to one or more songs downloaded onto the cellular telephone, satellite radio channel, artist name, genre, etc. After steps **654**, **657**, and **659** have been executed, control passes to step **663**.

In steps **663**, the present invention monitors the control panel buttons of the car stereo for cellular telephone operational commands. In step **664**, if a command is not detected, step **663** is re-invoked. Otherwise, if a command is received, step **663** invokes step **667**, wherein the received command is converted into a format recognizable by the cellular telephone connected to the present invention. Once the command has been formatted, step **669** is invoked, wherein the formatted command is transmitted to the cellular telephone and executed. Step **654** is then re-invoked, so that additional processing can occur.

FIG. 12A is a diagram showing an alternate embodiment of the present invention, indicated generally at **675**, wherein an after-market video device **695** is integrated for use with a car video system **685**. In particular, the interface **675** allows a non-native video device **695** (i.e., a device which is alien to a car video system) to be used interchangeably with a car video system **685**. The after-market video device **695** could comprise a portable DVD player, digital video (DV) camera, digital camera, rear-view camera, or any other video device. The interface **690** receives output video signals from the device **695**, and converts same for display on one or more displays **680** (*e.g.*, LCD seat-back displays in a minivan, fold-down displays mounted on the roof of a vehicle, vehicle navigation displays, etc.) of the car video system **685**. The output signals could be transmitted via a wired or a wireless connection to the interface **690**. The interface **690** could convert between composite and red/green/blue (RGB) video signals, and vice versa, using commercially-available video format conversion chips such as the TDA8315, TDA4570, TDA3567, TDA3566A, and TDA3569A video conversion chips manufactured by Philips Corp., and the AL251 and AL250 video conversion chips manufactured by Averlogic Technologies, Inc., or any other suitable video conversion chips. Commands issued by a user using the car video system **685** or display(s) **680** for controlling the device **695** are received by the interface **690**, converted into a format compatible with the device **695**, and transmitted

thereto for processing. The device **675** could include one or more of the circuits disclosed in **FIGS. 3A-3D** and modified for use with the video device **695**.

FIG. 12B is a flowchart showing processing logic, indicated generally at **671**, for integrating an after-market video device with a car video system. Beginning in step **673**, a determination is made as to whether the existing car video system is powered on. If a negative determination is made, step **674** is invoked, wherein the present invention enters a standby mode and waits for the car video system to be powered on. If a positive determination is made, step **677** is invoked, wherein a second determination is made as to whether the car video system is in a state responsive to signals external to the car video system. If a negative determination is made, step **673** is re-invoked.

If a positive determination is made in step **677**, an after-market video device handling process, indicated as block **687**, is invoked. Beginning in step **679**, a signal is generated by the present invention indicating that an external device is present, and the signal is continuously transmitted to the car video system. Importantly, this signal prevents the car video system from shutting off, entering a sleep mode, or otherwise being unresponsive to signals and/or data from an external source. In step **681**, the audio and video channels of the after-market device are connected (channeled) to the car video system, allowing audio and video from the after-market device to be played through the car video system. In step **684**, the display(s) of the car video system are updated with data from the after-market device. After steps **679**, **681**, and **684** have been executed, control passes to step **683**.

In step **683**, the present invention monitors the car video system for after-market video device operational commands. In step **689**, if a command is not detected, step **683** is re-invoked. Otherwise, if a command is received, step **689** invokes step **691**, wherein the received command is converted into a format recognizable by the after-market video device connected to the present invention. Once the command has been formatted, step **693** is invoked, wherein the formatted command is transmitted to the after-market video device and executed. Step **679** is then re-invoked, so that additional processing can occur.

FIG. 13A is a block diagram showing an alternate embodiment of the multimedia device integration system **710** of the present invention, wherein configuration jumpers **720** and protocol conversion software blocks **724** are provided for integrating after-market devices of various types using a single interface. The jumpers **720** can be set to a plurality

of different settings, each of which corresponds to an after-market device of a specific type (*e.g.*, CD changer, CD player, digital media player, satellite radio, video device, cellular telephone, etc.) or from a specific manufacturer. Additionally, the jumpers **720** can be used to specify one or more device or manufacturer types for the car stereo or video system **705**. The settings of the configuration jumpers **720** correspond to one or more protocol conversion software blocks **724** stored in memory (*e.g.*, programmable flash memory, ROM, EEPROM, etc.) **725** of the interface **710**. Each of the software blocks **724** controls the interface circuitry **715** and contains instructions for converting data from the device **707** into a format compatible with the car stereo or video system **705**, and vice versa. For example, a first block could contain software for allowing communication between an Apple iPod and an in-dash car stereo manufactured by Sony, and a second block could contain software for allowing communication between a DVD player and a car video system. Any desired number of blocks could be stored in the memory **725** and can be selected as desired by the user via configuration jumpers **720**. As such, a single interface **710** can be used for integrating numerous devices of various types and manufactures for use with one or more car stereo or video systems. The device **710** could include one or more of the circuits shown in **FIGS. 3A-3D**, with modifications depending upon the device types of the devices **705** and **707.**

FIG. 13B is a block diagram showing an alternate embodiment of the multimedia device integration system of the present invention, wherein wiring harnesses **727** and **728** and protocol conversion software blocks **729** are provided for integrating multimedia devices of various types using a single interface **726**. In this embodiment, the electrical configurations (pinouts) of each of the harnesses **727** and **728** correspond to car stereo / video systems and after-market devices of specific types and made by specific manufacturers (*e.g.*, harness **727** could correspond to a BMW car stereo, and harness **728** could correspond to an ALPINE satellite tuner). The electrical configurations (pinouts) of the harnesses are utilized by the interface **726** to retrieve a specific protocol conversion software block **729** that allows communication between the devices. The interface **726** could be provided with a plurality of protocol conversion software blocks pre-loaded into memory in the interface, and could be provided with any desired harnesses. The interface **726** could include one or more of the circuits shown in **FIGS. 3A-3D**, with modification

depending upon the device types of the devices attached to the wiring harnesses **727** and **728**.

FIG. 14 is a flowchart showing processing logic, indicated generally at **730**, of the multimedia device integration system of the present invention for integrating after-market devices of various types using a single interface. In step **735**, the interface determines types of devices that are connected thereto, including the car stereo or video system and one or more after-market devices to be integrated therewith. This could be achieved by the configuration jumper settings or the harness types connected to the interface and discussed with respect to **FIGS. 13A** and **13B**. Then, in step **740**, a protocol conversion software block is selected from blocks of conversion software (*e.g.*, from the blocks **725** and **729** shown in **FIGS. 13A** and **13B**). In step **745**, instructions are converted using the selected conversion block to allow the car stereo or video system to operate with the multimedia device.

FIG. 15 is a flowchart showing processing logic, indicated generally at **750**, of the multimedia device integration system of the present invention for allowing a user to specify one or more after-market device types for integration using a single interface. In step **770**, a user is provided with one or more lists of devices to be integrated, which are displayed on the display **760** of the car stereo or video device **755**. Then, in step **775**, using the buttons **765** of the car video device, the user can specify the type of multimedia device to be integrated (*e.g.*, by scrolling through the lists). Additionally, the device type could be specified using a graphical or software menu displayed on the car stereo or car video system. In step **780**, a determination is made as to whether a timeout has occurred (*e.g.*, the user has not selected a device type within a predetermined period of time). If a positive determination is made, step **785** occurs, wherein a protocol conversion software block is selected from memory corresponding to the last device type displayed by the car stereo or video system. If a negative determination is made, step **790** is invoked, wherein a determination is made as to whether the user has specified a device type. If a negative determination is made, step **775** is re-invoked so that the user can specify a device type. If a positive determination is made, step **795** is invoked, wherein a protocol conversion software block is selected from memory corresponding to the device specified by the user. In step **800**, the protocol conversion software block is mapped to a logical address in memory. Then, in step **805**, instructions to be exchanged between the car stereo or video

system and the after-market device are converted using the software block to allow communication between the devices using compatible formats. Accordingly, the logic of **FIG. 15** allows a single interface having multiple protocol conversion software blocks to be used integrate a plurality of after-market devices with a car stereo or video system.

FIG. 16 is a flowchart showing processing logic of the multimedia device integration system of the present invention, indicated generally at **810**, for allowing a user to quickly navigate through a list of songs on one or more after-market devices using the controls of a car stereo or video system (fast navigation technique). This method allows a user to quickly select a song from a list of songs available on an after-market device for playing on the car stereo or video system, and could be applied for use with any type of after-market device, including, but not limited to, a digital media player such as an MP3 player or Apple iPod player. Beginning in step **812**, a user is provided with a list of alphanumeric characters on a display of the car stereo or video system. This list could include the letters A through Z, as well as the numbers 0 through 9. In step **814**, the user can specify a desired alphanumeric character, which can be specified by scrolling through the list using one or more controls of the car stereo or video system and pressing a button once the desired character has been highlighted, or optionally, if an alphanumeric keypad (or touchscreen interface) is provided on the car stereo or video system, the user can directly enter the desired alphanumeric character.

When the desired alphanumeric character has been specified, in step **816** a remote database is queried using the alphanumeric character. The remote database could comprise a list of songs stored in one or more after-market devices integrated by the present invention for use with the car stereo or video system. In step **818**, a list of potentially matching songs is retrieved from the database and presented on the display of the car stereo or video system for perusal by the user. For example, if the user specified the letter "A," the list could include all songs in the remote database having titles (or artists) beginning with the letter "A." In step **820**, a determination is made as to whether a desired song appears in the list and is immediately viewable by the user, without requiring the user to scroll through the list. If a positive determination is made, step **822** is invoked, wherein the desired song is selected by the user and retrieved from the after-market device for playing on the car stereo or video system.

In the event that a negative determination is made in step **820**, step **824** is invoked, wherein the user can specify an additional alphanumeric character using the car stereo or video system. For example, if the user initially specified the letter "A" and the desired song is not visible in the list of songs without scrolling, the user can refine the query by adding an additional alphanumeric character. Thus, for example, the user can specify the letters "AN" to search for songs having titles (or artists) beginning with the letters "AN." In step **826**, the remote database of the after-market device is queried using the specified letters. In step **828**, a list of potential matches is presented to the user at the car stereo or video system. In step **830**, a determination is made as to whether the desired song appears in the list and is immediately viewable without requiring the user to scroll through the list. If a positive determination is made, step **822** is invoked, wherein the user can select the desired song for retrieval from the after-market device and playing on the car stereo or video system. If a negative determination is made, step **832** is invoked, wherein a determination is made as to whether a threshold number of alphanumeric characters has been specified by the user. For example, a maximum threshold of 3 alphanumeric characters could be specified, or any other desired number. If a negative determination is made, steps **824-832** are re-invoked in the manner disclosed herein to allow the user to specify additional alphanumeric characters for querying the remote database. If a positive determination is made (threshold met), then processing terminates and the user must scroll through the list of retrieved songs or repeat the processing disclosed in **FIG. 16** to begin a new query.

FIG. 17 is a diagram showing an another embodiment of the present invention, indicated generally at **850**, wherein a plurality of external devices are integrated using a single interface **852**. Any desired number or combination of devices can be integrated for use with a car stereo or video system using the interface **852**. The interface **852** houses a plurality of ports **858** for connecting any desired number of external devices, and a port **856** for connection with a car stereo or video system. The ports **858** and **856** could be any suitable type of input port, and could vary depending upon the types of devices to be integrated. Additionally, the interface **852** includes integration electronics **854**, which could include any desired electronics disclosed herein for integrating a plurality of external devices.

As shown in **FIG. 17**, a CD player **860**, a digital media device **862**, a satellite tuner **864**, a video device **866**, a cellular phone **868**, and an auxiliary input **870** are connected to the interface **852** and integrated for use with a car stereo or video system. The CD player **860** could comprise any desired CD player or changer. The digital media device **862** could comprise any portable digital media device, such as an Apple iPod, MP3 player, MP4, player, WMV player, portable music center, or any other desired device. The satellite tuner **864** could comprise any desired satellite tuner, such as an XM or Sirius tuner. The video device **866** could comprise any desired video device, such as a DVD player. The cellular phone **868** could comprise any cellular telephone capable of downloading and storing music or video files. The auxiliary input **870** could comprise any desired external device. Any desired number of interfaces **852** could be interconnected ("daisy-chained"). Further, the interface **852** could form part of an existing car stereo or video system. Control of the external devices connected to the interface **852** is provided through the car stereo or video system.

FIG. 18 is a diagram showing another embodiment of the present invention, indicated generally at **900**, wherein wireless integration is provided between a car audio and/or video system **910** and a portable audio and/or video device **924**. The car system **910** could be any OEM or after-market car audio and/or video system. The portable device **924** could comprise a CD player, CD changer, digital media player (*e.g.*, MP3 player, MP4 player, WMV player, Apple iPod, Apple video iPod), portable media center, portable media player, satellite receiver, digital audio broadcast (DAB) receiver (also commonly referred to as a high-definition (HD) radio receiver), video device (*e.g.*, DVD player or digital media player, such as the SONY PSP digital media player), cellular telephone, or any other portable device.

The car system **910** includes system electronics **912** (e.g., circuitry and components provided by an OEM or after-market car audio and/or video system manufacturer), a display **918**, a control panel **920** (e.g., buttons, touch screen display, etc.) for allowing user interaction and control, and a wireless interface or transceiver **916**. The wireless interface **916** could comprise an AT76C551 Bluetooth transceiver manufactured by Atmel, Inc., which includes a Bluetooth baseband controller with an integrated digital signal processor (DSP), and an AT7024 2.4 - 2.5 GHz band RF front end transceiver manufactured by Atmel, Inc., which includes a low-noise amplifier and transmit / receive

switch driver. Any other suitable wireless transceiver (e.g., IEEE 802.11a, 802.11b, or 802.11g) could also be substituted. The display **918** could comprise any display associated with the car system **910**, including, but not limited to, a display panel, a seat-back display, a dashboard display, an LCD or plasma display, or any other display in a car or associated with a car audio and/or video system, positioned anywhere within a vehicle.

The portable device **924** includes device electronics **934** (e.g., circuitry and components provided by the portable device manufacturer), a wireless interface or transceiver **926**, and an integration subsystem or module **932** positioned within the portable device **924**. Optionally, the wireless interface **926** could be positioned external to the portable device **924**. The wireless interface **926** is identical to the wireless interface **916**, and both interfaces **916** and **926** establish a wireless communications channel or link **922** between the car system **910** and the portable device **924**.

The integration subsystem **932** receives control commands that are issued at the car system **910** and wirelessly transmitted to the portable device **924** via the wireless communications link **922**, processes the commands into a format compatible with the device electronics **934** of the portable device **924**, and dispatches same to the device electronics **934** for execution thereby, so as to provide remote, wireless control of the portable device **924** using the car system **910**. For example, a "Play" command could be entered at the car system **910** (which could be a BMW car stereo), wirelessly transmitted to the portable device **924** (which could be an Apple iPod), converted by the integration subsystem **932** into a format recognizable by the device electronics **934**, and executed thereby. The integration subsystem **932** also receives data generated by the device electronics **934** (including, but not limited to, track information, artist information, song title, time information, etc.), processes same into a format compatible with the car system **910**, and transmits the processed data to the car system **910** using the wireless link **922** for display thereon using the display **918**. For example, playlists or other data generated by the portable device **924** could be processed by the integration subsystem **932** into a format compatible with the car system **910**, and wirelessly transmitted thereto for display on the display **918**.

Audio and video information generated by the portable device **924** can be transmitted digitally to the car system **910** using the wireless link **922**. This information could also be transmitted via one or more analog RF carrier signals, using suitable digital-

to-analog and analog-to-digital conversion circuitry known in the art. The integration subsystem **932** could also include conversion circuitry (*e.g.*, using the video format conversion chips discussed above with respect to **FIG. 12A**) for converting video information generated by the portable device **924** for display on the display **918** of the car system **910** (e.g., by converting composite video signals to red, green, and blue (RGB) video signals, or vice versa). It should be noted that the integration subsystem **932** could also be utilized to process data, video, and audio information provided by the portable device **924** where the portable device **924** is connected to the Internet (*e.g.*, via a wireless Internet connection established by a cellular telephone). In such circumstances, the display **918** of the car system **910** would function as an Internet browser, and the controls **920** of the car system **910** could be utilized to navigate the Internet.

The integration subsystem **932** contains circuitry similar to the circuitry disclosed in the various embodiments of the present invention discussed herein, and could include a PIC16F872 or PIC16F873 microcontroller manufactured by Microchip, Inc. and programmed in accordance with the flowchart discussed below with respect to **FIG. 24**. Additionally, the integration subsystem **932** generates a device presence signal for maintaining the car system **910** in a state responsive to the portable device **924**. It should be noted that a non-wireless connection **930** could be provided between optional external interfaces ports **914** and **928** of the car system **910** and the portable device **924**, respectively, using any suitable wired connection type such as serial, FIREWIRE, CAN/CAN2, USB/USB2, IE Bus, T Bus, I Bus, or any other connection, to allow for wired integration between the car system **910** and the portable device **924**. Additionally, the non-wireless connection **930** could include a fiber-optic connection, such as a D2B or MOST fiber-optic connection. The device presence can be transmitted to the car system **910** using the wireless link **922** or, optionally, the non-wireless connection **930**.

FIG. 19 is a diagram showing another embodiment of the present invention, indicated generally at **1000**, wherein wireless integration is provided between a car audio and/or video system **1010** and a portable audio and/or video device **1024**. The components shown in **FIG. 19** are identical to the components shown in **FIG. 18**, and reference numerals of corresponding components have been increased by 100. In this embodiment, the integration subsystem **1032** is positioned internally within the car system **1010**, which also includes system electronics **1012**, wireless interface **1016**, display **1018**,

control panel **1020**, and, optionally, external interface port **1014**. The portable device **1024** includes a wireless interface **1026** in communication with device electronics **1034**, and optionally, an external interface port **1028** for communicating with the external interface port **1014** of the car system **1010** via non-wireless connection **1030**.

FIG. 20 is a diagram showing another embodiment of the present invention, indicated generally at **1100**, wherein a docking slot **1140** is provided in a car audio and/or video system **1110** for receiving a portable audio and/or video device **1124**. The car system **1110** includes system electronics **1112** (e.g., circuitry and components provided by an OEM or after-market car audio or video system manufacturer), a display **1118**, and a control panel **1120**. The portable device **1124** includes an integration subsystem or module **1132**, device electronics **1134** (e.g., circuitry and components provided by the manufacturer of the portable device **1124**) and an external interface port **1142** that interfaces with the docking slot **1140** to allow electrical communication between the integration subsystem **1132** of the car system **1110** and the device electronics **1134** of the portable device **1124**. The electrical connection formed by the external interface port **1142** and the docking slot **1140** could include a FIREWIRE, CAN/CAN2, USB/USB2, IE Bus, T Bus, or I Bus connection, or any other suitable connection type. Additionally, a fiber-optic connection could be formed between the external interface port **1142** and the docking slot **1140**, using a D2B, MOST, or other suitable fiber-optic connection.

The portable device **1124** is inserted into the docking slot **1140** in the general direction indicated by arrow **A**. Once docked, the integration subsystem **1132** processes control commands issued at the car system **1110** into a format compatible with the portable device **1124**, and processes data generated by the portable device **1124** into a format compatible with the car system **1110** in the manner described herein. Audio and video signals generated by the portable device **1124** are channeled by the integration subsystem **1132** to the system electronics **1112**, for playing through the car system **1110**. The portable device **1124** could comprise a digital media player (*e.g.*, MP3 player, MP4 player, WMV player, Apple iPod, Apple video iPod, or other device), a portable media center, a portable media player, a satellite receiver, a digital audio broadcast (DAB) receiver or high-definition (HD) radio receiver, a portable video device, a cellular telephone, or any other portable device.

FIG. 21 is a diagram showing another embodiment of the present invention, indicated generally at **1200**, wherein a docking slot **1240** is provided in a car audio and/or video system **1210** for receiving a portable audio and/or video device **1224**. The components shown in **FIG. 21** are identical to those disclosed in **FIG. 20**, and reference numerals of corresponding components have been increased by 100. In this embodiment, the integration subsystem **1232** is positioned within the car system **1210**, which also includes system electronics **1212**, display **1218**, and control panel **1220**. The portable device **1224** includes device electronics **1234** and an external interface port **1242** for interfacing with the docking slot **1240** and providing electrical (and/or optical) communication with the integration subsystem **1232**.

FIG. 22 is a diagram showing another embodiment of the present invention, indicated generally at **1300**, wherein wireless integration is provided between a car audio and/or video system **1310** and a portable audio and/or video device **1324**, and voice synthesis and speech recognition capabilities are provided. More particularly, the portable device **1324** includes an integration subsystem or module **1332** having a voice recognition subsystem **1336** and a speech synthesizer **1338**. As with the embodiments discussed earlier with respect to **FIGS. 18-19**, the car system **1310** includes system electronics **1312** (*e.g.*, circuitry and components provided by an OEM or after-market car audio or video system manufacturer), an optional external interface port **1314**, a wireless interface or transceiver **1316** (which could be a Bluetooth or other suitable wireless transceiver), a display **1318**, and a control panel **1320**.

The portable device **1324** could comprise a CD player, CD changer, digital media player (*e.g.*, MP3 player, MP4 player, WMV player, Apple iPod, Apple video iPod, or other device), portable media center, portable media player, satellite receiver, digital audio broadcast (DAB) receiver, high-definition (HD) radio receiver, video device (*e.g.*, DVD player or digital media player, such as the SONY PSP digital media player), cellular telephone, or any other portable device. The portable device **1324** includes a wireless interface **1326** which communicates with the wireless interface **1316** to provide a wireless communications channel or link **1322**, an optional external interface port **1328** for providing a non-wireless connection **1330** with the external interface port **1314** (which could include any suitable wired connection, such as FIREWIRE, CAN/CAN2, USB/USB2, IE Bus, T Bus, I Bus, etc., or any suitable optical connection, such as D2B or

MOST), device electronics **1334**, and optional external audio output **1340** and optional external audio input **1342**.

The voice recognition subsystem **1336** of the integration subsystem **1332** could comprise the HM2007 speech recognition processor manufactured by Hualon Microelectric Corporation, the VRP6679 speech recognition processor manufactured by Oki, Inc., or any other suitable speech recognition processor. The voice recognition subsystem **1336** receives control commands that are spoken by a user and are transmitted to the portable device **1324** via the wireless link **1322** or the non-wireless connection **1330** (where the car system **1310** another vehicle component connected to the car system **1310** includes a microphone for receiving voice commands). Optionally, a microphone could be connected to the external audio input **1342** of the portable device **1324** for receiving voice commands. Any desired, spoken commands could be received by the integration subsystem **1332** and processed by the voice recognition subsystem **1336** into a format compatible with the device electronics **1334** of the portable device **1324** for execution thereby. For example, a user could speak a desired artist name, whereupon the voice recognition subsystem **1336** processes the spoken artist name into a digital format, passes the processed artist name to the integration subsystem **1332**, and the integration subsystem **1332** constructs a query command and passes the query command to the device electronics **1334** along with the processed artist name to the device electronics **1334**. The device electronics **1334** then queries the portable device **1324** for all songs (e.g., by searching ID3 tags associated with each song and stored in the portable device **1324**) having a matching artist name. The resulting list is then passed to the integration subsystem **1332**, whereupon the information is processed into a format compatible with the car system **1310**. Then, the information is transmitted to the car system **1310** via the wireless link **1322** or the non-wireless connection **1330** for display on the display **1318** of the car system **1310**.

Voice recognition could also be used to retrieve other media files, such as video clips that are stored on the portable device **1324.** Such files, one retrieved, could then be processed by the integration subsystem **1332** in the manner described herein, transmitted to the car system **1310** (via the wireless link **1322** or the non-wireless connection **1330**), and displayed on the display **1318** of the car system **1310**. An index of such files could

also be generated by the integration subsystem **1332** for quick browsing and retrieval using car system **1310** or voice commands.

The speech synthesizer **1338** provides synthesized speech corresponding to data produced by the portable device **1324**. For example, track lists, artist names, song titles, and other information (e.g., video clip titles, movie titles, etc.) could be retrieved from the portable device **1324** by the integration subsystem **1332** (e.g., in response to a command issued by the user at the car system **1310** or a spoken command processed by the voice recognition subsystem **1336**), and synthesized speech corresponding to the retrieved information could be generated by the speech synthesizer **1338** using known text-to-speech software. The speech synthesizer **1338** could include the RC 8650 or RC 8660 speech synthesis chipsets manufactured by RC Systems, Inc., or any other suitable speech synthesizers. Synthesized speech could be transmitted to the car system **1310** via the wireless link **1322** or the non-wireless connection **1330** and played through the car system **1310**, or optionally, the speech could be channeled to an external device via the optional external audio output **1340**. It should be noted that the voice recognition subsystem **1336** and the speech synthesizer **1338** could be formed on a single integrated circuit forming part of the integration subsystem **1332**. Additionally, the integration subsystem **1332** provides full control of the portable device **1324** using the car system **1310** and exchange of data, audio, and video signals between the portable device **1324** and the car system **1310**, in the manner described herein.

FIG. 23 is a diagram showing another embodiment of the present invention, indicated generally at **1400**, wherein wireless integration is provide between a car audio and/or video system **1410** and a portable audio and/or video device **1424** and voice recognition and speech synthesis capabilities are provided. The components shown in **FIG. 23** are functionally identical to the components shown in **FIG. 22**, and reference numerals of corresponding components have been increased by 100. In this embodiment, the integration subsystem **1432** is positioned in the car system **1410**, which includes system electronics **1412**, an optional external interface port **1414**, a wireless interface **1416**, a display **1418**, and a control panel **1420**. The integration subsystem **1432** includes a voice recognition subsystem **1436** and a speech synthesizer **1438**, which provide the voice recognition and speech synthesis capabilities described above with reference to **FIG. 22**. The portable device **1424** includes a wireless interface **1426**, and optional external

interface port **1428**, device electronics **1434**, an optional external audio output port **1440**, and an optional external audio input port **1442**.

FIG. 24 is a flowchart showing processing logic according to the present invention, indicated generally at **1450**, for wirelessly integrating a portable audio and/or video device for use with a car audio and/or video system. In step **1452**, a wireless link is established between the portable device and the car audio and/or video system. As discussed above, the wireless link could be any suitable wireless communications link, such as a Bluetooth wireless link, an IEEE 802.11 link, or any other suitable link. In step **1454**, the car audio and/or video system type is determined, such as the manufacturer name and/or model identifier. In step **1456**, the portable audio and/or video device type is identified, such as the manufacturer name and/or model identifier. In step **1458**, a protocol conversion software block is loaded from memory, based upon the corresponding device types of the car audio and/or video system and the portable audio and/or video device. The protocol conversion software block includes code for converting commands issued at the car audio and/or video system into a format compatible with the portable audio and/or video device, as well as code for converting data generated by the portable audio and/or video device into a format compatible with the car audio and/or video system.

In step **1460**, data generated by the portable audio and/or video device is processed by the protocol conversion software block. Then, in step **1466**, the processed data is transmitted to the car audio and/or video system for display thereon, using the wireless link. In step **1462**, audio and/or video signal generated by the portable audio and/or video device are channeled to the car audio and/or video system using the wireless link. In step **1464**, a determination is made as to whether commands from the car audio and/or video system are to be processed. If a negative determination is made, step **1458** is re-invoked. Otherwise, step **1468** is invoked, wherein the commands are processed using the protocol conversion software block. Then, in step **1470**, the processed commands are transmitted to the car audio and/or video system using the wireless link. Step **1458** is then re-invoked, so that additional processing can occur.

Importantly, the present invention allows video files in any format (including video clips, movies, pictures, etc.) that are stored on a portable device to be displayed on one or more displays of a car audio and/or video system, and playback of such files to be controlled using the car audio and/or video system. Examples of such files include, but

are not limited to, MPEG, WMV, AVI, JPEG, GIF, TIFF, MP4, or any other suitable video format. Such files could be stored on a cell phone, a portable media center, a portable media player, or any other portable device which is integrated by the present invention (through a wired or wireless connection) for use with a car audio and/or video system. Thus, for example, a video clip downloaded to a cellular telephone or a video clip stored on a portable device (e.g., an Apple video iPod) can be displayed on one or more displays of a car audio and/or video system. Further, the present invention allows for live video streams, such as live television video received by a cellular telephone or other portable device, to be displayed on one or more displays of the car audio and/or video system.

FIG. 25A is a diagram showing another embodiment of the present invention, indicated generally at **1500**, wherein a digital camera **1515** is integrated for use with a car audiovisual system **1505**. The digital camera **1515** could comprise any commercially-available digital still or video camera, such as a point-and-shoot or single-lens-reflex (SLR) digital camera. The digital camera **1515** is in electrical communication with the interface **1510** via any suitable electrical connection, such as USB, USB2, Firewire (IEEE 1394), etc., or any suitable wireless connection, such as BLUETOOTH, IEEE 802.11 (WiFi), etc. The interface **1510** receives data from the digital camera **1515** (such photographs or video clips) and formats same for displaying on a display **1520** of the car audiovisual system **1505**. Instructions for controlling the digital camera **1515** can be entered using the control panel buttons **1525** of the car audiovisual system **1505**. The instructions are processed by the interface **1510**, converted into a format (protocol) compatible with the digital camera **1515**, and transmitted to the digital camera **1515** for processing thereby. Output signals from the digital camera **1515** containing still images, full motion video, or multimedia data can be channeled to the car audiovisual system **1505** via the interface **1510** and played through the display **1520** and/or speakers of the car audiovisual system **1505**. For example, a video file stored in the digital camera **1515** can be selected using the control panel buttons **1525**, which causes the digital camera **1515** to produce corresponding output signals that are processed by the interface **1510,** transmitted to the car audiovisual system **1505,** and displayed on the display **1520**. It should be noted that control of the digital camera **1515** can be performed using buttons on the car audiovisual system **1505**, or a software or graphically-driven menu or interface, such as a

touch screen, as well as controls on the digital camera **1515** itself. The interface **1510** could include one or more of the circuits disclosed herein and modified for use with the digital camera **1515**, including, but not limited to a microcontroller programmed in accordance with the present invention as well as a video processing integrated circuit for converting video signals from the camera **1515** into video signals compatible with the car audiovisual system **1505**.

FIG. 25B is a flowchart showing processing logic, indicated generally at **1530**, for integrating a digital camera with a car audiovisual system. Beginning at step **1535**, a determination is made as to whether the existing car audiovisual system is powered on. If a negative determination is made, step **1540** is invoked, wherein the present invention enters a standby mode and waits for the car audiovisual system to be powered on. If a positive determination is made, step **1545** is invoked, wherein a second determination is made as to whether the car audiovisual system is in a state responsive to signals external to the car audiovisual system. If a negative determination is made, step **1535** is re-invoked.

If a positive determination is made in step **1545**, a digital camera handling process, indicated as block **1565**, is invoked. Beginning in step **1550**, a signal is generated by the present invention indicating that a digital camera is present, and the signal is continuously transmitted to the car audiovisual system. Importantly, this signal prevents the car audiovisual system from shutting off, entering a sleep mode, or otherwise being unresponsive to signals and/or data from an external source. In step **1555**, video and/or audio channels of the digital camera are connected (channeled) to the car audiovisual system. In step **1560**, data is retrieved by the present invention from the digital camera, such as title information corresponding to one or more files stored in the digital camera. For example, a list of files stored on the digital camera is presented on the display of the car audiovisual system for selection by a user. The user can then select a file, which could include a picture (.jpg, .gif, .tiff, etc.) or a video file (.wmv, .mpg, etc.), using the controls of the car audiovisual system, and display same on the display of the car audiovisual system. If conversion of the video signal is required, the present invention could convert the signal using any suitable video conversion circuitry (e.g., composite-to-RGB signal conversion, and/or vice versa) prior to displaying the signal on a display of the car audiovisual system. After steps **1550**, **1555**, and **1560** have been executed, control passes to step **1570**.

In step **1570**, the present invention monitors the control panel buttons of the car audiovisual system for digital camera operational instructions. In step **1575**, if an instruction is not detected, step **1570** is re-invoked. Otherwise, if an instruction is received, step **1580** is invoked, wherein the received instruction is converted into a format recognizable by the digital camera connected to the present invention. For example, after a user selects a particular file name presented on the display, an instruction to output video signals that correspond to the selected file is generated. Once the instruction has been formatted, step **1585** is invoked, wherein the formatted instruction is transmitted to the digital camera and executed thereby. Step **1550** is then re-invoked, so that additional processing can occur.

FIG. 26A is a diagram showing another embodiment of the present invention, indicated generally at **1600**, wherein a portable navigation device **1615** (*e.g.*, a Garmin or Tom Tom GPS receiver, etc.) is integrated for use with a car audiovisual system **1605**. The portable navigation device **1615** is in electrical communication (e.g., wired or wireless communication, as discussed hereinabove using any suitable wired or wireless connection methodology) with the interface **1610**, which receives data from the portable navigation device **1615** and formats same for displaying on a display **1620** of the car audiovisual system **1605**. Instructions for controlling the portable navigation device **1615** can be entered using control panel buttons **1625** of the car audiovisual system **1605**. The instructions are processed by the interface **1610**, converted into a format (protocol) compatible with the portable navigation device **1615**, and transmitted to the portable navigation device **1615** for processing thereby. Maps and audio cues from the portable navigation device **1615** can be channeled to the car audiovisual system **1605** via the interface **1610** and played through the display **1620** and/or speakers of the car audiovisual system **1605**. For example, a driving destination may be specified using the control panel buttons **1625**, which causes a digital map file (or a portion thereof) stored in the portable navigation device **1615** to be presented on the display **1620,** and speech-synthesized driving instructions (generated by the portable navigation device **1615**) to be played through speakers of the car audiovisual system **1605**. It should be noted that control of the portable navigation device **1615** can be performed using buttons on the car audiovisual system **1605**, or a software or graphically-driven menu or interface, such as a touch screen, as well as controls on the portable navigation device **1615** itself. One or more interfaces

could be connected to the interface **1610** ("daisy-chained") to allow multiple products to be integrated. The device **1600** could include one or more of the circuits disclosed herein and modified for use with the portable navigation device **1615**.

FIG. 26B is a flowchart showing processing logic, indicated generally at **1630**, for integrating a portable navigation device with a car audiovisual system. Beginning in step **1635**, a determination is made as to whether the existing car audiovisual system is powered on. If a negative determination is made, step **1640** is invoked, wherein the present invention enters a standby mode and waits for the car audiovisual system to be powered on. If a positive determination is made, step **1645** is invoked, wherein a second determination is made as to whether the car audiovisual system is in a state responsive to signals external to the car audiovisual system. If a negative determination is made, step **1635** is re-invoked.

If a positive determination is made in step **1645**, a portable navigation device handling process, indicated as block **1665**, is invoked. Beginning in step **1650**, a signal is generated by the present invention indicating that a portable navigation device is present, and the signal is continuously transmitted to the car audiovisual system. Importantly, this signal prevents the car audiovisual system from shutting off, entering a sleep mode, or otherwise being unresponsive to signals and/or data from an external source.

In step **1655**, video and/or audio channels of the portable navigation device are connected (channeled) to the car audiovisual system. In step **1660**, data is retrieved by the present invention from the portable navigation device, such as a menu for specifying a driving destination, and presented on the display of the car audiovisual system. After steps **1650**, **1655**, and **1660** have been executed, control passes to step **1670**.

In step **1670**, the present invention monitors the control panel buttons of the car audiovisual system for portable navigation device operational instructions. In step **1675**, if an instruction is not detected, step **1670** is re-invoked. Otherwise, if an instruction is received, step **1680** is invoked, wherein the received instruction is converted into a format recognizable by the portable navigation device connected to the present invention. For example, an instruction for displaying driving directions to a driving destination could be issued from the car audiovisual system and converted into a format compatible with the portable navigation device. Once the instruction has been formatted, step **1685** is invoked,

wherein the formatted instruction is transmitted to the portable navigation device and executed thereby. Step **1650** is then re-invoked, so that additional processing can occur.

FIG. 27 is a diagram showing another embodiment of the present invention, indicated generally at **1700**, wherein the integration system of the present is embodied as an interface integrated circuit **1725** (e.g., a microcontroller) that could be supplied to a manufacturer of a car audiovisual system **1705** and installed within the car audiovisual system **1705**, at the time of manufacture of the car audiovisual system **1705** or thereafter. The integrated circuit **1725** could be fabricated as a single microchip, or a collection of associated microchips (e.g., a chipset). The integrated circuit **1725** is in electrical communication with the car audiovisual system electronics **1710** and an associated display **1715** and control panel buttons **1720**. The interface integrated circuit **1725** is also in electrical communication with a communications port **1730** (*e.g.*, FIREWIRE, CAN/CAN2, USB/USB2, IE Bus, T Bus, I Bus, MOST, or D2B) which could be formed integrally with the car audiovisual system **1705**, e.g., accessible as a port on the front panel of the car audiovisual system **1705** (such as a USB port), or at some other location in a vehicle external to the car audiovisual system **1705** but in electrical communication therewith. Optionally, the interface integrated circuit **1725** could be in electrical communication with a wireless transceiver **1735** (*e.g.*, Bluetooth, IEEE 802.11, WiFi, WiMAX, EVDO, Wireless USB, or HyperLAN) and or one or more auxiliary communications ports **1740**, which could support the same or a different type of communications protocol as communications port **1730**. The wireless transceiver **1735** allows wireless communication of data, audio, and/or video between the interface integrated circuit **1725** and the portable music player **1745**.

A portable music player **1745** could be plugged directly into the communications port **1730** (e.g., using a USB or firewire connection) thereby placing the portable music player **1745** in electrical communication with the interface integrated circuit **1725**. The interface integrated circuit **1725** receives data, audio, and/or video from the portable music player **1745** through the communications port **1730** and formats the data for display on and/or playing through the car audiovisual system **1705**. Instructions for controlling the portable music player **1745** can be entered using the control panel buttons **1720** of the car audiovisual system **1705**. The instructions are processed by the interface integrated circuit **1725**, converted into a format (protocol) compatible with the portable music player **1745**,

and transmitted through the communications port **1730** to the portable music player **1745** for processing thereby. Audio from the portable music player **1745** can be channeled to the car audiovisual system **1705** via the interface integrated circuit **1725** and played through the display **1715** and/or speakers of the car audiovisual system **1705**.

A music file stored in the portable music player **1745** may be selected using the control panel buttons **1720**, which causes corresponding audio signals from the portable music player **1745** to be played through speakers of the car audiovisual system **1705**. It should be noted that control of the portable music player **1745** is not limited to the use of buttons on the car stereo or video system **1720**, and indeed, a software or graphically-driven menu or interface can be used to control the portable music player **1745**. The car audiovisual system **1705** could include one or more of the circuits disclosed herein and modified for use with the portable music player **1740**.

It should also be noted that a manufacturer of audiovisual system **1705** could be provided with protocol conversion software built into the interface integrated circuit **1725** and a schematic diagram with instructions for installing the interface integrated circuit **1725** into existing car audiovisual **1705** systems. Alternatively, a functional equivalent of the interface integrated circuit **1725** could be provided in the form of a protocol conversion software product or a firmware upgrade, which is loaded into an existing car audiovisual system and used by a microprocessor therein to allow integration with third-party devices. In this case, the existing car audiovisual system would include a data port or a wireless transceiver for communicating with third-party devices. Optionally, the interface integrated circuit **1725** could be sold to portable device manufacturers and implemented within portable audio and/or video devices. Alternatively, a functional equivalent of the interface integrated circuit **1725** could be provided in the form of a protocol conversion software product or a firmware upgrade, which is loaded into an existing portable and/or video device and used by a microprocessor therein to allow integration with third-party devices, such as an existing car audiovisual system.

In all embodiments of the present invention, the interface could allow audio and/or video signals generated by a car audiovisual system (whether from a live signal received by the car audiovisual system or from a stored medium) to be ported from the car audiovisual system to a portable audio and/or video device for recording same in the portable device. For example, a live radio signal received by the car audiovisual system

(e.g., a live FM station or a live satellite station) could be ported by the interface of the present invention to the portable device (via a wired or wireless connection) and recorded ("ripped") on the portable audio and/or video device in a suitable format, such as one or more MP3 files. Further, the interface allows audio and/or video signals generated by a portable audio and/or video device (whether from a live signal received by the portable device or from a stored medium) to be ported from the portable device to the car audiovisual system for recording same using the car audiovisual system.

The interface of the present invention could include circuitry for wirelessly charging a battery of a portable audio or video device. For example, the interface could include an inductive battery charging circuit which transmits electrical power to the portable device using induction, when the device is located near the interface. In such circumstances, the portable device would also include a corresponding inductive circuit which receives the transmitted electrical power and applies same to the battery of the portable device. Such a circuit could operate in a "trickle charge" mode, wherein a low voltage and amperage electrical current is delivered to the battery of the portable device over time to charge a battery. Also, transmission of power from the interface to the portable device could be accomplished through the use of radio frequency (RF) transmissions between the interface and the portable device. In situations where the interface is installed in a car audio or video system (as discussed herein), a wireless battery charging circuit could also be installed in the car audio or video system.

Having thus described the invention in detail, it is to be understood that the foregoing description is not intended to limit the spirit and scope thereof.

CLAIMS

What is claimed is:

1. A multimedia device integration system comprising:

a car audio system having a display associated therewith;

a portable device external to the car audio system;

a first wireless interface in communication with the car audio system;

a second wireless interface in communication with the portable device, the first and second wireless interfaces establishing a wireless communications link between the car audio system and the portable device; and

an integration subsystem for generating a device presence signal for maintaining the car audio system in a state responsive to the portable device, wherein the integration subsystem transmits the device presence signal to the car audio system, channels audio from the portable device to the car audio system using the wireless communications link, processes video information generated by the portable device into a format compatible with the car audio system, and transmits the processed video information to the car audio system using the wireless communications link for displaying the processed video information on the display of the car audio system.

2. The system of Claim 1, wherein the integration subsystem processes data generated by the portable device into a format compatible with the car audio system and displays the processed data on the display of the car audio system.

3. The system of Claim 1, wherein the integration subsystem receives control commands issued at the car audio system and transmitted over the wireless communications link, processes the commands into a format compatible with the portable device, and dispatches the processed commands to the portable device for execution thereby.

4. The system of Claim 1, wherein the integration subsystem further comprises a voice recognition subsystem for processing spoken control commands issued by a user.

5. The system of Claim 4, wherein the integration subsystem retrieves an audio file or a video file from the portable device in response to a spoken command.

6. The system of Claim 4, wherein the integration subsystem further comprises a speech synthesizer for generating synthesized speech corresponding to data generated by the portable device.

7. The system of Claim 1, wherein the car audio system comprises an OEM car audio system.

8. The system of Claim 1, wherein the car audio system comprises an after-market car audio system.

9. The system of Claim 1, wherein the portable device comprises a portable receiver.

10. The system of Claim 10, wherein the portable receiver comprises a digital audio broadcast (DAB) receiver, a high-definition (HD) radio receiver, or a satellite receiver.

11. The system of Claim 1, wherein the portable device comprises a portable digital media player.

12. The system of Claim 11, wherein the portable digital media player comprises a video device, a portable media center, a portable media player, an MP3 player, an MP4 player, a WMV player, an Apple iPod, or an Apple video iPod.

13. The system of Claim 1, wherein the portable device comprises a cellular telephone.

14. The system of Claim 1, further comprising a non-wireless connection established between the car audio system and the portable device for exchanging data, commands, audio and video signals between the car audio system and the portable device.

15. The system of Claim 1, wherein the integration subsystem is positioned within the portable device.

16. The system of Claim 1, wherein the integration subsystem is positioned within the car audio system.

17. The system of Claim 1, wherein the video information comprises a video file stored on the portable device.

18. The system of Claim 1, wherein the video information comprises a picture stored on the portable device.

19. The system of Claim 1, wherein the video information comprises a television signal received by the portable device.

20. A multimedia device integration system comprising:

a car video system having a display associated therewith;

a portable device external to the car video system;

a first wireless interface in communication with the car video system;

a second wireless interface in communication with the portable device, the first and second wireless interfaces establishing a wireless communications link between the car video system and the portable device; and

an integration subsystem for generating a device presence signal for maintaining the car video system in a state responsive to the portable device, wherein the integration subsystem transmits the device presence signal to the car video system, channels audio from the portable device to the car video system using the wireless communications link, processes video information generated by the portable device into a format compatible with the car video system, and transmits the processed video information to the car video system using the wireless communications link for displaying the processed video information on the display of the car video system.

21. The system of Claim 20, wherein the integration subsystem processes data generated by the portable device into a format compatible with the car video system and displays the processed data on the display of the car video system.

22. The system of Claim 20, wherein the integration subsystem receives control commands issued at the car video system and transmitted over the wireless communications link, processes the commands into a format compatible with the portable

device, and dispatches the processed commands to the portable device for execution thereby.

23. The system of Claim 20, wherein the integration subsystem further comprises a voice recognition subsystem for processing spoken control commands issued by a user.

24. The system of Claim 23, wherein the integration subsystem retrieves an audio file or a video file from the portable device in response to a spoken command.

25. The system of Claim 23, wherein the integration subsystem further comprises a speech synthesizer for generating synthesized speech corresponding to data generated by the portable device.

26. The system of Claim 20, wherein the car video system comprises an OEM car video system.

27. The system of Claim 20, wherein the car video system comprises an after-market car video system.

28. The system of Claim 20, wherein the portable device comprises a portable receiver.

29. The system of Claim 28, wherein the portable receiver comprises a digital audio broadcast (DAB) receiver, a high-definition (HD) radio receiver, or a satellite receiver.

30. The system of Claim 20, wherein the portable device comprises a portable digital media player.

31. The system of Claim 30, wherein the portable digital media player comprises a video device, a portable media center, a portable media player, an MP3 player, an MP4 player, a WMV player, an Apple iPod, or an Apple video iPod.

32. The system of Claim 20, wherein the portable device comprises a cellular telephone.

33. The system of Claim 20, further comprising a non-wireless connection established between the car video system and the portable device for exchanging data, commands, audio and video signals between the car video system and the portable device.

34. The system of Claim 20, wherein the integration subsystem is positioned within the portable device.

35. The system of Claim 20, wherein the integration subsystem is positioned within the car video system.

36. The system of Claim 20, wherein the video information comprises a video file stored on the portable device.

37. The system of Claim 20, wherein the video information comprises a picture stored on the portable device.

38. The system of Claim 20, wherein the video information comprises a television signal received by the portable device.

39. A multimedia device integration system comprising:

a car audio system;

a portable device external to the car audio system;

a docking slot formed in the car audio system for receiving the portable device and establishing electrical communication between the car audio system and the portable device; and

an integration subsystem for generating a device presence signal for maintaining the car audio system in a state responsive to the portable device, wherein the integration subsystem receives data generated by the portable device, processes the data into a format compatible with the car audio system, and transmits the processed data, the device presence signal, and audio signals to the car audio system.

40. The system of Claim 39, wherein the processed data is displayed on a display of the car audio system.

41. The system of Claim 39, wherein the integration subsystem processes a video file stored on the portable device into a format compatible with the car audio system and transmits the video file to the car audio system for displaying the video file on a display of the car audio system.

42. The system of Claim 39, wherein the integration subsystem receives control commands issued at the car audio system, processes the commands into a format compatible with the portable device, and dispatches the processed commands to the portable device for execution thereby.

43. The system of Claim 39, wherein the integration subsystem further comprises a voice recognition subsystem for processing spoken control commands issued by a user.

44. The system of Claim 43, wherein the integration subsystem retrieves an audio file or a video file from the portable device in response to a spoken command.

45. The system of Claim 43, wherein the integration subsystem further comprises a speech synthesizer for generating synthesized speech corresponding to data generated by the portable device.

46. The system of Claim 39, wherein the car audio system comprises an OEM car audio system.

47. The system of Claim 39, wherein the car audio system comprises an after-market car audio system.

48. The system of Claim 39, wherein the portable device comprises a portable receiver.

49. The system of Claim 48, wherein the portable receiver comprises a digital audio broadcast (DAB) receiver, a high-definition (HD) radio receiver, or a satellite receiver.

50. The system of Claim 39, wherein the portable device comprises a portable digital media player.

51. The system of Claim 50, wherein the portable digital media player comprises a video device, a portable media center, a portable media player, an MP3 player, an MP4 player, a WMV player, an Apple iPod, or an Apple video iPod.

52. The system of Claim 39, wherein the portable device comprises a cellular telephone.

53. The system of Claim 39, wherein the integration subsystem is positioned within the portable device.

54. The system of Claim 39, wherein the integration subsystem is positioned within the car audio system.

55. A multimedia device integration system comprising:

a car video system;

a portable device external to the car video system;

a docking slot formed in the car video system for receiving the portable device and establishing electrical communication between the car video system and the portable device; and

an integration subsystem for generating a device presence signal for maintaining the car video system in a state responsive to the portable device, wherein the integration subsystem receives data generated by the portable device, processes the data into a format compatible with the car video system, and transmits the processed data, the device presence signal, audio signals, and video signals to the car video system.

56. The system of Claim 55, wherein the processed data is displayed on a display of the car video system.

57. The system of Claim 55, wherein the integration subsystem processes a video file stored on the portable device into a format compatible with the car video system and transmits the video file to the car video system for displaying the video file on a display of the car video system.

58. The system of Claim 55, wherein the integration subsystem receives control commands issued at the car video system, processes the commands into a format compatible with the portable device, and dispatches the processed commands to the portable device for execution thereby.

59. The system of Claim 55, wherein the integration subsystem further comprises a voice recognition subsystem for processing spoken control commands issued by a user.

60. The system of Claim 59, wherein the integration subsystem retrieves an audio file or a video file from the portable device in response to a spoken command.

61. The system of Claim 59, wherein the integration subsystem further comprises a speech synthesizer for generating synthesized speech corresponding to data generated by the portable device.

62. The system of Claim 55, wherein the car video system comprises an OEM car video system.

63. The system of Claim 55, wherein the car video system comprises an after-market car video system.

64. The system of Claim 55, wherein the portable device comprises a portable receiver.

65. The system of Claim 64, wherein the portable receiver comprises a digital audio broadcast (DAB) receiver, a high-definition (HD) radio receiver, or a satellite receiver.

66. The system of Claim 55, wherein the portable device comprises a portable digital media player.

67. The system of Claim 66, wherein the portable digital media player comprises a video device, a portable media center, a portable media player, an MP3 player, an MP4 player, a WMV player, an Apple iPod, or an Apple video iPod.

68. The system of Claim 55, wherein the portable device comprises a cellular telephone.

69. The system of Claim 55, wherein the integration subsystem is positioned within the portable device.

70. The system of Claim 55, wherein the integration subsystem is positioned within the car video system.

71. A method for wirelessly integrating a portable device for use with a car audio system comprising:

establishing a wireless communications link between the car audio system and the portable device;

generating a device presence signal for maintaining the car audio system in a state responsive to the portable device;

transmitting the device presence signal to the car audio system over the wireless communications link;

processing video information generated by the portable device into a format compatible with the car audio system;

transmitting the processed video information and audio signals generated by the portable device to the car audio system over the wireless communications link;

displaying the processed video information on a display of the car audio system; and

playing the audio signals over the car audio system.

72. The method of Claim 71, further comprising processing data generated by the portable device into a format compatible with the car audio system.

73. The method of Claim 72, further comprising transmitting the processed data over the wireless communications link to the car audio system.

74. The method of Claim 73, further comprising displaying the processed data on a display of the car audio system.

75. The method of Claim 71, further comprising transmitting control commands issued by a user at the car audio system over the wireless communications link.

76. The method of Claim 75, further comprising receiving the control commands at the portable device and processing the control commands into a format compatible with the portable device.

77. The method of Claim 76, further comprising dispatching the processed control commands to the portable device for execution thereby.

78. The method of Claim 71, further comprising receiving spoken control commands with a voice recognition subsystem and processing the spoken control commands into a format compatible with the portable device.

79. The method of Claim 78, further comprising dispatching the processed control commands to the portable device for execution thereby.

80. The method of Claim 71, further comprising generating synthesized speech corresponding to data generated by the portable device.

81. A method for wirelessly integrating a portable device for use with a car video system comprising:

establishing a wireless communications link between the car video system and the portable device;

generating a device presence signal for maintaining the car video system in a state responsive to the portable device;

transmitting the device presence signal to the car video system over the wireless communications link;

processing video information generated by the portable device into a format compatible with the car video system;

transmitting the processed video information and audio signals generated by the portable device to the car video system over the wireless communications link;

displaying the processed video information on a display of the car video system; and

playing the audio signals over the car video system.

82. The method of Claim 81, further comprising processing data generated by the portable device into a format compatible with the car video system.

83. The method of Claim 82, further comprising transmitting the processed data over the wireless communications link to the car video system.

84. The method of Claim 83, further comprising displaying the processed data on a display of the car video system.

85. The method of Claim 81, further comprising transmitting control commands issued by a user at the car video system over the wireless communications link.

86. The method of Claim 85, further comprising receiving the control commands at the portable device and processing the control commands into a format compatible with the portable device.

87. The method of Claim 86, further comprising dispatching the processed control commands to the portable device for execution thereby.

88. The method of Claim 81, further comprising receiving spoken control commands with a voice recognition subsystem and processing the spoken control commands into a format compatible with the portable device.

89. The method of Claim 88, further comprising dispatching the processed control commands to the portable device for execution thereby.

90. The method of Claim 81, further comprising generating synthesized speech corresponding to data generated by the portable device.

91. A docking station for docking and integrating a portable device for use with a car stereo, comprising:

a base portion;

a bottom member connected to the base portion;

a top member removably connected to the base portion, the base portion, bottom member, and top member defining a cavity for receiving a portable device; and

an integration device connected to the base portion for integrating the portable device with a car stereo.

92. A multimedia device integration system comprising:

a car audiovisual system having a display associated therewith;

a cellular telephone external to the car audiovisual system, the cellular telephone including a receiver for receiving a broadcast radio transmission transmitted to the cellular telephone; and

an interface in communication with the car audiovisual system and the cellular telephone, wherein the interface generates and transmits a device presence signal to the car audiovisual system to maintain same in a state responsive to the cellular telephone, processes the broadcast radio transmission received by the cellular telephone into a format compatible with the car audiovisual system, and transmits the processed broadcast radio transmission to the car audiovisual system for playing thereby.

93. The multimedia device integration system of Claim 92, wherein the broadcast radio transmission comprises a satellite radio transmission received by the cellular telephone.

94. The multimedia device integration system of Claim 92, wherein the broadcast radio transmission comprises a live radio transmission from a radio station.

95. The multimedia device integration system of Claim 92, wherein the broadcast radio transmission comprises a streamed audio transmission received by the cellular telephone.

96. The multimedia device integration system of Claim 92, wherein the broadcast radio transmission comprises a video transmission received by the cellular telephone.

97. The multimedia device integration system of Claim 96, wherein the video transmission comprises a live video transmission.

98. The multimedia device integration system of Claim 96, wherein the video transmission comprises a streamed video transmission.

99. The multimedia device integration system of Claim 96, wherein the interface processes the video transmission into a format compatible with the car audiovisual system and transmits the processed video transmission to the car audiovisual system for display thereon.

100. The multimedia device integration system of Claim 92, wherein the interface receives control commands issued at the car audiovisual system, processes the control commands into a format compatible with the cellular telephone, and transmit processed control commands to the cellular telephone for execution thereby.

101. The multimedia device integration system of Claim 92, wherein the interface processes navigational information received by the cellular telephone into a format compatible with the car audiovisual system, and transmits processed navigational information to the car audiovisual system for display thereon.

102. The multimedia device integration system of Claim 101, wherein the navigational information comprises a road map.

103. The multimedia device integration system of Claim 101, wherein the navigational information comprises a Global Positioning System (GPS) map.

104. A multimedia device integration system comprising:

a car audiovisual system;

a digital camera external to the car audiovisual system; and

an interface in electrical communication with the car audiovisual system and the digital camera, wherein the interface generates and transmits a device presence signal to the car audiovisual system to maintain same in a state responsive to the digital camera, processes output signals generated by the digital camera into a format compatible with the car audiovisual system, and transmits the processed output signals to the car audiovisual system for display thereby.

105. The multimedia device integration system of Claim 104, wherein the interface transmits audio signals generated by the digital camera device to the car audiovisual system for playing thereby.

106. The multimedia device integration system of Claim 104, wherein the interface receives control commands issued at the car audiovisual system, processes the control commands into a format compatible with the digital camera, and transmits processed control commands to the digital camera for execution thereby.

107. The multimedia device integration system of Claim 104, wherein the output signal comprises a still video image.

108. The multimedia device integration system of Claim 104, wherein the output signal comprises a full motion video clip.

109. The multimedia device integration system of Claim 104, wherein the output signal comprises a live video signal.

110. The multimedia device integration system of Claim 104, wherein the output signal comprises a streaming video signal.

111. A multimedia device integration system comprising:

a car audiovisual system;

a portable navigation device external to the car audiovisual system;

an interface in electrical communication with the car audiovisual system and the portable navigation device, wherein the interface processes video and data signals generated by the portable navigation device into a format compatible with the car audiovisual system, and transmits the processed video and data signals to the car audiovisual system for display thereby.

112. The multimedia device integration system of Claim 111, wherein the interface receives control commands issued at the car audiovisual system, processes the control commands into a format compatible with the portable navigation device, and transmits processed control commands to the portable navigation device for execution thereby.

113. The multimedia device integration system of Claim 111, wherein the portable navigation system comprises a portable Global Positioning System (GPS) device.

114. The multimedia device integration system of Claim 111, wherein the video signals comprise a map generated by the portable navigation device and displayed on the car audiovisual system.

115. The multimedia device integration system of Claim 111, wherein the interface transmits audio signals generated by the portable navigation device to the car audiovisual system for playing thereby.

116. The multimedia device integration system of Claim 115, wherein the audio signals comprise synthesized speech generated by the portable navigation device.

117. A multimedia device integration system, comprising:

a car audiovisual system;

an after-market, portable audiovisual device external to the car audiovisual system; and

an interface integrated circuit installed in the portable audiovisual device and in communication with the car audiovisual system and the portable audiovisual device, the interface integrated circuit generating and transmitting a device presence signal for maintaining the car audiovisual signal in a state responsive to the portable audiovisual device and transmitting audio signals from the portable audiovisual device to the car audiovisual system for playing thereon.

118. The system of Claim 117, wherein the interface integrated circuit receives control commands issued at the car audiovisual system, processes the control commands into a format compatible with the portable audiovisual device, and transmits processed control commands to the portable audiovisual device for execution thereby.

119. The system of Claim 117, wherein the interface integrated circuit receives data generated by the portable audiovisual device, processes the data into a format compatible with the car audiovisual system, and transmits processed data to the portable audiovisual device for display thereby.

120. The system of Claim 117, wherein the interface integrated circuit receives video signals generated by the portable audiovisual device, processes the video signals into a

format compatible with the car audiovisual device, and transmits processed video signals to the car audiovisual device for display thereby.

121. The system of Claim 117, further comprising a communications port operatively associated with the interface integrated circuit and allowing communications between the interface integrated circuit and the portable audiovisual device.

122. The system of Claim 121, wherein the communications port comprises a Universal Serial Bus (USB) port.

123. The system of Claim 117, further comprising a wireless transceiver operatively associated with the interface integrated circuit and allowing wireless communications between the interface integrated circuit and the portable audiovisual device.

124. The system of Claim 123, wherein the wireless transceiver comprises a WiFi, Bluetooth, or IEEE 802.11 transceiver.

125. The system of Claim 117, wherein the integrated circuit transmits audio signals generated by the portable audiovisual device to the car audiovisual system for recording by the car audiovisual system.

126. The system of Claim 117, wherein the integrated circuit transmits audio signals generated by the car audiovisual system to the portable audiovisual device for recording by the portable audiovisual device.

127. The system of Claim 117, wherein the integrated circuit transmits video signals generated by the portable audiovisual device to the car audiovisual system for recording by the car audiovisual system.

128. The system of Claim 117, wherein the integrated circuit transmits video signals generated by the car audiovisual system to the portable audiovisual device for recording by the portable audiovisual device.

129. The system of Claim 117, wherein the integrated circuit comprises a single microchip.

130. The system of Claim 117, wherein the integrated circuit comprises a chipset.

131. The system of Claim 117, wherein the integrated circuit comprises a microprocessor of the car audiovisual system.

132. A multimedia device integration system, comprising:

a car audiovisual system;

an after-market, portable audiovisual device external to the car audiovisual system; and

an interface integrated circuit installed in the car audiovisual system and in communication with the car audiovisual system and the portable audiovisual device, the interface integrated circuit generating and transmitting a device presence signal for maintaining the car audiovisual system in a state responsive to the portable audiovisual device and transmitting audio signals from the portable audiovisual device to the car audiovisual system for playing thereby.

133. The system of Claim 132, wherein the interface integrated circuit receives control commands issued at the car audiovisual system, processes the control commands into a format compatible with the portable audiovisual device, and transmits processed control commands to the portable audiovisual device for execution thereby.

134. The system of Claim 132, wherein the interface integrated circuit receives data generated by the portable audiovisual device, processes the data into a format compatible with the car audiovisual system, and transmits processed data to the portable audiovisual device for display thereby.

135. The system of Claim 132, wherein the interface integrated circuit receives video signals generated by the portable audiovisual device, processes the video signals into a format compatible with the car audiovisual device, and transmits processed video signals to the car audiovisual device for display thereby.

136. The system of Claim 132, further comprising a communications port operatively associated with the interface integrated circuit and allowing communications between the interface integrated circuit and the portable audiovisual device.

137. The system of Claim 136, wherein the communications port comprises a Universal Serial Bus (USB) port.

138. The system of Claim 132, further comprising a wireless transceiver operatively associated with the interface integrated circuit and allowing wireless communications between the interface integrated circuit and the portable audiovisual device.

139. The system of Claim 138, wherein the wireless transceiver comprises a WiFi, Bluetooth, or IEEE 802.11 transceiver.

140. The system of Claim 132, wherein the integrated circuit transmits audio signals generated by the portable audiovisual device to the car audiovisual system for recording by the car audiovisual system.

141. The system of Claim 132, wherein the integrated circuit transmits audio signals generated by the car audiovisual system to the portable audiovisual device for recording by the portable audiovisual device.

142. The system of Claim 132, wherein the integrated circuit transmits video signals generated by the portable audiovisual device to the car audiovisual system for recording by the car audiovisual system.

143. The system of Claim 132, wherein the integrated circuit transmits video signals generated by the car audiovisual system to the portable audiovisual device for recording by the portable audiovisual device.

144. The system of Claim 142, wherein the integrated circuit comprises a single microchip.

145. The system of Claim 142, wherein the integrated circuit comprises a chipset.

146. The system of Claim 132, wherein the integrated circuit comprises a microprocessor of the car audiovisual system.

147. A multimedia device integration system comprising:

a car audiovisual system;

a portable audio device external to the car audiovisual system;

an interface in communication with the car audiovisual system and the portable audio device, the interface generating and transmitting a device presence signal to the car audiovisual system to maintain the car audiovisual system in a state responsive to the portable audio device, the interface transmitting audio signals from the portable audio device to the car audiovisual system; and

a charging circuit for inductively charging a battery of the portable audio device

148. The multimedia device integration system of Claim 147, wherein the charging circuit comprises a first inductive charging circuit operatively associated with the interface and a second inductive charging circuit operatively associated with the portable audio device, the first and second inductive charging circuits inductively coupled to each other to transmit electrical power therebetween.

149. The multimedia device integration system of Claim 147, wherein the interface receives video signals from the portable audio device, processes same into a format compatible with the car audiovisual system, and transmits processed video signals to the car audiovisual system for display thereby.

150. The multimedia device integration system of Claim 147, wherein the interface receives control commands issued at the car audiovisual system, processes same into a format compatible with the portable audio device, and transmits processed control commands to the portable audio device for execution thereby.

151. A multimedia device integration system comprising:

a car audiovisual system;

a portable audio device external to the car audiovisual system;

an interface in communication with the car audiovisual system and the portable audio device, the interface generating and transmitting a device presence signal to the car audiovisual system to maintain the car audiovisual system in a state responsive to the portable audio device, the interface transmitting audio signals from the portable audio device to the car audiovisual system; and

a charging circuit for wirelessly charging a battery of the portable audio device

152. The multimedia device integration system of Claim 151, wherein the charging circuit comprises a first wireless charging circuit operatively associated with the interface and a second wireless charging circuit operatively associated with the portable audio device, the first and second wireless charging circuits wirelessly coupled to each other to transmit electrical power therebetween.

153. The multimedia device integration system of Claim 151, wherein the interface receives video signals from the portable audio device, processes same into a format compatible with the car audiovisual system, and transmits processed video signals to the car audiovisual system for display thereby.

154. The multimedia device integration system of Claim 151, wherein the interface receives control commands issued at the car audiovisual system, processes same into a format compatible with the portable audio device, and transmits processed control commands to the portable audio device for execution thereby.

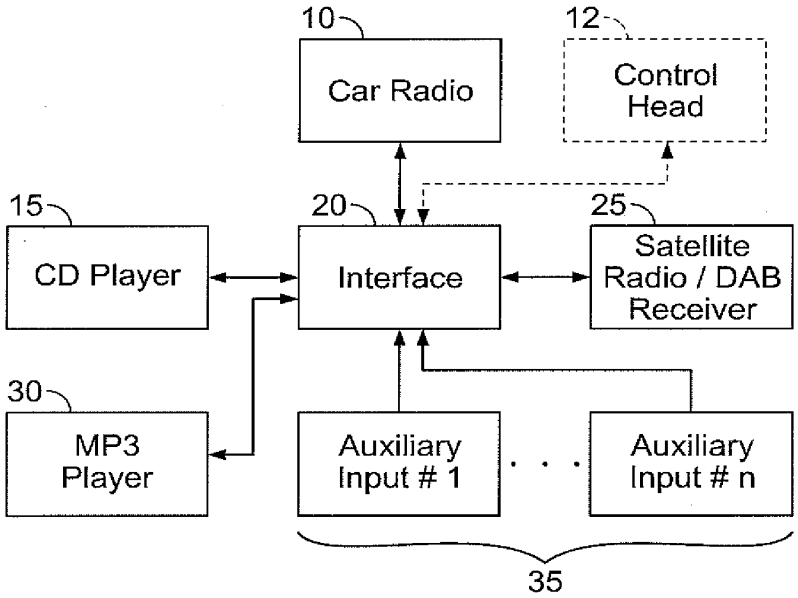


FIG. 1

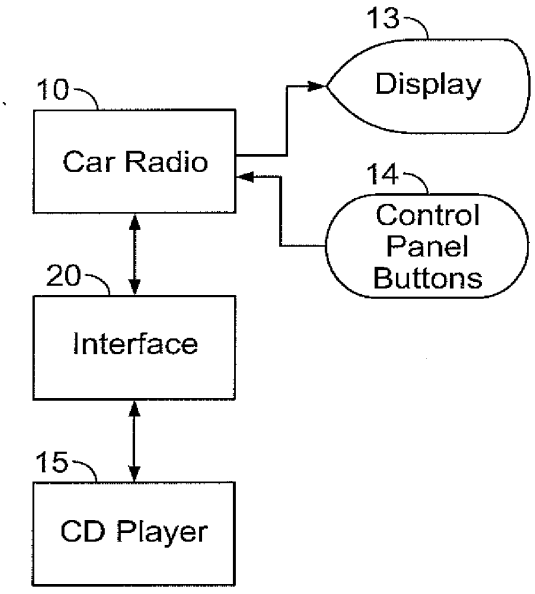


FIG. 2A

2/41

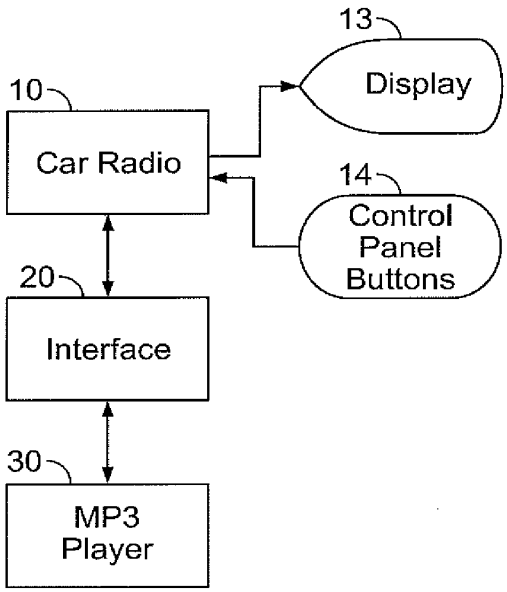


FIG. 2B

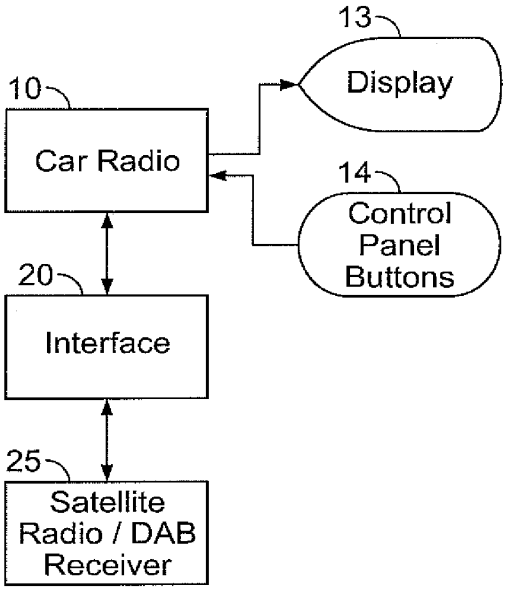


FIG. 2C

3/41

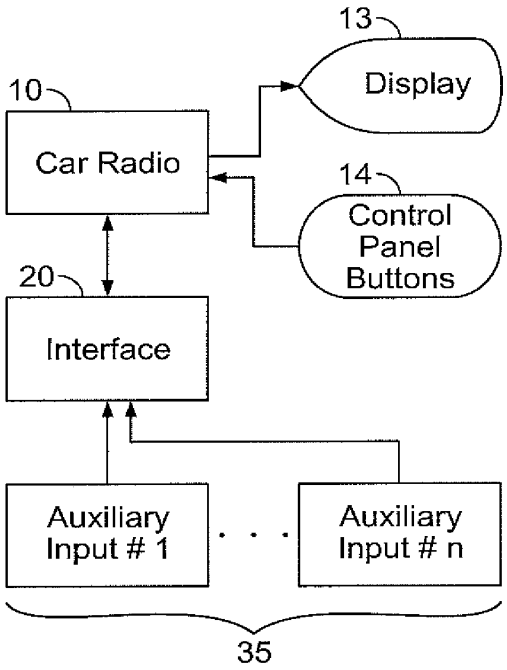


FIG. 2D

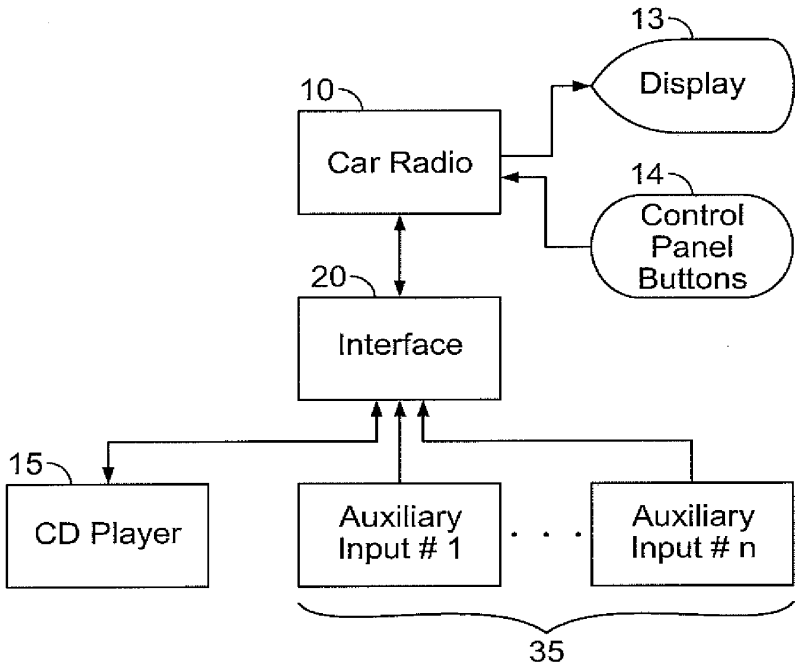


FIG. 2E

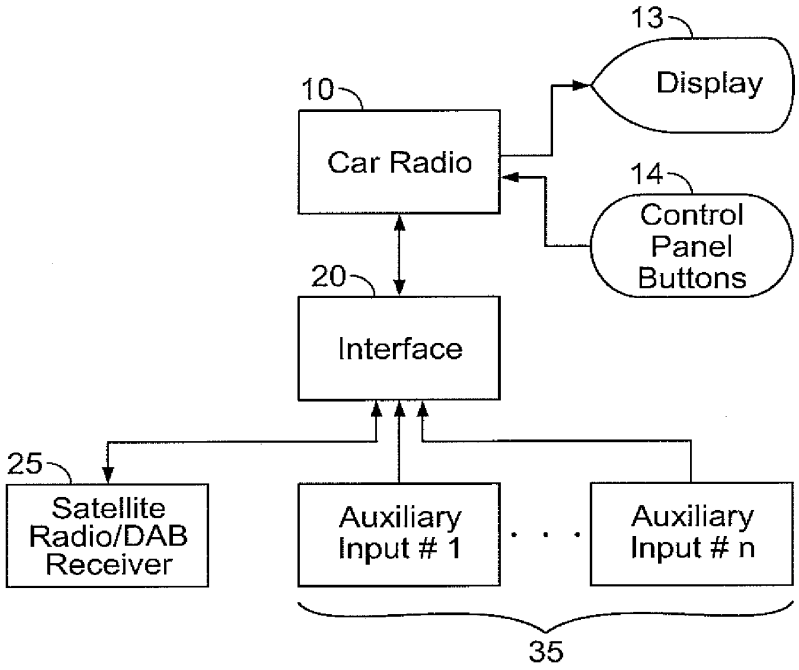


FIG. 2F

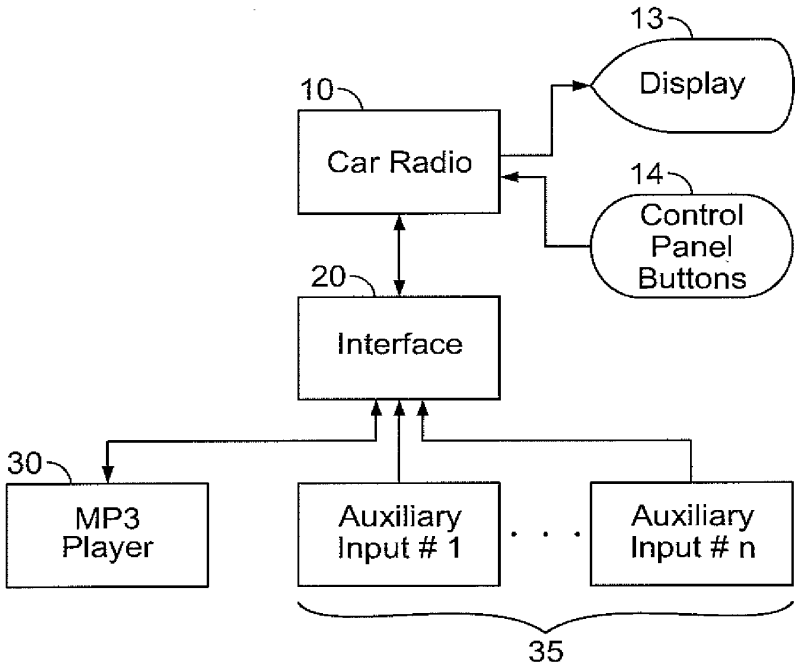


FIG. 2G

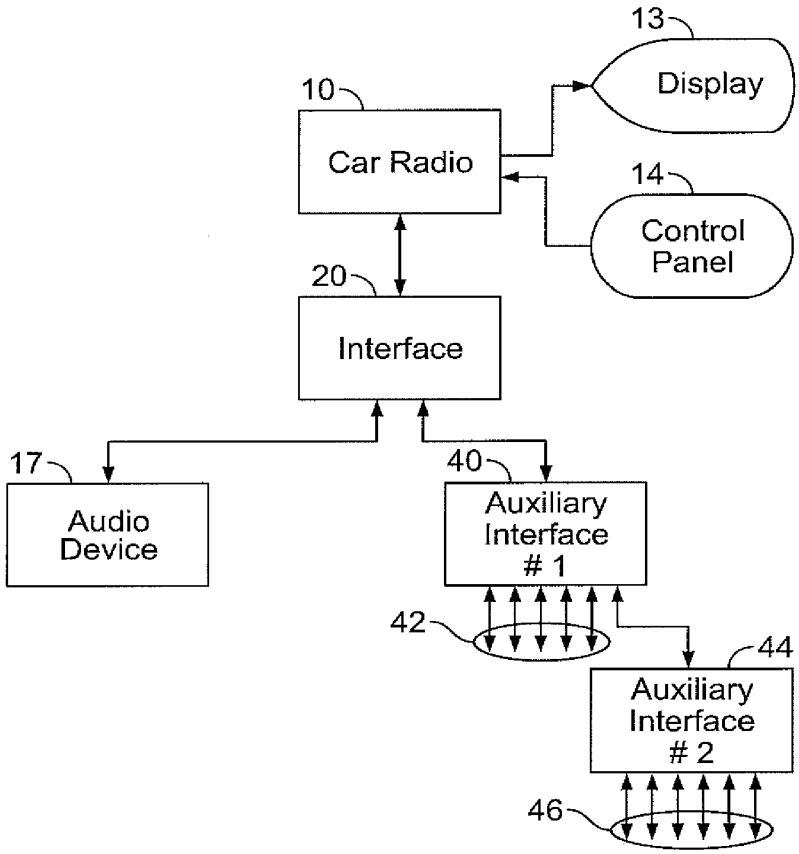
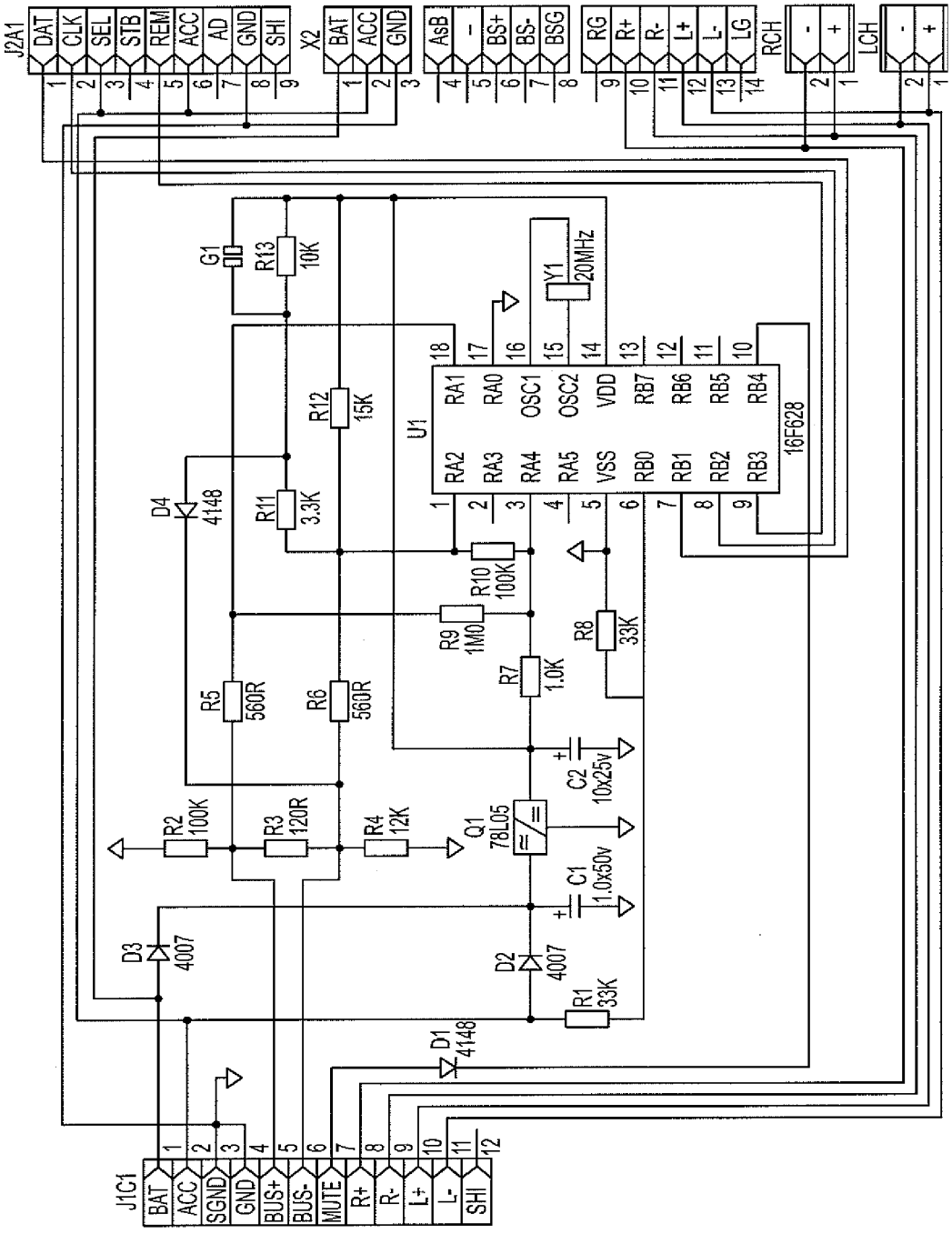

13
Display
10
Car Radio
14
Control Panel
20
Interface
17
Audio Device
40
Auxiliary Interface # 1
42
44
Auxiliary Interface # 2
46

FIG. 2H



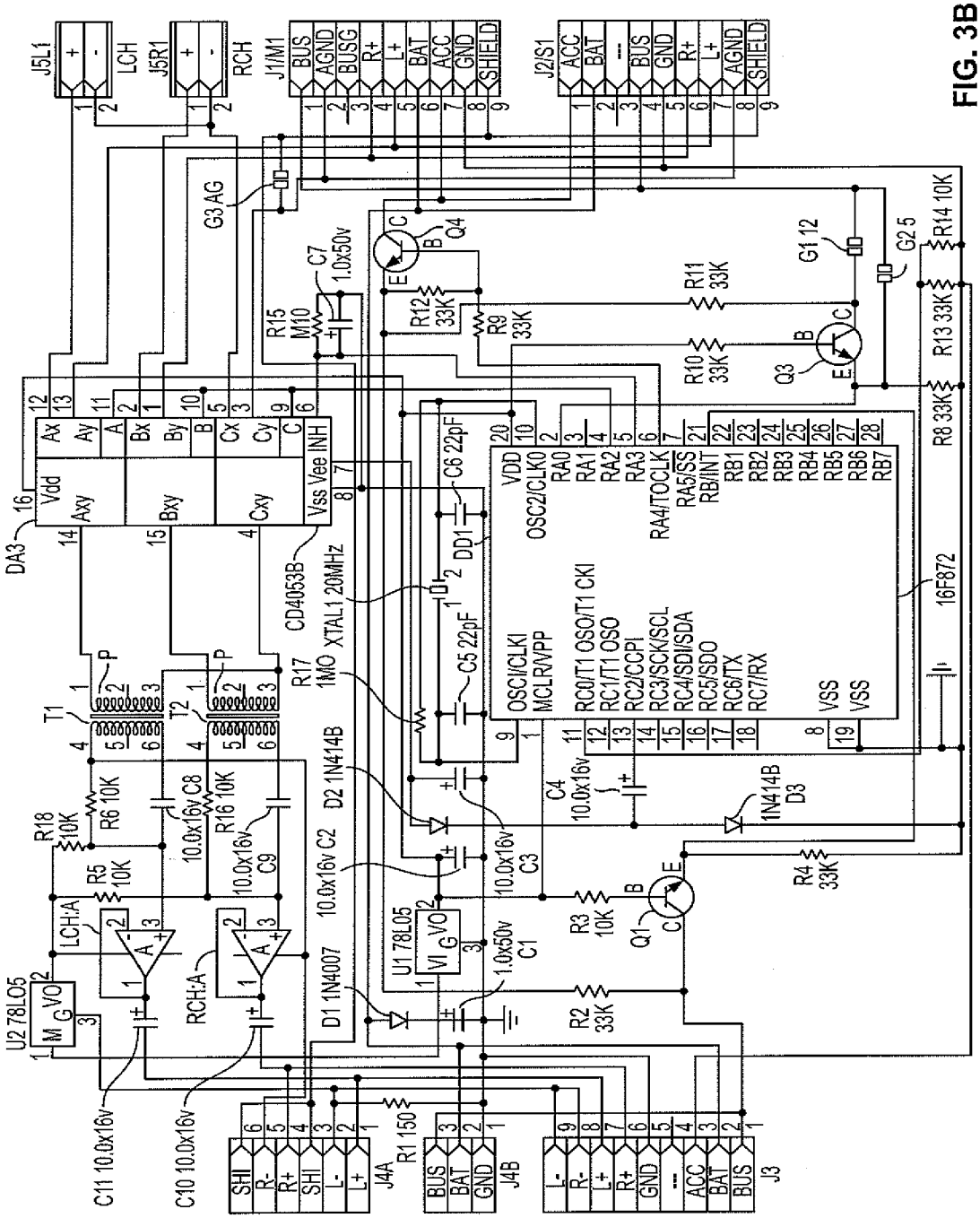
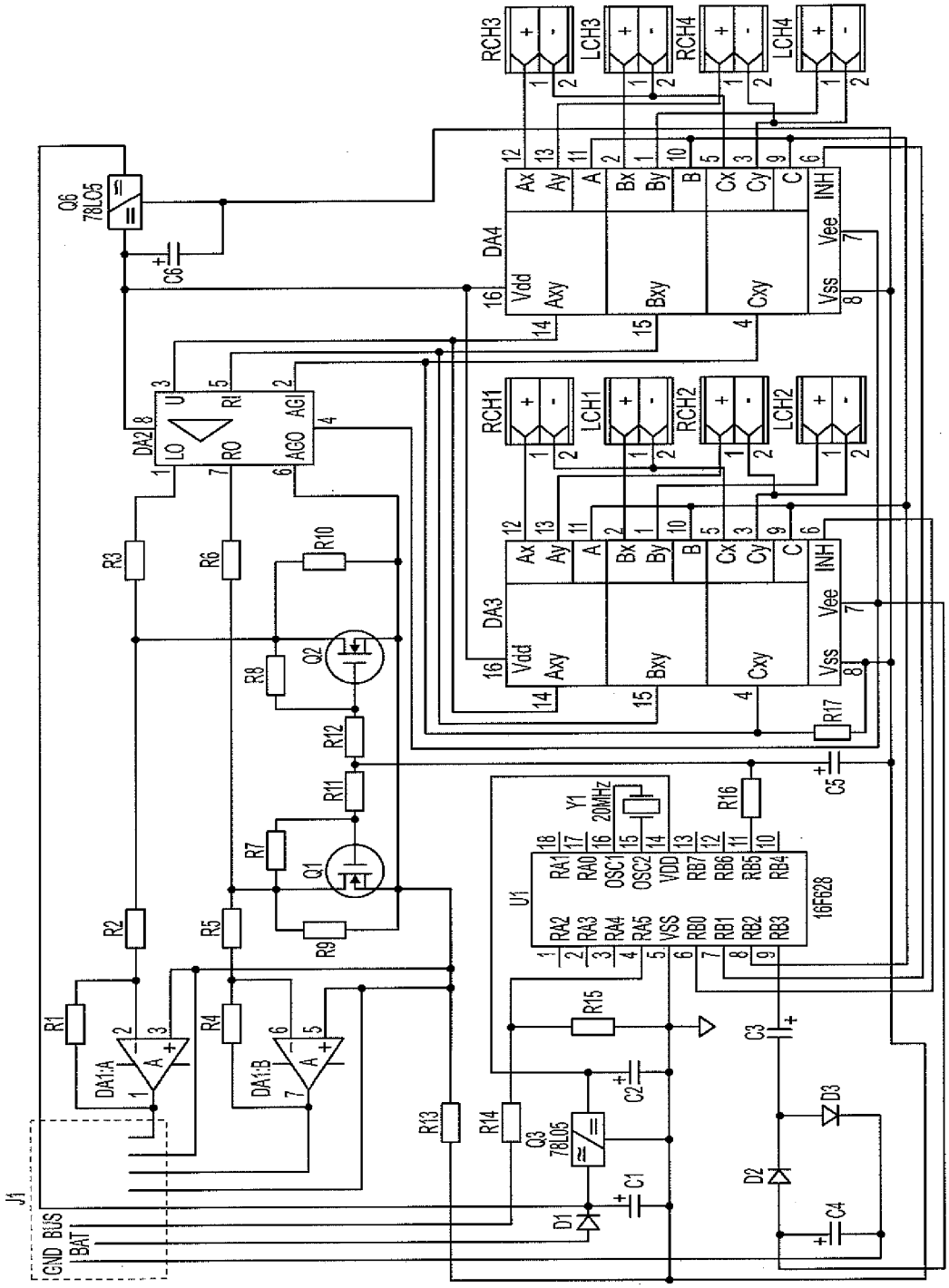
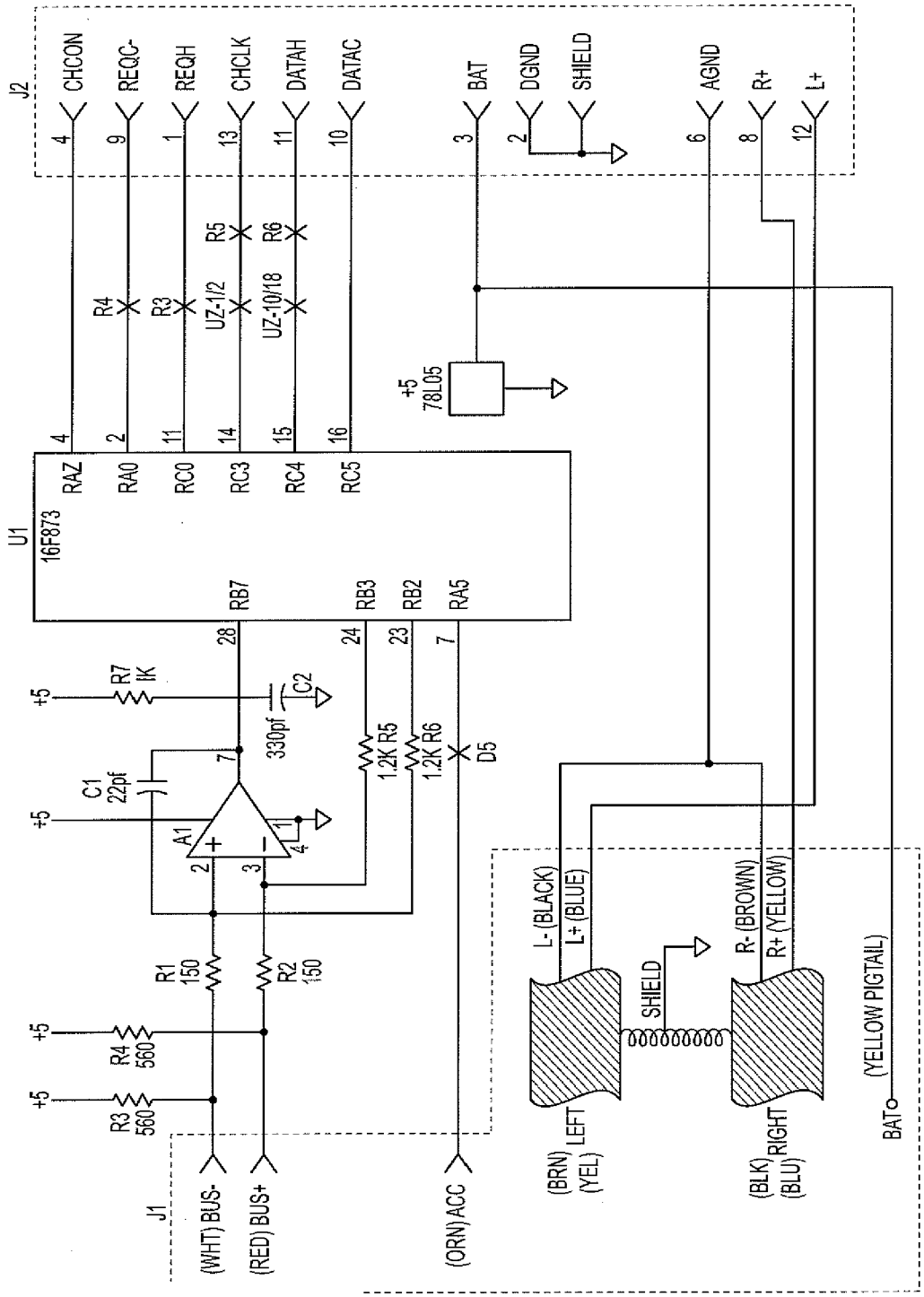


FIG. 3B





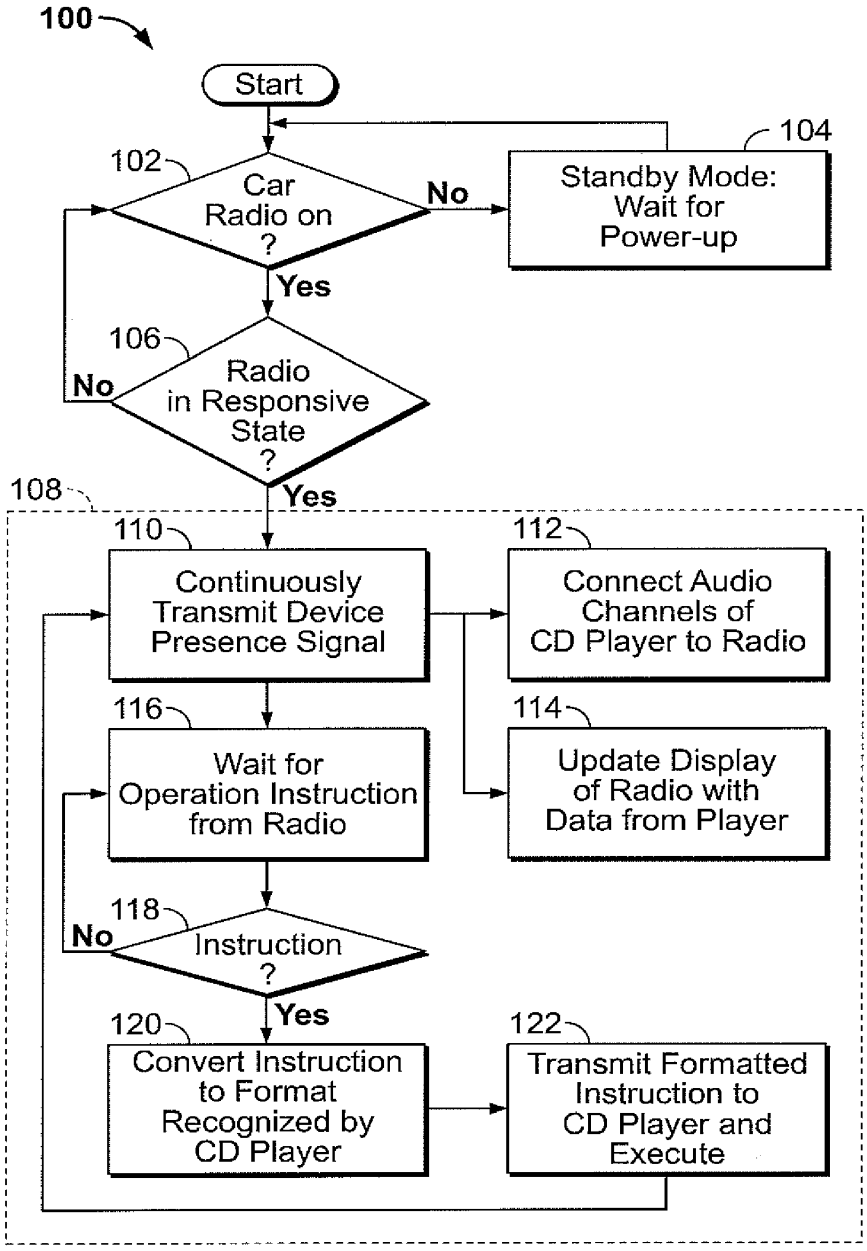


FIG. 4A

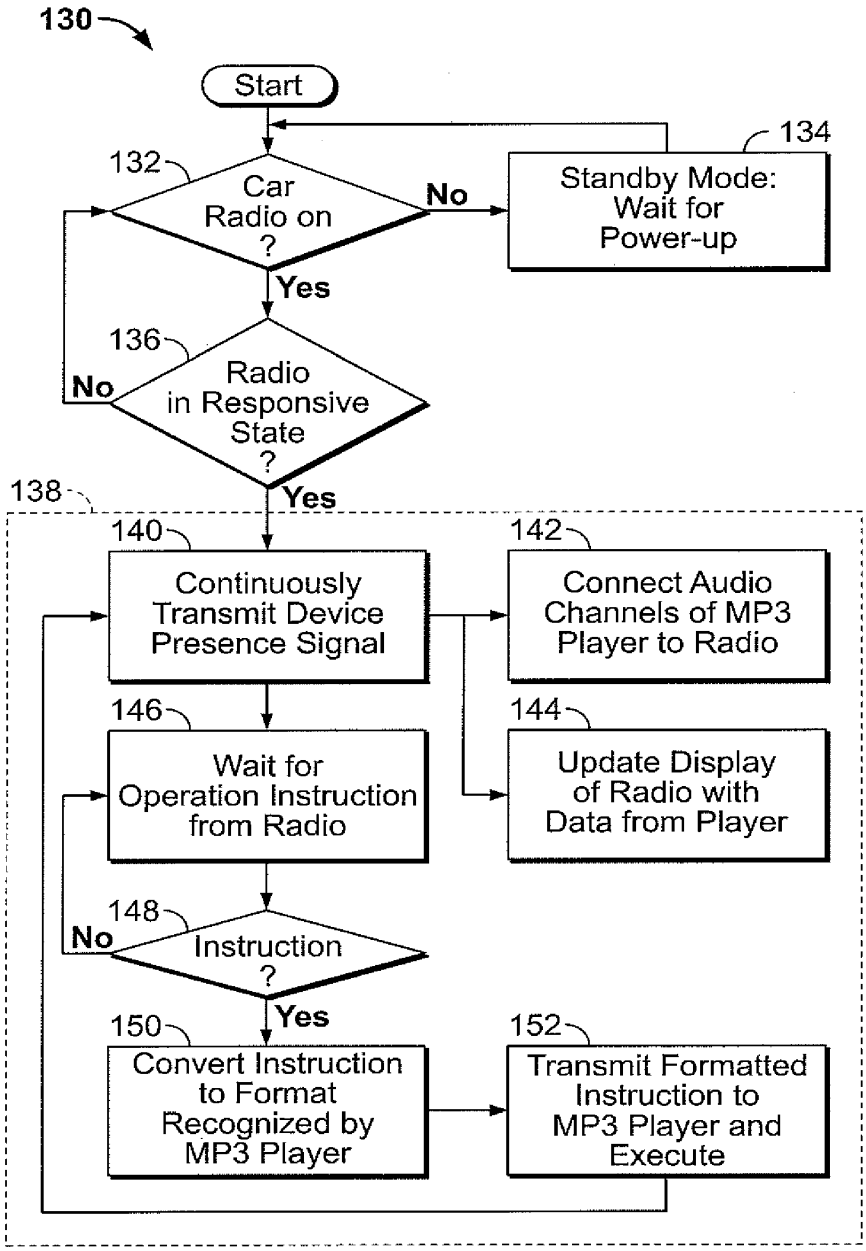


FIG. 4B

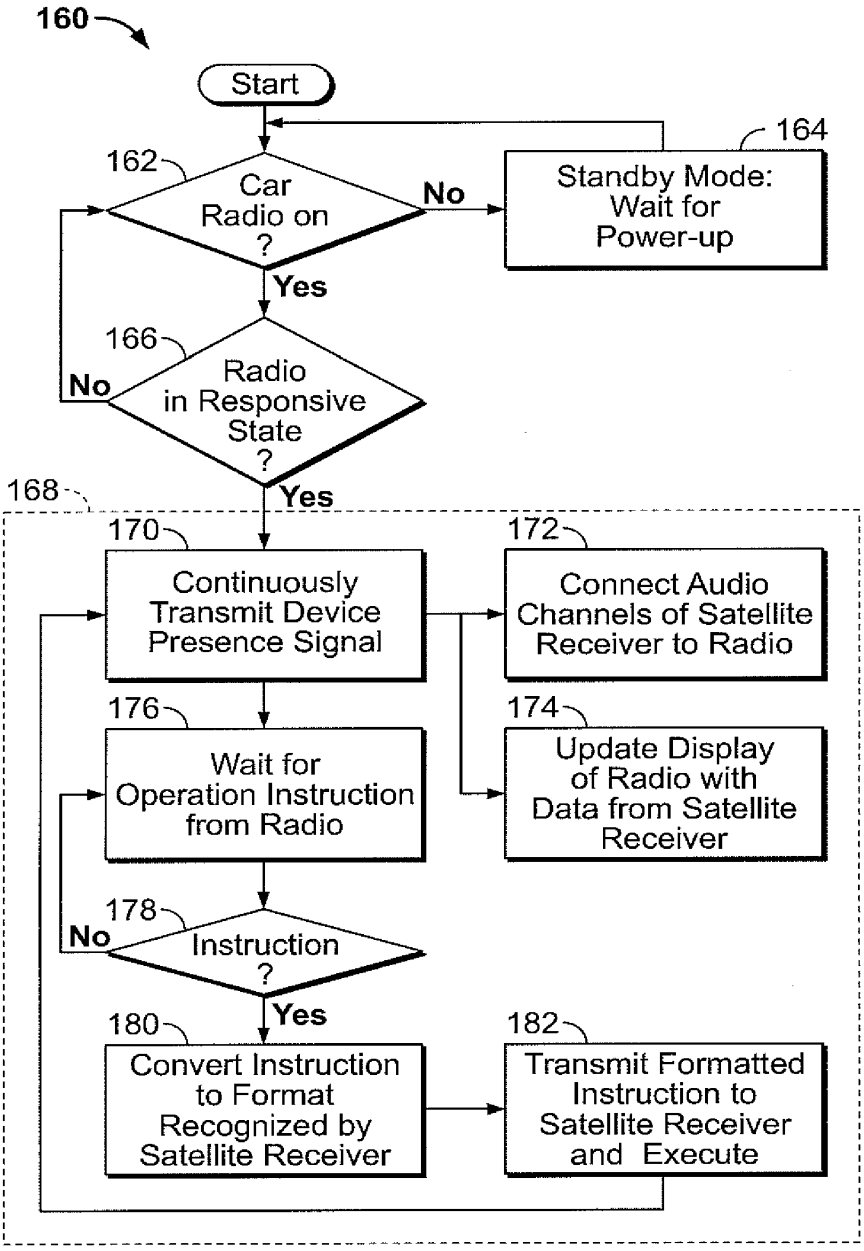


FIG. 4C

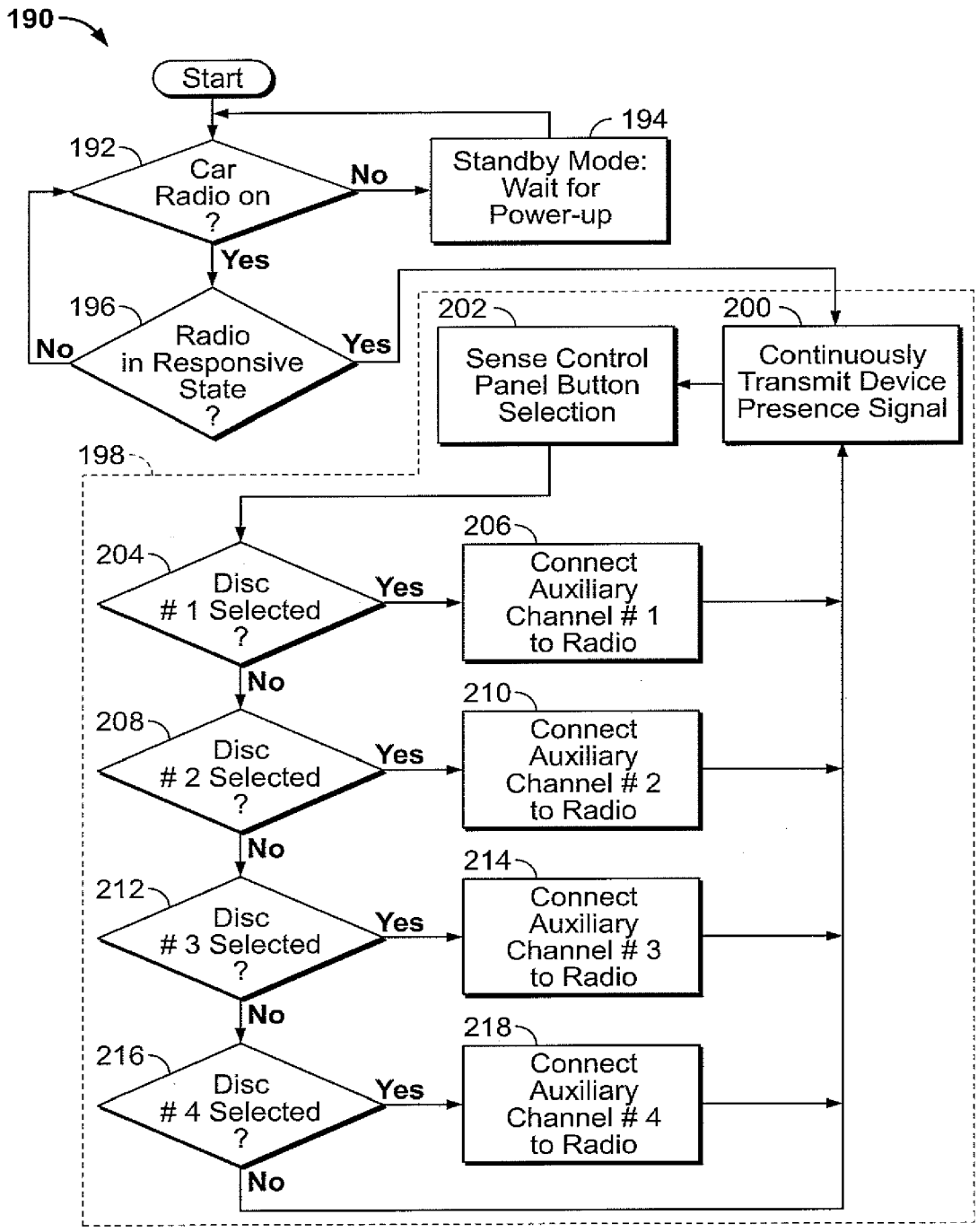


FIG. 4D

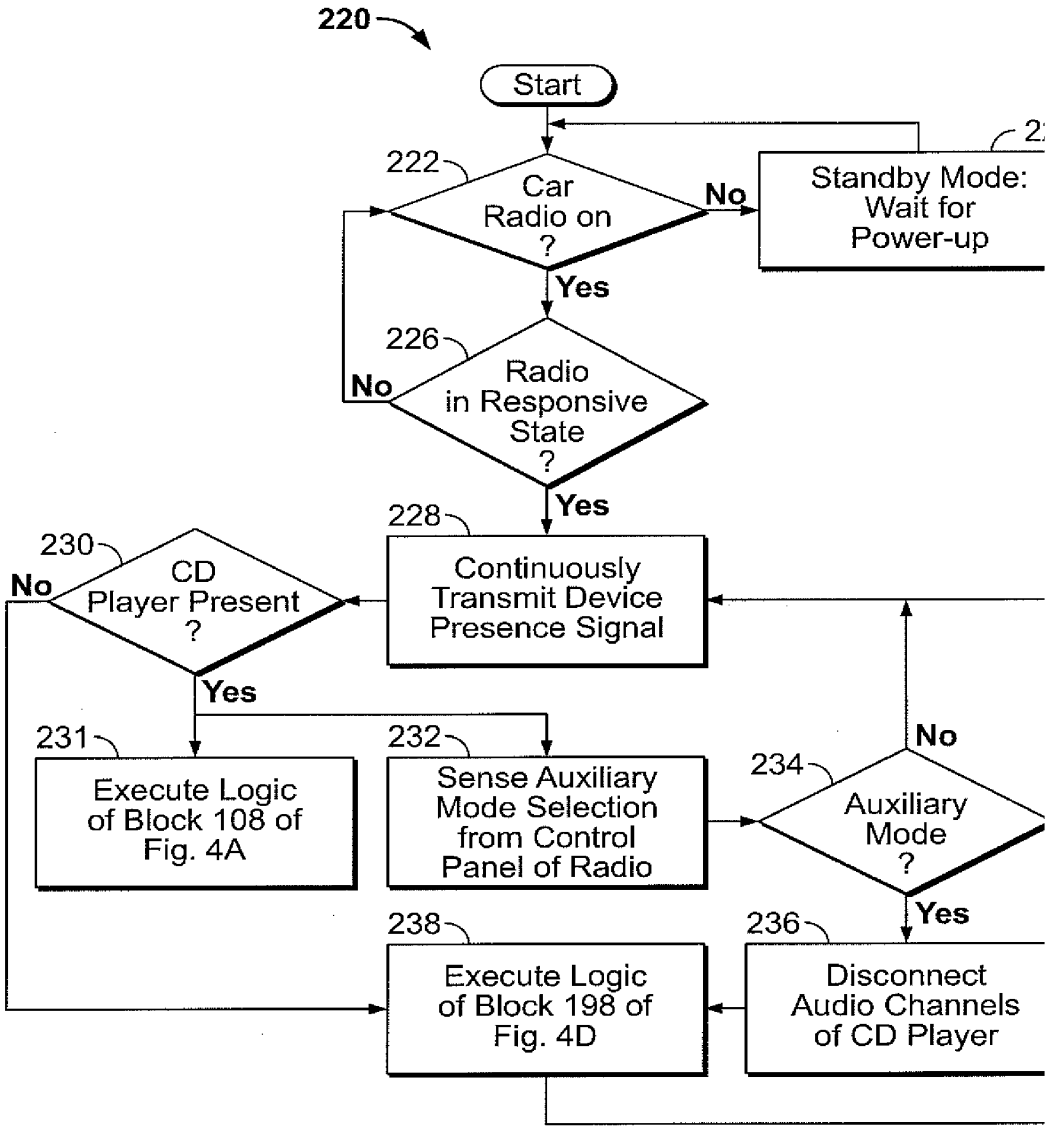


FIG. 4E

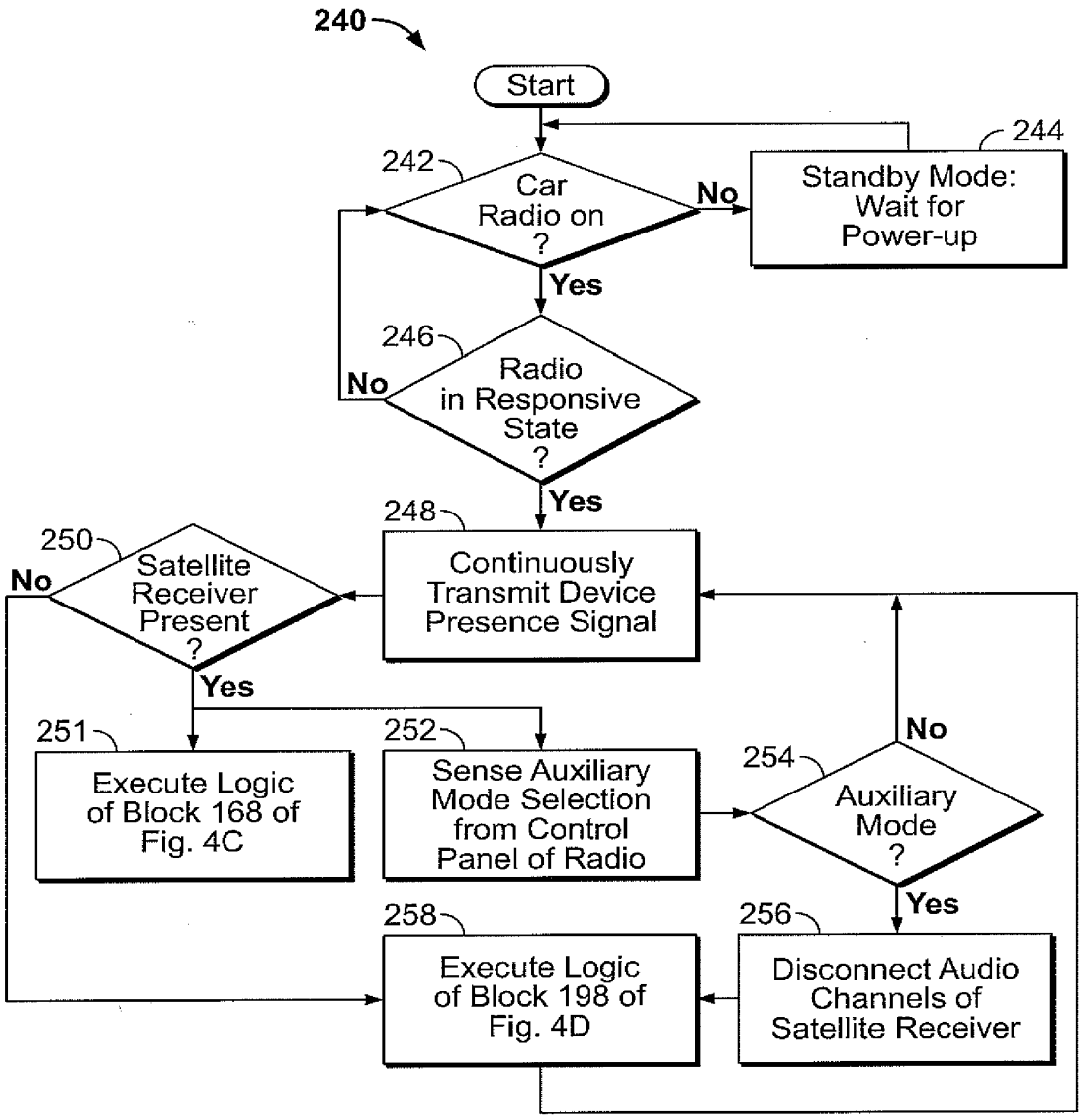


FIG. 4F

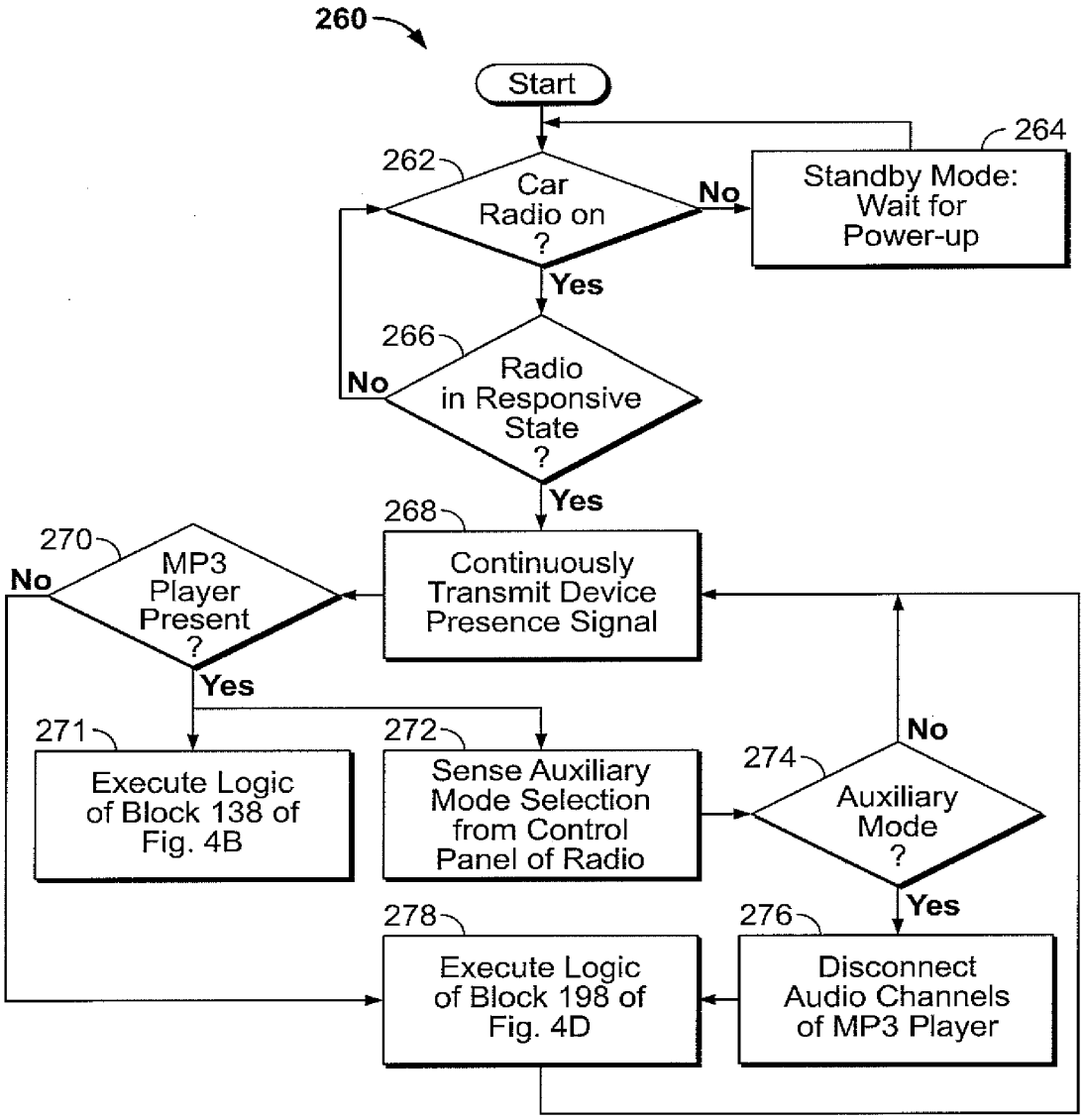


FIG. 4G

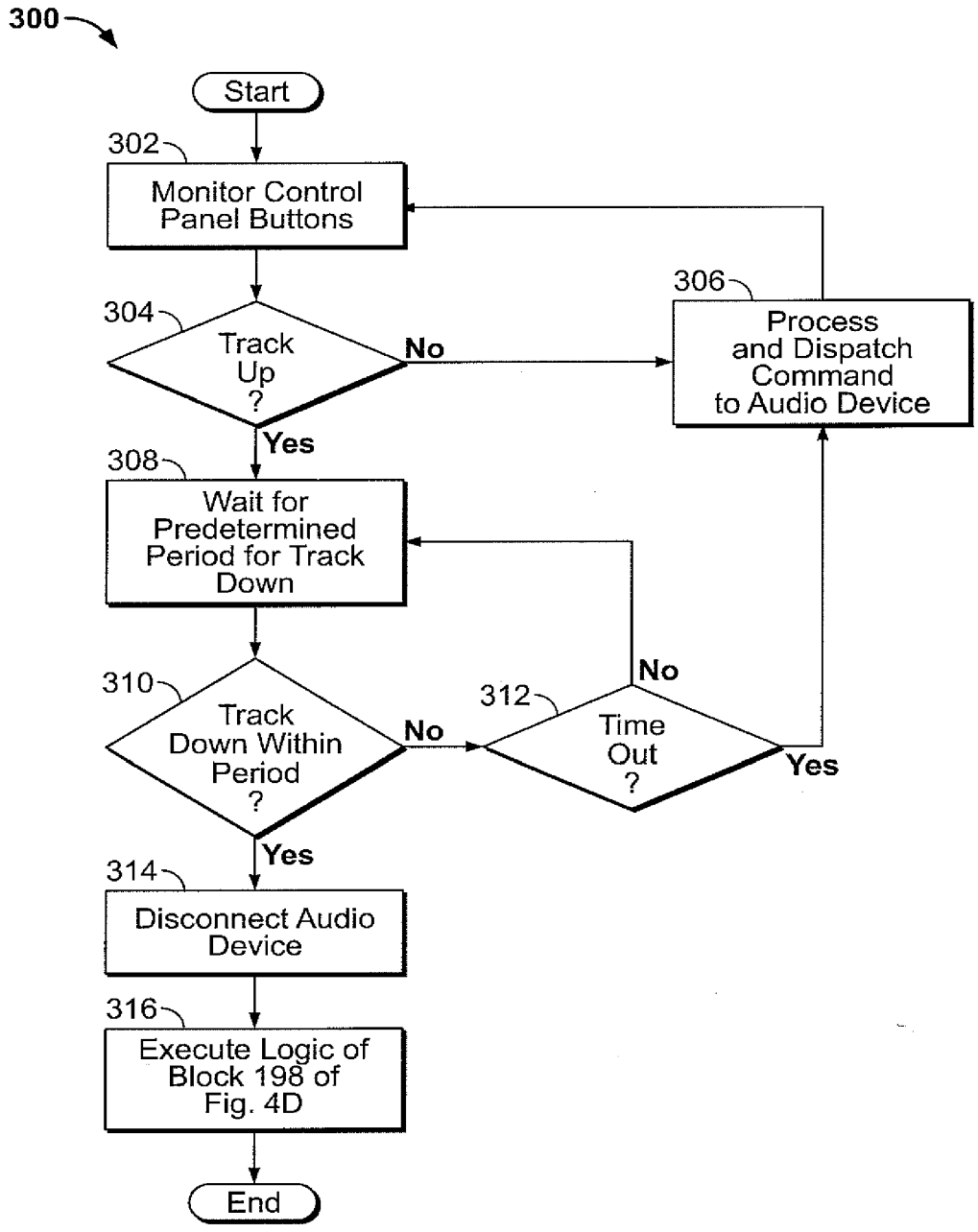


FIG. 5

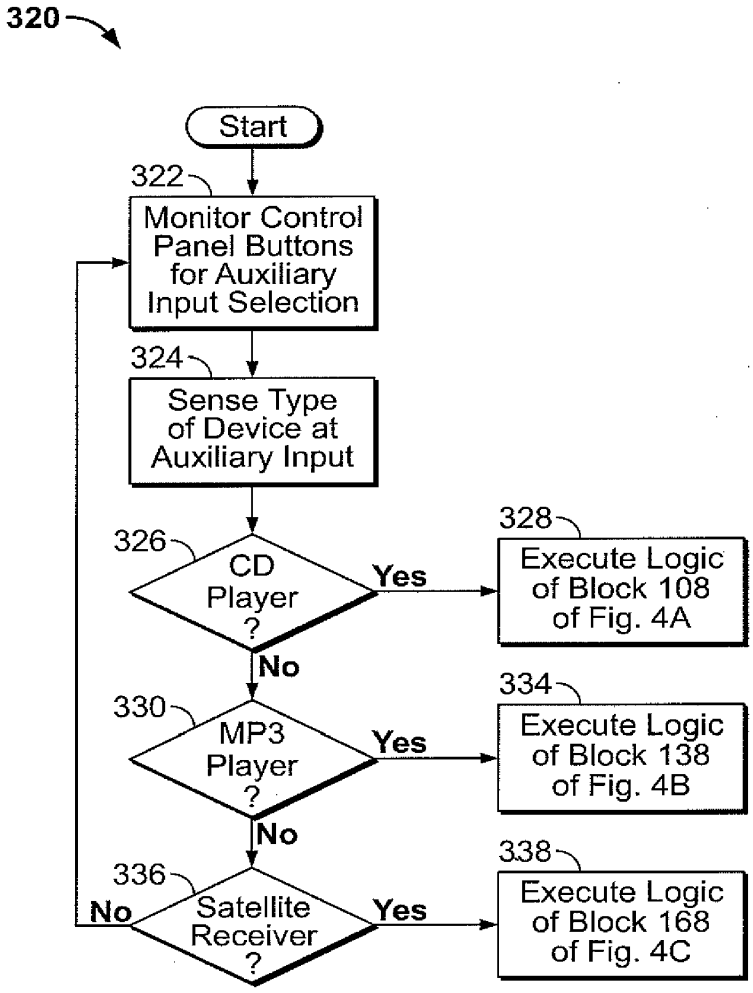


FIG. 6

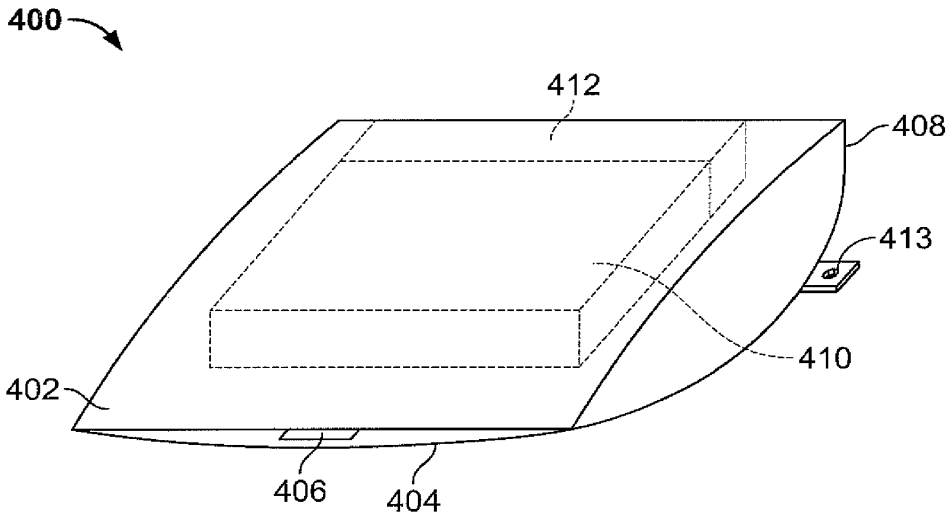


FIG. 7A

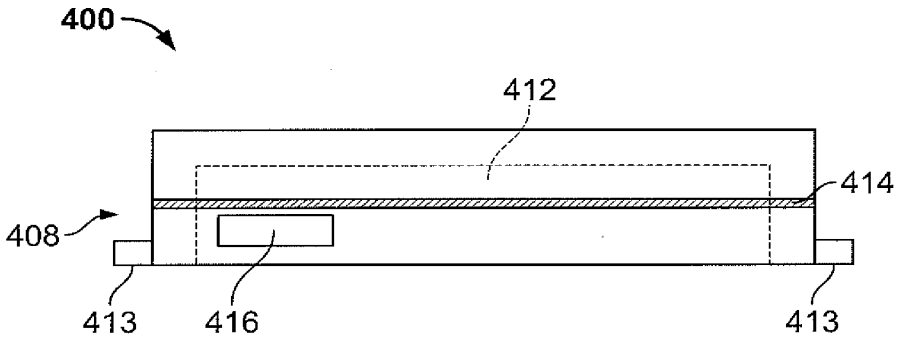


FIG. 7B

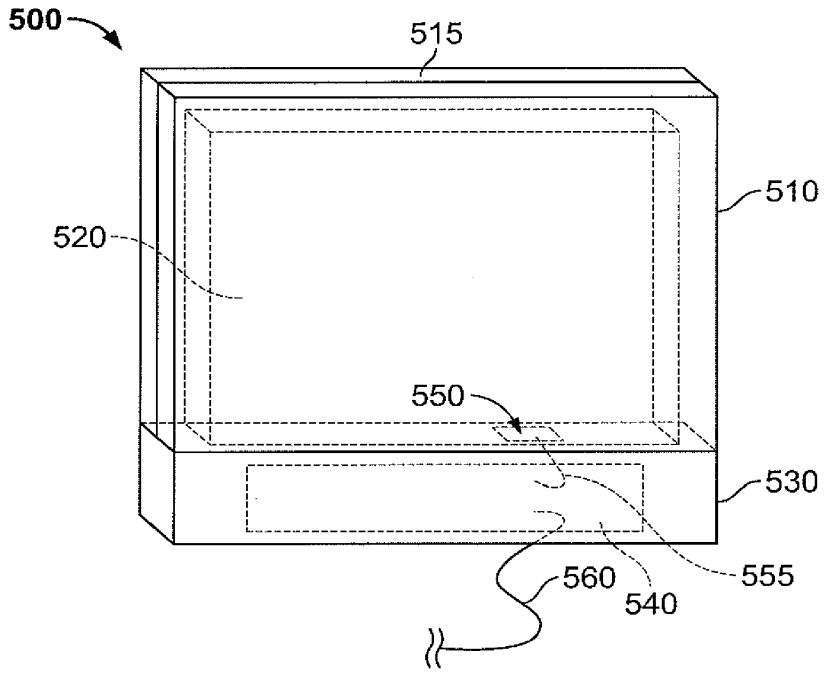


FIG. 8A

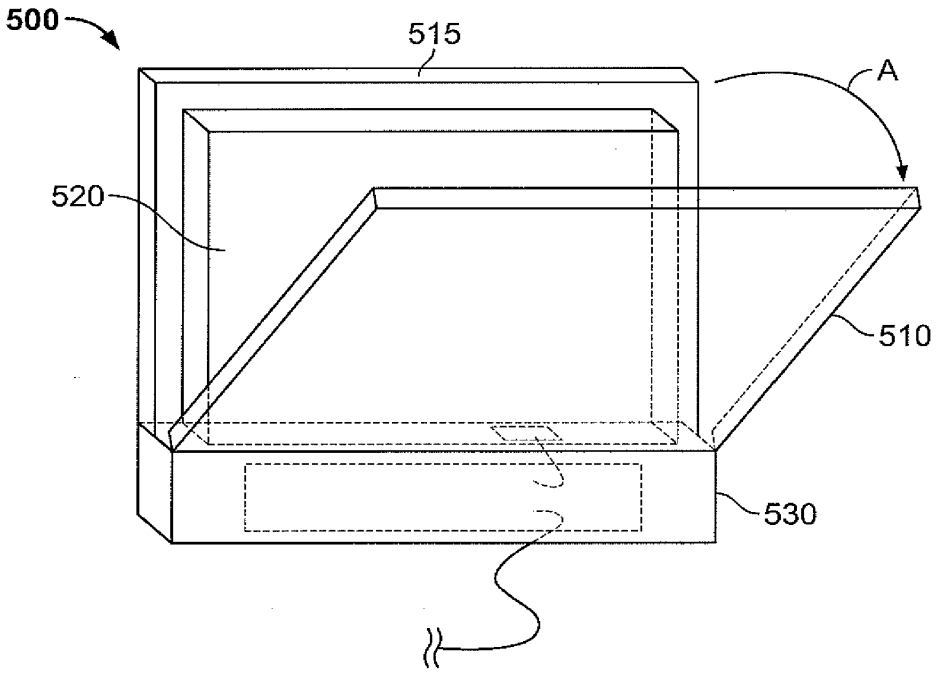


FIG. 8B

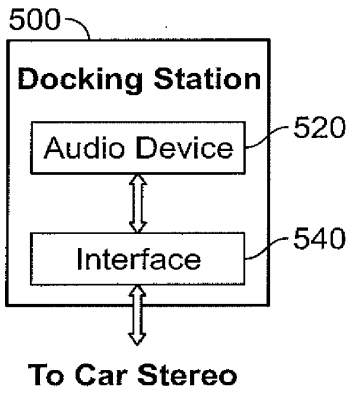


FIG. 9

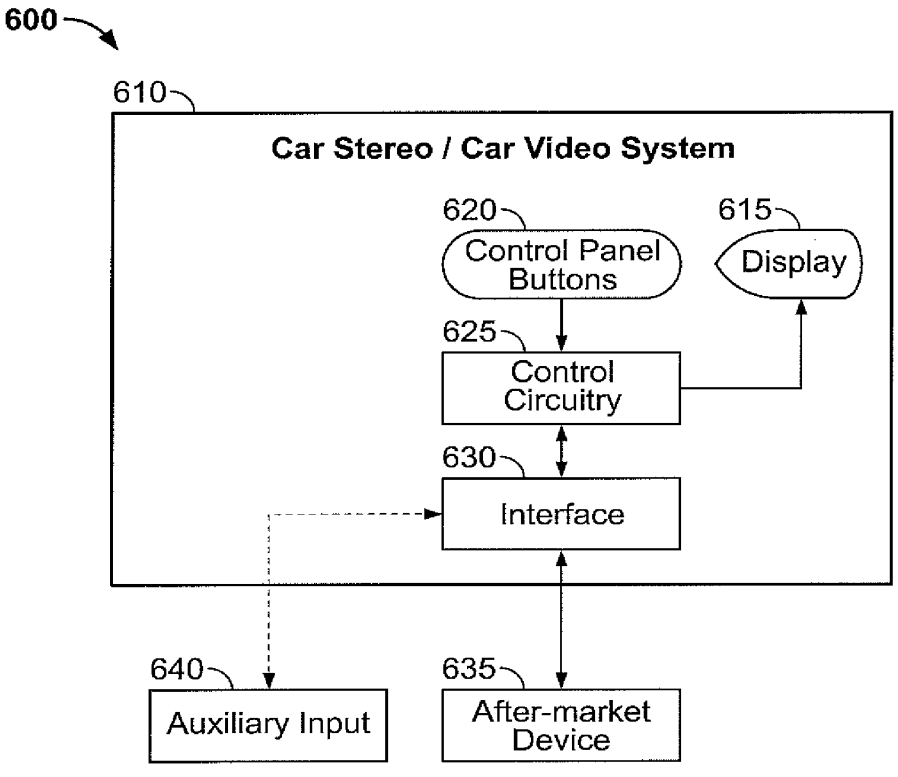


FIG. 10

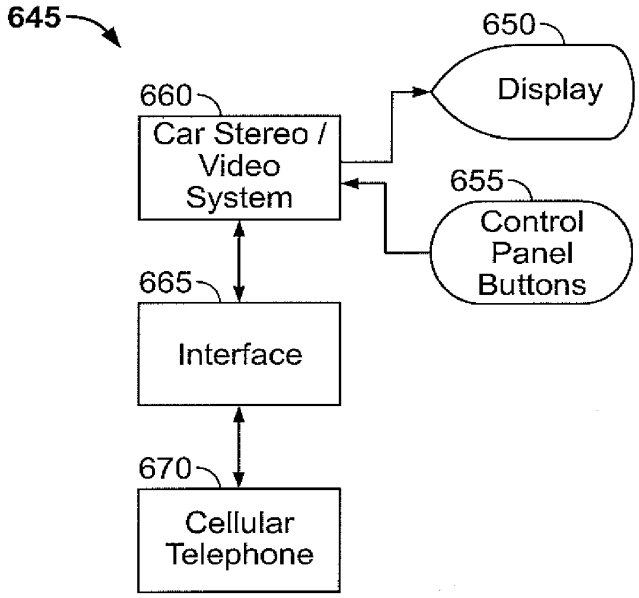


FIG. 11A

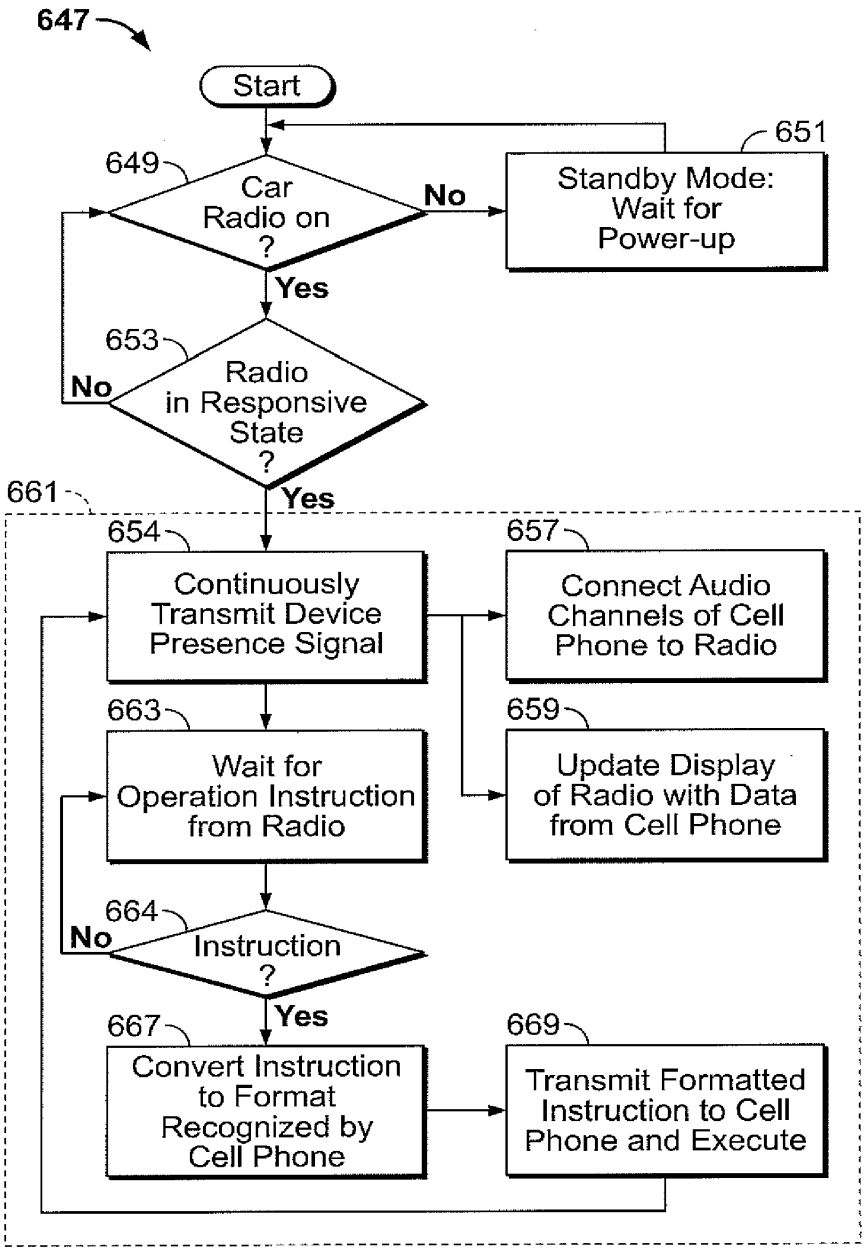


FIG. 11B

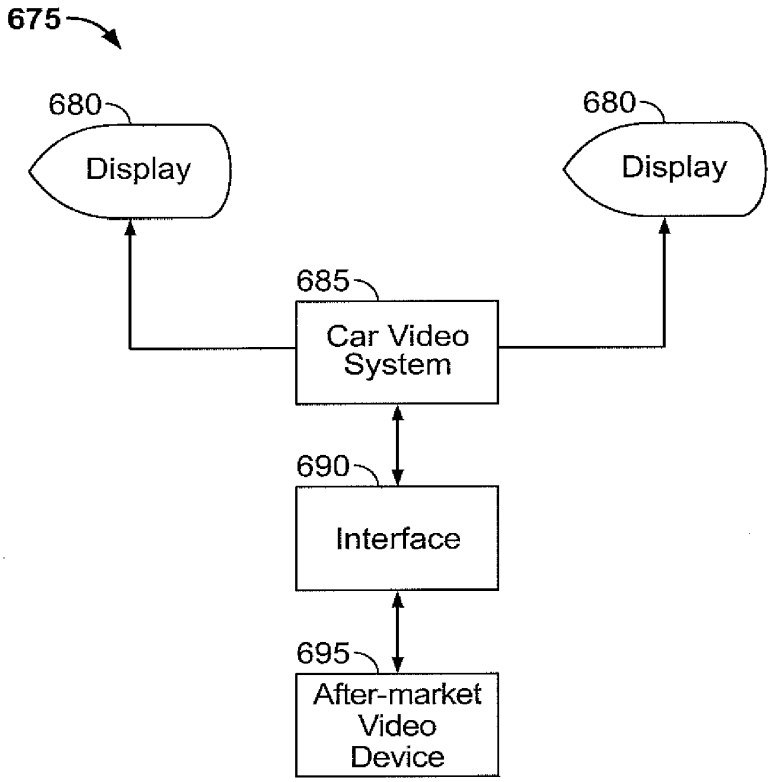


FIG. 12A

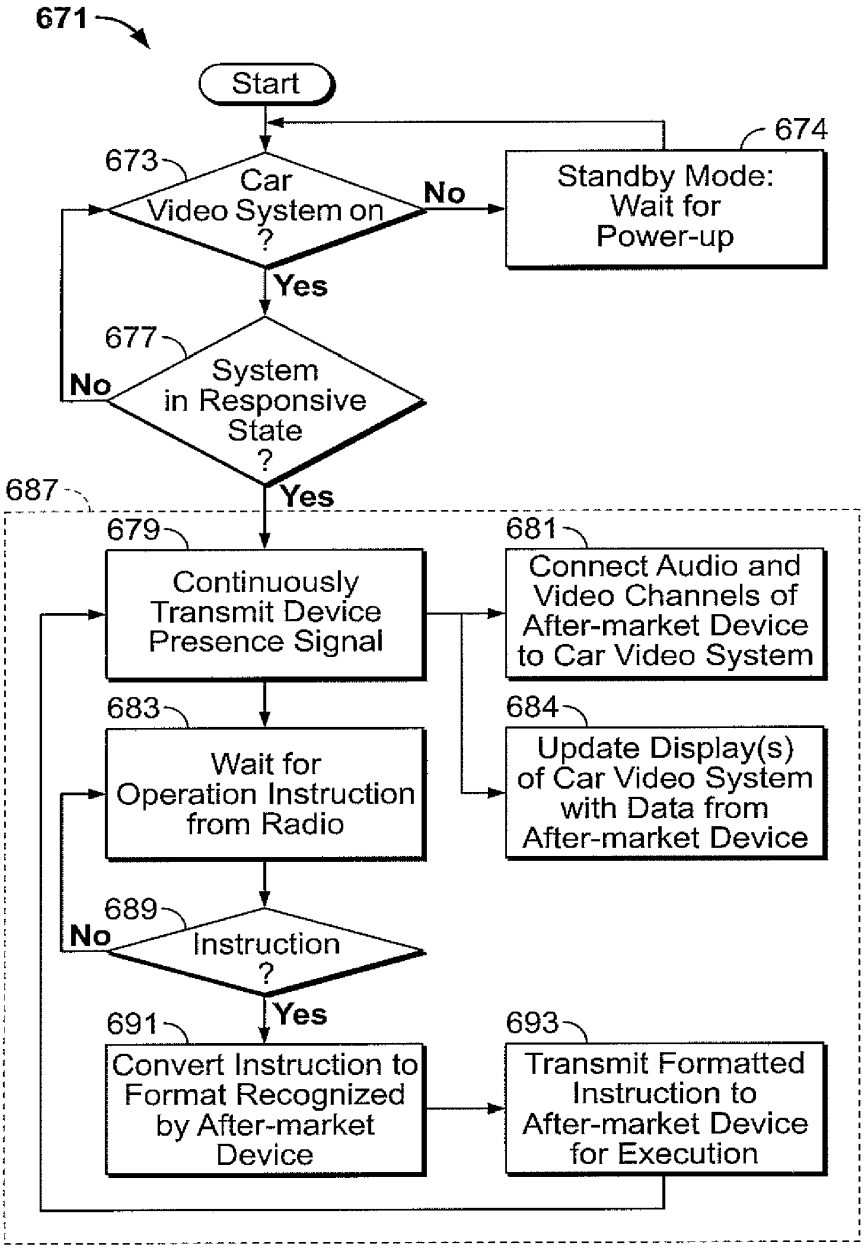


FIG. 12B

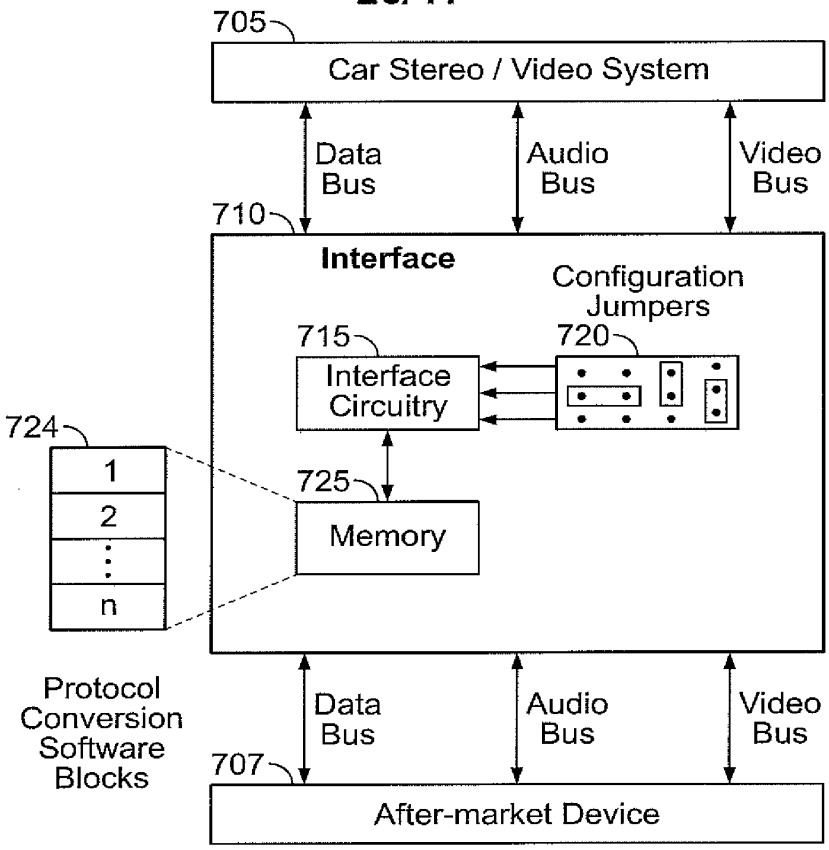


FIG. 13A

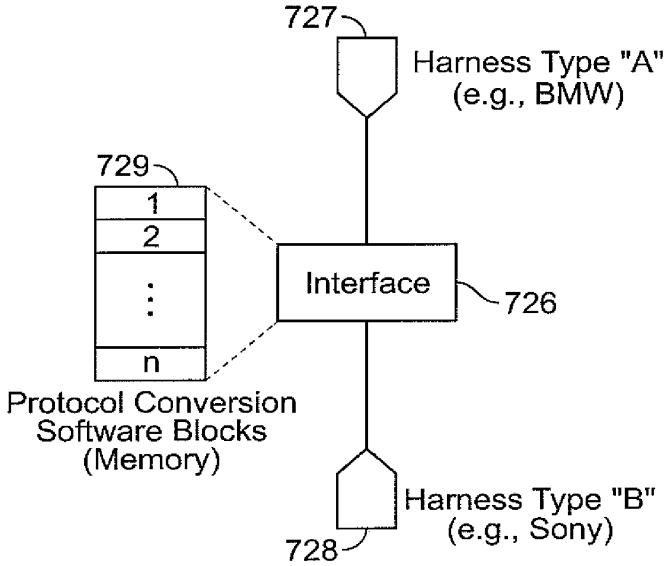


FIG. 13B

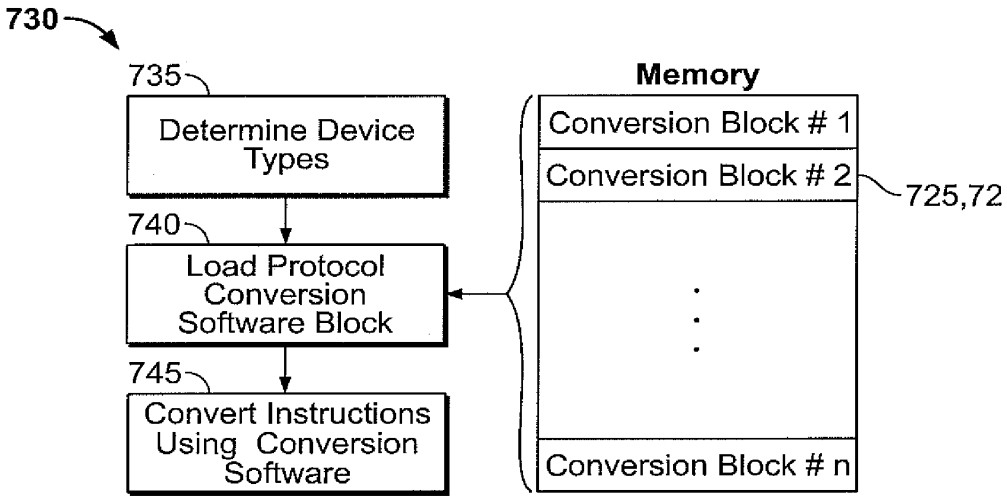

730
735
Determine Device Types
740
Load Protocol Conversion Software Block
745
Convert Instructions Using Conversion Software
Memory
Conversion Block # 1
Conversion Block # 2
725,72
Conversion Block # n

FIG. 14

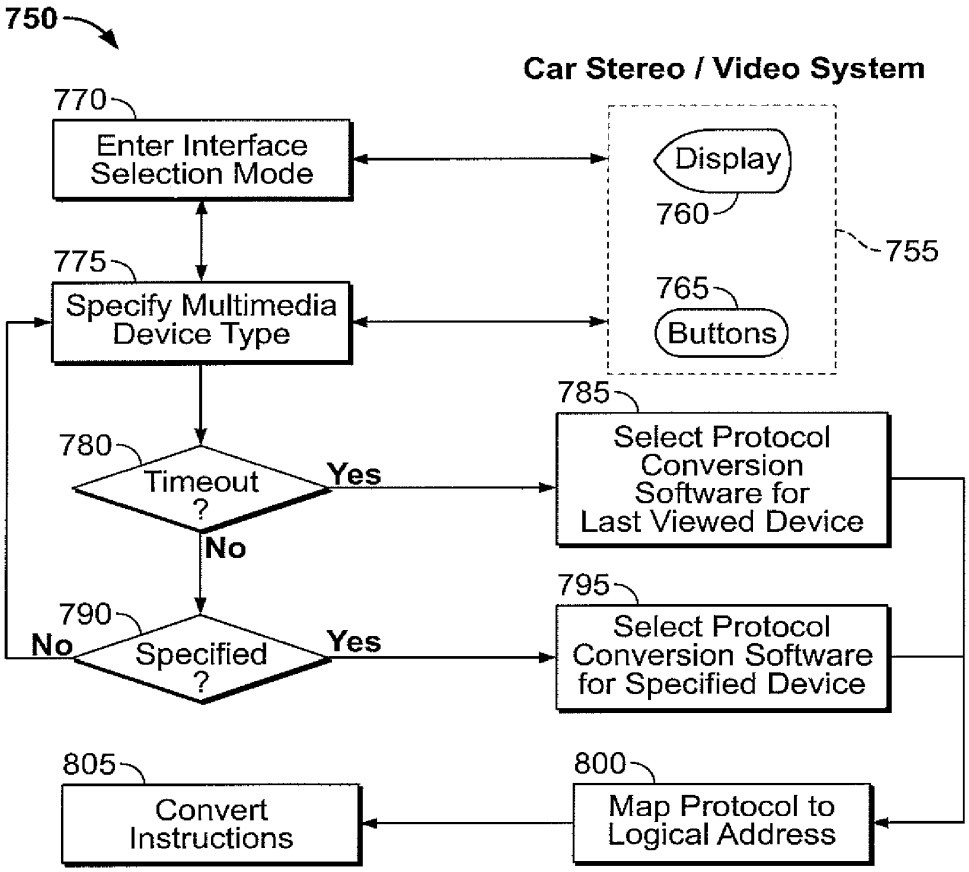

750
Car Stereo / Video System
770
Enter Interface Selection Mode
775
Specify Multimedia Device Type
Display
760
765
Buttons
755
780
Timeout ?
Yes
No
785
Select Protocol Conversion Software for Last Viewed Device
790
No
Specified ?
Yes
795
Select Protocol Conversion Software for Specified Device
805
Convert Instructions
800
Map Protocol to Logical Address

FIG. 15

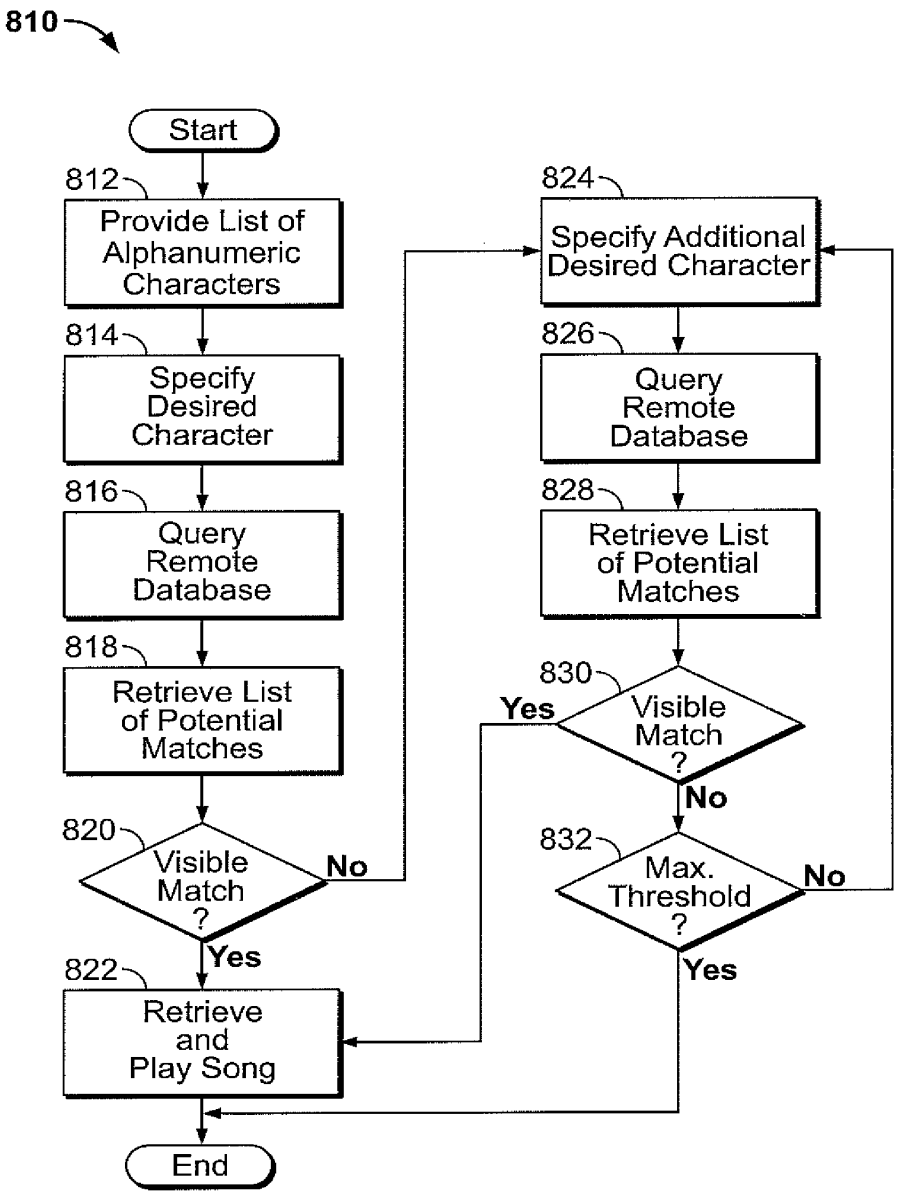


FIG. 16

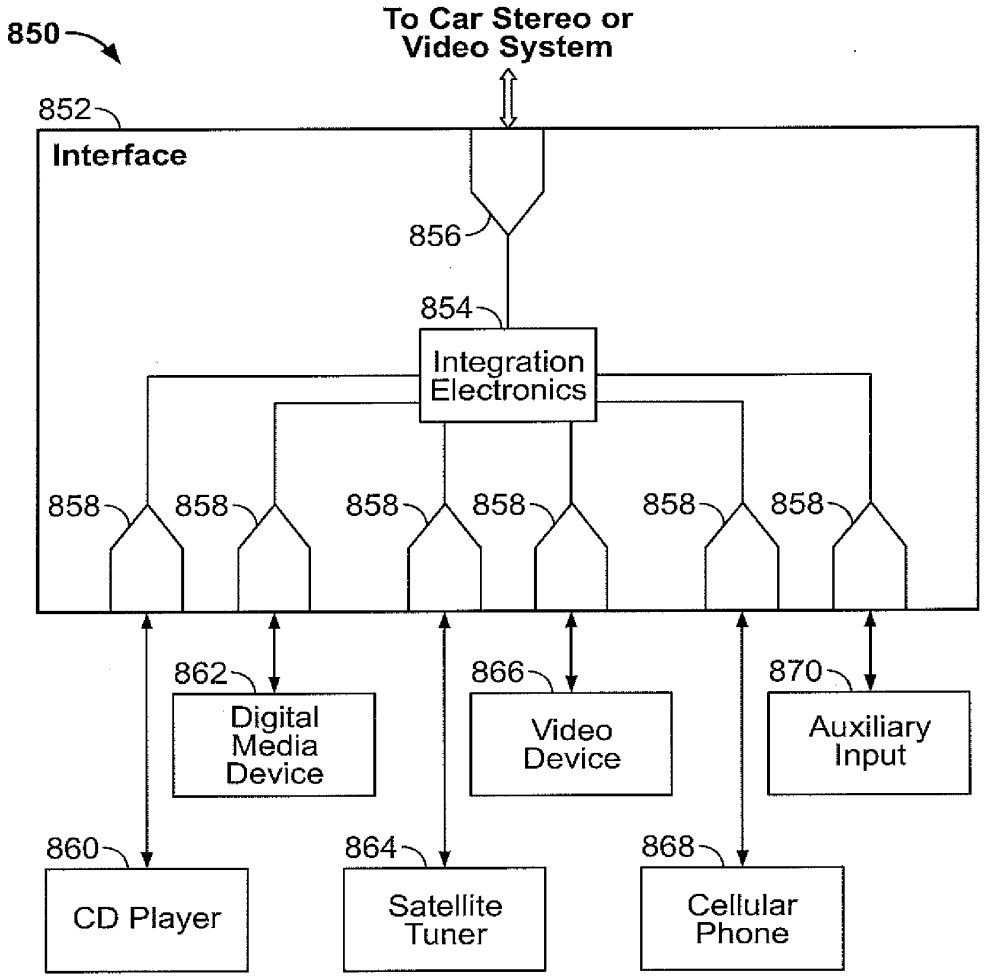


FIG. 17

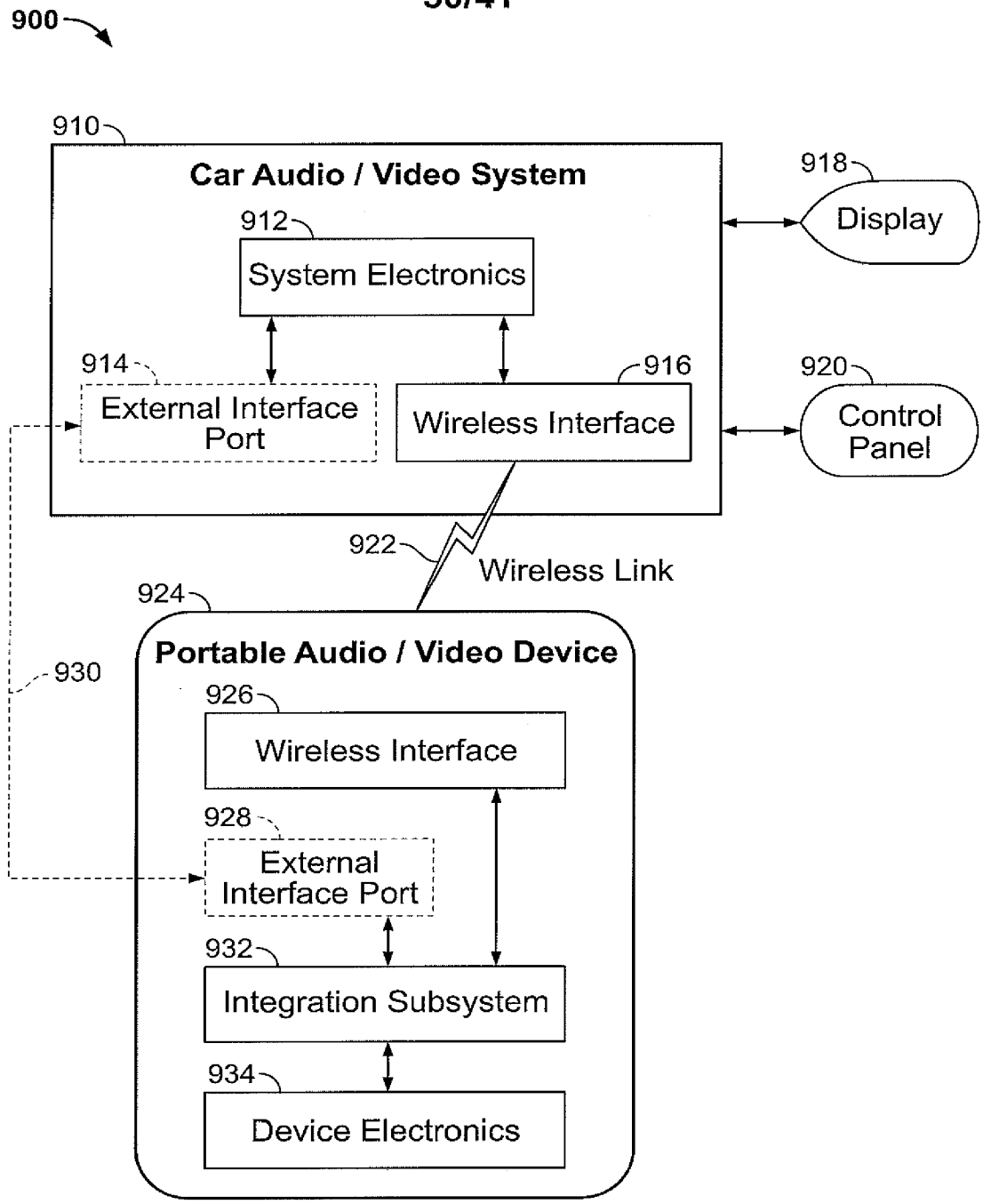


FIG. 18

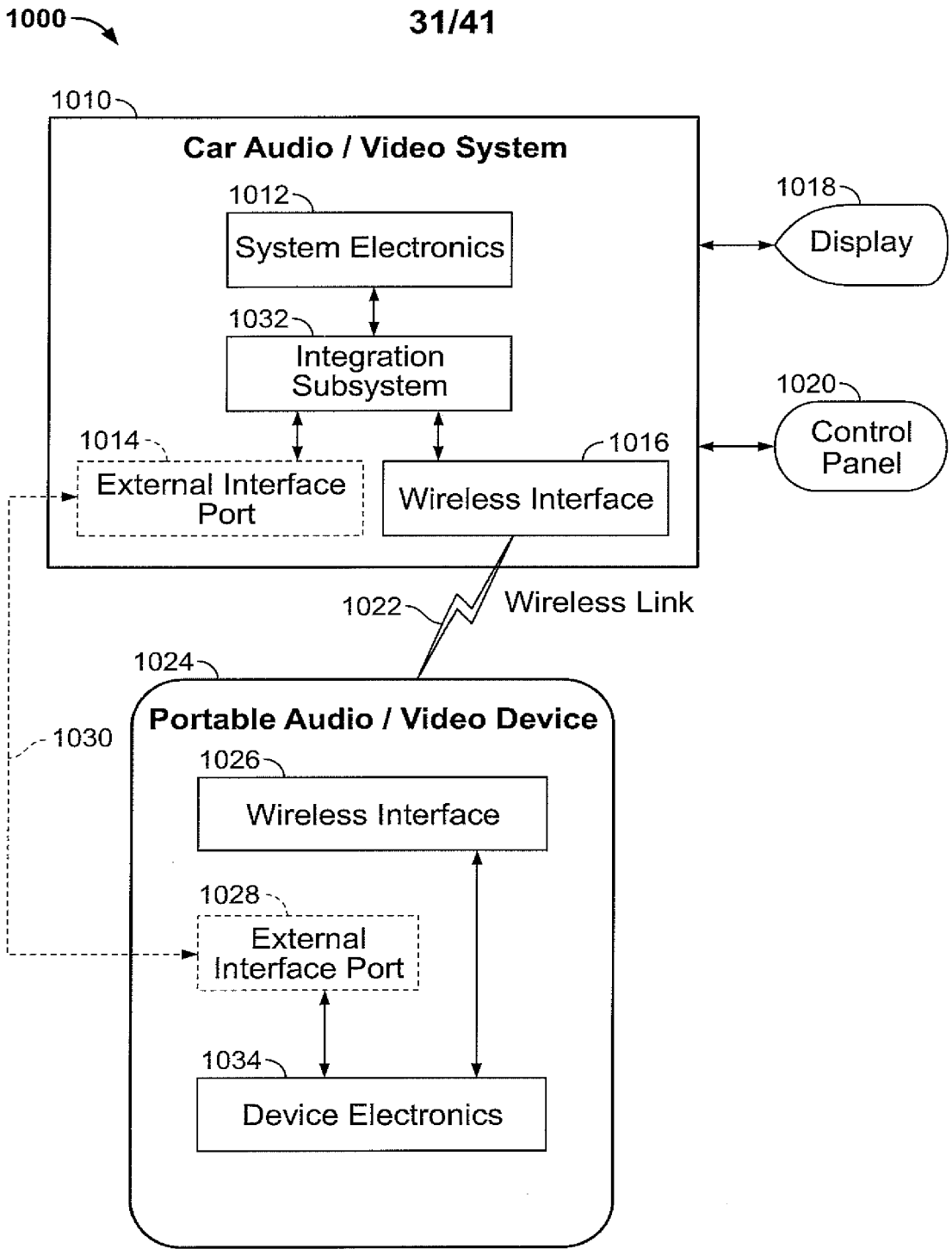

1000
1010
Car Audio / Video System
1012
System Electronics
1032
Integration Subsystem
1014
External Interface Port
1016
Wireless Interface
1018
Display
1020
Control Panel
1022
Wireless Link
1024
Portable Audio / Video Device
1030
1026
Wireless Interface
1028
External Interface Port
1034
Device Electronics

FIG. 19

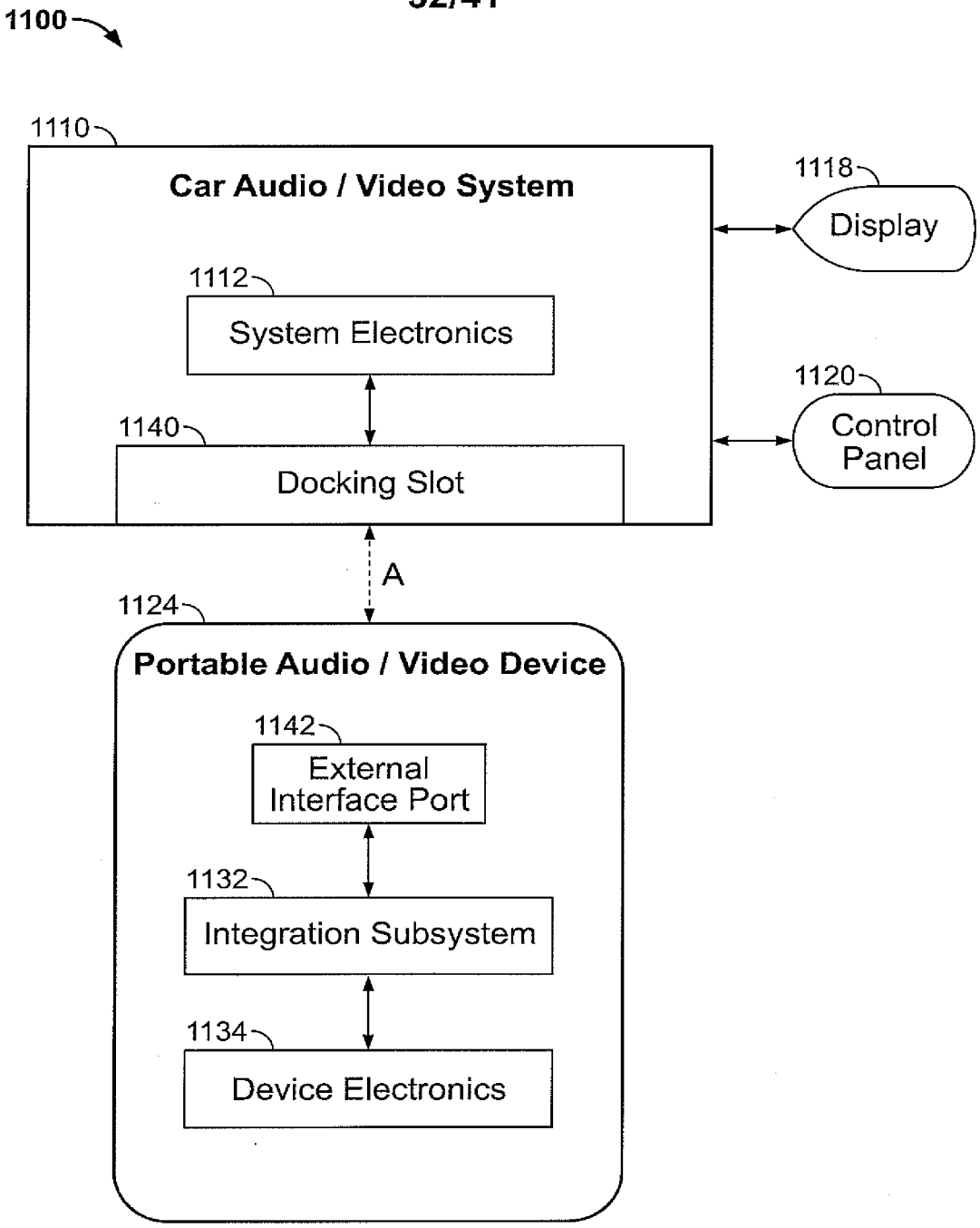


FIG. 20

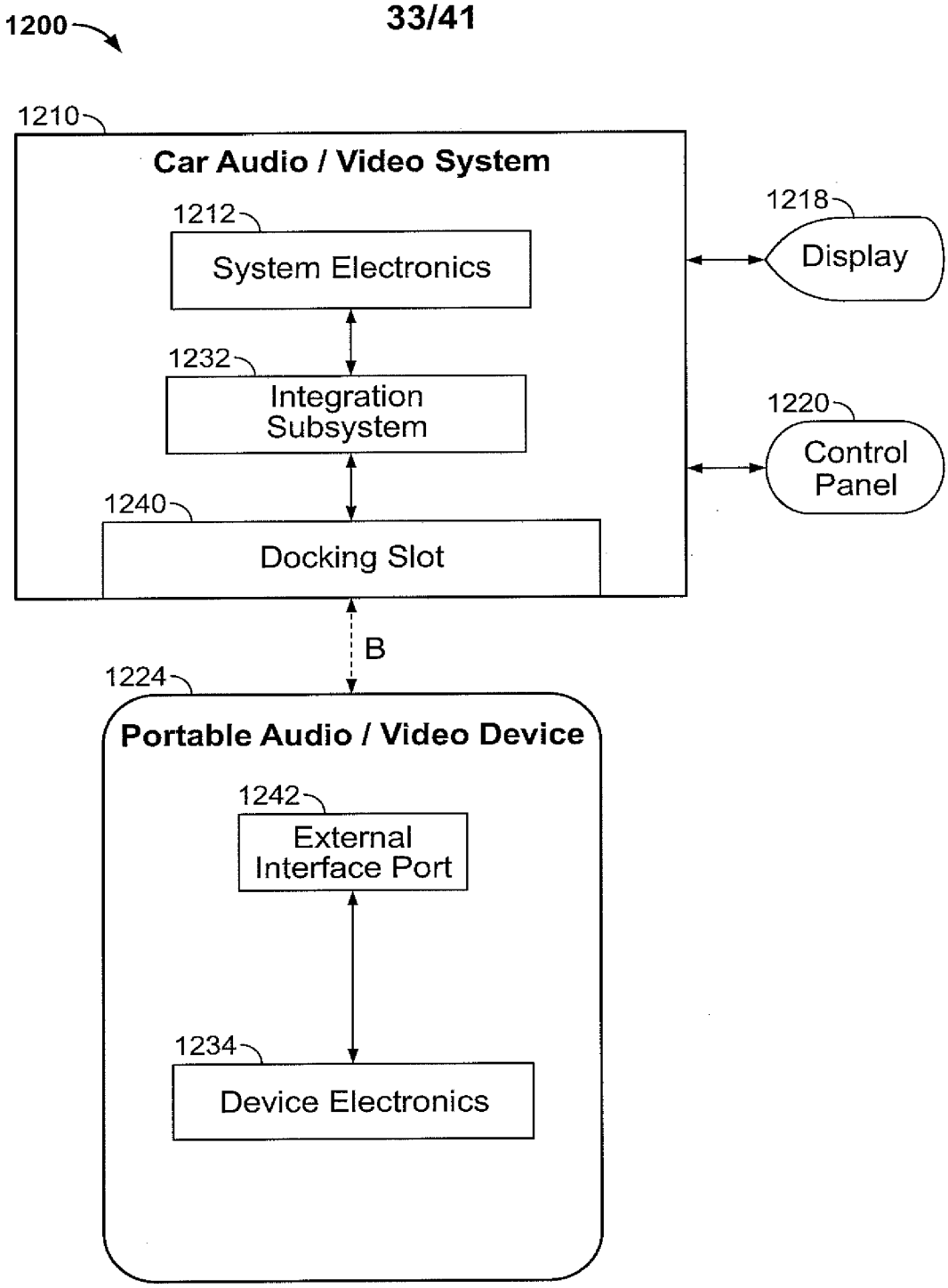


FIG. 21

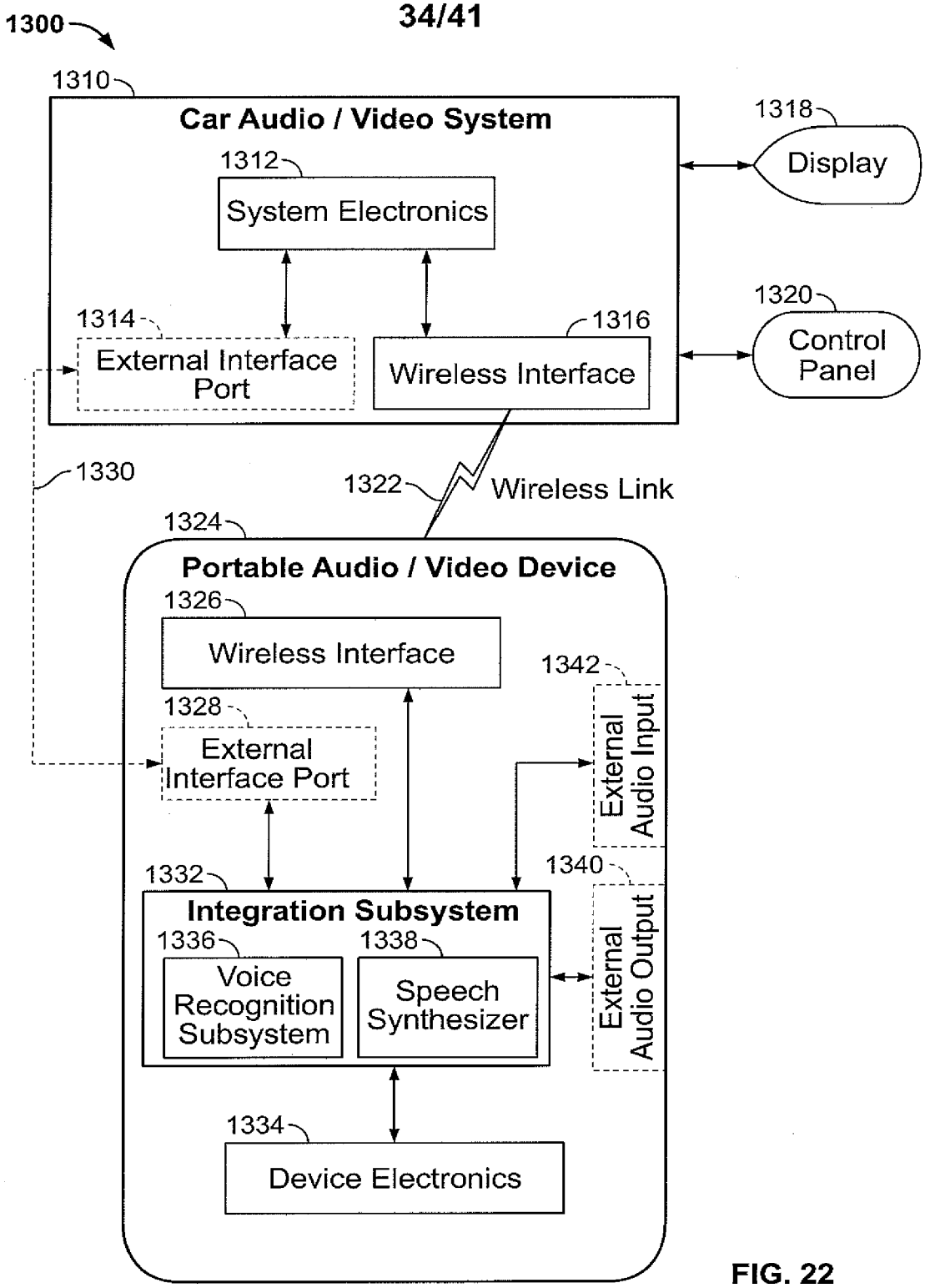


FIG. 22

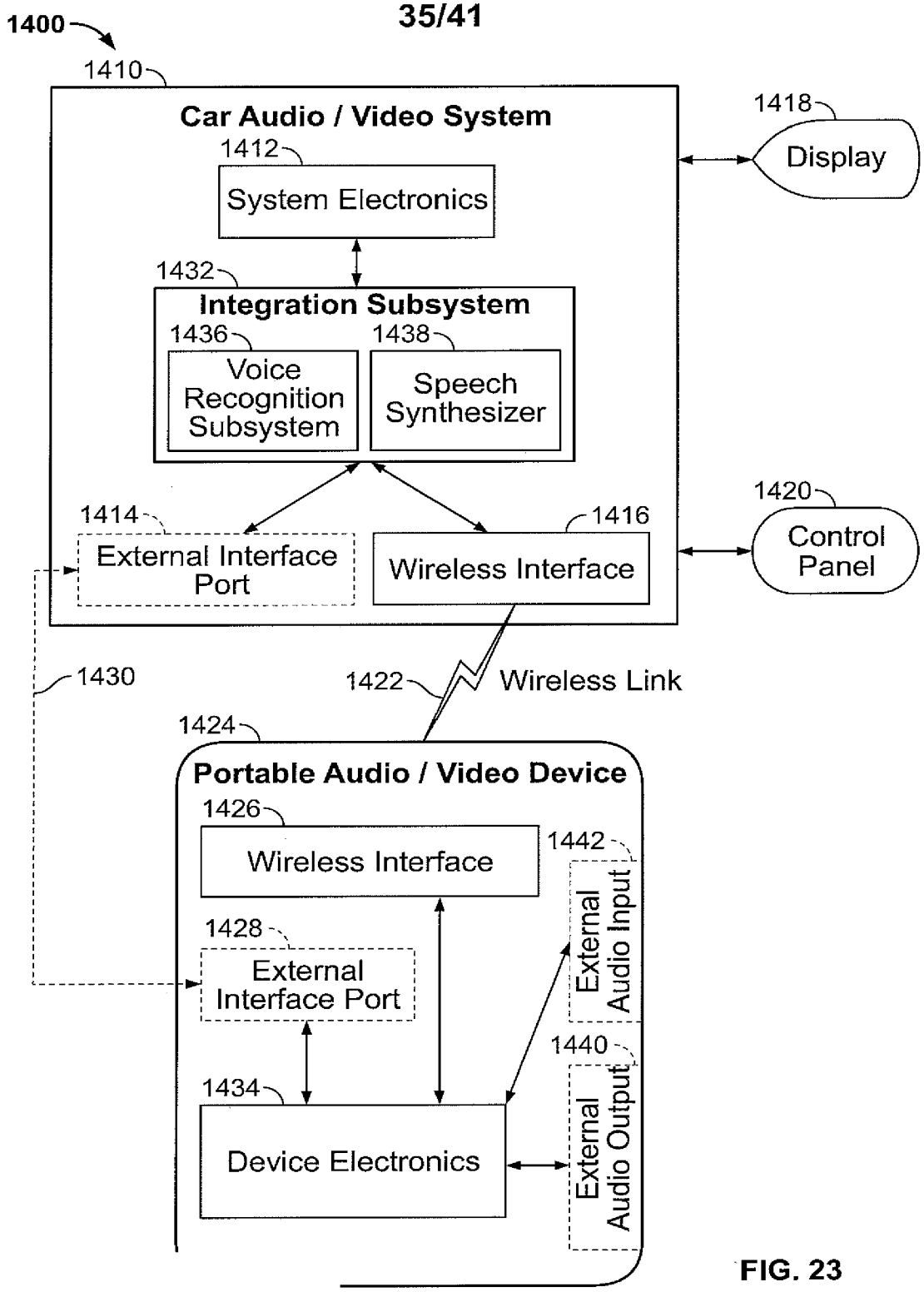


FIG. 23

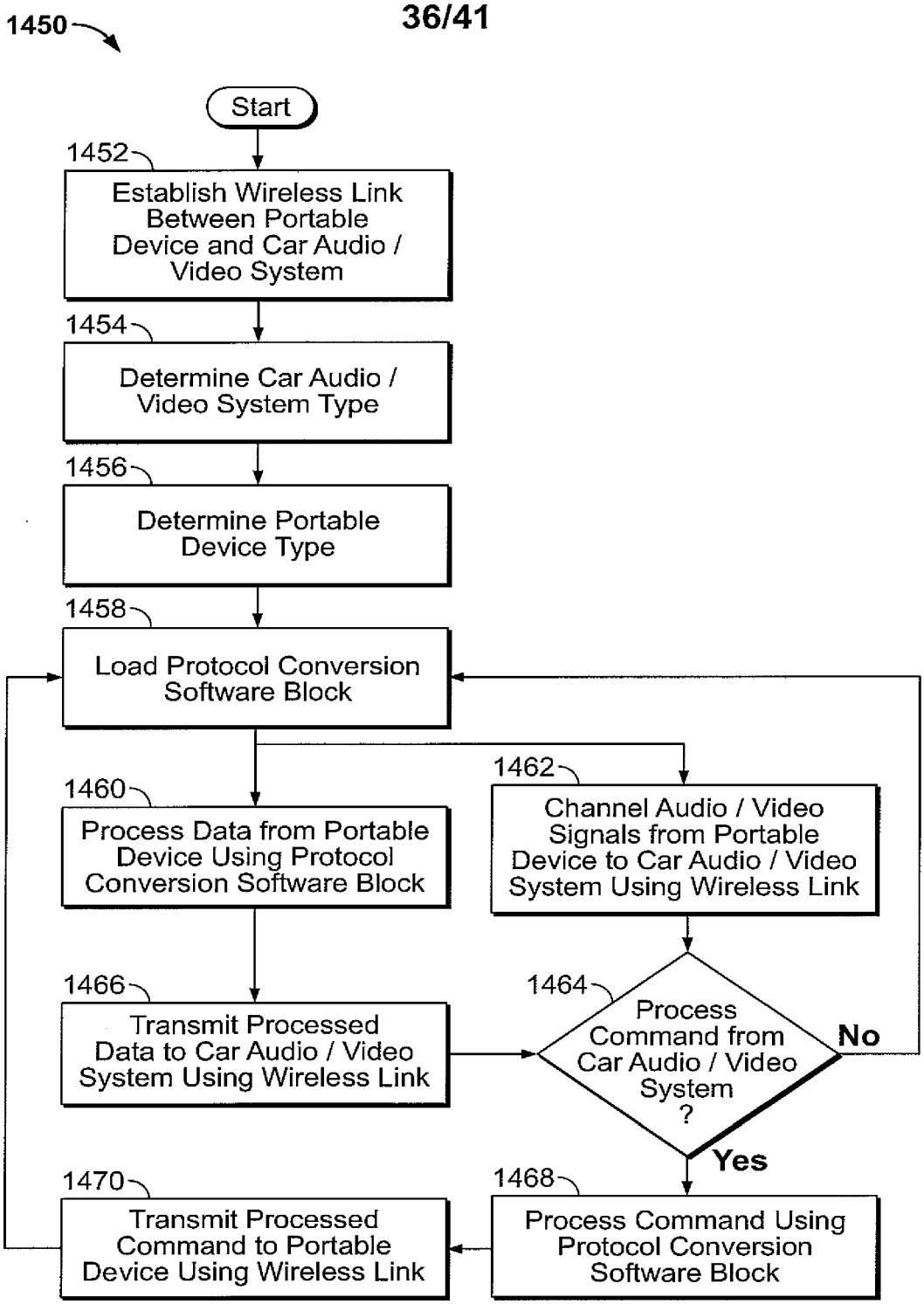


FIG. 24

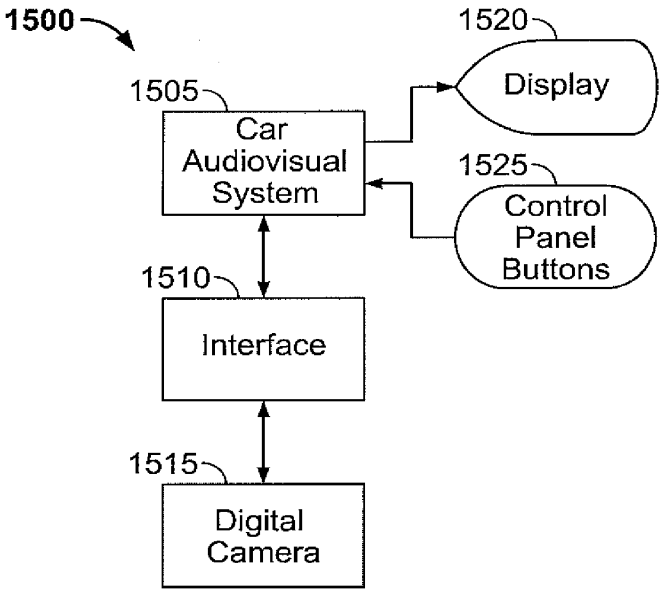


FIG. 25A

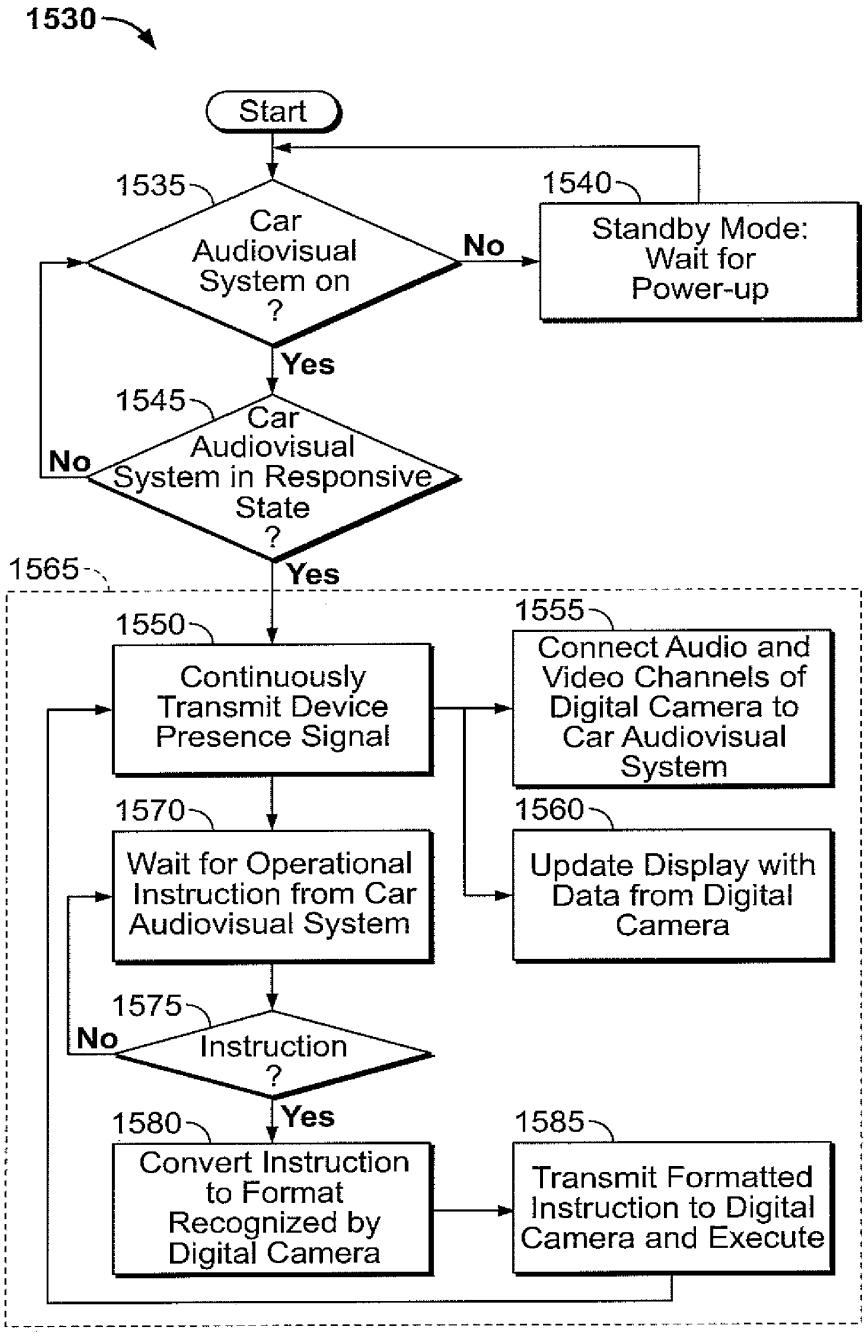


FIG. 25B

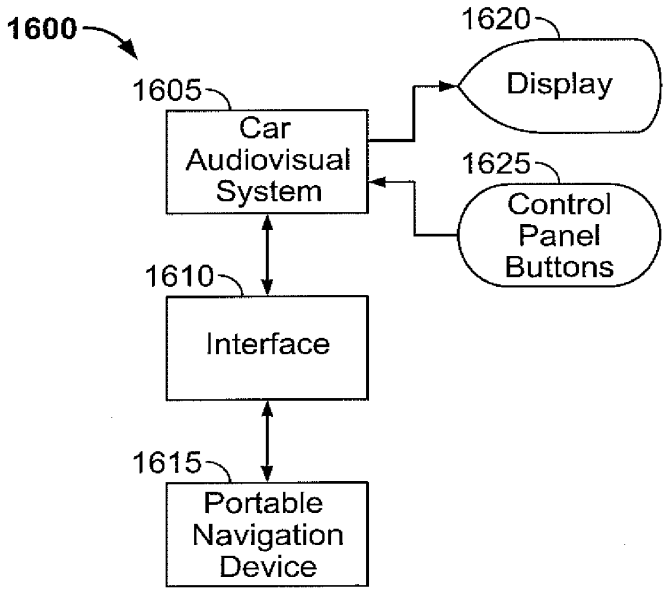


FIG. 26A

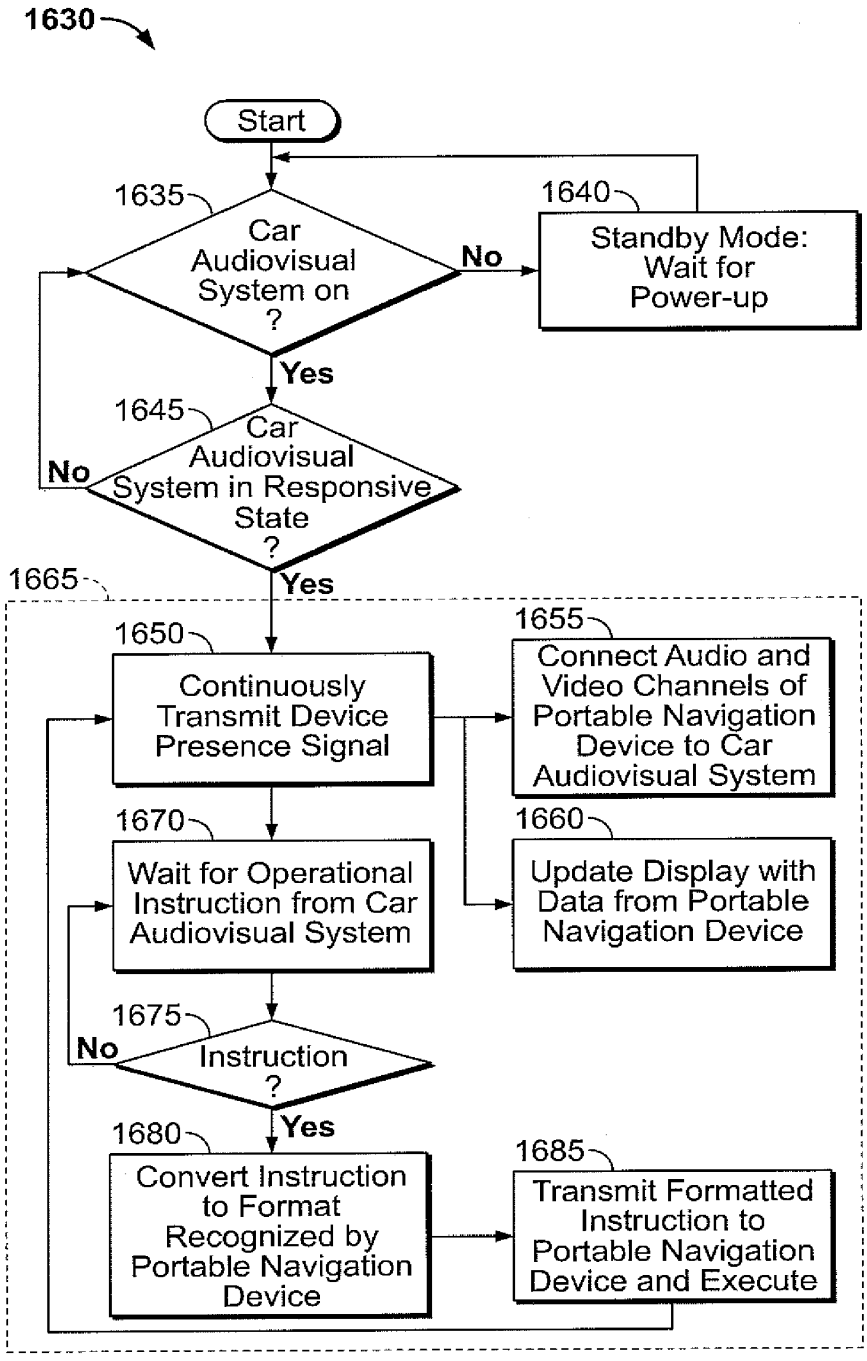


FIG. 26B

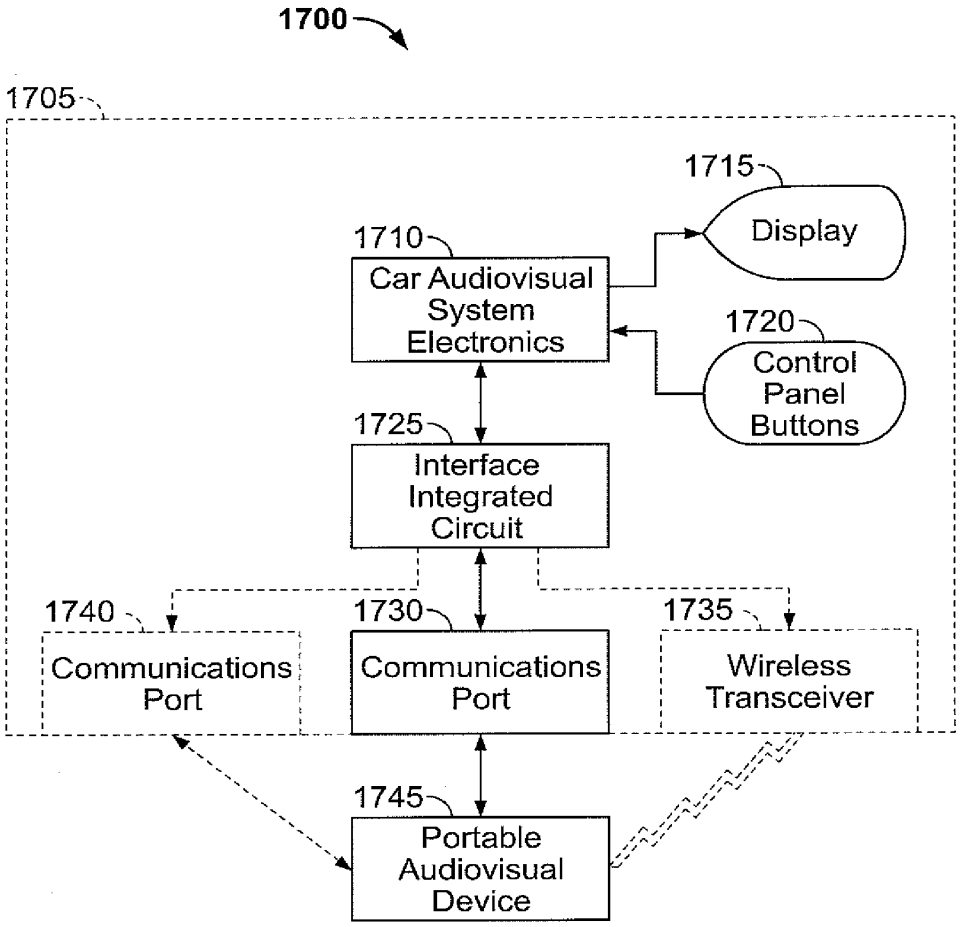


FIG.27

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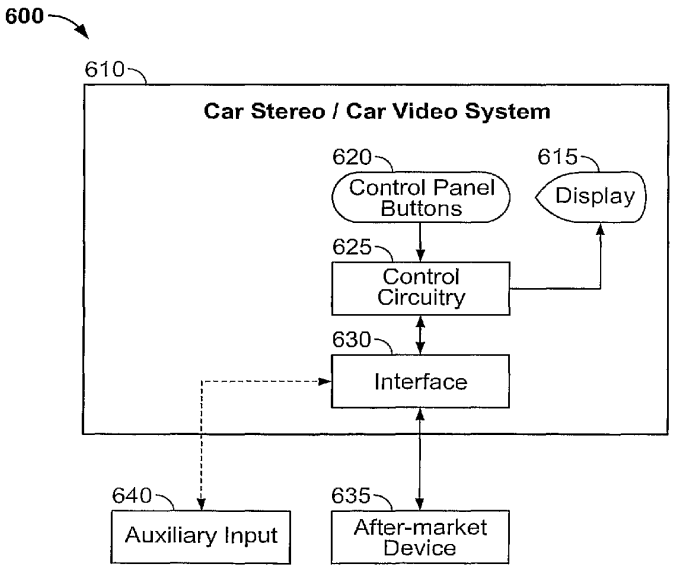
(54) Title: MULTIMEDIA DEVICE INTEGRATION SYSTEM



(57) Abstract: An multimedia device integration system is provided. One or more after-market audio or video devices, such as a CD player, CD changer, digital media device {e.g., MP3 player, MP4 player, WMV player, Apple iPod, portable music center, or other device) satellite receiver {e.g., XM or Sirius receiver), DAB receiver, video device {e.g., DVD player), cellular telephone, or any other device or combinations thereof, is integrated for use with an existing OEM or after-market car stereo or video system, wherein control commands can be issued at the car stereo or video system and data from the after-market device can be displayed on the car stereo or video system. Control commands generated at the car stereo or video system are received, processed, converted into a format recognizable by the after-market device, and dispatched to the after-market device for execution. Information from the after-market device is converted into a format recognizable by the car stereo or video system, and dispatched to the car stereo or video system for display thereon. One or more auxiliary input sources can be integrated with the car stereo or video system, and selected using the controls of the car stereo or video system. A docking station is provided for docking a portable audio or video device for integration with the car stereo or video system.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

INVENTOR: IRA MARLOWE

TITLE: MULTIMEDIA DEVICE INTEGRATION SYSTEM

SPECIFICATION

BACKGROUND OF THE INVENTION

FIELD OF THE INVENTION

The present invention relates to a multimedia device integration system. More specifically, the present invention relates to a multimedia device integration system for integrating after-market components such as satellite receivers, CD players, CD changers, digital media devices (*e.g.*, MP3 players, MP4 players, WMV players, Apple iPod devices, portable media centers, and other devices), Digital Audio Broadcast (DAB) receivers, auxiliary audio sources, video devices (*e.g.*, DVD players), cellular telephones, and other devices for use with factory-installed (OEM) or after-market car stereo and video systems.

RELATED ART

Automobile audio systems have continued to advance in complexity and the number of options available to automobile purchasers. Early audio systems offered a simple AM and/or FM tuner, and perhaps an analog tape deck for allowing cassettes, 8-tracks, and other types of tapes to be played while driving. Such early systems were closed, in that external devices could not be easily integrated therewith.

With advances in digital technology, CD players have been included with automobile audio systems. Original Equipment Manufacturers (OEMs) often produce car stereos having CD players and/or changers for allowing CDs to be played while driving. However, such systems often include proprietary buses and protocols that do not allow after-market audio systems, such as satellite receivers (e.g., XM satellite tuners), digital audio broadcast (DAB) receivers, digital media players (*e.g.*, Apple iPod, MP3, MP4, WMV, etc.), CD changers, auxiliary input sources, video devices (*e.g.*, DVD players), cellular telephones, and the like, to be easily integrated therewith. Thus, automobile purchasers are frequently forced to either entirely replace the OEM audio system, or use same throughout the life of the vehicle or the duration of ownership. Even if the OEM radio is replaced with an after-market radio, the after-market radio also frequently is not operable with an external device.

A particular problem with integrating after-market audio and video systems with existing car stereo and video systems is that signals generated by both systems are in proprietary formats, and are not capable of being processed by the after-market system. Additionally, signals generated by the after-market system are also in a proprietary format that is not recognizable by the car stereo or video system. Thus, in order to integrate after-market systems with existing car stereo and video systems, it is necessary to convert signals between such systems.

It known in the art to provide one or more expansion modules for OEM and after-market car stereos for allowing external audio products to be integrated with the car stereo. However, such expansion modules only operate with and allow integration of external audio products manufactured by the same manufacturer as

the OEM / after-market car stereo. For example, a satellite receiver manufactured by PIONEER, Inc., cannot be integrated with an OEM car radio manufactured by TOYOTA or an after-market car radio manufactured by CLARION, Inc. Thus, existing expansion modules only serve the limited purpose of integrating equipment by the same manufacturer as the car stereo. Thus, it would be desirable to provide an integration system that allows any audio device of any manufacture to be integrated with any OEM or after-market radio system. Further, radio-frequency (RF) transmitters and cassette tape adapters have been developed for allowing music from a device external to a car radio, such as a portable CD player, to be played through the car radio using the FM receiver or the cassette deck of the radio. However, such systems are often prone to interference, and do not provide high fidelity.

Moreover, it would be desirable to provide an integration system that not only achieves integration of various audio and video devices that are alien to a given OEM or after-market car stereo or video system, but also allows for information to be exchanged between the after-market device and the car stereo or video system. For example, it would be desirable to provide a system wherein station, track, time, and song information can be retrieved from the after-market device, formatted, and transmitted to the car stereo or video system for display thereby, such as at an LCD panel of the car stereo or on one or more display panels of a car video system. Such information could be transmitted and displayed on both hardwired car stereo and video systems (*e.g.*, radios installed in dashboards or at other locations within the car), or integrated for display on one or more software or graphically-driven radio systems operable with graphical display panels.

Additionally, it would be desirable to provide a multimedia device integration system that allows a user to control more than one device, such as a CD or satellite receiver and one or more auxiliary sources, and to quickly and conveniently switch between same using the existing controls of the car stereo or video system.

Accordingly, the present invention addresses these needs by providing a multimedia device integration system that allows a plurality of after-market devices, such as CD players, CD changers, digital media devices (*e.g.*, MP3 players, MP4 players, Apple iPod, WMV players, portable media centers, and other devices), satellite receivers, DAB receivers, auxiliary input sources, video devices (*e.g.*, DVD players), cellular telephones, or any combination thereof, to be integrated into existing car stereo and video systems while allowing information to be displayed on, and control to be provided from, the car stereo or video system.

SUMMARY OF THE INVENTION

The present invention relates to a multimedia device integration system. One or more after-market audio devices, such as CD players, CD changers, digital media devices (*e.g.*, MP3 players, MP4 players, WMV players, Apple iPod devices, portable media centers, and other devices), satellite receivers (*e.g.*, XM or Sirius receivers), digital audio broadcast (DAB) receiver, or auxiliary input sources, can be connected to and operate with an existing stereo system in an automobile, such as an OEM car stereo system or an after-market car stereo system installed in the automobile. The integration system connects to and interacts with the car stereo at any available port of the car stereo, such as a CD input port, a satellite input, or other known type of connection. If the car stereo system is an after-market car stereo system, the present invention generates a signal that is sent to the car stereo to keep same in an operational state and responsive to external data and signals. Commands generated at the control panel are received by the present invention and converted into a format recognizable by the after-market device. The formatted commands are executed by the after-market device, and audio therefrom is channeled to the car stereo. Information from the after-market device is received by the present invention, converted into a format recognizable by the car stereo, and forwarded to the car stereo for display thereby. The formatted information could include information relating to a CD or MP3 track being played, channel, song, and artist information from a satellite receiver or DAB receiver, or video information from one or more external devices connected to the present invention. The information can be presented as one or more menus, textual, or graphical prompts for display on an LCD display of the radio, allowing

interaction with the user at the radio. A docking port may be provided for allowing portable external audio devices to be connected to the interface of the present invention.

In an embodiment of the present invention, a dual-input device is provided for integrating both an external audio device and an auxiliary input with an OEM or after-market car stereo. The user can select between the external audio device and the auxiliary input using the controls of the car stereo. The invention can automatically detect the type of device connected to the auxiliary input, and integrate same with the car stereo.

In another embodiment of the present invention, an interface is provided for integrating a plurality of auxiliary input sources with an existing car stereo system. A user can select between the auxiliary sources using the control panel of the car stereo. One or more after-market audio devices can be integrated with the auxiliary input sources, and a user can switch between the audio device and the auxiliary input sources using the car stereo. Devices connected to the auxiliary input sources are inter-operable with the car stereo, and are capable of exchanging commands and data via the interface.

In another embodiment of the present invention, an interface is provided for integrating an external device for use with a car stereo or video system, wherein the interface is positioned within the car stereo or video system. The system comprises a car stereo or video system; an after-market device external to the car stereo or video system; an interface positioned within the car stereo or video system and connected between the car stereo or video system and the after-market device for exchanging data and audio or video signals between the car stereo or

video system and the after-market device; means for processing and dispatching commands for controlling the after-market device from the car stereo or video system in a format compatible with the after-market device; and means for processing and displaying data from the after-market device on a display of the car stereo or video system in a format compatible with the car stereo or video system. The after-market device could comprise one or more of a CD changer, CD player, satellite receiver (*e.g.*, XM or Sirius), digital media device (*e.g.*, MP3, MP4, WMV, or Apple iPod device), video device (*e.g.*, DVD player), cellular telephone, or any combination thereof.

In another embodiment of the present invention, an interface is provided for integrating a cellular telephone for use with a car stereo or video system. The system comprises a car stereo or video system; a cellular telephone external to the car stereo or video system; an interface connected between the car stereo or video system and the cellular telephone for exchanging data and audio or video signals between the car stereo or video system and the cellular telephone; means for processing and dispatching commands for controlling the cellular telephone from the car stereo or video system in a format compatible with the cellular telephone; and means for processing and displaying data from the cellular telephone on a display of the car stereo or video system in a format compatible with the car stereo or video system.

In another embodiment of the present invention, an interface is provided for integrating an external video system for use with a car video system. The system comprises a car video system; an after-market video device external to the car

video system; an interface connected between the car video system and the after-market video device for exchanging data, audio, and video signals between the car video system and the after-market video device; means for processing and dispatching commands for controlling the after-market video device from the car video system in a format compatible with the after-market video device; and means for processing and displaying data from the after-market video device on a display of the car video system in a format compatible with the car video system.

The present invention also provides an interface for integrating a plurality of after-market devices for use with a car stereo or video system using a single interface. In one embodiment, the system comprises an interface in electrical communication with a car stereo or video system and an after-market device; a plurality of configuration jumpers in the interface for specifying a first device type corresponding to the car stereo or video system and a second device type corresponding to the after-market device; and a plurality of protocol conversion software blocks stored in memory in the interface for converting signals from the after-market device into a first format compatible with the car stereo or video system and for converting signals from the car stereo or video system into a second format compatible with the after-market device, wherein at least one of the protocol conversion software blocks are selected by the interface using settings of the plurality of configuration jumpers. In another embodiment, the system comprises an interface in electrical communication with a car stereo or video system and an after-market device; first and second wiring harnesses attached to the interface, wherein the first wiring harness includes a first electrical configuration corresponding to the car stereo or video system and the second

wiring harness includes a second electrical configuration corresponding to the after-market device; and a plurality of protocol conversion software blocks stored in memory in the interface for converting signals from the after-market device into a first format compatible with the car stereo or video system and for converting signals from the car stereo or video system into a second format compatible with the after-market device, wherein at least one of the protocol conversion software blocks are selected by the interface using the first and second electrical configurations of the first and second wiring harnesses. A plurality of wiring harnesses can be provided for integrating a plurality of devices.

The present invention also provides a method for integrating an after-market device for use with a car stereo or video system, comprising the steps of interconnecting the car stereo or video system and the after-market device with an interface; determining a first device type corresponding to the car stereo or video system and a second device type corresponding to the after-market device; loading a protocol conversion software block from memory in the interface using the first and second device types; converting signals from the after-market device into a first format compatible with the car stereo or video system using the protocol conversion software block; and converting signals from the car stereo or video system into a second format compatible with the after-market device using the protocol conversion software block.

BRIEF DESCRIPTION OF THE DRAWINGS

These and other important objects and features of the invention will be apparent from the following Detailed Description of the Invention, taken in connection with the accompanying drawings, in which:

FIG. 1 is a block diagram showing the multimedia device integration system of the present invention.

FIG. 2a is a block diagram showing an alternate embodiment of the multimedia device integration system of the present invention, wherein a CD player is integrated with a car radio.

FIG. 2b is a block diagram showing an alternate embodiment of the multimedia device integration system of the present invention, wherein a MP3 player is integrated with a car radio.

FIG. 2c is a block diagram showing an alternate embodiment of the multimedia device integration system of the present invention, wherein a satellite or DAB receiver is integrated with a car radio.

FIG. 2d is a block diagram showing an alternate embodiment of the multimedia device integration system of the present invention, wherein a plurality of auxiliary input sources are integrated with a car radio.

FIG. 2e is a block diagram showing an alternate embodiment of the multimedia device integration system of the present invention, wherein a CD player and a plurality of auxiliary input sources are integrated with a car radio.

FIG. 2f is a block diagram showing an alternate embodiment of the present invention, wherein a satellite or DAB receiver and a plurality of auxiliary input source are integrated with a car radio.

FIG. 2g is a block diagram showing an alternate embodiment of the present invention, wherein a MP3 player and a plurality of auxiliary input sources are integrated with a car radio.

FIG. 2h is a block diagram showing an alternate embodiment of the present invention, wherein a plurality of auxiliary interfaces and an audio device are integrated with a car stereo.

FIG. 3a is a circuit diagram showing a device according to the present invention for integrating a CD player or an auxiliary input source with a car radio.

FIG. 3b is a circuit diagram showing a device according to the present invention for integrating both a CD player and an auxiliary input source with a car radio, wherein the CD player and the auxiliary input are switchable by a user.

FIG. 3c is a circuit diagram showing a device according to the present invention for integrating a plurality of auxiliary input sources with a car radio.

FIG. 3d is a circuit diagram showing a device according to the present invention for integrating a satellite or DAB receiver with a car radio.

FIG. 4a is a flowchart showing processing logic according to the present invention for integrating a CD player with a car radio.

FIG. 4b is a flowchart showing processing logic according to the present invention for integrating a MP3 player with a car radio.

FIG. 4c is a flowchart showing processing logic according to the present invention for integrating a satellite receiver with a car radio.

FIG. 4d is a flowchart showing processing logic according to the present invention for integrating a plurality of auxiliary input sources with a car radio.

FIG. 4e is a flowchart showing processing logic according to the present invention for integrating a CD player and one or more auxiliary input sources with a car radio.

FIG. 4f is a flowchart showing processing logic according to the present invention for integrating a satellite or DAB receiver and one or more auxiliary input sources with a car radio.

FIG. 4g is a flowchart showing processing logic according to the present invention for integrating a MP3 player and one or more auxiliary input sources with a car stereo.

FIG. 5 is a flowchart showing processing logic according to the present invention for allowing a user to switch between an after-market audio device and one or more auxiliary input sources.

FIG. 6 is a flowchart showing processing logic according to the present invention for determining and handling various device types connected to the auxiliary input ports of the invention.

FIG. 7a is a perspective view of a docking station according to the present invention for retaining an audio device within a car.

FIG. 7b is an end view of the docking station of **FIG. 7a**.

FIGS. 8a-8b are perspective views of another embodiment of the docking station of the present invention, which includes the multimedia device integration system of the present invention incorporated therewith.

FIG. 9 is a block diagram showing the components of the docking station of **FIGS. 8a-8b**.

FIG. 10 is a block diagram showing an alternate embodiment of the multimedia device integration system of the present invention, wherein the interface is incorporated within a car stereo or car video system.

FIG. 11a is a diagram showing an alternate embodiment of the multimedia device integration system of the present invention for integrating a cellular telephone for use with a car stereo or video system; **FIG. 11b** is a flowchart showing processing logic for integrating a cellular telephone for use with a car stereo or video system.

FIG. 12a is a diagram showing an alternate embodiment of the multimedia device integration system of the present invention for integrating an after-market video device for use with a car video system; **FIG. 12b** is a flowchart showing processing logic for integrating an after-market video device for use with a car video system.

FIG. 13a is a block diagram showing an alternate embodiment of the multimedia device integration system of the present invention, wherein configuration jumpers and protocol conversion software blocks are provided for integrating after-market devices of various types using a single interface.

FIG. 13b is a block diagram showing an alternate embodiment of the multimedia device integration system of the present invention, wherein wiring harnesses and protocol conversion software blocks are provided for integrating after-market devices of various types using a single interface.

FIG. 14 is a flowchart showing processing logic of the multimedia device integration system of the present invention for integrating after-market devices of various types using a single interface.

FIG. 15 is a flowchart showing processing logic of the multimedia device integration system of the present invention for allowing a user to specify one or more after-market device types for integration using a single interface.

FIG. 16 is a flowchart showing processing logic of the multimedia device integration system of the present invention for allowing a user to quickly navigate through a list of songs on one or more after-market devices using the controls of a car stereo or video system.

FIG. 17 is a diagram showing an another embodiment of the present invention, wherein a plurality of external devices are integrated using a single interface.

DETAILED DESCRIPTION OF THE INVENTION

The present invention relates to a multimedia device integration system. One or more after-market devices, such as a CD player, CD changer, digital media player (*e.g.*, MP3 player, MP4 player, WMV player, Apple iPod, portable media center, or other device), satellite receiver, digital audio broadcast (DAB) receiver, video device (*e.g.*, DVD player), cellular telephone, or the like, can be integrated with an existing car radio or car video device, such as an OEM or after-market car stereo or video system. Control of the after-market device is enabled using the car stereo or car video system, and information from the after-market device, such as channel, artist, track, time, song, and other information information, is retrieved form the after-market device, processed, and forwarded to the car stereo or car video system for display thereon. The information channeled to the car stereo or video system can include video from the external device, as well as graphical and menu-based information. A user can review and interact with information via the car stereo. Commands from the car stereo or video system are received, processed by the present invention into a format recognizable by the after-market device device, and transmitted thereto for execution. One or more auxiliary input channels can be integrated by the present invention with the car stereo or video system. The user can switch between one or more after-market devices and one or more auxiliary input channels using the control panel buttons of the car stereo or video system.

As used herein, the term "integration" or "integrated" is intended to mean connecting one or more external devices or inputs to an existing car stereo or video system via an interface, processing and handling signals, audio, and/or video

information, allowing a user to control the devices via the car stereo or video system, and displaying data from the devices on the car stereo or video system. Thus, for example, integration of a CD player with a car stereo system allows for the CD player to be remotely controlled via the control panel of the stereo system, and data from the CD player to be sent to the display of the stereo. Of course, control of after-market devices can be provided at locations other than the control panel of the car stereo or video system without departing from the spirit or scope of the present invention. Further, as used herein, the term "inter-operable" is intended to mean allowing the external audio or video device to receive and process commands that have been formatted by the interface of the present invention, as well as allowing a car stereo or video system to display information that is generated by the external audio or video device and processed by the present invention. Additionally, by the term "inter-operable," it is meant allowing a device that is alien to the environment of an existing OEM or after-market car stereo or video system to be utilized thereby.

Also, as used herein, the terms "car stereo" and "car radio" are used interchangeably and are intended to include all presently existing car stereos, radios, video systems, such as physical devices that are present at any location within a vehicle, in addition to software and/or graphically- or display-driven receivers. An example of such a receiver is a software-driven receiver that operates on a universal LCD panel within a vehicle and is operable by a user via a graphical user interface displayed on the universal LCD panel. Further, any future receiver, whether a hardwired or a software/graphical receiver operable on one or more displays, is considered within the definition of the terms "car stereo" and "car

radio," as used herein, and is within the spirit and scope of the present invention. Moreover, the term "car" is not limited to any specific type of automobile, but rather, includes all automobiles. Additionally, by the term "after-market," it is meant any device not installed by a manufacturer at the time of sale of the car.

FIG. 1 is a block diagram showing the multimedia device integration (or interface) system of the present invention, generally indicated at **20**. A plurality of devices and auxiliary inputs can be connected to the interface **20**, and integrated with an OEM or after-market car radio **10**. A CD player or changer **15** can be integrated with the radio **10** via interface **20**. A satellite radio or DAB receiver **25**, such as an XM or Sirius radio satellite receiver or DAB receiver known in the art, could be integrated with the radio **10**, via the interface **20**. Further, an MP3 player **30** could also be integrated with the radio **10** via interface **20**. The MP3 player **30** could be any known digital media device, such as an Apple iPod or any other digital media device. Moreover, a plurality of auxiliary input sources, illustratively indicated as auxiliary input sources **35** (comprising input sources 1 through *n*, *n* being any number), could also be integrated with the car radio **10** via interface **20**. Optionally, a control head **12**, such as that commonly used with after-market CD changers and other similar devices, could be integrated with the car radio **10** via interface **20**, for controlling any of the car radio **10**, CD player/changer **15**, satellite/DAB receiver **25**, MP3 player **30**, and auxiliary input sources **35**. Thus, as can be readily appreciated, the interface **20** of the present invention allows for the integration of a multitude of devices and inputs with an OEM or after-market car radio or stereo.

FIG. 2a is a block diagram of an alternate embodiment of the multimedia device interface system of the present invention, wherein a CD player/changer **15** is integrated with an OEM or after-market car radio **10**. The CD player **15** is electrically connected with the interface **20**, and exchanges data and audio signals therewith. The interface **20** is electrically connected with the car radio **10**, and exchanges data and audio signals therewith. In a preferred embodiment of the present invention, the car radio **10** includes a display **13** (such as an alphanumeric, electroluminescent display) for displaying information, and a plurality of control panel buttons **14** that normally operate to control the radio **10**. The interface **20** allows the CD player **15** to be controlled by the control buttons **14** of the radio **10**. Further, the interface **20** allows information from the CD player **15**, such as track, disc, time, and song information, to be retrieved therefrom, processed and formatted by the interface **20**, sent to the display **13** of the radio **10**.

Importantly, the interface **20** allows for the remote control of the CD player **15** from the radio **10** (e.g., the CD player **15** could be located in the trunk of a car, while the radio **10** is mounted on the dashboard of the car). Thus, for example, one or more discs stored within the CD player **15** can be remotely selected by a user from the radio **10**, and tracks on one or more of the discs can be selected therefrom. Moreover, standard CD operational commands, such as pause, play, stop, fast forward, rewind, track forward, and track reverse (among other commands) can be remotely entered at the control panel buttons **14** of the radio **10** for remotely controlling the CD player **15**.

FIG. 2b is a block diagram showing an alternate embodiment of the present invention, wherein an MP3 player **30** is integrated with an OEM or after-market

car radio **10** via interface **20**. As mentioned earlier, the interface **20** of the present invention allows for a plurality of disparate audio devices to be integrated with an existing car radio for use therewith. Thus, as shown in **FIG. 2b**, remote control of the MP3 player **30** via radio **10** is provided for via interface **20**. The MP3 player **30** is electronically interconnected with the interface **20**, which itself is electrically interconnected with the car radio **10**. The interface **20** allows data and audio signals to be exchanged between the MP3 player **30** and the car radio **10**, and processes and formats signals accordingly so that instructions and data from the radio **10** are processable by the MP3 player **30**, and vice versa. Operational commands, such as track selection, pause, play, stop, fast forward, rewind, and other commands, are entered via the control panel buttons **14** of car radio **10**, processed by the interface **20**, and formatted for execution by the MP3 player **30**. Data from the MP3 player, such as track, time, and song information, is received by the interface **20**, processed thereby, and sent to the radio **10** for display on display **13**. Audio from the MP3 player **30** is selectively forwarded by the interface **20** to the radio **10** for playing.

FIG. 2c is a block diagram showing an alternate embodiment of the present invention, wherein a satellite receiver or DAB receiver **25** is integrated with an OEM or after-market car radio **10** via the interface **20**. Satellite/DAB receiver **25** can be any satellite radio receiver known in the art, such as XM or Sirius, or any DAB receiver known in the art. The satellite/DAB receiver **25** is electrically interconnected with the interface **20**, which itself is electrically interconnected with the car radio **10**. The satellite/DAB receiver **25** is remotely operable by the control panel buttons **14** of the radio **10**. Commands from the radio **10** are received by the

interface **20**, processed and formatted thereby, and dispatched to the satellite/DAB receiver **25** for execution thereby. Information from the satellite/DAB receiver **25**, including time, station, and song information, is received by the interface **20**, processed, and transmitted to the radio **10** for display on display **13**. Further, audio from the satellite/DAB receiver **25** is selectively forwarded by the interface **20** for playing by the radio **10**.

FIG. 2d is a block diagram showing an alternate embodiment of the present invention, wherein one or more auxiliary input sources **35** are integrated with an OEM or after-market car radio **10**. The auxiliary inputs **35** can be connected to analog sources, or can be digitally coupled with one or more audio devices, such as after-market CD players, CD changers, MP3 players, satellite receivers, DAB receivers, and the like, and integrated with an existing car stereo. Preferably, four auxiliary input sources are connectable with the interface **20**, but any number of auxiliary input sources could be included. Audio from the auxiliary input sources **35** is selectively forwarded to the radio **10** under command of the user. As will be discussed herein in greater detail, a user can select a desired input source from the auxiliary input sources **35** by depressing one or more of the control panel buttons **14** of the radio **10**. The interface **20** receives the command initiated from the control panel, processes same, and connects the corresponding input source from the auxiliary input sources **35** to allow audio therefrom to be forwarded to the radio **10** for playing. Further, the interface **20** determines the type of audio devices connected to the auxiliary input ports **35**, and integrates same with the car stereo **10**.

As mentioned previously, the present invention allows one or more external audio devices to be integrated with an existing OEM or after-market car stereo, along with one or more auxiliary input sources, and the user can select between these sources using the controls of the car stereo. Such "dual input" capability allows operation with devices connected to either of the inputs of the device, or both. Importantly, the device can operate in "plug and play" mode, wherein any device connected to one of the inputs is automatically detected by the present invention, its device type determined, and the device automatically integrated with an existing OEM or after-market car stereo. Thus, the present invention is not dependent any specific device type to be connected therewith to operate. For example, a user can first purchase a CD changer, plug same into a dual interface, and use same with the car stereo. At a point later in time, the user could purchase an XM tuner, plug same into the device, and the tuner will automatically be detected and integrated with the car stereo, allowing the user to select from and operate both devices from the car stereo. It should be noted that such plug and play capability is not limited to a dual input device, but is provided for in every embodiment of the present invention. The dual-input configuration of the preset invention is illustrated in **FIGS. 2e-2h** and described below.

FIG. 2e is a block diagram showing an alternate embodiment of the present invention, wherein an external CD player/changer **15** and one or more auxiliary input sources **35** are integrated with an OEM or after-market car stereo **10**. Both the CD player **15** and one or more of the auxiliary input sources **35** are electrically interconnected with the interface **20**, which, in turn, is electrically interconnected to the radio **10**. Using the controls **14** of the radio **10**, a user can select between the

CD player **15** and one or more of the inputs **35** to selectively channel audio from these sources to the radio. The command to select from one of these sources is received by the interface **20**, processed thereby, and the corresponding source is channeled to the radio **10** by the interface **20**. As will be discussed later in greater detail, the interface **20** contains internal processing logic for selecting between these sources.

FIG. 2f is a block diagram of an alternate embodiment of the present invention, wherein a satellite receiver or DAB receiver and one or more auxiliary input sources are integrated by the interface **20** with an OEM or after-market car radio **10**. Similar to the embodiment of the present invention illustrated in **FIG. 2e** and described earlier, the interface **20** allows a user to select between the satellite/DAB receiver **25** and one or more of the auxiliary input sources **35** using the controls **14** of the radio **10**. The interface **20** contains processing logic, described in greater detail below, for allowing switching between the satellite/DAB receiver **25** and one or more of the auxiliary input sources **35**.

FIG. 2g is a block diagram of an alternate embodiment of the present invention, wherein a MP3 player **30** and one or more auxiliary input sources **35** are integrated by the interface **20** with an OEM or after-market car radio **10**. Similar to the embodiments of the present invention illustrated in **FIGS. 2e** and **2f** and described earlier, the interface **20** allows a user to select between the MP3 player **30** and one or more of the auxiliary input sources **35** using the controls **14** of the radio **10**. The interface **20** contains processing logic, as will be discussed later in greater detail, for allowing switching between the MP3 player **30** and one or more of the auxiliary input sources **35**.

FIG. 2h is a block diagram showing an alternate embodiment of the present invention, wherein a plurality of auxiliary interfaces **40** and **44** and an audio device **17** are integrated with an OEM or after-market car stereo **10**. Importantly, the present invention can be expanded to allow a plurality of auxiliary inputs to be connected to the car stereo **10** in a tree-like fashion. Thus, as can be seen in **FIG. 2h**, a first auxiliary interface **40** is connected to the interface **20**, and allows data and audio from the ports **42** to be exchanged with the car radio **10**. Connected to one of the ports **42** is another auxiliary interface **44**, which, in turn, provides a plurality of input ports **46**. Any device connected to any of the ports **42** or **46** can be integrated with the car radio **10**. Further, any device connected to the ports **42** or **46** can be inter-operable with the car radio **10**, allowing commands to be entered from the car radio **10** (*e.g.*, such as via the control panel **14**) for commanding the device, and information from the device to be displayed by the car radio **10**. Conceivably, by configuring the interfaces **40**, **44**, and successive interfaces in a tree configuration, any number of devices can be integrated using the present invention.

The various embodiments of the present invention described above and shown in **FIGS. 1** through **2h** are illustrative in nature and are not intended to limit the spirit or scope of the present invention. Indeed, any conceivable audio device or input source, in any desired combination, can be integrated by the present invention into existing car stereo systems. Further, it is conceivable that not only can data and audio signals be exchanged between the car stereo and any external device, but also video information that can be captured by the present invention,

processed thereby, and transmitted to the car stereo for display thereby and interaction with a user thereat.

Various circuit configurations can be employed to carry out the present invention. Examples of such configurations are described below and shown in **FIGS. 3a-3d**.

FIG. 3a is an illustrative circuit diagram according to the present invention for integrating a CD player or an auxiliary input source with an existing car stereo system. A plurality of ports **J1C1, J2A1, X2, RCH,** and **LCH** are provided for allowing connection of the interface system of the present invention between an existing car radio, an after-market CD player or changer, or an auxiliary input source. Each of these ports could be embodied by any suitable electrical connector known in the art. Port **J1C1** connects to the input port of an OEM car radio, such as that manufactured by TOYOTA, Inc. Conceivably, port **J1C1** could be modified to allow connection to the input port of an after-market car radio. Ports **J2A1, X2, RCH,** and **LCH** connect to an after-market CD changer, such as that manufactured by PANASONIC, Inc., or to an auxiliary input source.

Microcontroller **U1** is in electrical communication with each of the ports **J1C1**, **J2A1**, and **X2**, and provides functionality for integrating the CD player or auxiliary input source connected to the ports **J2A1, X2, RCH,** and **LCH**. For example, microcontroller **U1** receives control commands, such as button or key sequences, initiated by a user at control panel of the car radio and received at the connector **J1C1**, processes and formats same, and dispatches the formatted commands to the CD player or auxiliary input source via connector **J2A1**. Additionally, the microcontroller **U1** receives information provided by the CD

player or auxiliary input source via connector **J2A1**, processes and formats same, and transmits the formatted data to the car stereo via connector **J1C1** for display on the display of the car stereo. Audio signals provided at the ports **J2A1, X2, RCH** and **LCH** is selectively channeled to the car radio at port **J1C1** under control of one or more user commands and processing logic, as will be discussed in greater detail, embedded within microcontroller **U1**.

In a preferred embodiment of the present invention, the microcontroller **U1** comprises the 16F628 microcontroller manufactured by MICROCHIP, Inc. The 16F628 chip is a CMOS, flash-based, 8-bit microcontroller having an internal, 4 MHz internal oscillator, 128 bytes of EEPROM data memory, a capture/compare/PWM, a USART, 2 comparators, and a programmable voltage reference. Of course, any suitable microcontroller known in the art can be substituted for microcontroller **U1** without departing from the spirit or scope of the present invention.

A plurality of discrete components, such as resistors **R1** through **R13**, diodes **D1** through **D4**, capacitors **C1** and **C2**, and oscillator **Y1**, among other components, are provided for interfacing the microcontroller **U1** with the hardware connected to the connectors **J1C1, J2A1, X2, RCH**, and **LCH**. These components, as will be readily appreciated to one of ordinary skill in the art, can be arranged as desired to accommodate a variety of microcontrollers, and the numbers and types of discrete components can be varied to accommodate other similar controllers. Thus, the circuit shown in **FIG. 3a** and described herein is illustrative in nature, and modifications thereof are considered to be within the spirit and scope of the present invention.

FIG. 3b is a diagram showing an illustrative circuit configuration according to the present invention, wherein one or more after-market CD changers / players and an auxiliary input source are integrated with an existing car stereo, and wherein the user can select between the CD changer/player and the auxiliary input using the controls of the car stereo. A plurality of connectors are provided, illustratively indicated as ports **J4A**, **J4B**, **J3**, **J5L1**, **J5R1**, **J1**, and **J2**. Ports **J4A**, **J4B**, and **J3** allow the audio device interface system of the present invention to be connected to one or more existing car stereos, such as an OEM car stereo or an after-market car stereo. Each of these ports could be embodied by any suitable electrical connector known in the art. For example, ports **J4A** and **J4B** can be connected to an OEM car stereo manufactured by BMW, Inc. Port **J3** can be connected to a car stereo manufactured by LANDROVER, Inc. Of course, any number of car stereos, by any manufacturer, could be provided. Ports **J1** and **J2** allow connection to an after-market CD changer or player, such as that manufactured by ALPINE, Inc., and an auxiliary input source. Optionally, ports **J5L1** and **J5R1** allow integration of a standard analog (line-level) source. Of course, a single standalone CD player or auxiliary input source could be connected to either of ports **J1** or **J2**.

Microcontroller **DD1** is in electrical communication with each of the ports **J4A**, **J4B**, **J3**, **J5L1**, **J5R1**, **J1**, and **J2**, and provides functionality for integrating the CD player and auxiliary input source connected to the ports **J1** and **J2** with the car stereo connected to the ports **J4A** and **J4B** or **J3**. For example, microcontroller **DD1** receives control commands, such as button or key sequences, initiated by a user at control panel of the car radio and received at the connectors **J4A** and **J4B**

or **J3**, processes and formats same, and dispatches the formatted commands to the CD player and auxiliary input source via connectors **J1** or **J2**. Additionally, the microcontroller **DD1** receives information provided by the CD player and auxiliary input source via connectors **J1** or **J2**, processes and formats same, and transmits the formatted data to the car stereo via connectors **J4A** and **J4B** or **J3** for display on the display of the car stereo. Further, the microcontroller **DD1** controls multiplexer **DA3** to allow selection between the CD player/changer and the auxiliary input. Audio signals provided at the ports **J1, J2, J5L1** and **J5R1** is selectively channeled to the car radio at ports **J4A** and **J4B** or **J3** under control of one or more user commands and processing logic, as will be discussed in greater detail, embedded within microcontroller **DD1**.

In a preferred embodiment of the present invention, the microcontroller **DD1** comprises the 16F872 microcontroller manufactured by MICROCHIP, Inc. The 16F872 chip is a CMOS, flash-based, 8-bit microcontroller having 64 bytes of EEPROM data memory, self-programming capability, an ICD, 5 channels of 10 bit Analog-to-Digital (A/D) converters, 2 timers, capture/compare/PWM functions, a USART, and a synchronous serial port configurable as either a 3-wire serial peripheral interface or a 2-wire inter-integrated circuit bus. Of course, any suitable microcontroller known in the art can be substituted for microcontroller **DD1** without departing from the spirit or scope of the present invention. Additionally, in a preferred embodiment of the present invention, the multiplexer **DA3** comprises the CD4053 triple, two-channel analog multiplexer/demultiplexer manufactured by FAIRCHILD SEMICONDUCTOR, Inc. Any other suitable

multiplexer can be substituted for **DA3** without departing from the spirit or scope of the present invention.

A plurality of discrete components, such as resistors **R1** through **R18**, diodes **D1** through **D3**, capacitors **C1-C11,** and **G1-G3**, transistors **Q1-Q3,** transformers **T1** and **T2**, amplifiers **LCH:A** and **LCH:B,** oscillator **XTAL1**, among other components, are provided for interfacing the microcontroller **DD1** and the multiplexer **DA3** with the hardware connected to the connectors **J4A, J4B, J3, J5L1, J5R1, J1,** and **J2**. These components, as will be readily appreciated to one of ordinary skill in the art, can be arranged as desired to accommodate a variety of microcontrollers and multiplexers, and the numbers and types of discrete components can be varied to accommodate other similar controllers and multiplexers. Thus, the circuit shown in **FIG. 3b** and described herein is illustrative in nature, and modifications thereof are considered to be within the spirit and scope of the present invention.

FIG. 3c is a diagram showing an illustrative circuit configuration for integrating a plurality of auxiliary inputs using the controls of the car stereo. A plurality of connectors are provided, illustratively indicated as ports **J1**, **RCH1**, **LCH1**, **RCH2**, **LCH2**, **RCH3, LCH3, RCH4,** and **LCH4**. Port **J1** allows the multimedia device integration system of the present invention to be connected to one or more existing car stereos. Each of these ports could be embodied by any suitable electrical connector known in the art. For example, port **J1** could be connected to an OEM car stereo manufactured by HONDA, Inc., or any other manufacturer. Ports **RCH1**, **LCH1**, **RCH2**, **LCH2**, **RCH3, LCH3, RCH4,** and **LCH4** allow connection with the left and right channels of four auxiliary input

sources. Of course, any number of auxiliary input sources and ports/connectors could be provided.

Microcontroller **U1** is in electrical communication with each of the ports **J1**, **RCH1**, **LCH1**, **RCH2**, **LCH2**, **RCH3**, **LCH3**, **RCH4**, and **LCH4**, and provides functionality for integrating one or more auxiliary input sources connected to the ports **RCH1**, **LCH1**, **RCH2**, **LCH2**, **RCH3**, **LCH3**, **RCH4**, and **LCH4** with the car stereo connected to the port **J1**. Further, the microcontroller **U1** controls multiplexers **DA3** and **DA4** to allow selection amongst any of the auxiliary inputs using the controls of the car stereo. Audio signals provided at the ports **RCH1**, **LCH1**, **RCH2**, **LCH2**, **RCH3**, **LCH3**, **RCH4**, and **LCH4** are selectively channeled to the car radio at port **J1** under control of one or more user commands and processing logic, as will be discussed in greater detail, embedded within microcontroller **U1**. In a preferred embodiment of the present invention, the microcontroller **U1** comprises the 16F872 microcontroller discussed earlier. Additionally, in a preferred embodiment of the present invention, the multiplexers **DA3** and **DA4** comprises the CD4053 triple, two-channel analog multiplexer/demultiplexer, discussed earlier. Any other suitable microcontroller and multiplexers can be substituted for **U1**, **DA3**, and **DA4** without departing from the spirit or scope of the present invention.

A plurality of discrete components, such as resistors **R1** through **R15**, diodes **D1** through **D3**, capacitors **C1-C5**, transistors **Q1-Q2**, amplifiers **DA1:A** and **DA1:B**, and oscillator **Y1**, among other components, are provided for interfacing the microcontroller **U1** and the multiplexers **DA3** and **DA4** with the hardware connected to the ports **J1**, **RCH1**, **LCH1**, **RCH2**, **LCH2**, **RCH3**,

LCH3, RCH4, and **LCH4**. These components, as will be readily appreciated to one of ordinary skill in the art, can be arranged as desired to accommodate a variety of microcontrollers and multiplexers, and the numbers and types of discrete components can be varied to accommodate other similar controllers and multiplexers. Thus, the circuit shown in **FIG. 3c** and described herein is illustrative in nature, and modifications thereof are considered to be within the spirit and scope of the present invention.

FIG. 3d is an illustrative circuit diagram according to the present invention for integrating a satellite receiver with an existing OEM or after-market car stereo system. Ports **J1** and **J2** are provided for allowing connection of the integration system of the present invention between an existing car radio and a satellite receiver. These ports could be embodied by any suitable electrical connector known in the art. Port **J2** connects to the input port of an existing car radio, such as that manufactured by KENWOOD, Inc. Port **1** connects to an after-market satellite receiver, such as that manufactured by PIONEER, Inc.

Microcontroller **U1** is in electrical communication with each of the ports **J1** and **J2**, and provides functionality for integrating the satellite receiver connected to the port **J1** with the car stereo connected to the port **J2**. For example, microcontroller **U1** receives control commands, such as button or key sequences, initiated by a user at control panel of the car radio and received at the connector **J2**, processes and formats same, and dispatches the formatted commands to the satellite receiver via connector **J2**. Additionally, the microcontroller **U1** receives information provided by the satellite receiver via connector **J1**, processes and formats same, and transmits the formatted data to the car stereo via connector **J2**

for display on the display of the car stereo. Audio signals provided at the port **J1** is selectively channeled to the car radio at port **J2** under control of one or more user commands and processing logic, as will be discussed in greater detail, embedded within microcontroller **U1**.

In a preferred embodiment of the present invention, the microcontroller **U1** comprises the 16F873 microcontroller manufactured by MICROCHIP, Inc. The 16F873 chip is a CMOS, flash-based, 8-bit microcontroller having 128 bytes of EEPROM data memory, self-programming capability, an ICD, 5 channels of 10 bit Analog-to-Digital (A/D) converters, 2 timers, 2 capture/compare/PWM functions, a synchronous serial port that can be configured as a either a 3-wire serial peripheral interface or a 2-wire inter-integrated circuit bus, and a USART. Of course, any suitable microcontroller known in the art can be substituted for microcontroller **U1** without departing from the spirit or scope of the present invention.

A plurality of discrete components, such as resistors **R1** through **R7**, capacitors **C1** and **C2**, and amplifier **A1**, among other components, are provided for interfacing the microcontroller **U1** with the hardware connected to the connectors **J1** and **J2**. These components, as will be readily appreciated to one of ordinary skill in the art, can be arranged as desired to accommodate a variety of microcontrollers, and the numbers and types of discrete components can be varied to accommodate other similar controllers. Thus, the circuit shown in **FIG. 3d** and described herein is illustrative in nature, and modifications thereof are considered to be within the spirit and scope of the present invention.

FIGS. 4a through **6** are flowcharts showing processing logic according to the present invention. Such logic can be embodied as software and/or instructions stored in a read-only memory circuit (*e.g.*, and EEPROM circuit), or other similar device. In a preferred embodiment of the present invention, the processing logic described herein is stored in one or more microcontrollers, such as the microcontrollers discussed earlier with reference to **FIGS. 3a-3d**. Of course, any other suitable means for storing the processing logic of the present invention can be employed.

FIG. 4a is a flowchart showing processing logic, indicated generally at **100**, for integrating a CD player or changer with an existing OEM or after-market car stereo system. Beginning in step **100**, a determination is made as to whether the existing car stereo is powered on. If a negative determination is made, step **104** is invoked, wherein the present invention enters a standby mode and waits for the car stereo to be powered on. If a positive determination is made, step **106** is invoked, wherein a second determination is made as to whether the car stereo is in a state responsive to signals external to the car stereo. If a negative determination is made, step **106** is re-invoked.

If a positive determination is made in step **106**, a CD handling process, indicated as block **108**, is invoked, allowing the CD player/changer to exchange data and audio signals with any existing car stereo system. Beginning in step **110**, a signal is generated by the present invention indicating that a CD player/changer is present, and the signal is continuously transmitted to the car stereo. Importantly, this signal prevents the car stereo from shutting off, entering a sleep mode, or otherwise being unresponsive to signals and/or data from an external source. If the

car radio is an OEM car radio, the CD player presence signal need not be generated. Further, the signal need not be limited to a CD player device presence signal, but rather, could be any type of device presence signal (*e.g.*, MP3 player device presence signal, satellite receiver presence signal, video device presence signal, cellular telephone presence signal, or any other type of device presence signal). Concurrently with step **110**, or within a short period of time before or after the execution of step **110**, steps **112** and **114** are invoked. In step **112**, the audio channels of the CD player/changer are connected (channeled) to the car stereo system, allowing audio from the CD player/changer to be played through the car stereo. In step **114**, data is retrieved by the present invention from the CD player/changer, including track and time information, formatted, and transmitted to the car stereo for display by the car stereo. Thus, information produced by the external CD player/changer can be quickly and conveniently viewed by a driver by merely viewing the display of the car stereo. After steps **110**, **112**, and **114** have been executed, control passes to step **116**.

In steps **116**, the present invention monitors the control panel buttons of the car stereo for CD operational commands. Examples of such commands include track forward, track reverse, play, stop, fast forward, rewind, track program, random track play, and other similar commands. In step **118**, if a command is not detected, step **116** is re-invoked. Otherwise, if a command is received, step **118** invokes step **120**, wherein the received command is converted into a format recognizable by the CD player/changer connected to the present invention. For example, in this step, a command issued from a GM car radio is converted into a format recognizable by a CD player/changer manufactured by ALPINE, Inc. Any

conceivable command from any type of car radio can be formatted for use by a CD player/changer of any type or manufacture. Once the command has been formatted, step **122** is invoked, wherein the formatted command is transmitted to the CD player/changer and executed. Step **110** is then re-invoked, so that additional processing can occur.

FIG. 4b is a flowchart showing processing logic, indicated generally at **130**, for integrating an MP3 player with an existing car stereo system. Examples of MP3 players that can be integrated by the present invention include, but are not limited to, the Apple iPod and other types of digital media devices. Beginning in step **132**, a determination is made as to whether the existing car stereo is powered on. If a negative determination is made, step **134** is invoked, wherein the present invention enters a standby mode and waits for the car stereo to be powered on. If a positive determination is made, step **136** is invoked, wherein a second determination is made as to whether the car stereo is in a state responsive to signals external to the car stereo. If a negative determination is made, step **136** is re-invoked.

If a positive determination is made in step **136**, an MP3 handling process, indicated as block **138**, is invoked, allowing the MP3 player to exchange data and audio signals with any existing car stereo system. Beginning in step **140**, a signal is generated by the present invention indicating that an MP3 player is present, and the signal is continuously transmitted to the car stereo. Importantly, this signal prevents the car stereo from shutting off, entering a sleep mode, or otherwise being unresponsive to signals and/or data from an external source. In step **142**, the audio channels of the MP3 player are connected (channeled) to the car stereo system,

allowing audio from the MP3 player to be played through the car stereo. In step **144**, data is retrieved by the present invention from the MP3 player, including track, time, title, and song information, formatted, and transmitted to the car stereo for display by the car stereo. Thus, information produced by the MP3 player can be quickly and conveniently viewed by a driver by merely viewing the display of the car stereo. After steps **140**, **142**, and **144** have been executed, control passes to step **146**.

In steps **146**, the present invention monitors the control panel buttons of the car stereo for MP3 operational commands. Examples of such commands include track forward, track reverse, play, stop, fast forward, rewind, track program, random track play, and other similar commands. In step **148**, if a command is not detected, step **146** is re-invoked. Otherwise, if a command is received, step **148** invokes step **150**, wherein the received command is converted into a format recognizable by the MP3 player connected to the present invention. For example, in this step, a command issued from a HONDA car radio is converted into a format recognizable by an MP3 player manufactured by PANASONIC, Inc. Any conceivable command from any type of car radio can be formatted for use by an MP3 player of any type or manufacture. Once the command has been formatted, step **152** is invoked, wherein the formatted command is transmitted to the MP3 player and executed. Step **140** is then re-invoked, so that additional processing can occur.

FIG. 4c is a flowchart showing processing logic, indicated generally at **160**, for integrating a satellite receiver or a DAB receiver with an existing car stereo system. Beginning in step **162**, a determination is made as to whether the

existing car stereo is powered on. If a negative determination is made, step **164** is invoked, wherein the present invention enters a standby mode and waits for the car stereo to be powered on. If a positive determination is made, step **166** is invoked, wherein a second determination is made as to whether the car stereo is in a state responsive to signals external to the car stereo. If a negative determination is made, step **166** is re-invoked.

If a positive determination is made in step **166**, a satellite/DAB receiver handling process, indicated as block **168**, is invoked, allowing the satellite/DAB receiver to exchange data and audio signals with any existing car stereo system. Beginning in step **170**, a signal is generated by the present invention indicating that a satellite or DAB receiver is present, and the signal is continuously transmitted to the car stereo. Importantly, this signal prevents the car stereo from shutting off, entering a sleep mode, or otherwise being unresponsive to signals and/or data from an external source. In step **172**, the audio channels of the satellite/DAB receiver are connected (channeled) to the car stereo system, allowing audio from the satellite receiver or DAB receiver to be played through the car stereo. In step **174**, data is retrieved by the present invention from the satellite/DAB receiver, including channel number, channel name, artist name, song time, and song title, formatted, and transmitted to the car stereo for display by the car stereo. The information could be presented in one or more menus, or via a graphical interface viewable and manipulable by the user at the car stereo. Thus, information produced by the receiver can be quickly and conveniently viewed by a driver by merely viewing the display of the car stereo. After steps **170**, **172**, and **174** have been executed, control passes to step **176**.

In steps **176**, the present invention monitors the control panel buttons of the car stereo for satellite/DAB receiver operational commands. Examples of such commands include station up, station down, station memory program, and other similar commands. In step **178**, if a command is not detected, step **176** is re-invoked. Otherwise, if a command is received, step **178** invokes step **180**, wherein the received command is converted into a format recognizable by the satellite/DAB receiver connected to the present invention. For example, in this step, a command issued from a FORD car radio is converted into a format recognizable by a satellite receiver manufactured by PIONEER, Inc. Any conceivable command from any type of car radio can be formatted for use by a satellite/DAB receiver of any type or manufacture. Once the command has been formatted, step **182** is invoked, wherein the formatted command is transmitted to the satellite/DAB receiver and executed. Step **170** is then re-invoked, so that additional processing can occur.

FIG. 4d is a flowchart showing processing logic, indicated generally at **190**, for integrating a plurality of auxiliary input sources with a car radio. Beginning in step **192**, a determination is made as to whether the existing car stereo is powered on. If a negative determination is made, step **194** is invoked, wherein the present invention enters a standby mode and waits for the car stereo to be powered on. If a positive determination is made, step **196** is invoked, wherein a second determination is made as to whether the car stereo is in a state responsive to signals external to the car stereo. If a negative determination is made, step **196** is re-invoked.

If a positive determination is made in step **196**, an auxiliary input handling process, indicated as block **198**, is invoked, allowing one or more auxiliary inputs

to be connected (channeled) to the car stereo. Further, if a plurality of auxiliary inputs exist, the logic of block **198** allows a user to select a desired input from the plurality of inputs. Beginning in step **200**, a signal is generated by the present invention indicating that an external device is present, and the signal is continuously transmitted to the car stereo. Importantly, this signal prevents the car stereo from shutting off, entering a sleep mode, or otherwise being unresponsive to signals and/or data from an external source. Then, in step **202**, the control panel buttons of the car stereo are monitored.

In a preferred embodiment of the present invention, each of the one or more auxiliary input sources are selectable by selecting a CD disc number on the control panel of the car radio. Thus, in step **204**, a determination is made as to whether the first disc number has been selected. If a positive determination is made, step **206** is invoked, wherein the first auxiliary input source is connected (channeled) to the car stereo. If a negative determination is made, step **208** is invoked, wherein a second determination is made as to whether the second disc number has been selected. If a positive determination is made, step **210** is invoked, wherein the second auxiliary input source is connected (channeled) to the car stereo. If a negative determination is made, step **212** is invoked, wherein a third determination is made as to whether the third disc number has been selected. If a positive determination is made, step **214** is invoked, wherein the third auxiliary input source is connected (channeled) to the car stereo. If a negative determination is made, step **216** is invoked, wherein a fourth determination is made as to whether the fourth disc number has been selected. If a positive determination is made, step **218** is invoked, wherein the fourth auxiliary input source is connected (channeled) to the car stereo. If a

negative determination is made, step **200** is re-invoked, and the process disclosed for block **198** repeated. Further, if any of steps **206, 210, 214,** or **218** are executed, then step **200** is re-invoked and block **198** repeated.

The process disclosed in block **198** allows a user to select from one of four auxiliary input sources using the control buttons of the car stereo. Of course, the number of auxiliary input sources connectable with and selectable by the present invention can be expanded to any desired number. Thus, for example, 6 auxiliary input sources could be provided and switched using corresponding selection key(s) or keystroke(s) on the control panel of the radio. Moreover, any desired keystroke, selection sequence, or button(s) on the control panel of the radio, or elsewhere, can be utilized to select from the auxiliary input sources without departing from the spirit or scope of the present invention.

FIG. 4e is a flowchart showing processing logic, indicated generally at **220**, for integrating a CD player and one or more auxiliary input sources with a car radio. Beginning in step **222**, a determination is made as to whether the existing car stereo is powered on. If a negative determination is made, step **224** is invoked, wherein the present invention enters a standby mode and waits for the car stereo to be powered on. If a positive determination is made, step **226** is invoked, wherein a second determination is made as to whether the car stereo is in a state responsive to signals external to the cars stereo. If a negative determination is made, step **226** is re-invoked.

If a positive determination is made in step **226**, then step **228** is invoked, wherein a signal is generated by the present invention indicating that an external device is present, and the signal is continuously transmitted to the car stereo.

Importantly, this signal prevents the car stereo from shutting off, entering a sleep mode, or otherwise being unresponsive to signals and/or data from an external source. Then, in step **230**, a determination is made as to whether a CD player is present (*i.e.*, whether an external CD player or changer is connected to the multimedia device integration system of the present invention). If a positive determination is made, steps **231** and **232** are invoked. In step **231**, the logic of block **108** of **FIG. 4a** (the CD handling process), described earlier, is invoked, so that the CD player/changer can be integrated with the car stereo and utilized by a user. In step **232**, a sensing mode is initiated, wherein the present invention monitors for a selection sequence (as will be discussed in greater detail) initiated by the user at the control panel of the car stereo for switching from the external CD player/changer to one or more auxiliary input sources. Step **234** is then invoked, wherein a determination is made as to whether such a sequence has been initiated. If a negative determination is made, step **234** re-invokes step **228**, so that further processing can occur. Otherwise, if a positive determination is made (*i.e.*, the user desires to switch from the external CD player/changer to one of the auxiliary input sources), step **236** is invoked, wherein the audio channels of the CD player/changer are disconnected from the car stereo. Then, step **238** is invoked, wherein the logic of block **198** of **FIG. 4d** (the auxiliary input handling process), discussed earlier, is executed, allowing the user to select from one of the auxiliary input sources. In the event that a negative determination is made in step **230** (no external CD player/changer is connected to the present invention), then step **238** is invoked, and the system goes into auxiliary mode. The user can then select from one or more auxiliary input sources using the controls of the radio.

FIG. 4f is a flowchart showing processing logic, indicated generally at **240**, for integrating a satellite receiver or DAB receiver and one or more auxiliary input sources with a car radio. Beginning in step **242**, a determination is made as to whether the existing car stereo is powered on. If a negative determination is made, step **244** is invoked, wherein the present invention enters a standby mode and waits for the car stereo to be powered on. If a positive determination is made, step **246** is invoked, wherein a second determination is made as to whether the car stereo is in a state responsive to signals external to the car stereo. If a negative determination is made, step **246** is re-invoked.

If a positive determination is made in step **246**, then step **248** is invoked, wherein a signal is generated by the present invention indicating that an external device is present, and the signal is continuously transmitted to the car stereo. Importantly, this signal prevents the car stereo from shutting off, entering a sleep mode, or otherwise being unresponsive to signals and/or data from an external source. Then, in step **250**, a determination is made as to whether a satellite receiver or DAB receiver is present (*i.e.*, whether an external satellite receiver or DAB receiver is connected to the multimedia device integration system of the present invention). If a positive determination is made, steps **251** and **252** are invoked. In step **251**, the logic of block **168** of **FIG. 4c** (the satellite/DAB receiver handling process), described earlier, is invoked, so that the satellite receiver can be integrated with the car stereo and utilized by a user. In step **252**, a sensing mode is initiated, wherein the present invention monitors for a selection sequence (as will be discussed in greater detail) initiated by the user at the control panel of the car stereo for switching from the external satellite receiver to one or more auxiliary

input sources. Step **254** is then invoked, wherein a determination is made as to whether such a sequence has been initiated. If a negative determination is made, step **254** re-invokes step **258**, so that further processing can occur. Otherwise, if a positive determination is made (*i.e.*, the user desires to switch from the external satellite/DAB receiver to one of the auxiliary input sources), step **256** is invoked, wherein the audio channels of the satellite receiver are disconnected from the car stereo. Then, step **258** is invoked, wherein the logic of block **198** of **FIG. 4d** (the auxiliary input handling process), discussed earlier, is executed, allowing the user to select from one of the auxiliary input sources. In the event that a negative determination is made in step **250** (no external satellite/DAB receiver is connected to the present invention), then step **258** is invoked, and the system goes into auxiliary mode. The user can then select from one or more auxiliary input sources using the controls of the radio.

FIG. 4g is a flowchart showing processing logic according to the present invention for integrating an MP3 player and one or more auxiliary input sources with a car stereo. Beginning in step **262**, a determination is made as to whether the existing car stereo is powered on. If a negative determination is made, step **264** is invoked, wherein the present invention enters a standby mode and waits for the car stereo to be powered on. If a positive determination is made, step **266** is invoked, wherein a second determination is made as to whether the car stereo is in a state responsive to signals external to the car stereo. If a negative determination is made, step **266** is re-invoked.

If a positive determination is made in step **266**, then step **268** is invoked, wherein a signal is generated by the present invention indicating that an external

device is present, and the signal is continuously transmitted to the car stereo. Importantly, this signal prevents the car stereo from shutting off, entering a sleep mode, or otherwise being unresponsive to signals and/or data from an external source. Then, in step **270**, a determination is made as to whether an MP3 player is present (*i.e.*, whether an external MP3 player is connected to the multimedia device integration system of the present invention). If a positive determination is made, steps **271** and **272** are invoked. In step **271**, the logic of block **138** of **FIG. 4b** (the MP3 handling process), described earlier, is invoked, so that the MP3 player can be integrated with the car stereo and utilized by a user. In step **272**, a sensing mode is initiated, wherein the present invention monitors for a selection sequence (as will be discussed in greater detail) initiated by the user at the control panel of the car stereo for switching from the external MP3 player to one or more auxiliary input sources. Step **274** is then invoked, wherein a determination is made as to whether such a sequence has been initiated. If a negative determination is made, step **274** re-invokes step **278**, so that further processing can occur. Otherwise, if a positive determination is made (*i.e.*, the user desires to switch from the external MP3 player to one of the auxiliary input sources), step **276** is invoked, wherein the audio channels of the MP3 player are disconnected from the car stereo. Then, step **278** is invoked, wherein the logic of block **198** of **FIG. 4d** (the auxiliary input handling process), discussed earlier, is executed, allowing the user to select from one of the auxiliary input sources. In the event that a negative determination is made in step **270** (no external MP3 player is connected to the present invention), then step **278** is invoked, and the system goes into auxiliary mode. The user can then select from one or more auxiliary input sources using the controls of the radio.

As mentioned previously, to enable integration, the present invention contains logic for converting command signals issued from an after-market or OEM car stereo into a format compatible with one or more external audio devices connected to the present invention. Such logic can be applied to convert any car stereo signal for use with any external device. For purposes of illustration, a sample code portion is shown in **Table 1**, below, for converting control signals from a BMW car stereo into a format understandable by a CD changer:

Table 1

```
;       ================================================
;       Radio requests changer to STOP (exit PLAY mode)
;       Decoding 6805183801004C message
;       ================================================

Encode_RD_stop_msg:

        movlw 0x68
        xorwf BMW_Recv_buff,W
        skpz
        return

        movlw 0x05
        xorwf BMW_Recv_buff+1,W
        skpz
        return

        movlw 0x18
        xorwf BMW_Recv_buff+2,W
        skpz
        return

        movlw 0x38
        xorwf BMW_Recv_buff+3,W
        skpz
        return

        movlw 0x01
        xorwf BMW_Recv_buff+4,W
        skpz
        return

        tstf  BMW_Recv_buff+5
        skpz
        return

        movlw 0x4C
        xorwf BMW_Recv_buff+6,W
```

```
        skpz
        return

        bsf   BMW_Recv_STOP_msg
        return
```

The code portion shown in **Table 1** receives a STOP command issued by a BMW stereo, in a format proprietary to BMW stereos. Preferably, the received command is stored in a first buffer, such as BMW_Recv_buff. The procedure "Encode_RD_stop_msg" repetitively applies an XOR function to the STOP command, resulting in a new command that is in a format compatible with the after-market CD player. The command is then stored in an output buffer for dispatching to the CD player.

Additionally, the present invention contains logic for retrieving information from an after-market audio device, and converting same into a format compatible with the car stereo for display thereby. Such logic can be applied to convert any data from the external device for display on the car stereo. For purposes of illustration, a sample code portion is shown in **Table 2**, below, for converting data from a CD changer into a format understandable by a BMW car stereo:

Table 2

```
;       ========================================
;       Changer replies with STOP confirmation
;       Encoding 180A68390002003F0001027D message
;       ========================================

Load_CD_stop_msg:
        movlw 0x18
        movwf BMW_Send_buff

        movlw 0x0A
        movwf BMW_Send_buff+1

        movlw 0x68
        movwf BMW_Send_buff+2

        movlw 0x39
```

```
                movwf BMW_Send_buff+3

                movlw 0x00              ;current  status_XX=00,  power
    off
                movwf BMW_Send_buff+4

                movlw 0x02              ;current  status_YY=02,  power
    off
                movwf BMW_Send_buff+5

                clrf  BMW_Send_buff+6   ;separate field, always =0

                movfw BMW_MM_stat       ;current status_MM , magazine
    config
                movwf BMW_Send_buff+7

                clrf  BMW_Send_buff+8   ;separate field, always =0

                movfw BMW_DD_stat       ;current status_DD , current
    disc
                movwf BMW_Send_buff+9

                movfw BMW_TT_stat       ;current status_TT , current
    track
                movwf BMW_Send_buff+10

                xorwf BMW_Send_buff+9,W ;calculate check sum
                xorwf BMW_Send_buff+8,W
                xorwf BMW_Send_buff+7,W
                xorwf BMW_Send_buff+6,W
                xorwf BMW_Send_buff+5,W
                xorwf BMW_Send_buff+4,W
                xorwf BMW_Send_buff+3,W
                xorwf BMW_Send_buff+2,W
                xorwf BMW_Send_buff+1,W
                xorwf BMW_Send_buff,W

                movwf BMW_Send_buff+11  ;store check sum
                movlw D'12'             ;12 bytes total
                movwf BMW_Send_cnt
                bsf   BMW_Send_on       ;ready to send
                return
```

The code portion shown in **Table 2** receives a STOP confirmation message from the CD player, in a format proprietary to the CD player. Preferably, the received command is stored in a first buffer, such as BMW_Send_buff. The procedure "Load_CD_stop_msg" retrieves status information, magazine information, current disc, and current track information from the CD changer, and constructs a response containing this information. Then, a checksum is calculated

and stored in another buffer. The response and checksum are in a format compatible with the BMW stereo, and are ready for dispatching to the car stereo.

The present invention also includes logic for converting signals from an OEM car stereo system for use with a digital media device such as an MP3, MP4, or Apple iPod player. Shown below are code samples for allowing commands and data to be exchanged between a Ford car stereo and an Apple iPod device:

Table 3

```
//decoding Ford "play" command :41-C0-80-CA-01+
        if ( ACP_rx_ready == ON ) {
                ACP_rx_ready = OFF;
                ACP_rx_taddr = ACP_rx_buff[1];
                ACP_rx_saddr = ACP_rx_buff[2];
                ACP_rx_data1 = ACP_rx_buff[3];
                ACP_rx_data2 = ACP_rx_buff[4];
                ACP_rx_data3 = ACP_rx_buff[5];
                if ( (ACP_rx_saddr == 0x80) ) {
                        switch ( ACP_rx_taddr ) {
                                case 0xC0:
                                        if ( ACP_rx_data1 == 0xCA)
{
                                                if ( ACP_rx_data2
== 0x01 ) {
      flags.ACP_play_req = 1;
                                                }
                                                break;
                                        }
                                        break;
                        }
                }
```

In the code portion shown in **Table 3**, a "Play" command selected by a user at the controls of a Ford OEM car stereo is received, and portions of the command are stored in one or more buffer arrays. Then, as shown below in **Table 4**, the decoded portions of the command stored in the one or more buffer arrays are used to construct a "Play/Pause" command in a format compatible with the Apple iPod device, and the command is sent to the Apple iPod for execution thereby:

Table 4

```
// encoding iPod "play/pause" command 0xFF 0x55 0x03 0x02 0x00
0x01 0xFA

        if ( iPod_play_req == ON ) {
                iPod_play_req = OFF;
                iPod_tx_data[0] = 0x55;
                iPod_tx_data[1] = 0x03;
                iPod_tx_data[2] = 0x02;
                iPod_tx_data[3] = 0x00;
                iPod_tx_data[4] = 0x01;
                iPod_tx_counter = 5;
                iPod_tx_ready = ON;
        }
```

While the code portions shown in **Tables 1-2** are implemented using assembler language, and the code portions shown in **Tables 3-4** are implemented using the C programming language, it is to be expressly understood that any low or high level language known in the art could be utilized without departing from the spirit or scope of the invention. It will be appreciated that various other code portions can be developed for converting signals from any after-market or OEM car stereo for use by an after-market external audio device, and vice versa.

FIG. 5 is a flowchart showing processing logic, indicated generally at **300** for allowing a user to switch between an after-market audio device, and one or more auxiliary input sources. As was discussed earlier, the present invention allows a user to switch from one or more connected audio devices, such as an external CD player/changer, MP3 player, satellite receiver, DAB receiver, or the like, and activate one or more auxiliary input sources. A selection sequence, initiated by the user at the control panel of the car stereo, allows such switching. Beginning in step **302**, the buttons of the control panel are monitored. In step **304**, a determination is made as to whether a "Track Up" button or sequence has been

initiated by the user. The "Track Up" button or sequence can for a CD player, MP3 player, or any other device. If a negative determination is made, step **306** is invoked, wherein the sensed button or sequence is processed in accordance with the present invention and dispatched to the external audio device for execution. Then, step **302** is re-invoked, so that additional buttons or sequences can be monitored.

In the event that a positive determination is made in step **304**, step **308** is invoked, wherein the present invention waits for a predetermined period of time while monitoring the control panel buttons for additional buttons or sequences. In a preferred embodiment of the present invention, the predetermined period of time is 750 milliseconds, but of course, other time durations are considered within the spirit and scope of the present invention. In step **310**, a determination is made as to whether the user has initiated a "Track Down" button or sequence at the control panel of the car stereo within the predetermined time period. These sequences can be used for a CD player, MP3 player, or any other device. If a negative determination is made, step **312** is invoked. In step **312**, a determination is made as to whether a timeout has occurred (*e.g.*, whether the predetermined period of time has expired). If a negative determination is made, step **308** is re-invoked. Otherwise, is a positive determination is made, step **312** invokes step **306**, so that any buttons or key sequences initiated by the user that are not a "Track Down" command are processed in accordance with the present invention and dispatched to the audio device for execution.

In the event that a positive determination is made in step **310** (a "Track Down" button or sequence has been initiated within the predetermined time

period), then step **314** is invoked. In step **314**, the audio channels of the audio device are disconnected, and then step **316** is invoked. In step **316**, the logic of block **198** of **FIG. 4d** (the auxiliary input handling process), discussed earlier, is invoked, so that the user can select from one of the auxiliary input sources in accordance with the present invention. Thus, at this point in time, the system has switched, under user control, from the audio device to a desired auxiliary input. Although the foregoing description of the process **300** has been described with reference to "Track Up" and "Track Down" buttons or commands initiated by the user, it is to be expressly understood that any desired key sequence, keystroke, button depress, or any other action, can be sensed in accordance with the present invention and utilized for switching modes.

When operating in auxiliary mode, the present invention provides an indication on the display of the car stereo corresponding to such mode. For example, the CD number could be displayed as "1", and the track number displayed as "99," thus indicating to the user that the system is operating in auxiliary mode and that audio and data is being supplied from an auxiliary input source. Of course, any other indication could be generated and displayed on the display of the car stereo, such as a graphical display (*e.g.*, an icon) or textual prompt.

FIG. 6 is a flowchart showing processing logic, indicated generally at **320**, for determining and handling various device types connected to the auxiliary input ports of the invention. The present invention can sense device types connected to the auxiliary input ports, and can integrate same with the car stereo using the procedures discussed earlier. Beginning in step **322**, the control panel buttons of

the car stereo are monitored for a button or sequence initiated by the user corresponding to an auxiliary input selection (such as the disc number method discussed earlier with reference to **FIG. 4d**). In response to an auxiliary input selection, step **324** is invoked, wherein the type of device connected to the selected auxiliary input is sensed by the present invention. Then, step **326** is invoked.

In step **326**, a determination is made as to whether the device connected to the auxiliary input is a CD player/changer. If a positive determination is made, step **328** is invoked, wherein the logic of block **108** of **FIG. 4a** (the CD handling process), discussed earlier, is executed, and the CD player is integrated with the car stereo. If a negative determination is made in step **326**, then step **330** is invoked. In step **330**, a determination is made as to whether the device connected to the auxiliary input is an MP3 player. If a positive determination is made, step **334** is invoked, wherein the logic of block **138** if **FIG. 4b** (the MP3 handling process), discussed earlier, is executed, and the MP3 player is integrated with the car stereo. If a negative determination is made in step **330**, then step **336** is invoked. In step **336**, a determination is made as to whether the device connected to the auxiliary input is a satellite receiver or a DAB receiver. If a positive determination is made, step **338** is invoked, wherein the logic of block **168** of **FIG. 4c** (the satellite/DAB receiver handling process), discussed earlier, is executed, and the satellite receiver is integrated with the car stereo. If a negative determination is made in step **336**, step **322** is re-invoked, so that additional auxiliary input selections can be monitored and processed accordingly. Of course, process **320** can be expanded to allow other types of devices connected to the auxiliary inputs of the present invention to be integrated with the car stereo.

The present invention can be expanded for allowing video information generated by an external device to be integrated with the display of an existing OEM or after-market car stereo. In such a mode, the invention accepts RGB (red/green/blue) input signals from the external device, and converts same to composite signals. The composite signals are then forwarded to the car stereo for display thereby, such as on an LCD panel of the stereo. Additionally, the present invention can accept composite input signals from an external device, and convert same to RGB signals for display on the car stereo. Further, information from the external device can be formatted and presented to the user in one or more graphical user interfaces or menus capable of being viewed and manipulated on the car stereo.

FIG. 7a is a perspective view of a docking station **400** according to the present invention for retaining an audio device within a car. Importantly, the present invention can be adapted to allow portable audio devices to be integrated with an existing car stereo. The docking station **400** allows such portable devices to be conveniently docked and integrated with the car stereo. The docking station **400** includes a top portion **402** hingedly connected at a rear portion **408** to a bottom portion **404**, preferably in a clam-like configuration. A portable audio device **410**, such as the SKYFI radio distributed by DELPHI, Inc., is physically and electrically connected with the docking portion **412**, and contained within the station **100**. A clasp **406** can be provided for holding the top and bottom portions in a closed position to retain the device **410**. Optionally, a video device could also be docked using the docking station **400**, and tabs **413** can be provided for holding the docking station **400** in place against a portion of a car. Conceivably, the docking

station **400** could take any form, such as a sleeve-like device for receiving and retaining a portable audio device and having a docking portion for electrically and mechanically mating with the audio device.

FIG. 7b is an end view showing the rear portion **408** of the docking station **400** of **FIG. 7a**. A hinge **414** connects the top portion and the bottom portions of the docking station **400**. A data port **416** is provided for interfacing with the audio device docked within the station **400**, and is in electrical communication therewith. In a preferred embodiment of the present invention, the data port **416** is an RS-232 serial or USB data port that allows for the transmission of data with the audio device, and which connects with the multimedia device integration system of the present invention for integrating the audio device with an OEM or after-market car stereo. Any known bus technology can be utilized to interface with any portable audio or video device contained within the docking station **400**, such as FIREWIRE, D2B, MOST, CAN, USB/USB2, IE Bus, T Bus, I Bus, or any other bus technology known in the art. It should be noted that the present invention can be operated without a docking station, *i.e.*, a portable audio or video device can be plugged directly into the present invention for integration with a car stereo or video system.

FIGS. 8a-8b are perspective views of another embodiment of the docking station of the present invention, indicated generally at **500**, which includes the multimedia device integration system of the present invention, indicated generally at **540**, incorporated therewith. As shown in **FIG. 8a**, the docking station **500** includes a base portion **530**, a bottom member **515** interconnected with the base portion **530** at an edge thereof, and a top member **510** hingedly interconnected at

an edge to the base portion **530**. The top member **510** and the bottom member **515** define a cavity for docking and storing a portable audio device **520**, which could be a portable CD player, MP3 player, satellite (*e.g.*, XM, SIRIUS, or other type) tuner, or any other portable audio device. The docking station **500** would be configured to accommodate a specific device, such as an IPOD from Apple Computer, Inc., or any other portable device.

The multimedia device integration system **540**, in the form of a circuit board, is housed within the base portion **530** and performs the integration functions discussed herein for integrating the portable device **520** with an existing car stereo or car video system. The integration system **540** is in communication with the portable device **520** via a connector **550**, which is connected to a port on the device **520**, and a cable **555** interconnected between the connector **550** and the integration system **540**. The connector **550** could be any suitable connector and can vary according to the device type. For example, a MOLEX, USB, or any other connector could be used, depending on the portable device. The integration system **540** is electrically connected with a car stereo or car video system by cable **560**. Alternatively, the integration system could wirelessly communicate with the car stereo or car video system. A transmitter could be used at the integration system to communicate with a receiver at the car stereo or car video system. Where automobiles include Bluetooth systems, such systems can be used to communicate with the integration system. As can be readily appreciated, the docking station **500** provides a convenient device for docking, storing, and integrating a portable device for use with a car stereo. Further, the docking station **500** could be positioned at

any desired location within a vehicle, including, but not limited to, the vehicle trunk.

As shown in **FIG. 8b**, the top member **510** can be opened in the general direction indicated by arrow **A** to allow for access to the portable audio device **520**. In this fashion, the device **520** can be quickly accessed for any desired purpose, such as for inserting and removing the device **520** from the docking station **500**, as well as for providing access to the controls of the device **520**.

FIG. 9 is a block diagram showing the components of the docking station of **FIGS. 8a-8b**. The docking station **500** houses both a portable audio or video device **520** and a multimedia device integration system (or interface) **540**. The shape and configuration of the docking station **500** can be varied as desired without departing from the spirit or scope of the present invention.

The integration system of the present invention provides for control of a portable audio or video device, or other device, through the controls of the car stereo or video system system. As such, controls on the steering wheel, where present, may also be used to control the portable audio device or other device. Further, in all embodiments of the present invention, communication between the after-market device and a car stereo or video system can be accomplished using known wireless technologies, such as Bluetooth.

FIG. 10 is a block diagram showing an alternate embodiment of the multimedia device integration system of the present invention, indicated generally at **600**, wherein the interface **630** is incorporated within a car stereo or car video system **610**. The interface **630** is in electrical communication with the control panel buttons **620**, display **615**, and associated control circuitry **625** of the car

stereo or video system **610**. The interface **630** could be manufactured on a separate printed circuit board positioned within the stereo or video system **610**, or on one or more existing circuit boards of the stereo or video system **610**. An after-market device **635** can be put into electrical communication with the interface **630** via a port or connection on the car stereo or video system **610**, and integrated for use with the car stereo or video system **610**.

The device **635** can be controlled using the control panel buttons **620** of the car stereo or video system **610**, and information from the device **635** is formatted by the interface **630** and displayed in the display **615** of the car stereo or video system **610**. Additionally, control commands generated at the car stereo or car video device **610** are converted by the interface **630** into a format (protocol) compatible with the multimedia device **635**, and are dispatched thereto for execution. A plurality of multimedia devices could be intergrated using the interface **630**, as well as one or more auxiliary input sources **640**. The after-market device **635** could comprise any audio, video, or telecommunications device, including, but not limited to, a CD player, CD changer, digital media player (*e.g.*, MP3 player, MP4 player, WMV player, Apple iPod, or any other player), satellite radio (*e.g.*, XM, Sirius, Delphi, etc.), video device (*e.g.*, DVD player), cellular telephone, or any other type of device or combinations thereof. Additionally, one or more interfaces could be connected to the interface **630** ("daisy-chained") to allow multiple products to be integrated. The device **600** could include one or more of the circuits disclosed in **FIGS. 3a-3d** and modified depending upon the type of the after-market device **635**.

FIG. 11a is a diagram showing an alternate embodiment of the present invention, indicated generally at **645**, wherein a cellular telephone **670** is intergrated for use with a car stereo. The telephone **670** is in electrical communication with the interface **665**, which receives data from the cellular telephone and formats same for displaying on the display **650** of the car stereo or video system **660**. Commands for controlling the telephone **670** can be entered using the control panel buttons **655** of the car stereo or video system **660**. The commands are processed by the interface **665**, converted into a format (protocol) compatible with the telephone **670**, and transmitted to the telephone **670** for processing thereby. Additionally, audio from the telephone **670** can be channeled to the car stereo or video system **660** via the interface **665** and played through the speakers of the car stereo or video system **660**. For example, if the telephone **670** is provided with the ability to download songs or music, such songs or music can be selected using the car stereo or video system **660** and played therethrough using the interface **665**. It should be noted that control of the cellular telephone could be provided using one or more displays (*e.g.*, LCD) of a car video system. Moreover, control of the cellular telephone **670** is not limited to the use of buttons on the car stereo or video ststem **660**, and indeed, a software or graphically-driven menu or interface can be used to control the cellular telephone. The device **645** could include one or more of the circuits disclosed in **FIGS. 3a-3d** and modified for use with the cellular telephone **670**.

FIG. 11b is a flowchart showing processing logic, indicated generally at **647**, for integrating a cellular telephone with a car radio. Beginning in step **649**, a determination is made as to whether the existing car stereo is powered on. If a

negative determination is made, step **651** is invoked, wherein the present invention enters a standby mode and waits for the car stereo to be powered on. If a positive determination is made, step **653** is invoked, wherein a second determination is made as to whether the car stereo is in a state responsive to signals external to the car stereo. If a negative determination is made, step **649** is re-invoked.

If a positive determination is made in step **653**, a cellular telephone handling process, indicated as block **661**, is invoked. Beginning in step **654**, a signal is generated by the present invention indicating that a cellular telephone is present, and the signal is continuously transmitted to the car stereo. Importantly, this signal prevents the car stereo from shutting off, entering a sleep mode, or otherwise being unresponsive to signals and/or data from an external source. In step **657**, the audio channels of the cellular telephone are connected (channeled) to the car stereo system, allowing audio from the cellular telephone to be played through the car stereo. In step **659**, data is retrieved by the present invention from the cellular telephone, such as song information corresponding to one or more songs downloaded onto the cellular telephone. After steps **654**, **657**, and **659** have been executed, control passes to step **663**.

In steps **663**, the present invention monitors the control panel buttons of the car stereo for cellular telephone operational commands. In step **664**, if a command is not detected, step **663** is re-invoked. Otherwise, if a command is received, step **663** invokes step **667**, wherein the received command is converted into a format recognizable by the cellular telephone connected to the present invention. Once the command has been formatted, step **669** is invoked, wherein the formatted

command is transmitted to the cellular telephone and executed. Step **654** is then re-invoked, so that additional processing can occur.

FIG. 12a is a diagram showing an alternate embodiment of the present invention, indicated generally at **675**, wherein an after-market video device **695** is integrated for use with a car video system **685**. The after-market video device **695** could comprise a portable DVD player, digital video (DV) camera, digital camera, or any other video device. The interface **690** receives output video signals from the device **695**, and converts same for display on one or more displays **680** (*e.g.*, LCD seat-back displays in a minivan, fold-down displays mounted on the roof of a vehicle, vehicle navigation displays, etc.) of the car video system **685**. The interface **690** could convert between composite and red/green/blue (RGB) video signals, and vice versa, using commercially-available video format conversion chips such as the TDA8315, TDA4570, TDA3567, TDA3566A, and TDA3569A video conversion chips manufactured by Philips Corp., and the AL251 and AL250 video conversion chips manufactured by Averlogic Technologies, Inc., or any other suitable video conversion chips. Commands issued by a user using the car video system **685** or display(s) **680** for controlling the device **695** are received by the interface **690**, converted into a format compatible with the device **695**, and transmitted thereto for processing. The device **675** could include one or more of the circuits disclosed in **FIGS. 3a-3d** and modified for use with the video device **695**.

FIG. 12b is a flowchart showing processing logic, indicated generally at **671**, for integrating an after-market video device with a car video system. Beginning in step **673**, a determination is made as to whether the existing car video

system is powered on. If a negative determination is made, step **674** is invoked, wherein the present invention enters a standby mode and waits for the car video system to be powered on. If a positive determination is made, step **677** is invoked, wherein a second determination is made as to whether the car video system is in a state responsive to signals external to the car video system. If a negative determination is made, step **673** is re-invoked.

If a positive determination is made in step **677**, an after-market video device handling process, indicated as block **687**, is invoked. Beginning in step **679**, a signal is generated by the present invention indicating that an external device is present, and the signal is continuously transmitted to the car video system. Importantly, this signal prevents the car video system from shutting off, entering a sleep mode, or otherwise being unresponsive to signals and/or data from an external source. In step **681**, the audio and video channels of the after-market device are connected (channeled) to the car video system, allowing audio and video from the after-market device to be played through the car video system. In step **684**, the display(s) of the car video system are updated with data from the after-market device. After steps **679**, **681**, and **684** have been executed, control passes to step **683**.

In step **683**, the present invention monitors the car video system for after-market video device operational commands. In step **689**, if a command is not detected, step **683** is re-invoked. Otherwise, if a command is received, step **689** invokes step **691**, wherein the received command is converted into a format recognizable by the after-market video device connected to the present invention. Once the command has been formatted, step **693** is invoked, wherein the formatted

command is transmitted to the after-market video device and executed. Step **679** is then re-invoked, so that additional processing can occur.

FIG. 13a is a block diagram showing an alternate embodiment of the multimedia device integration system **710** of the present invention, wherein configuration jumpers **720** and protocol conversion software blocks **724** are provided for integrating after-market devices of various types using a single interface. The jumpers **720** can be set to a plurality of different settings, each of which corresponds to an after-market device of a specific type (*e.g.*, CD changer, CD player, digital media player, satellite radio, video device, cellular telephone, etc.) or from a specific manufacturer. Additionally, the jumpers **720** can be used to specify one or more device or manufacturer types for the car stereo or video system **705**. The settings of the configuration jumpers **720** correspond to one or more protocol conversion software blocks **724** stored in memory (*e.g.*, programmable flash memory, ROM, EEPROM, etc.) **725** of the interface **710**. Each of the software blocks **724** controls the interface circuitry **715** and contains instructions for converting data from the device **707** into a format compatible with the car stereo or video system **705**, and vice versa. For example, a first block could contain software for allowing communication between an Apple iPod and an in-dash car stereo manufactured by Sony, and a second block could contain software for allowing communication between a DVD player and a car video system. Any desired number of blocks could be stored in the memory **725** and can be selected as desired by the user via configuration jumpers **720**. As such, a single interface **710** can be used for integrating numerous devices of various types and manufactures for use with one or more car stereo or video systems. The device **710** could

include one or more of the circuits shown in **FIGS. 3a-3d**, with modifications depending upon the device types of the devices **705** and **707**.

FIG. 13b is a block diagram showing an alternate embodiment of the multimedia device integration system of the present invention, wherein wiring harnesses **727** and **728** and protocol conversion software blocks **729** are provided for integrating multimedia devices of various types using a single interface **726**. In this embodiment, the electrical configurations (pinouts) of each of the harnesses **727** and **728** correspond to car stereo / video systems and after-market devices of specific types and made by specific manufacturers (*e.g.*, harness **727** could correspond to a BMW car stereo, and harness **728** could correspond to an ALPINE satellite tuner). The electrical configurations (pinouts) of the harnesses are utilized by the interface **726** to retrieve a specific protocol conversion software block **729** that allows communication between the devices. The interface **726** could be provided with a plurality of protocol conversion software blocks pre-loaded into memory in the interface, and could be provided with any desired harnesses. The interface **726** could include one or more of the circuits shown in **FIGS. 3a-3d**, with modification depending upon the device types of the devices attached to the wiring harnesses **727** and **728**.

FIG. 14 is a flowchart showing processing logic, indicated generally at **730**, of the multimedia device integration system of the present invention for integrating after-market devices of various types using a single interface. In step **735**, the interface determines types of devices that are connected thereto, including the car stereo or video system and one or more after-market devices to be integrated therewith. This could be achieved by the configuration jumper settings

or the harness types connected to the interface and discussed with respect to **FIGS. 13a** and **13b**. Then, in step **740**, a protocol conversion software block is selected from blocks of conversion software (*e.g.*, from the blocks **725** and **729** shown in **FIGS. 13a** and **13b**). In step **745**, instructions are converted using the selected conversion block to allow the car stereo or video system to operate with the multimedia device.

FIG. 15 is a flowchart showing processing logic, indicated generally at **750**, of the multimedia device integration system of the present invention for allowing a user to specify one or more after-market device types for integration using a single interface. In step **770**, a user is provided with one or more lists of devices to be integrated, which are displayed on the display **760** of the car stereo or video device **755**. Then, in step **775**, using the buttons **765** of the car video device, the user can specify the type of multimedia device to be integrated (*e.g.*, by scrolling through the lists). Additionally, the device type could be specified using a graphical or software menu displayed on the car stereo or car video system. In step **780**, a determination is made as to whether a timeout has occurred (*e.g.*, the user has not selected a device type within a predetermined period of time). If a positive determination is made, step **785** occurs, wherein a protocol conversion software block is selected from memory corresponding to the last device type displayed by the car stereo or video system. If a negative determination is made, step **790** is invoked, wherein a determination is made as to whether the user has specified a device type. If a negative determination is made, step **775** is re-invoked so that the user can specify a device type. If a positive determination is made, step **795** is invoked, wherein a protocol conversion software block is selected from

memory corresponding to the device specified by the user. In step **800**, the protocol conversion software block is mapped to a logical address in memory. Then, in step **805**, instructions to be exchanged between the car stereo or video system and the after-market device are converted using the software block to allow communication between the devices using compatible formats. Accordingly, the logic of **FIG. 15** allows a single interface having multiple protocol conversion software blocks to be used integrate a plurality of after-market devices with a car stereo or video system.

FIG. 16 is a flowchart showing processing logic of the multimedia device integration system of the present invention, indicated generally at **810**, for allowing a user to quickly navigate through a list of songs on one or more after-market devices using the controls of a car stereo or video system (fast navigation technique). This method allows a user to quickly select a song from a list of songs available on an after-market device for playing on the car stereo or video system, and could be applied for use with any type of after-market device, including, but not limited to, a digital media player such as an MP3 player or Apple iPod player. Beginning in step **812**, a user is provided with a list of alphanumeric characters on a display of the car stereo or video system. This list could include the letters A through Z, as well as the numbers 0 through 9. In step **814**, the user can specify a desired alphanumeric character, which can be specified by scrolling through the list using one or more controls of the car stereo or video system and pressing a button once the desired character has been highlighted, or optionally, if an alphanumeric keypad (or touchscreen interface) is provided on the car stereo or video system, the user can directly enter the desired alphanumeric character.

When the desired alphanumeric character has been specified, in step **816** a remote database is queried using the alphanumeric character. The remote database could comprise a list of songs stored in one or more after-market devices integrated by the present invention for use with the car stereo or video system. In step **818**, a list of potentially matching songs is retrieved from the database and presented on the display of the car stereo or video system for perusal by the user. For example, if the user specified the letter "A," the list could include all songs in the remote database having titles (or artists) beginning with the letter "A." In step **820**, a determination is made as to whether a desired song appears in the list and is immediately viewable by the user, without requiring the user to scroll through the list. If a positive determination is made, step **822** is invoked, wherein the desired song is selected by the user and retrieved from the after-market device for playing on the car stereo or video system.

In the event that a negative determination is made in step **820**, step **824** is invoked, wherein the user can specify an additional alphanumeric character using the car stereo or video system. For example, if the user initially specified the letter "A" and the desired song is not visible in the list of songs without scrolling, the user can refine the query by adding an additional alphanumeric character. Thus, for example, the user can specify the letters "AN" to search for songs having titles (or artists) beginning with the letters "AN." In step **826**, the remote database of the after-market device is queried using the specified letters. In step **828**, a list of potential matches is presented to the user at the car stereo or video system. In step **830**, a determination is made as to whether the desired song appears in the list and

is immediately viewable without requiring the user to scroll through the list. If a positive determination is made, step **822** is invoked, wherein the user can select the desired song for retrieval from the after-market device and playing on the car stereo or video system. If a negative determination is made, step **832** is invoked, wherein a determination is made as to whether a threshold number of alphanumeric characters has been specified by the user. For example, a maximum threshold of 3 alphanumeric characters could be specified, or any other desired number. If a negative determination is made, steps **824-832** are re-invoked in the manner disclosed herein to allow the user to specify additional alphanumeric characters for querying the remote database. If a positive determination is made (threshold met), then processing terminates and the user must scroll through the list of retrieved songs or repeat the processing disclosed in **FIG. 16** to begin a new query.

FIG. 17 is a diagram showing an another embodiment of the present invention, indicated generally at **850**, wherein a plurality of external devices are integrated using a single interface **852**. Any desired number or combination of devices can be integrated for use with a car stereo or video system using the interface **852**. The interface **852** houses a plurality of ports **858** for connecting any desired number of external devices, and a port **856** for connection with a car stereo or video system. The ports **858** and **856** could be any suitable type of input port, and could vary depending upon the types of devices to be integrated. Additionally, the interface **852** includes integration electronics **854**, which could include any desired electronics disclosed herein for integrating a plurality of external devices.

As shown in **FIG. 17**, a CD player **860**, a digital media device **862**, a satellite tuner **864**, a video device **866**, a cellular phone **868**, and an auxiliary input **870** are connected to the interface **852** and integrated for use with a car stereo or video system. The CD player **860** could comprise any desired CD player or changer. The digital media device **862** could comprise any portable digital media device, such as an Apple iPod, MP3 player, MP4, player, WMV player, portable music center, or any other desired device. The satellite tuner **864** could comprise any desired satellite tuner, such as an XM or Sirius tuner. The video device **866** could comprise any desired video device, such as a DVD player. The cellular phone **868** could comprise any cellular telephone capable of downloading and storing music or video files. The auxiliary input **870** could comprise any desired external device. Any desired number of interfaces **852** could be interconnected ("daisy-chained"). Further, the interface **852** could form part of an existing car stereo or video system. Control of the external devices connected to the interface **852** is provided through the car stereo or video system.

Having thus described the invention in detail, it is to be understood that the foregoing description is not intended to limit the spirit and scope thereof.

CLAIMS

What is claimed is:

1. A multimedia device integration system comprising:

a car stereo system;

an after-market device external to the car stereo system;

an interface positioned within the car stereo system and connected between the car stereo system and the after-market device for exchanging data and audio signals between the car stereo system and the after-market device;

means for processing and dispatching commands for controlling the after-market device from the car stereo system in a format compatible with the after-market device; and

means for processing and displaying data from the after-market device on a display of the car stereo system in a format compatible with the car stereo system.

2. The apparatus of claim 1, wherein the after-market device comprises a CD player, CD changer, digital media player, Digital Audio Broadcast (DAB) receiver, satellite receiver, or a cellular telephone.

3. The apparatus of claim 2, wherein the digital media player comprises an MP3 player, an MP4 player, WMV player, or an Apple iPod.

4. The apparatus of claim 1, further comprising one or more auxiliary input sources connected to the interface.

5. A multimedia device integration system comprising:

a car stereo system;

a cellular telephone external to the car stereo system;

an interface connected between the car stereo system and the cellular telephone for exchanging data and audio signals between the car stereo system and the cellular telephone;

means for processing and dispatching commands for controlling the cellular telephone from the car stereo system in a format compatible with the cellular telephone; and

means for processing and displaying data from the cellular telephone on a display of the car stereo system in a format compatible with the car stereo system.

6. The apparatus of claim 5, further comprising songs or music downloadable through the cellular telephone.

7. The apparatus of claim 6, wherein the songs or music are playable through the car stereo system using the interface.

8. A multimedia device integration system comprising:

a car video system;

a cellular telephone external to the car video system;

an interface connected between the car video system and the cellular telephone for exchanging data, audio, and video signals between the car video system and the cellular telephone;

means for processing and dispatching commands for controlling the cellular telephone from the car video system in a format compatible with the cellular telephone; and

means for processing and displaying data from the cellular telephone on a display of the car video system in a format compatible with the car video system.

9. The apparatus of claim 8, further comprising songs or music downloadable through the cellular telephone.

10. The apparatus of claim 9, wherein the songs or music are playable through the car video system using the interface.

11. A multimedia device integration system comprising:

a car video system;

an after-market video device external to the car video system;

an interface connected between the car video system and the after-market video device for exchanging data, audio, and video signals between the car video system and the after-market video device;

means for processing and dispatching commands for controlling the after-market video device from the car video system in a format compatible with the after-market video device; and

means for processing and displaying data from the after-market video device on a display of the car video system in a format compatible with the car video system.

12. The apparatus of claim 11, wherein the after-market video device comprises a DVD player.

13. The appataus of claim 11, wherein the interface is positioned within the car video system.

14. A multimedia device integration system comprising:

an interface in electrical communication with a car stereo system and an after-market device;

a plurality of configuration jumpers in the interface for specifying a first device type corresponding to the car stereo system and a second device type corresponding to the after-market device; and

a plurality of protocol conversion software blocks stored in memory in the interface for converting signals from the after-market device into a first format compatible with the car stereo system and for converting signals from the car stereo system into a second format compatible with the after-market device, wherein at least one of the protocol conversion software blocks are selected by the interface using settings of the plurality of configuration jumpers.

15. The system of claim 14, wherein the plurality of protocol conversion software blocks allow a plurality of after-market devices to integrated with the car stereo system.

16. The system of claim 14, wherein the plurality of configuration jumpers are settable by a user.

17. A multimedia device integration system comprising:

an interface in electrical communication with a car video system and an after-market device;

a plurality of configuration jumpers in the interface for specifying a first device type corresponding to the car video system and a second device type corresponding to the after-market device; and

a plurality of protocol conversion software blocks stored in memory in the interface for converting signals from the after-market device into a first format compatible with the car video system and for converting signals from the car video system into a second format compatible with the after-market device, wherein at least one of the protocol conversion software blocks are selected by the interface using settings of the plurality of configuration jumpers.

18. The system of claim 17, wherein the plurality of protocol conversion software blocks allow a plurality of after-market devices to integrated with the car video system.

19. The system of claim 17, wherein the plurality of configuration jumpers are settable by a user.

20. A multimedia device integration system comprising:

an interface in electrical communication with a car stereo system and an after-market device;

first and second wiring harnesses attached to the interface, wherein the first wiring harness includes a first electrical configuration corresponding to the car stereo system and the second wiring harness includes a second electrical configuration corresponding to the after-market device; and

a plurality of protocol conversion software blocks stored in memory in the interface for converting signals from the after-market device into a first format compatible with the car stereo system and for converting signals from the car stereo system into a second format compatible with the after-market device, wherein at least one of the protocol conversion software blocks are selected by the interface using the first and second electrical configurations of the first and second wiring harnesses.

21. The system of claim 20, further comprising a plurality of wiring harnesses corresponding to additional device types and connectable to the interface.

22. A multimedia device integration system comprising:

an interface in electrical communication with a car video system and an after-market device;

first and second wiring harnesses attached to the interface, wherein the first wiring harness includes a first electrical configuration corresponding to the car video system and the second wiring harness includes a second electrical configuration corresponding to the after-market device; and

a plurality of protocol conversion software blocks stored in memory in the interface for converting signals from the after-market device into a first format compatible with the car video system and for converting signals from the car video system into a second format compatible with the after-market device, wherein at least one of the protocol conversion software blocks are selected by the interface using the first and second electrical configurations of the first and second wiring harnesses.

23. The system of claim 22, further comprising a plurality of wiring harnesses corresponding to additional device types and connectable to the interface.

24. A method for integrating an after-market device for use with a car stereo system comprising:

interconnecting the car stereo system and the after-market device with an interface;

determining a first device type corresponding to the car stereo system and a second device type corresponding to the after-market device;

loading a protocol conversion software block from memory in the interface using the first and second device types;

converting signals from the after-market device into a first format compatible with the car stereo system using the protocol conversion software block;

converting signals from the car stereo system into a second format compatible with the after-market device using the protocol conversion software block; and

exchanging converted signals between the car stereo system and the after-market device.

25. The method of claim 24, wherein the step of determining the first and second device types comprises determining jumper settings of the interface, wherein the jumper settings correspond to the first and second device types.

26. The method of claim 24, wherein the step of determining the first and second device types comprises determining electrical configurations of wiring harnesses attached to the interface, wherein the electrical configurations correspond to the first and second device types.

27. The method of claim 24, wherein the step of determining the first and second device types comprises allowing the user to specify a device type of the after-market device using the car stereo system.

28. A method for integrating an after-market device for use with a car video system comprising:

interconnecting the car video system and the after-market device with an interface;

determining a first device type corresponding to the car video system and a second device type corresponding to the after-market device;

loading a protocol conversion software block from memory in the interface using the first and second device types;

converting signals from the after-market device into a first format compatible with the car video system using the protocol conversion software block;

converting signals from the car video system into a second format compatible with the after-market device using the protocol conversion software block; and

exchanging converted signals between the car video system and the after-market device.

29. The method of claim 28, wherein the step of determining the first and second device types comprises determining jumper settings of the interface, wherein the jumper settings correspond to the first and second device types.

30. The method of claim 28, wherein the step of determining the first and second device types comprises determining electrical configurations of wiring harnesses attached to the interface, wherein the electrical configurations correspond to the first and second device types.

31. The method of claim 28, wherein the step of determining the first and second device types comprises allowing the user to specify a device type of the after-market device using the car video system.

32. A method for retrieving a song from an after-market device from a car stereo system comprising:

allowing a user to specify an alphanumeric character using controls of the car stereo system;

querying a database of songs in the after-market device using the alphanumeric character;

displaying a list of potentially matching songs in the after-market device on a dsplay of the car stereo system; and

allowing the user to select a desired song from the list of potentially matching songs for playing the desired song on the car stereo system.

33. The method of claim 32, further comprising allowing the user to specify one or more additional alphanumeric characters using the controls of the car stereo system.

34. The method of claim 33, further comprising querying the remote database using the one or more additional alphanumeric characters and displaying a second list of potentially matching songs on the display of the car stereo system.

35. The method of claim 32, wherein the step of allowing the user to specify the alphanumeric character comprises providing the user with a list of alphanumeric characters on the display of the car stereo and allowing the user to select a desired character from the list of alphanumeric characters.

36. A multimedia device integration system comprising:

a car audiovisual system;

a plurality of after-market devices external to the car audiovisual system;

an interface connected between the car audiovisual system and the plurality of after-market devices for exchanging data, audio, and video signals between the car audiovisual system and the plurality of after-market devices;

means for processing and dispatching commands for controlling the plurality of after-market devices from the car audiovisual system in at least one format compatible with at least one of the plurality of after-market devices; and

means for processing and displaying data from the plurality of after-market devices on a display of the car audiovisual system in a format compatible with the car audiovisual system.

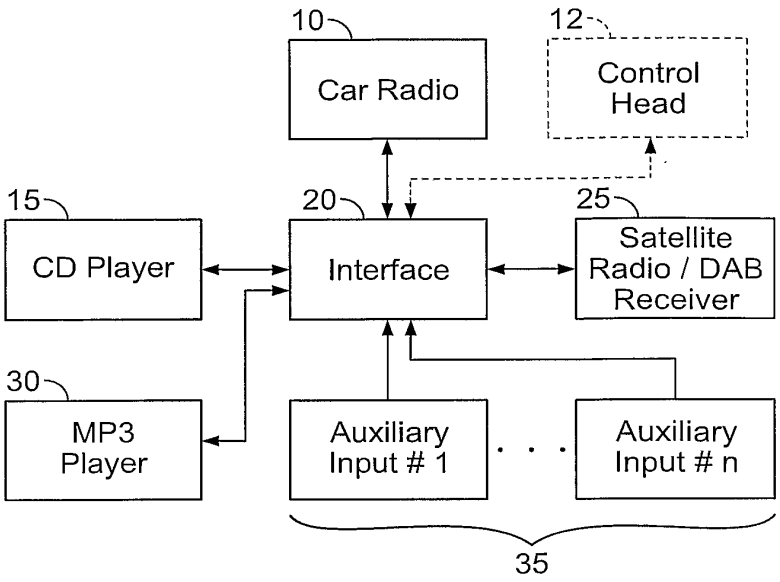
10
Car Radio
12
Control Head
15
CD Player
20
Interface
25
Satellite Radio / DAB Receiver
30
MP3 Player
Auxiliary Input # 1
Auxiliary Input # n
35

FIG. 1

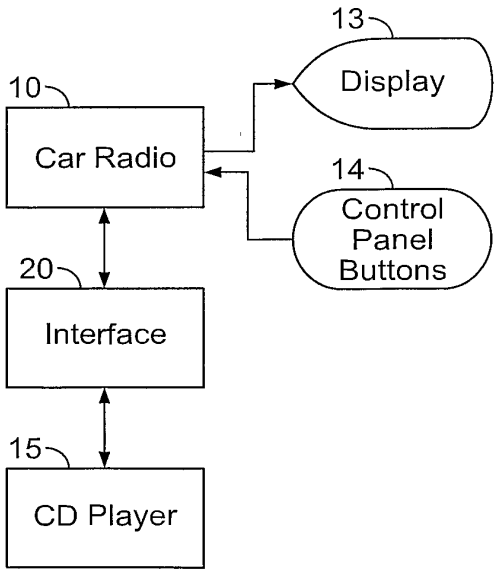
13
Display
10
Car Radio
14
Control Panel Buttons
20
Interface
15
CD Player

FIG. 2A

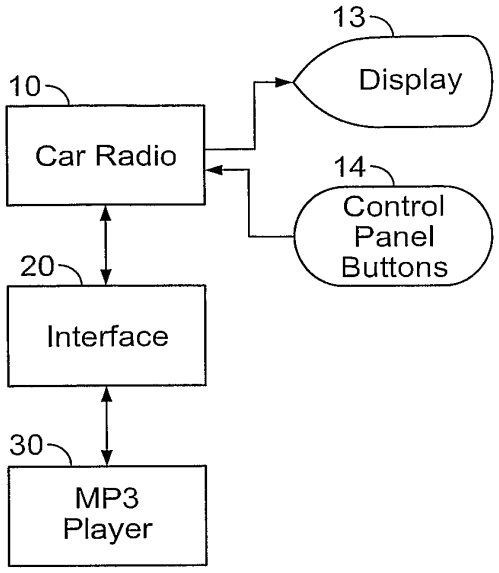
13
Display
10
Car Radio
14
Control Panel Buttons
20
Interface
30
MP3 Player

FIG. 2B

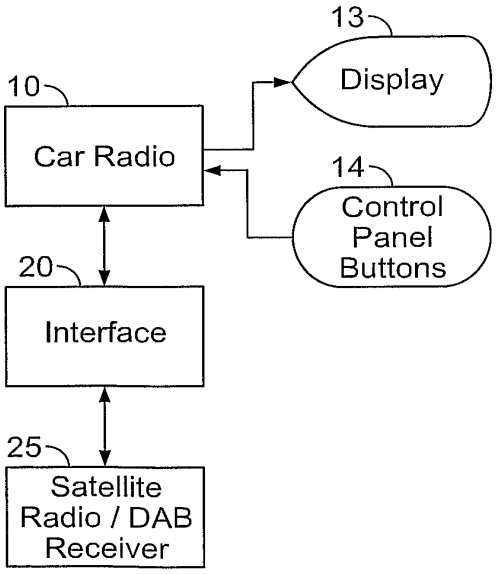
13
Display
10
Car Radio
14
Control Panel Buttons
20
Interface
25
Satellite Radio / DAB Receiver

FIG. 2C

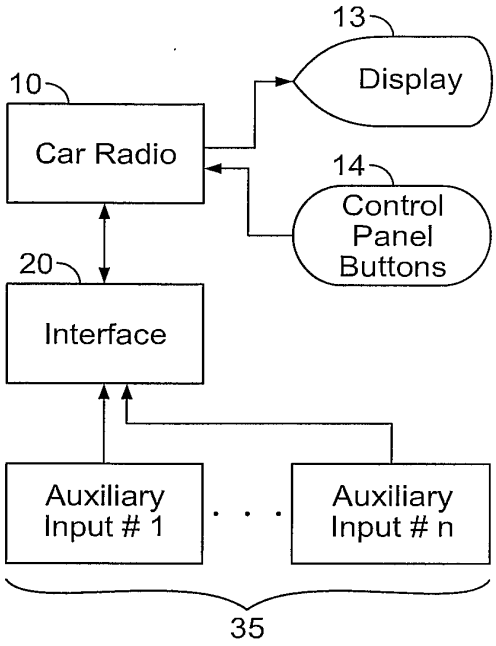
13
Display
10
Car Radio
14
Control Panel Buttons
20
Interface
Auxiliary Input # 1
Auxiliary Input # n
35

FIG. 2D

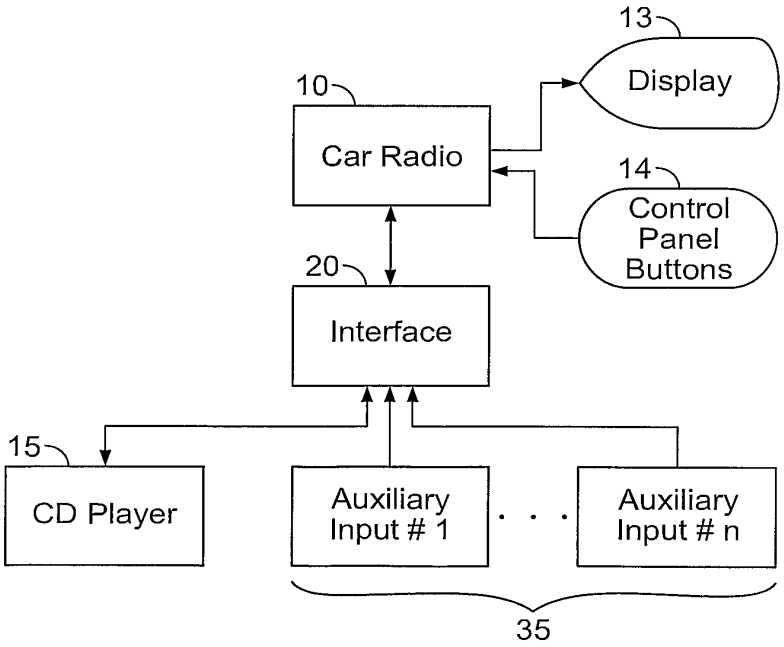
13
Display
10
Car Radio
14
Control Panel Buttons
20
Interface
15
CD Player
Auxiliary Input # 1
Auxiliary Input # n
35

FIG. 2E

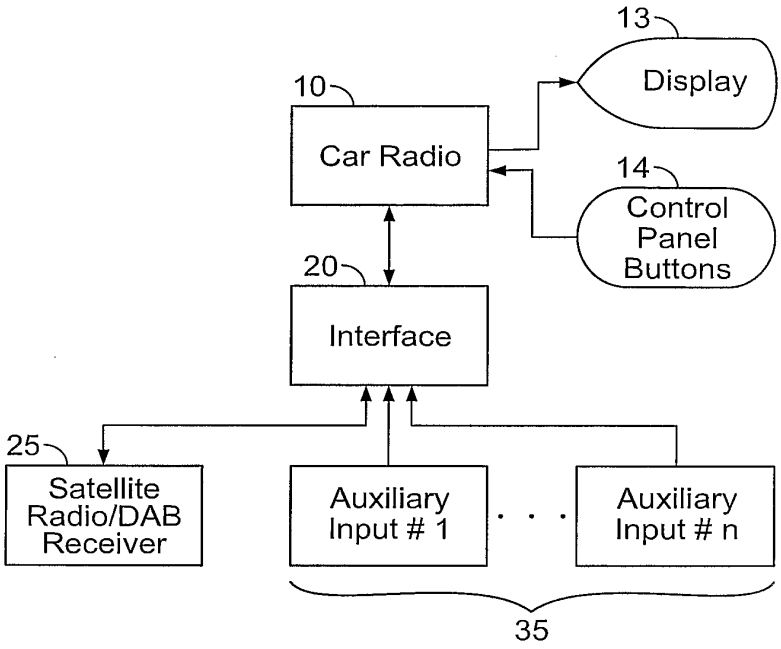
13
Display
10
Car Radio
14
Control Panel Buttons
20
Interface
25
Satellite Radio/DAB Receiver
Auxiliary Input # 1
Auxiliary Input # n
35

FIG. 2F

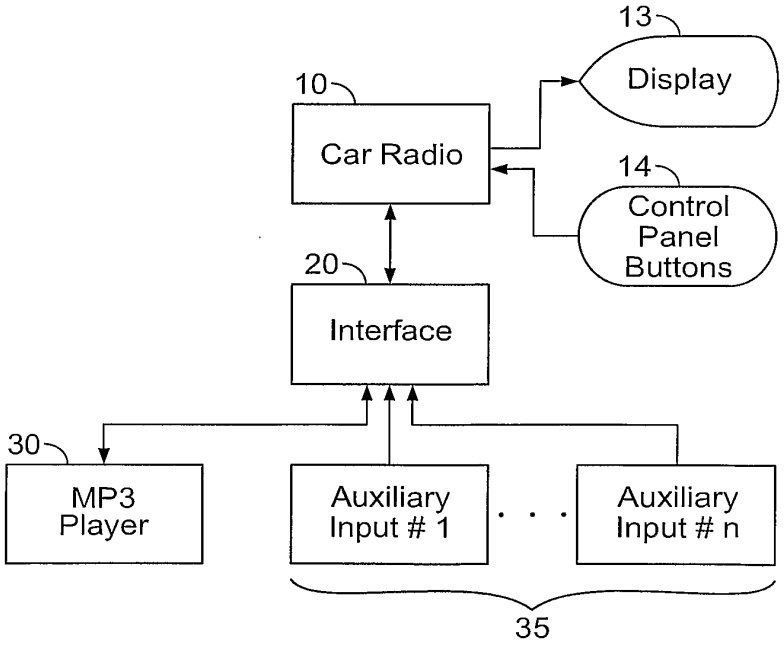
13
Display
10
Car Radio
14
Control Panel Buttons
20
Interface
30
MP3 Player
Auxiliary Input # 1
Auxiliary Input # n
35

FIG. 2G

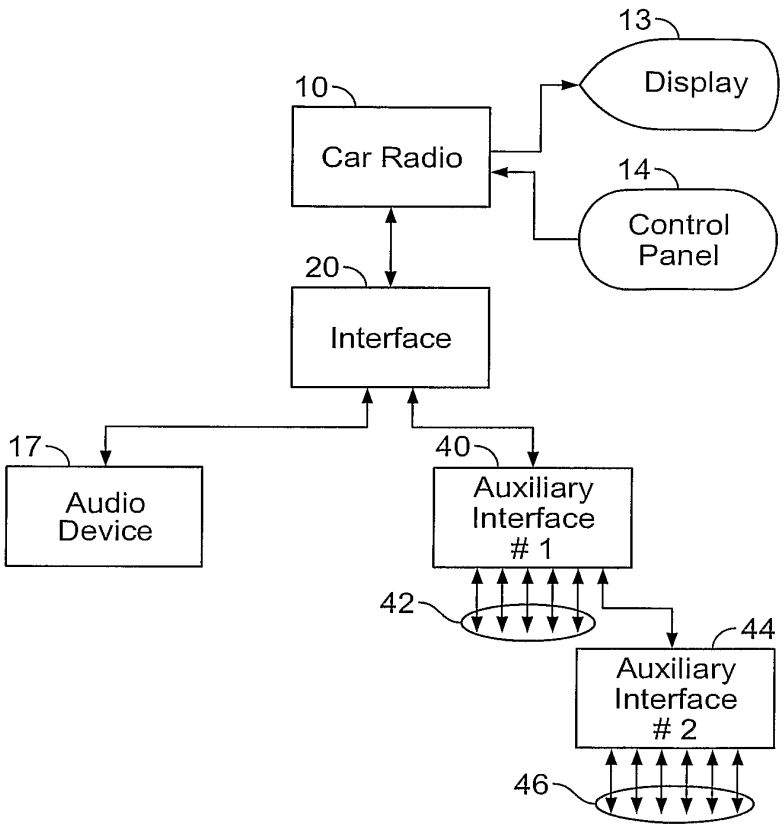
13
Display
10
Car Radio
14
Control Panel
20
Interface
17
Audio Device
40
Auxiliary Interface # 1
42
44
Auxiliary Interface # 2
46

FIG. 2H

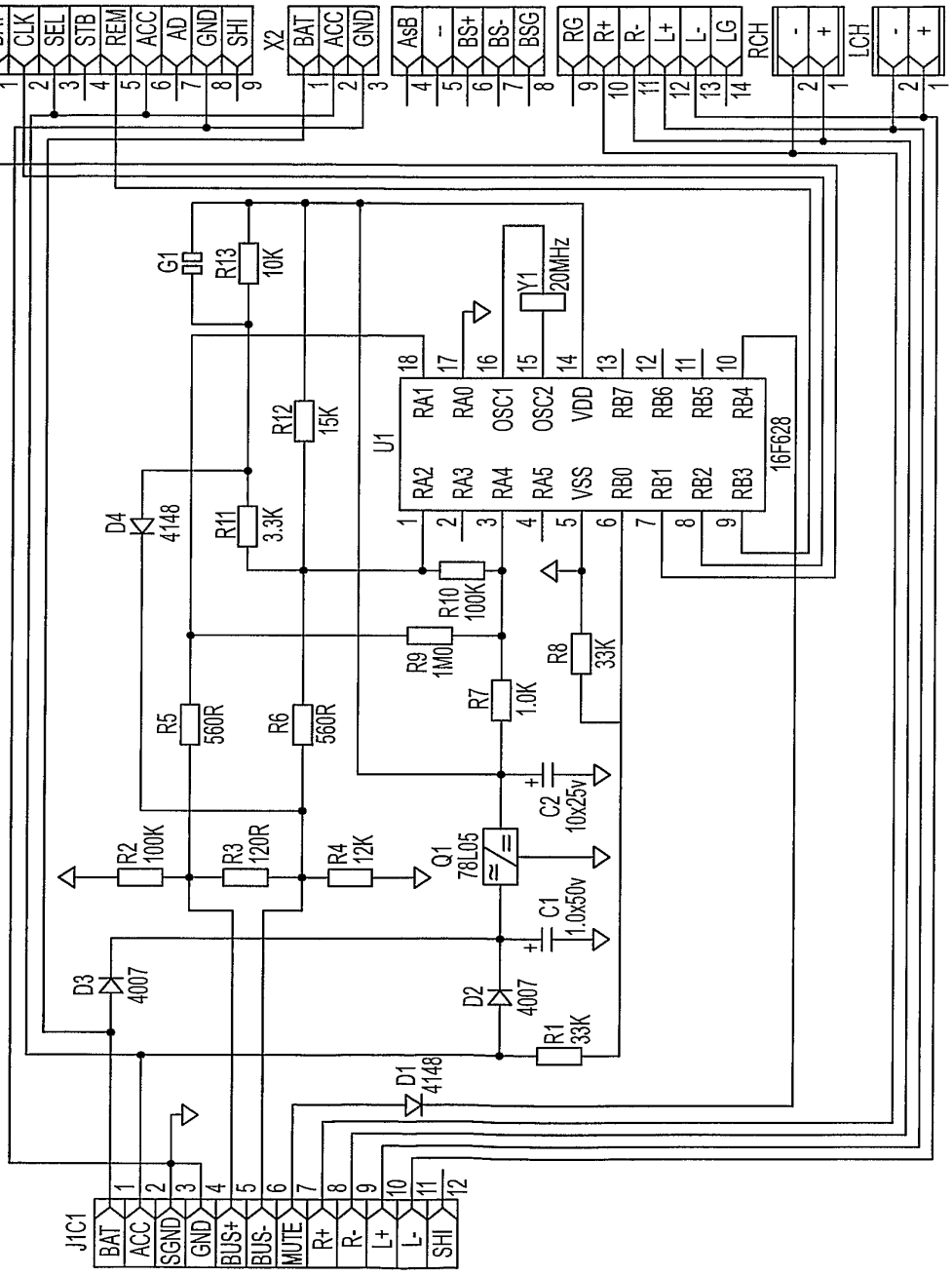
J2A1
DAT
CLK
SEL
STB
REM
ACC
AD
GND
SHI
X2
BAT
ACC
GND
AsB
-
BS+
BS-
BSG
RG
R+
R-
L+
L-
LG
RCH
LCH
U1
16F628
RA1
RA0
OSC1
OSC2
VDD
RB7
RB6
RB5
RB4
RA2
RA3
RA4
RA5
VSS
RB0
RB1
RB2
RB3
Y1
20MHz
G1
R13
10K
R12
15K
R11
3.3K
D4
4148
R10
100K
R9
1M0
R8
33K
R7
1.0K
R5
560R
R6
560R
C2
10x25v
R2
100K
R3
120R
R4
12K
Q1
78L05
C1
1.0x50v
D3
4007
D2
4007
R1
33K
D1
4148
J1C1
BAT
ACC
SGND
GND
BUS+
BUS-
MUTE
R+
R-
L+
L-
SHI

FIG. 3A

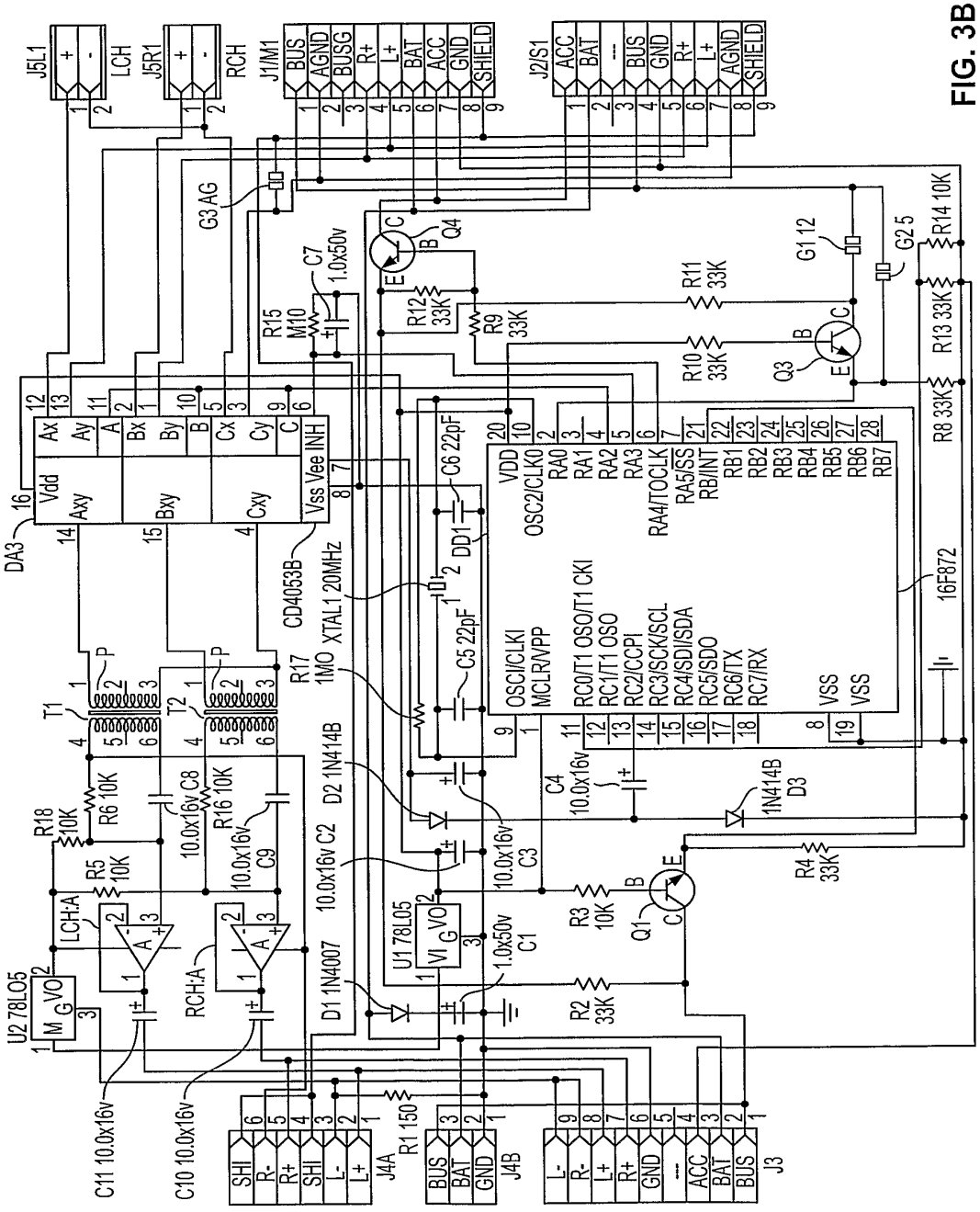
J5L1
LCH
J5R1
RCH
J1/M1
BUS
AGND
BUSG
R+
L+
BAT
ACC
GND
SHIELD
J2/S1
G3 AG
C7 1.0x50v
R15 M10
R12 33K
R9 33K
R11 33K
R10 33K
Q4
Q3
G1 12
G2 5
R14 10K
R13 33K
R8 33K
DA3
CD4053B
C6 22pF
DD1
XTAL1 20MHz
C5 22pF
R17 1MO
T1
T2
R18 10K
R6 10K
R16 10K
C8 10.0x16v
C9 10.0x16v
D2 1N414B
C2 10.0x16v
C4 10.0x16v
C3 10.0x16v
D3 1N414B
R4 33K
R5 10K
R3 10K
Q1
LCH:A
RCH:A
U2 78L05
U1 78L05
D1 1N4007
C1 1.0x50v
R2 33K
C11 10.0x16v
C10 10.0x16v
R1 150
J4A
J4B
J3
16F872
VDD
VSS
OSC1/CLKI
MCLR/VPP
OSC2/CLKO
RA0
RA1
RA2
RA3
RA4/TOCLK
RA5/SS
RB/INT
RB1
RB2
RB3
RB4
RB5
RB6
RB7
RC0/T1 OSO/T1 CKI
RC1/T1 OSO
RC2/CCP1
RC3/SCK/SCL
RC4/SDI/SDA
RC5/SDO
RC6/TX
RC7/RX

FIG. 3B

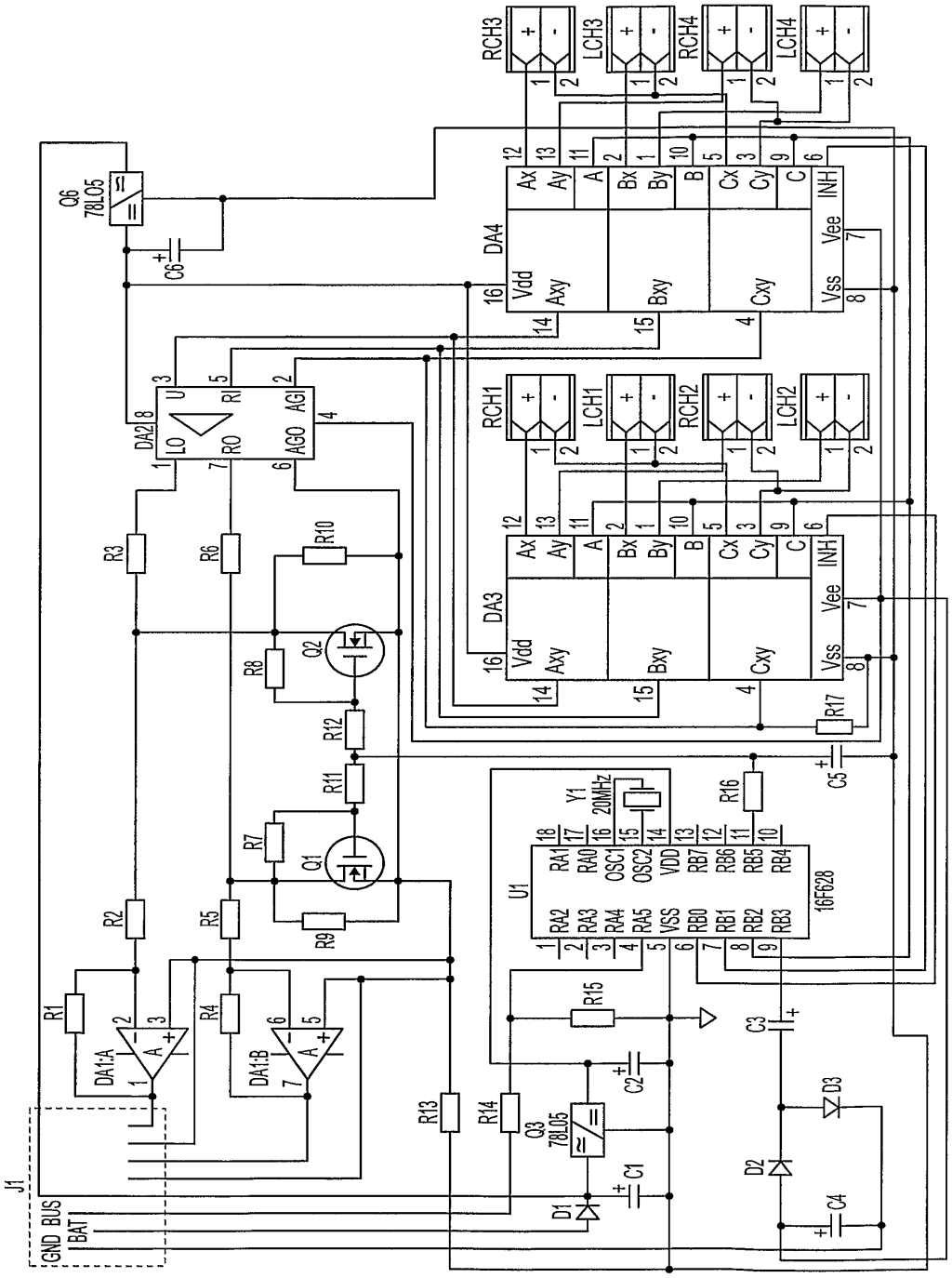
RCH3
LCH3
RCH4
LCH4
RCH1
LCH1
RCH2
LCH2
DA4
DA3
DA2
DA1:A
DA1:B
U1
16F628
Y1
20MHz
Q6
78L05
Q3
78L05
Q1
Q2
J1
GND
BUS
BAT
R1
R2
R3
R4
R5
R6
R7
R8
R9
R10
R11
R12
R13
R14
R15
R16
R17
C1
C2
C3
C4
C5
C6
D1
D2
D3

FIG. 3C

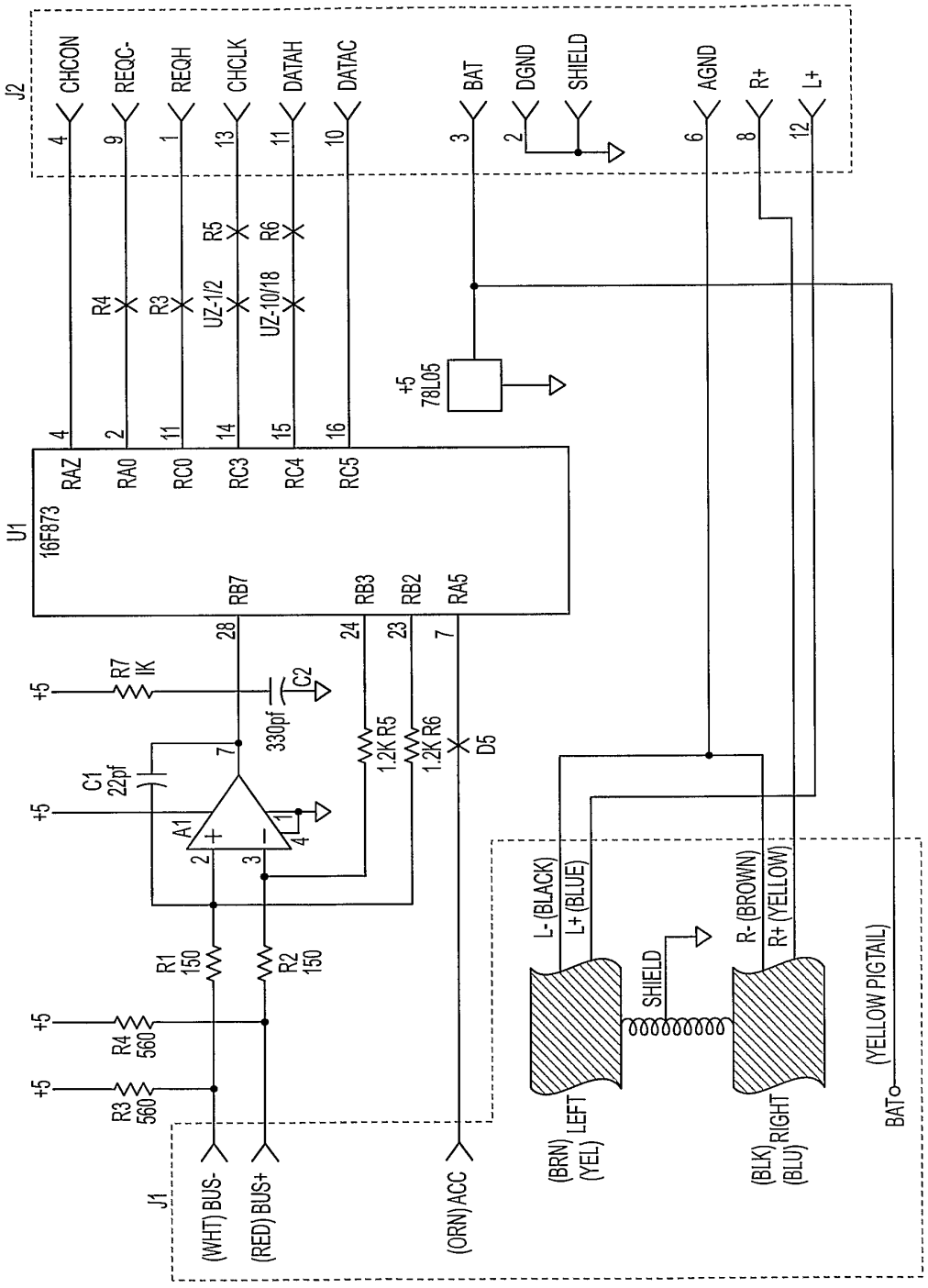
J2
CHCON
REQC-
REQH
CHCLK
DATAH
DATAC
BAT
DGND
SHIELD
AGND
R+
L+
U1
16F873
RAZ
RA0
RC0
RC3
RC4
RC5
RB7
RB3
RB2
RA5
+5
78L05
R4
R3
UZ-1/2
R5
R6
UZ-10/18
R7
1K
C2
330pf
C1
22pf
A1
1.2K R5
1.2K R6
D5
R1
150
R2
150
R4
560
R3
560
J1
(WHT) BUS-
(RED) BUS+
(ORN) ACC
L- (BLACK)
L+ (BLUE)
SHIELD
R- (BROWN)
R+ (YELLOW)
(YELLOW PIGTAIL)
(BRN)
(YEL)
LEFT
(BLK)
(BLU)
RIGHT
BAT

FIG. 3D

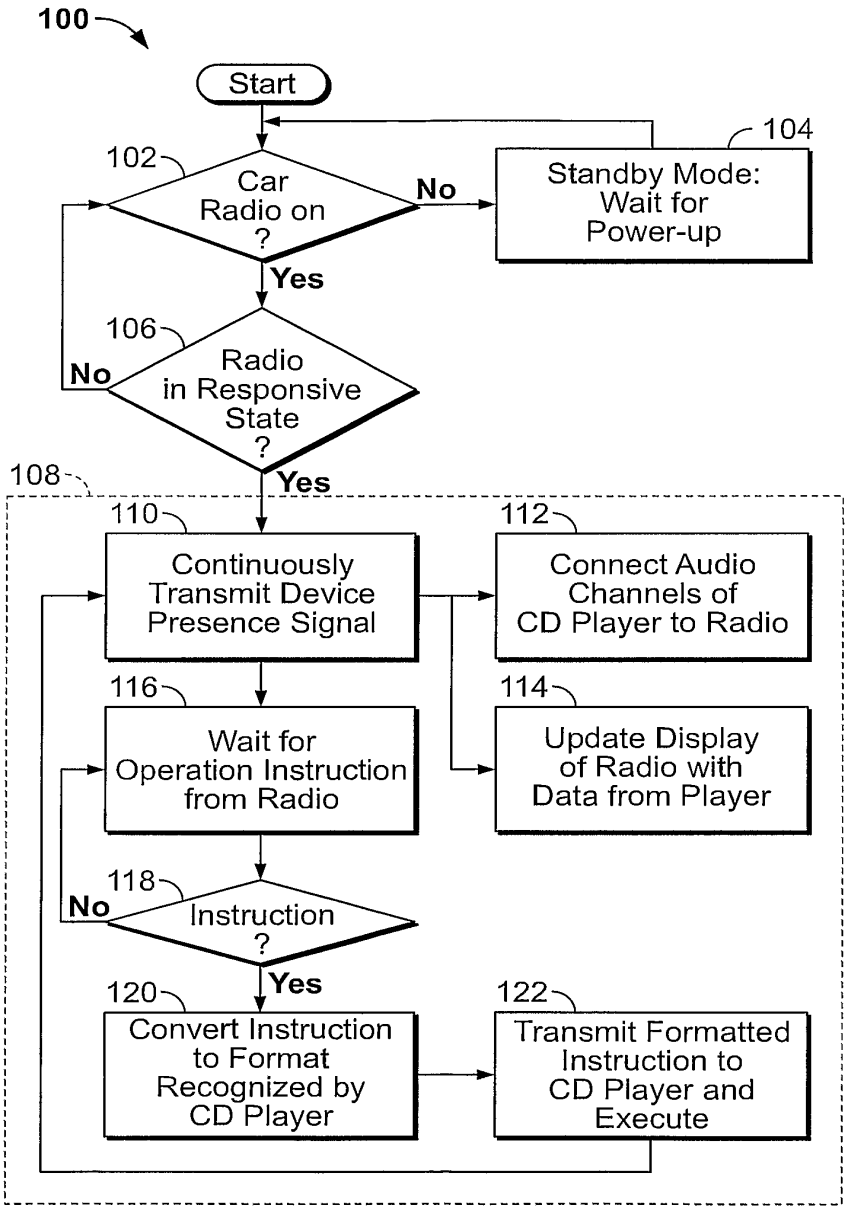
100
Start
102
Car Radio on ?
No
104
Standby Mode: Wait for Power-up
Yes
106
Radio in Responsive State ?
No
Yes
108
110
Continuously Transmit Device Presence Signal
112
Connect Audio Channels of CD Player to Radio
116
Wait for Operation Instruction from Radio
114
Update Display of Radio with Data from Player
118
Instruction ?
No
Yes
120
Convert Instruction to Format Recognized by CD Player
122
Transmit Formatted Instruction to CD Player and Execute

FIG. 4A

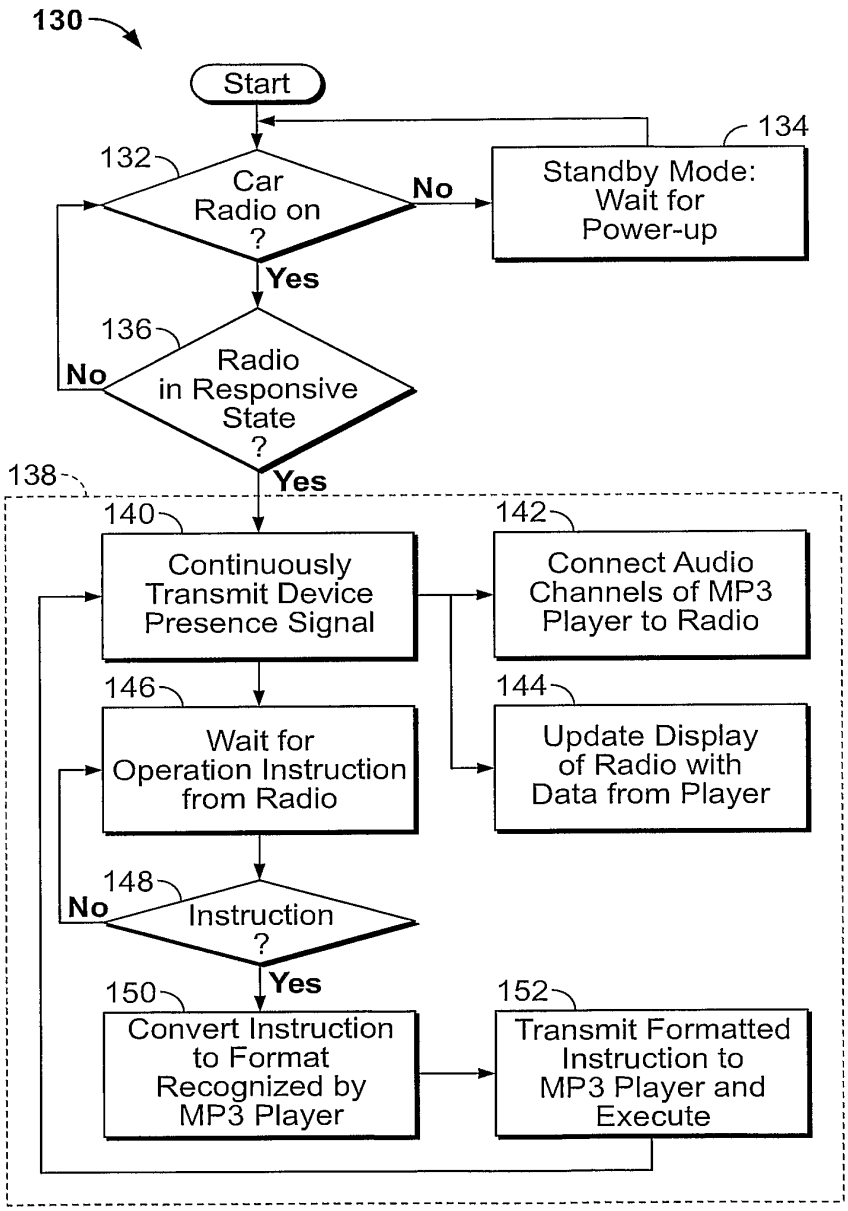
130
Start
132
Car Radio on ?
No
134
Standby Mode: Wait for Power-up
Yes
136
Radio in Responsive State ?
No
Yes
138
140
Continuously Transmit Device Presence Signal
142
Connect Audio Channels of MP3 Player to Radio
146
Wait for Operation Instruction from Radio
144
Update Display of Radio with Data from Player
148
Instruction ?
No
Yes
150
Convert Instruction to Format Recognized by MP3 Player
152
Transmit Formatted Instruction to MP3 Player and Execute

FIG. 4B

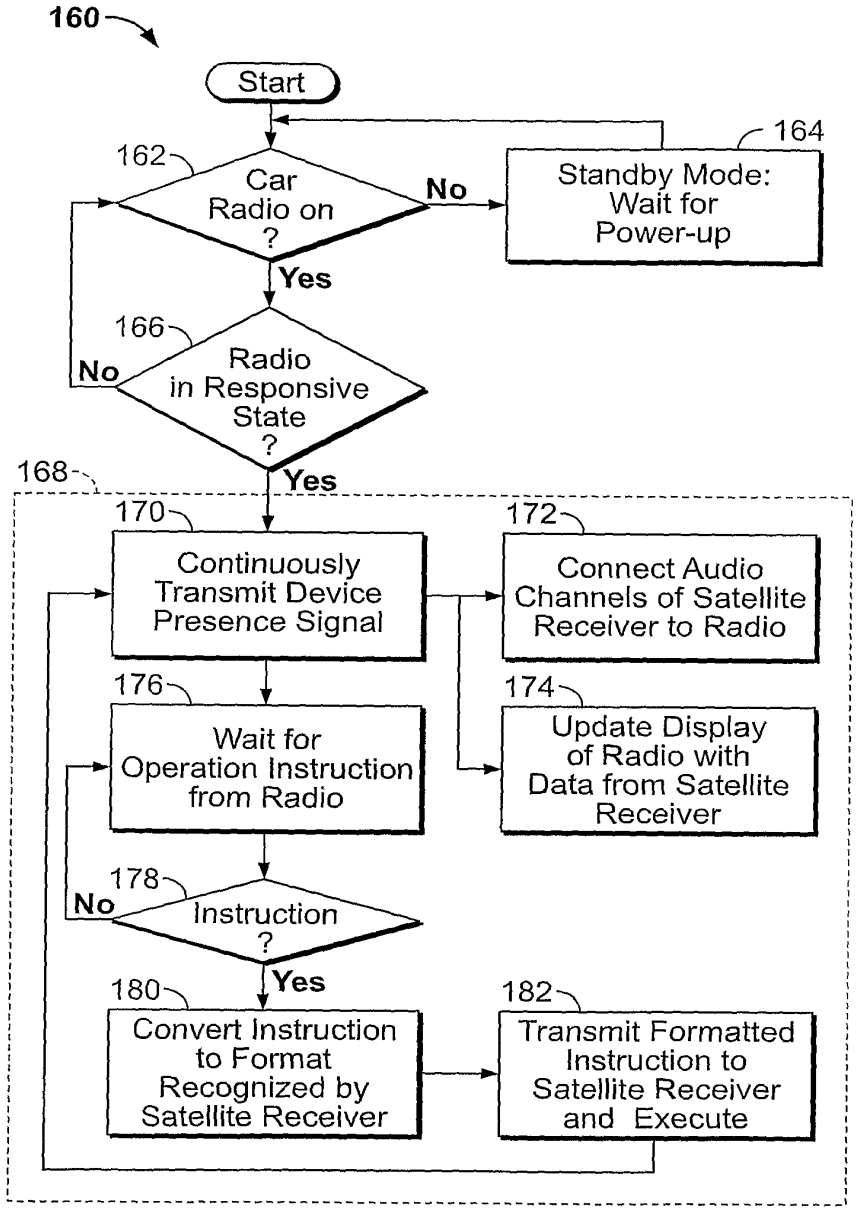
160
Start
162
Car Radio on ?
No
164
Standby Mode: Wait for Power-up
Yes
166
Radio in Responsive State ?
No
Yes
168
170
Continuously Transmit Device Presence Signal
172
Connect Audio Channels of Satellite Receiver to Radio
176
Wait for Operation Instruction from Radio
174
Update Display of Radio with Data from Satellite Receiver
178
Instruction ?
No
Yes
180
Convert Instruction to Format Recognized by Satellite Receiver
182
Transmit Formatted Instruction to Satellite Receiver and Execute

FIG. 4C

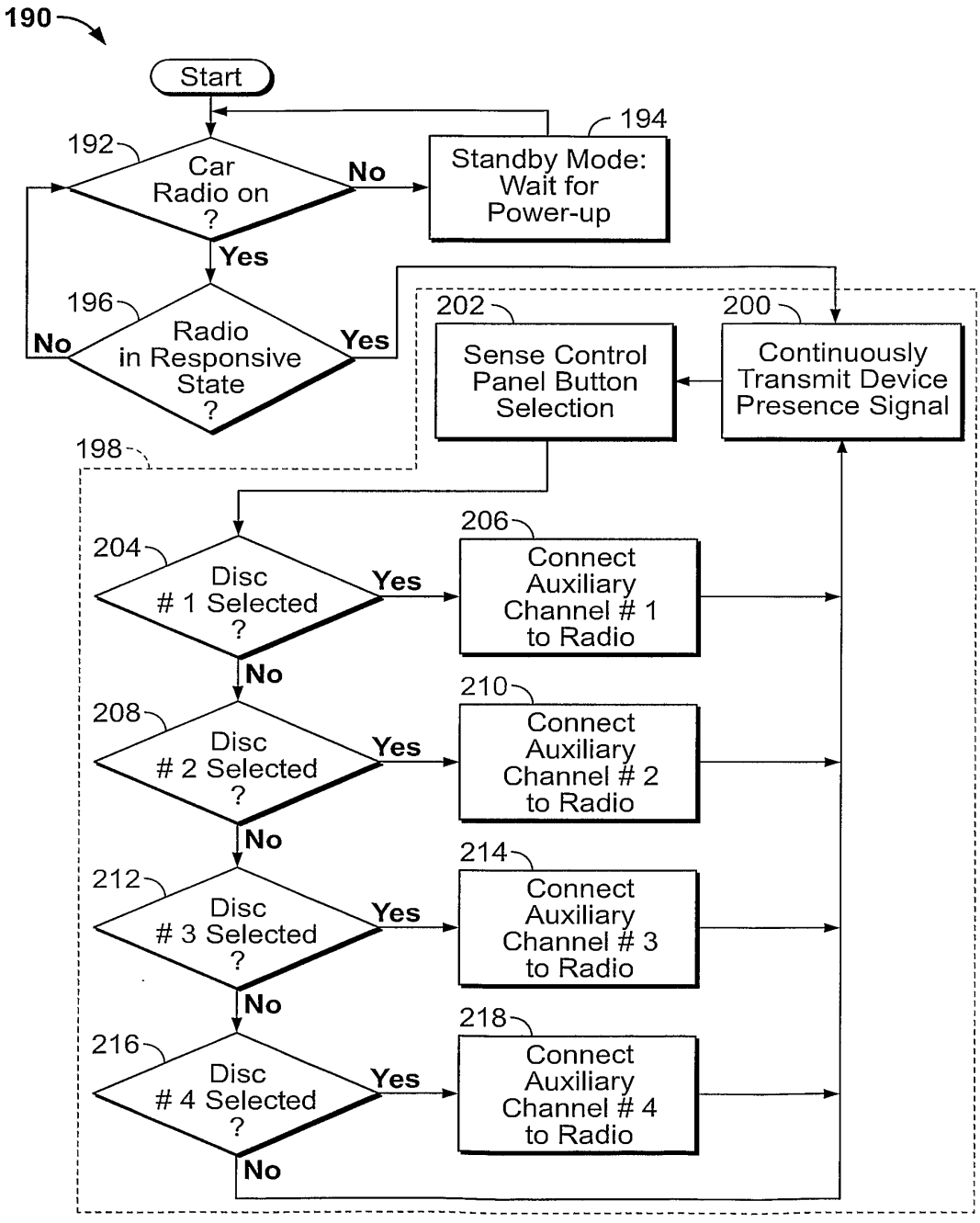
190
Start
192
Car Radio on ?
No
194
Standby Mode: Wait for Power-up
Yes
196
Radio in Responsive State ?
No
Yes
202
Sense Control Panel Button Selection
200
Continuously Transmit Device Presence Signal
198
204
Disc # 1 Selected ?
Yes
206
Connect Auxiliary Channel # 1 to Radio
No
208
Disc # 2 Selected ?
Yes
210
Connect Auxiliary Channel # 2 to Radio
No
212
Disc # 3 Selected ?
Yes
214
Connect Auxiliary Channel # 3 to Radio
No
216
Disc # 4 Selected ?
Yes
218
Connect Auxiliary Channel # 4 to Radio
No

FIG. 4D

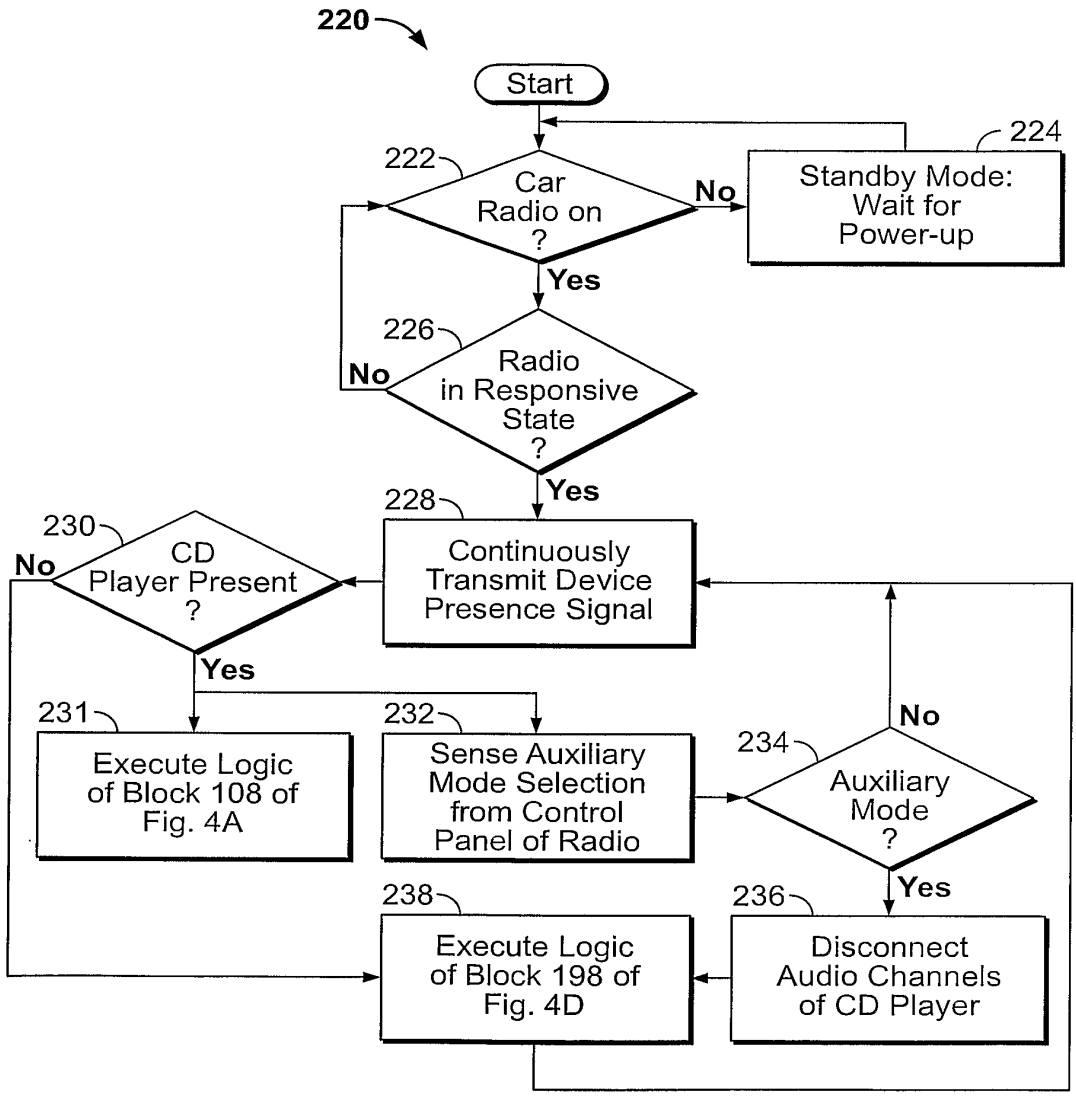
220
Start
222
Car Radio on ?
No
224
Standby Mode: Wait for Power-up
Yes
226
Radio in Responsive State ?
No
Yes
228
Continuously Transmit Device Presence Signal
230
CD Player Present ?
No
Yes
231
Execute Logic of Block 108 of Fig. 4A
232
Sense Auxiliary Mode Selection from Control Panel of Radio
234
Auxiliary Mode ?
No
Yes
236
Disconnect Audio Channels of CD Player
238
Execute Logic of Block 198 of Fig. 4D

FIG. 4E

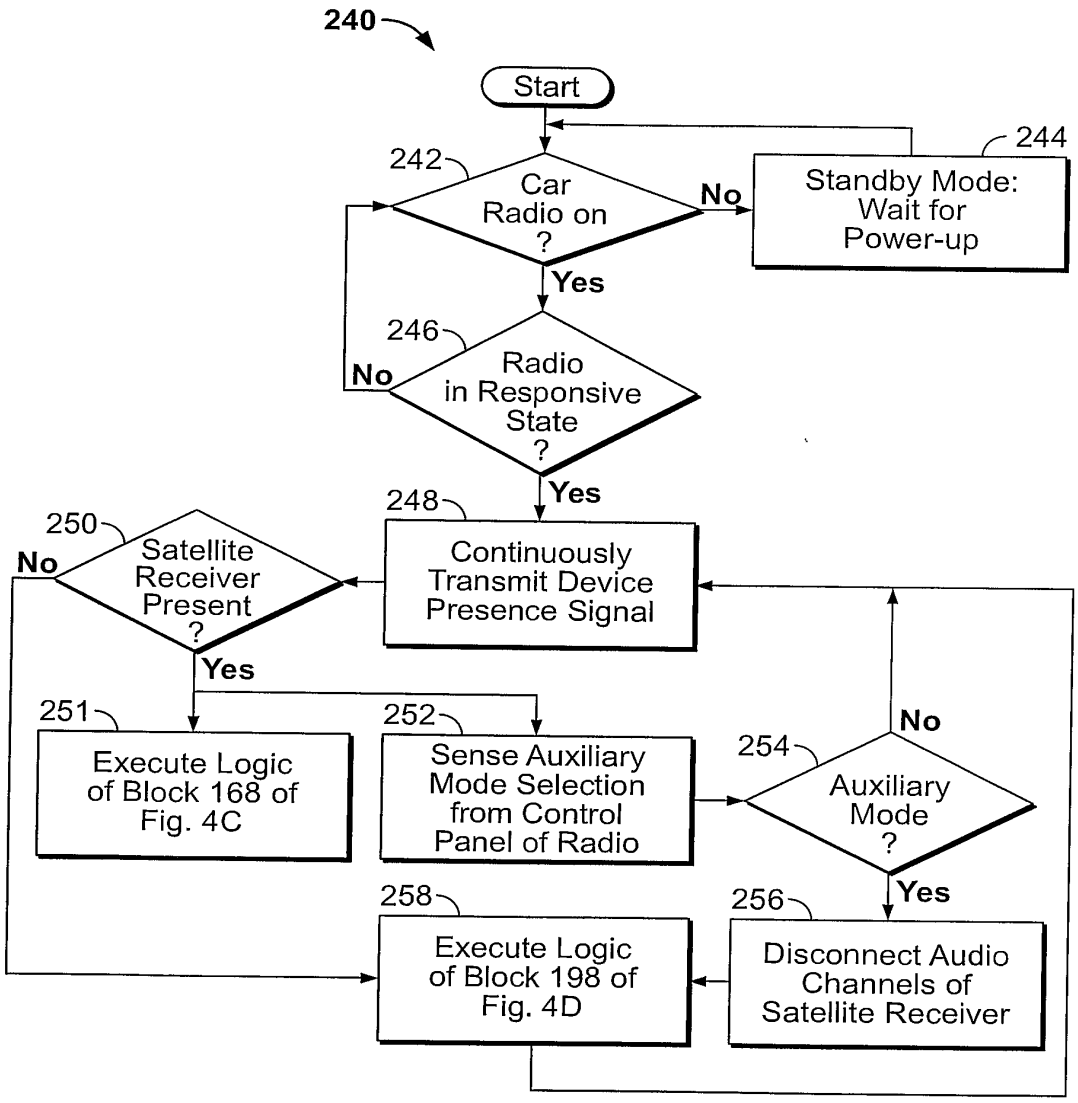
240
Start
242
Car Radio on ?
No
244
Standby Mode: Wait for Power-up
Yes
246
Radio in Responsive State ?
No
Yes
248
Continuously Transmit Device Presence Signal
250
Satellite Receiver Present ?
No
Yes
251
Execute Logic of Block 168 of Fig. 4C
252
Sense Auxiliary Mode Selection from Control Panel of Radio
254
Auxiliary Mode ?
No
Yes
256
Disconnect Audio Channels of Satellite Receiver
258
Execute Logic of Block 198 of Fig. 4D

FIG. 4F

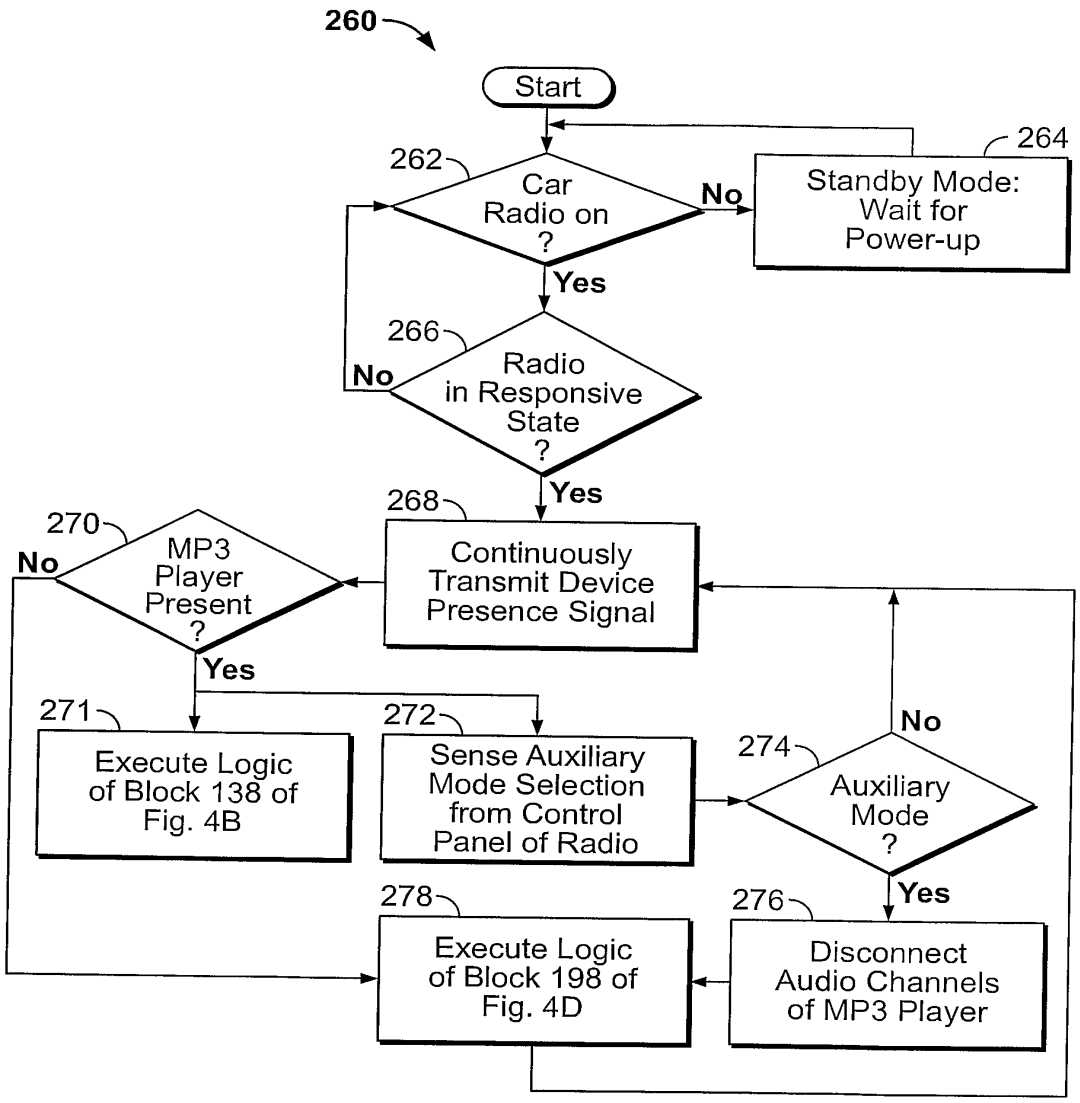
260
Start
262
Car Radio on ?
No
264
Standby Mode: Wait for Power-up
Yes
266
Radio in Responsive State ?
No
Yes
268
Continuously Transmit Device Presence Signal
270
MP3 Player Present ?
No
Yes
271
Execute Logic of Block 138 of Fig. 4B
272
Sense Auxiliary Mode Selection from Control Panel of Radio
274
Auxiliary Mode ?
No
Yes
276
Disconnect Audio Channels of MP3 Player
278
Execute Logic of Block 198 of Fig. 4D

FIG. 4G

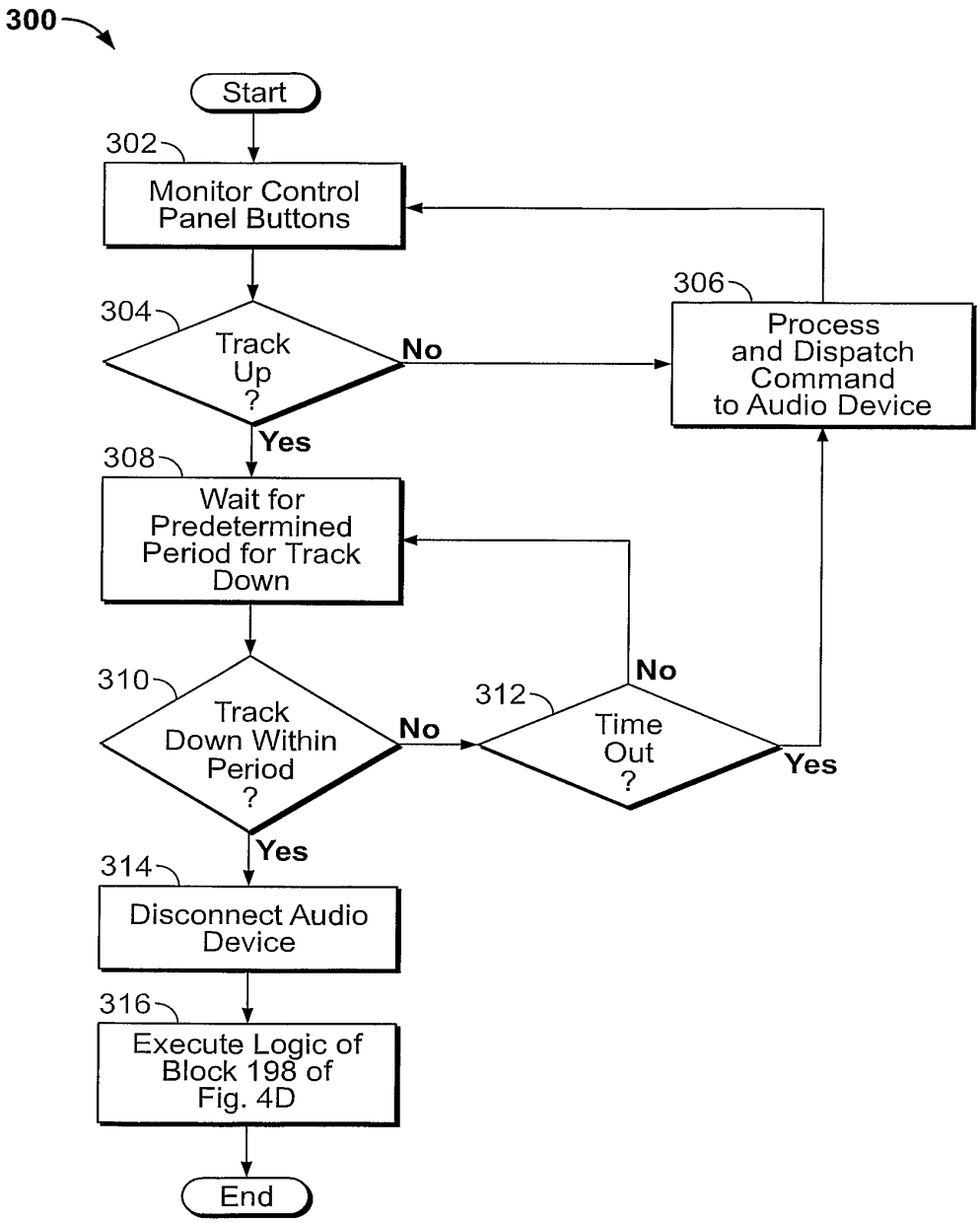
300
Start
302
Monitor Control Panel Buttons
304
Track Up ?
No
306
Process and Dispatch Command to Audio Device
Yes
308
Wait for Predetermined Period for Track Down
310
Track Down Within Period ?
No
312
Time Out ?
No
Yes
Yes
314
Disconnect Audio Device
316
Execute Logic of Block 198 of Fig. 4D
End

FIG. 5

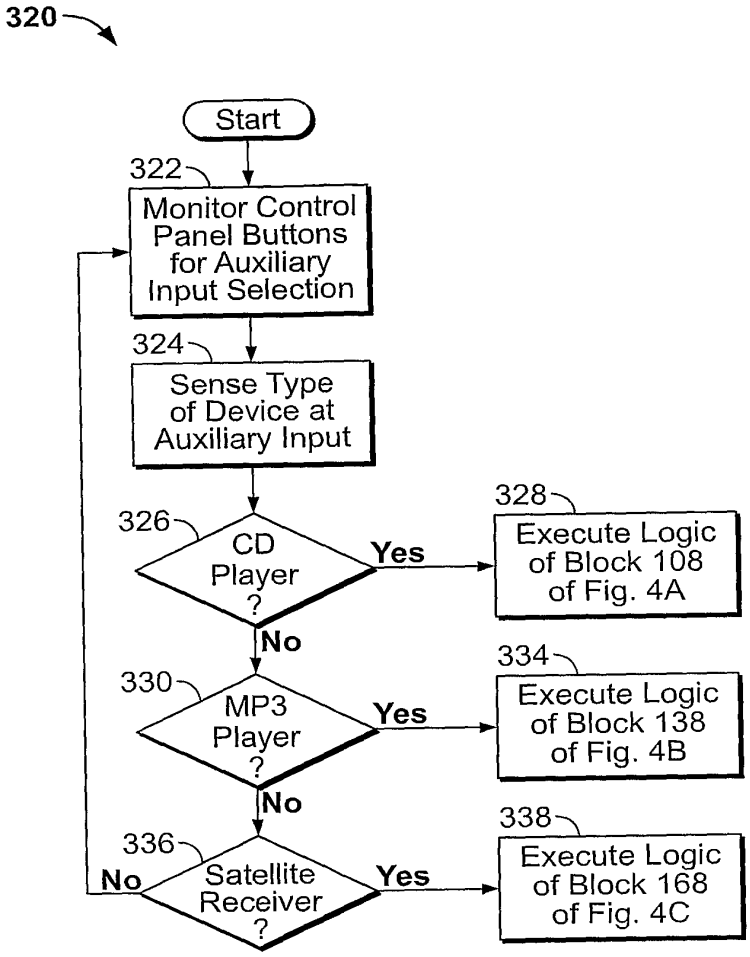
320
Start
322
Monitor Control Panel Buttons for Auxiliary Input Selection
324
Sense Type of Device at Auxiliary Input
326
CD Player ?
Yes
328
Execute Logic of Block 108 of Fig. 4A
No
330
MP3 Player ?
Yes
334
Execute Logic of Block 138 of Fig. 4B
No
336
Satellite Receiver ?
No
Yes
338
Execute Logic of Block 168 of Fig. 4C

FIG. 6

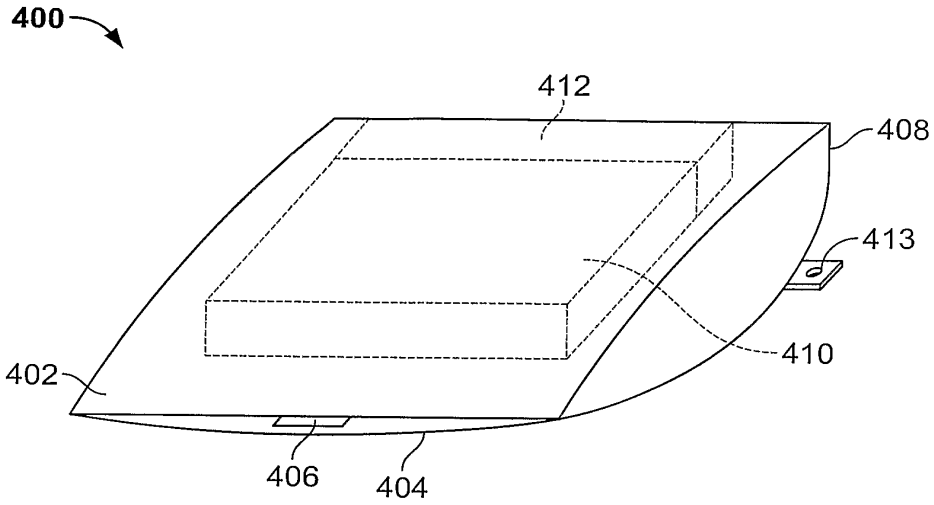

FIG. 7A

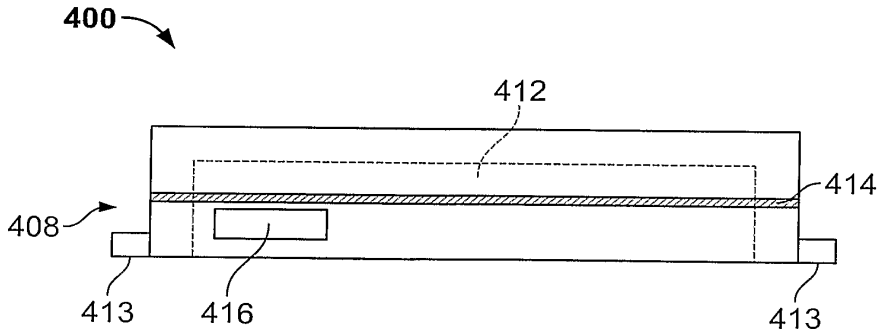

FIG. 7B

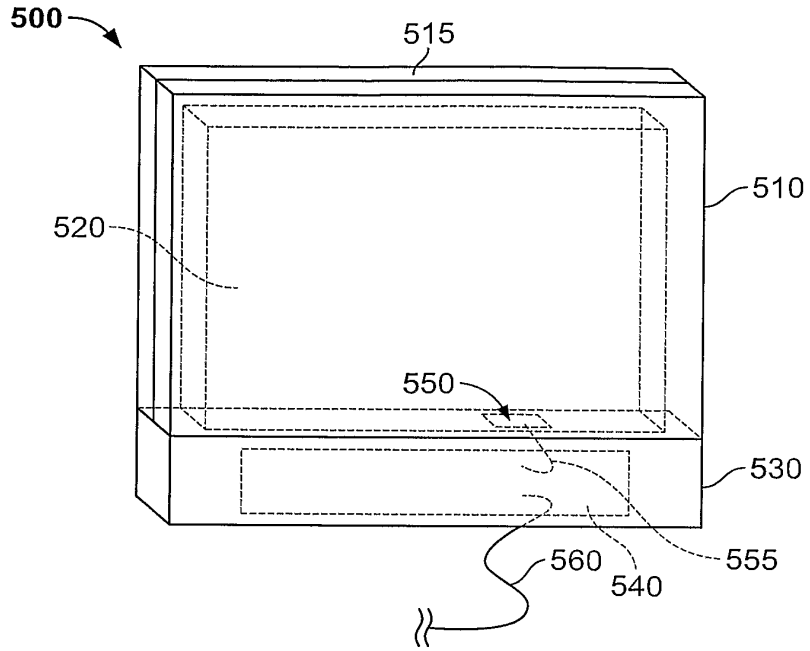

FIG. 8A

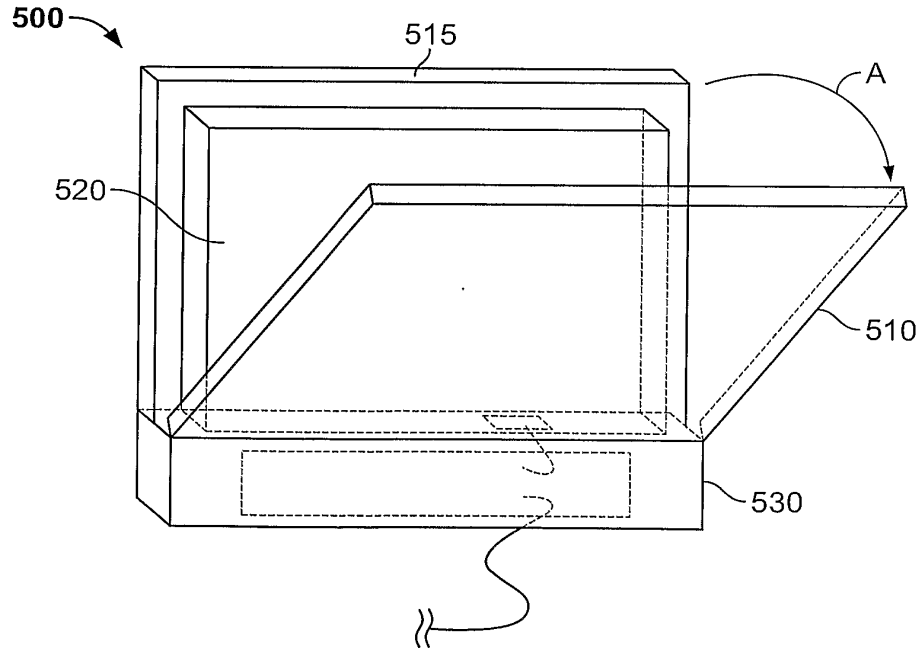

FIG. 8B

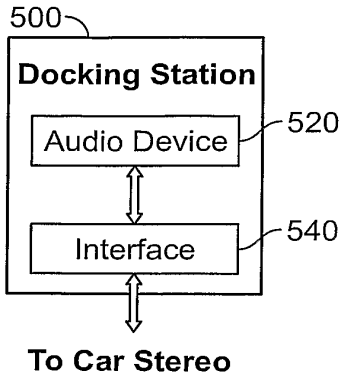
500
Docking Station
Audio Device
520
Interface
540
To Car Stereo

FIG. 9

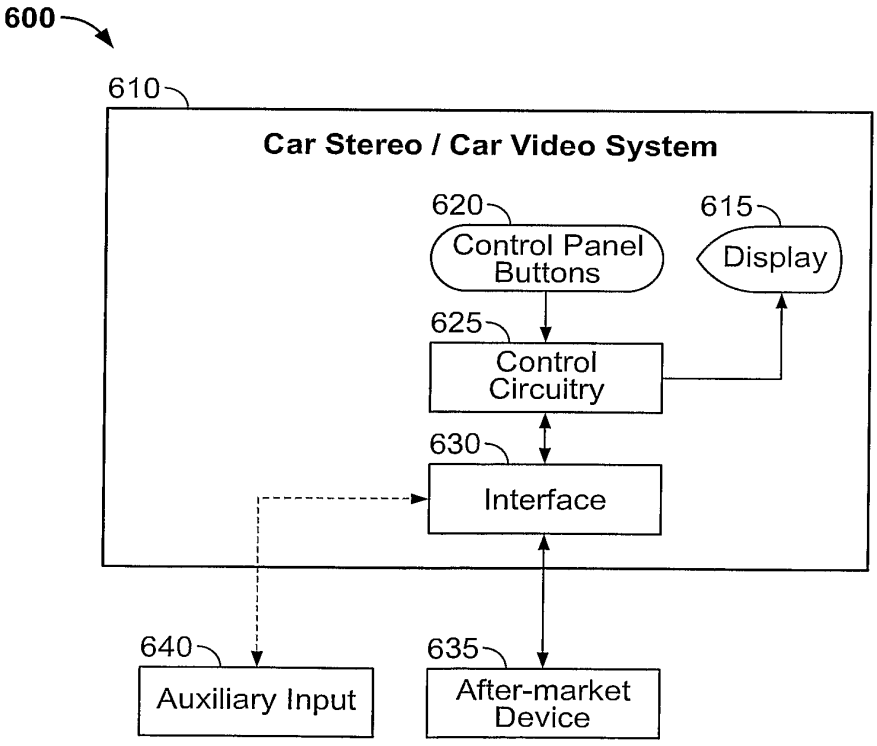
600
610
Car Stereo / Car Video System
620
Control Panel Buttons
615
Display
625
Control Circuitry
630
Interface
640
Auxiliary Input
635
After-market Device

FIG. 10

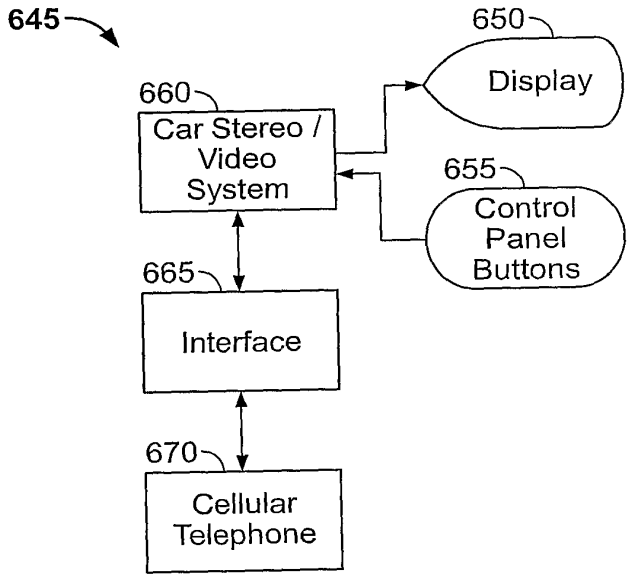
645
650
Display
660
Car Stereo / Video System
655
Control Panel Buttons
665
Interface
670
Cellular Telephone

FIG. 11A

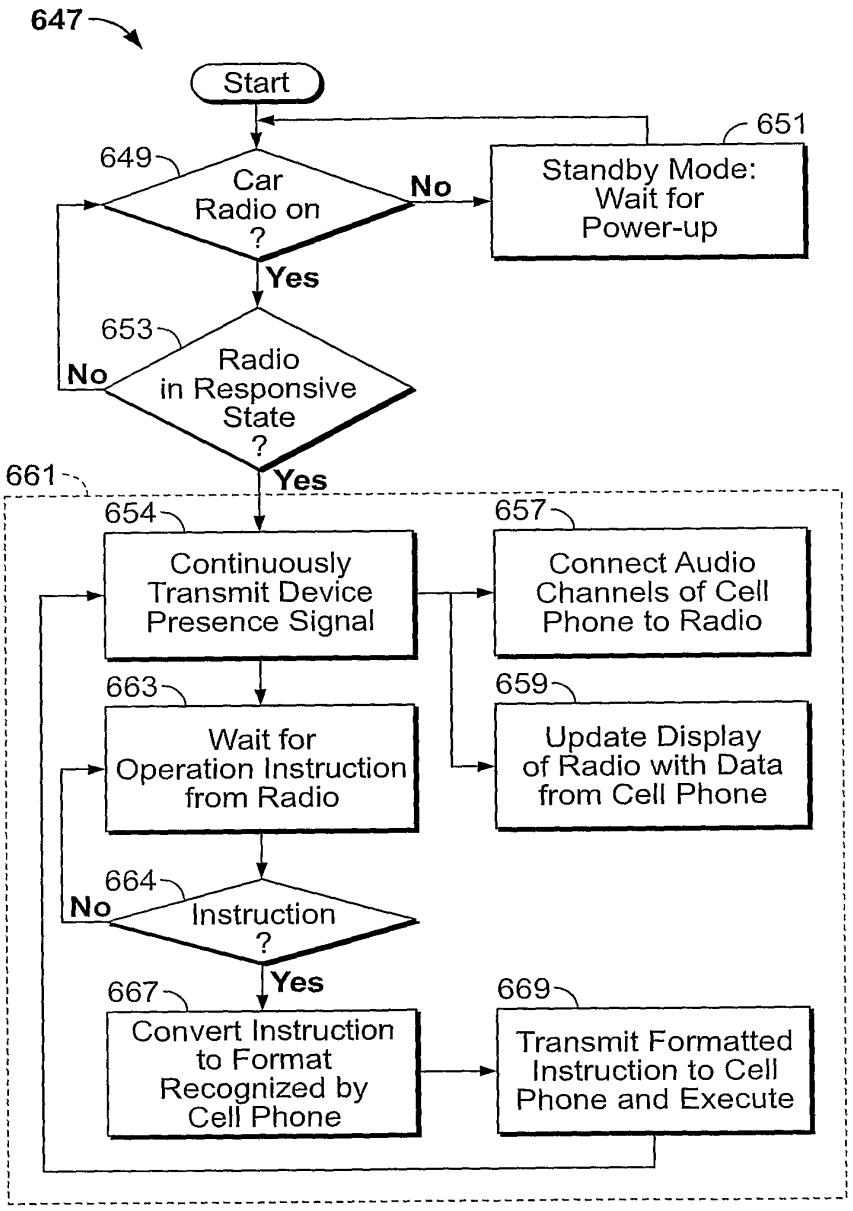
647
Start
649
Car Radio on ?
No
651
Standby Mode: Wait for Power-up
Yes
653
Radio in Responsive State ?
No
Yes
661
654
Continuously Transmit Device Presence Signal
657
Connect Audio Channels of Cell Phone to Radio
663
Wait for Operation Instruction from Radio
659
Update Display of Radio with Data from Cell Phone
664
Instruction ?
No
Yes
667
Convert Instruction to Format Recognized by Cell Phone
669
Transmit Formatted Instruction to Cell Phone and Execute

FIG. 11B

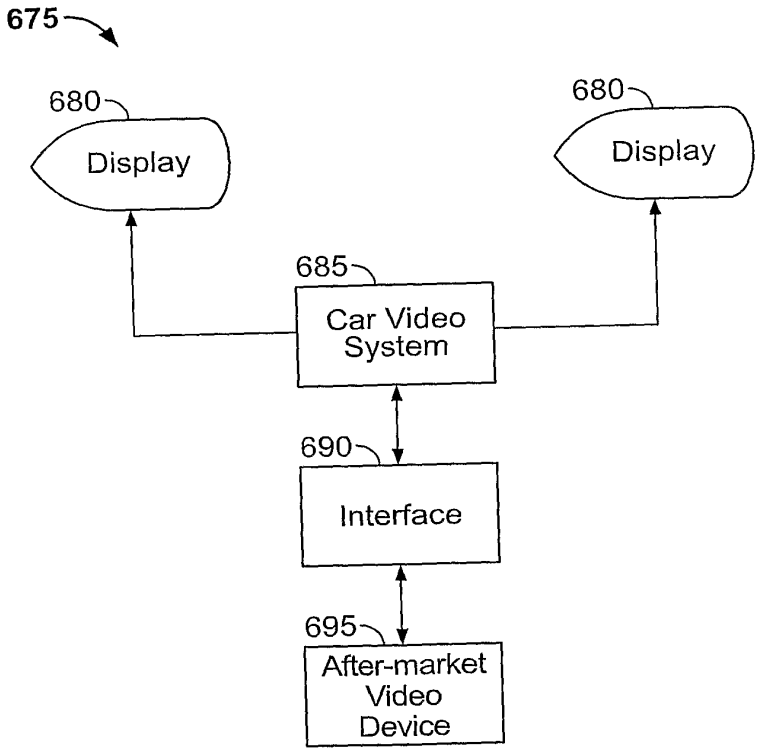
675
680
Display
680
Display
685
Car Video System
690
Interface
695
After-market Video Device

FIG. 12A

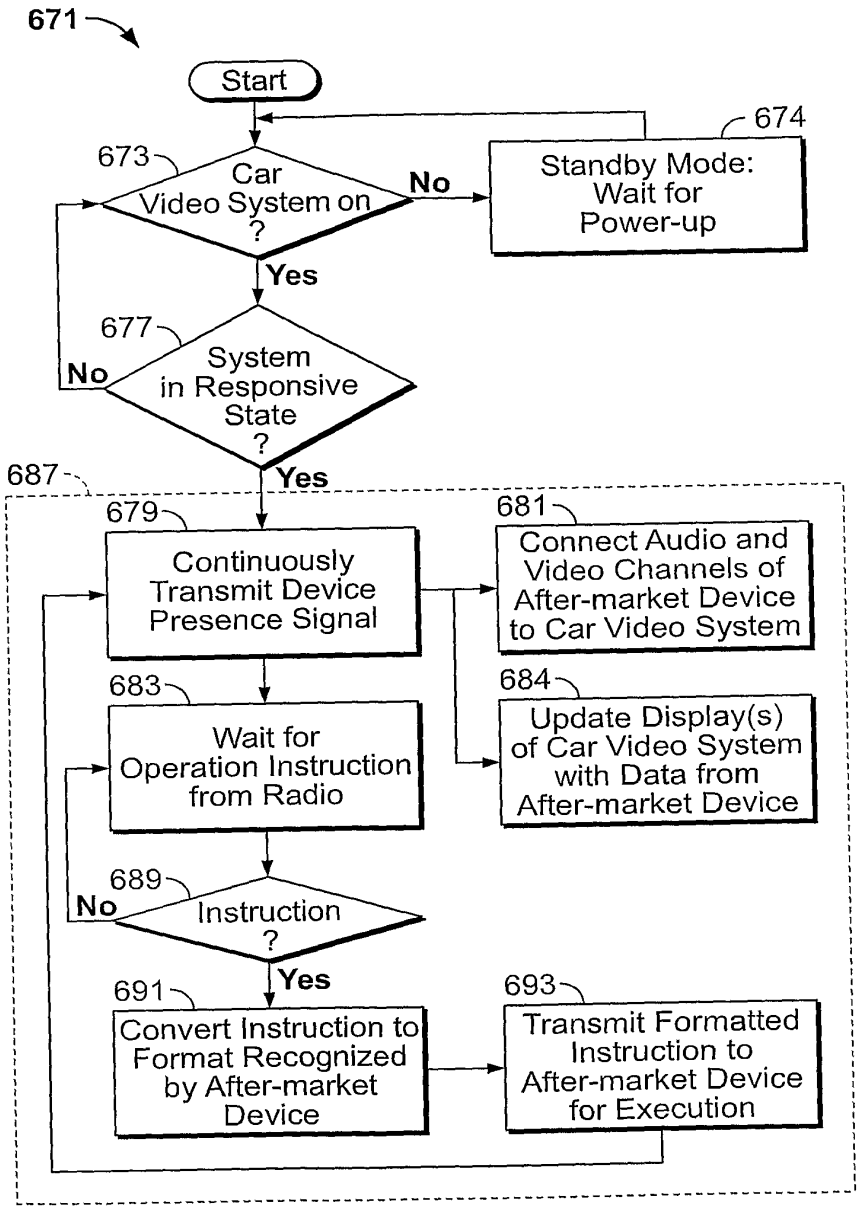
671
Start
673
Car Video System on ?
No
674
Standby Mode: Wait for Power-up
Yes
677
System in Responsive State ?
No
Yes
687
679
Continuously Transmit Device Presence Signal
681
Connect Audio and Video Channels of After-market Device to Car Video System
683
Wait for Operation Instruction from Radio
684
Update Display(s) of Car Video System with Data from After-market Device
689
Instruction ?
No
Yes
691
Convert Instruction to Format Recognized by After-market Device
693
Transmit Formatted Instruction to After-market Device for Execution

FIG. 12B

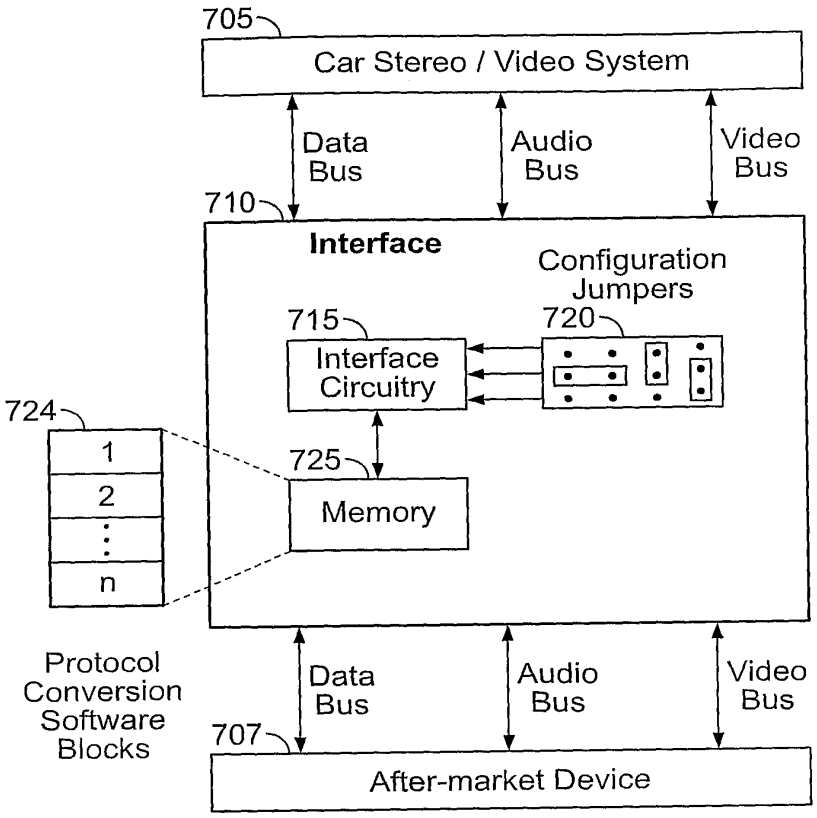

FIG. 13A

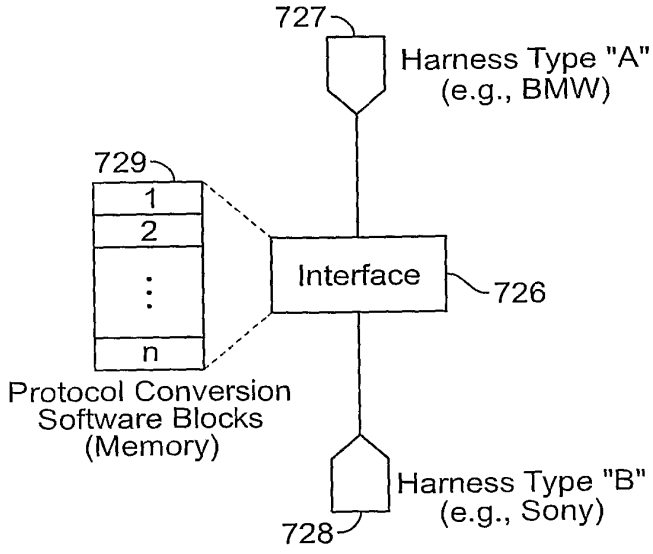

FIG. 13B

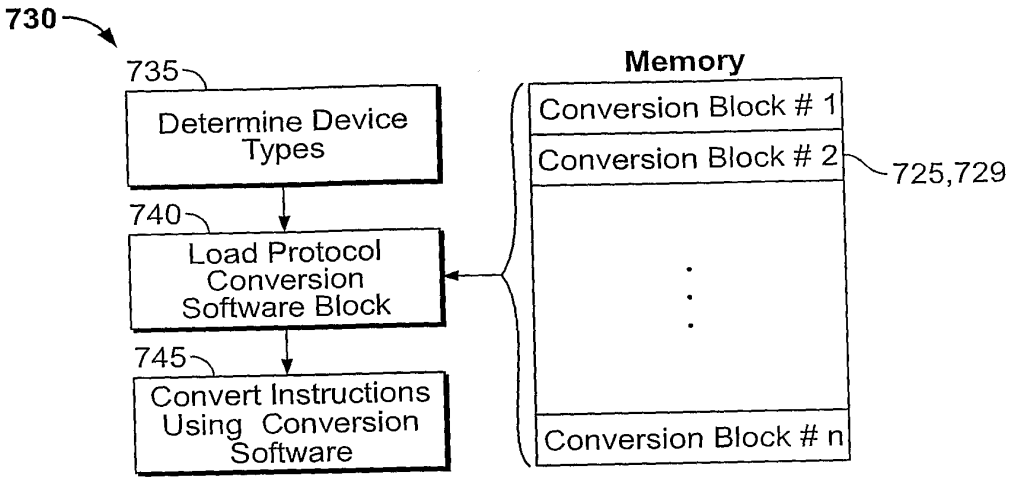
730
735
Determine Device Types
740
Load Protocol Conversion Software Block
745
Convert Instructions Using Conversion Software
Memory
Conversion Block # 1
Conversion Block # 2
725,729
Conversion Block # n

FIG. 14

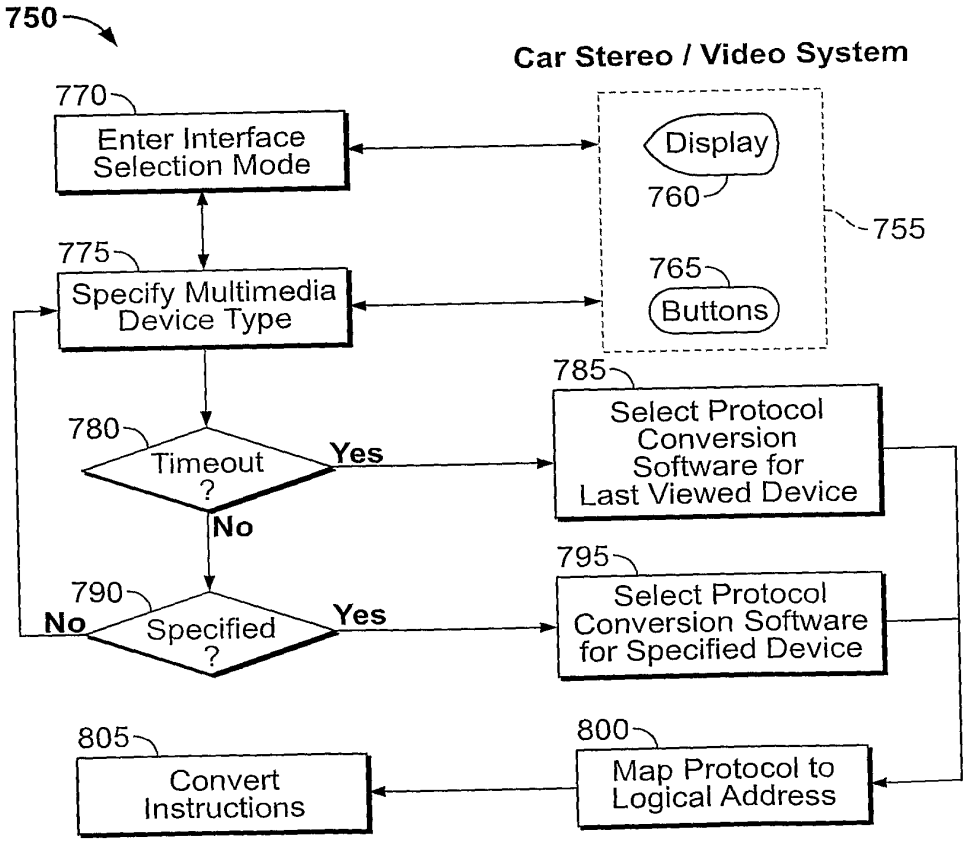
750
Car Stereo / Video System
770
Enter Interface Selection Mode
775
Specify Multimedia Device Type
Display
760
755
765
Buttons
780
Timeout ?
Yes
No
785
Select Protocol Conversion Software for Last Viewed Device
790
Specified ?
No
Yes
795
Select Protocol Conversion Software for Specified Device
805
Convert Instructions
800
Map Protocol to Logical Address

FIG. 15

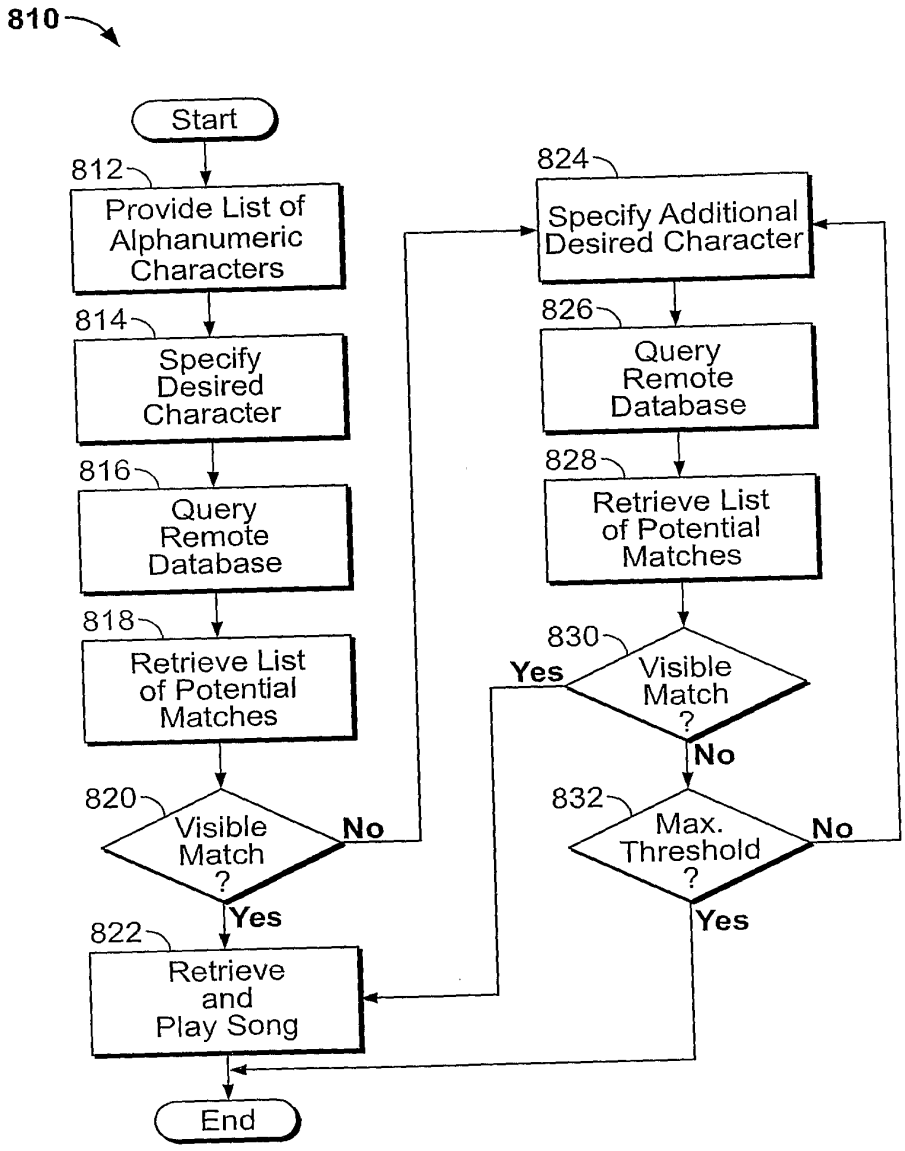
810
Start
812
Provide List of Alphanumeric Characters
814
Specify Desired Character
816
Query Remote Database
818
Retrieve List of Potential Matches
820
Visible Match ?
No
Yes
822
Retrieve and Play Song
End
824
Specify Additional Desired Character
826
Query Remote Database
828
Retrieve List of Potential Matches
830
Visible Match ?
Yes
No
832
Max. Threshold ?
No
Yes

FIG. 16

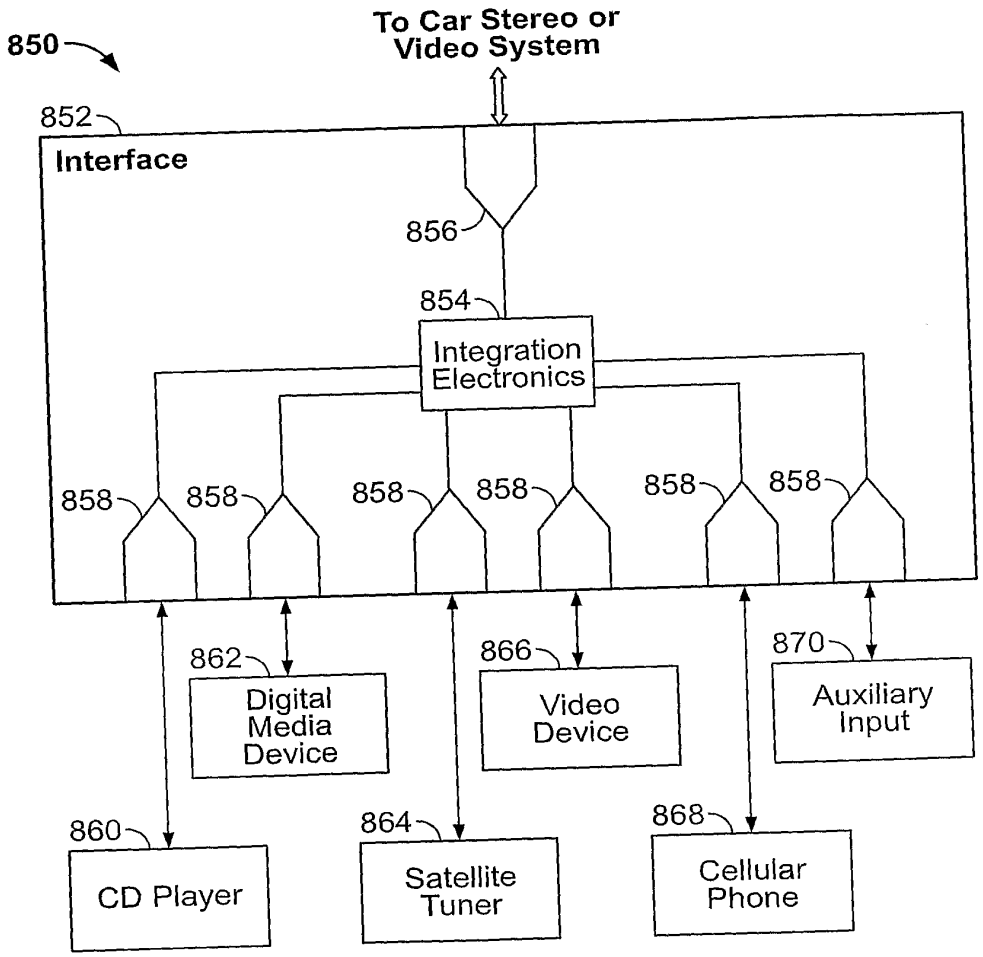
850
To Car Stereo or Video System
852
Interface
856
854
Integration Electronics
858
858
858
858
858
858
862
Digital Media Device
866
Video Device
870
Auxiliary Input
860
CD Player
864
Satellite Tuner
868
Cellular Phone

FIG. 17

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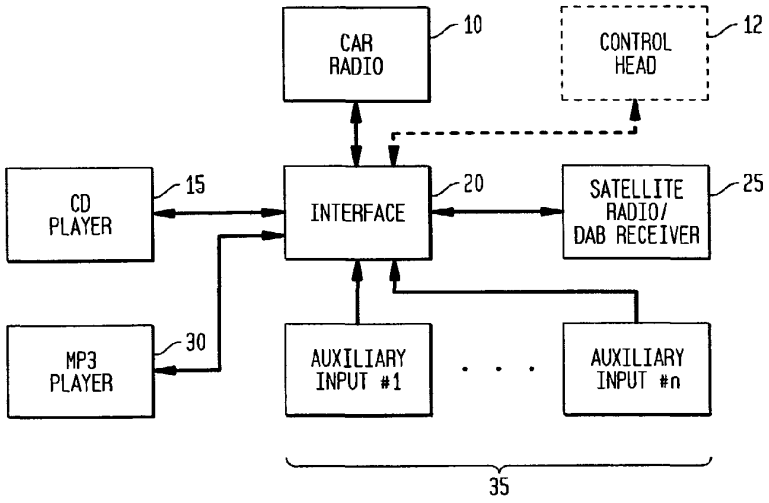

(57) Abstract: An audio device integration system is provided. One or more after-market audio devices, such as a CD player (15), CD changer, MP3 player (30), satellite receiver (25), DAB receiver (25), or the like, is integrated for use with an existing OEM or after-market car stereo system, wherein control commands can be issued at the car stereo (10) and responsive data from the audio device (15, 25, 30) can be displayed on the stereo. Control commands generated at the car stereo (10) are received, processed, converted into a format recognizable by the audio device (15, 25, 30), and dispatched to the audio device (15, 25, 30) for execution. Information from the audio device (15, 25, 30), including track, disc, song, station, time, and other information, is received, processed, converted into a format recognizable by the car stereo, and dispatched to the car stereo (10) for display thereon.

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

AUDIO DEVICE INTEGRATION SYSTEM

SPECIFICATION

BACKGROUND OF THE INVENTION

FIELD OF THE INVENTION

The present invention relates to an audio device integration system. More specifically, the present invention relates to an audio device integration system for integrating after-market components such as satellite receivers, CD players, CD changers, MP3 players, Digital Audio Broadcast (DAB) receivers, auxiliary audio sources, and the like with factory-installed (OEM) or after-market car stereo systems.

RELATED ART

Automobile audio systems have continued to advance in complexity and the number of options available to automobile purchasers. Early audio systems offered a simple AM and/or FM tuner, and perhaps an analog tape deck for allowing cassettes, 8-tracks, and other types of tapes to be played while driving. Such early systems were closed, in that external devices could not be easily integrated therewith.

With advances in digital technology, CD players have been included with automobile audio systems. Original Equipment Manufacturers (OEMs) often produce car stereos having CD players and/or changers for allowing CDs to be played while driving. However, such systems often include proprietary buses and protocols that do not allow after-market audio systems, such as satellite receivers (e.g., XM satellite tuners), digital audio broadcast (DAB) receivers, MP3 players, CD changers, auxiliary input sources, and the like, to be easily integrated therewith. Thus, automobile purchasers are frequently forced to either entirely replace the OEM audio system, or use same throughout the life of the vehicle or the duration of ownership. Even if the OEM radio is replaced with an after-market radio, the after-market radio also frequently is not operable with an external device.

A particular problem with integrating after-market audio systems with existing car stereos is that signals generated by the car stereo is in a proprietary format, and is not capable of being processed by the after-market system. Additionally, signals

generated by the after-market system are also in a proprietary format that is not recognizable by the car stereo. Thus, in order to integrate after-market systems with car stereos, it is necessary to convert signals between such systems.

It known in the art to provide one or more expansion modules for OEM and after-market car stereos for allowing external audio products to be integrated with the car stereo. However, such expansion modules only operate with and allow integration of external audio products manufactured by the same manufacturer as the OEM / after-market car stereo. For example, a satellite receiver manufactured by PIONEER, Inc., cannot be integrated with an OEM car radio manufactured by TOYOTA or an after-market car radio manufactured by CLARION, Inc. Thus, existing expansion modules only serve the limited purpose of integrating equipment by the same manufacturer as the car stereo. Thus, it would be desirable to provide an integration system that allows any audio device of any manufacture to be integrated with any OEM or after-market radio system.

Moreover, it would be desirable to provide an integration system that not only achieves integration of various audio devices that are alien to a given OEM or after-market stereo system, but also allows for information to be exchanged between the after-market device and the car stereo. For example, it would be desirable to provide a system wherein station, track, time, and song information can be retrieved from the after-market device, formatted, and transmitted to the car stereo for display thereby, such as at an LCD panel of the car stereo. Such information could be transmitted and displayed on both hardwired radio systems (*e.g.*, radios installed in dashboards or at other locations within the car), or integrated for display on one or more software or graphically-driven radio systems operable with graphical display panels. Additionally, it would be desirable to provide an audio integration system that allows a user to control more than one device, such as a CD or satellite receiver and one or more auxiliary sources, and to quickly and conveniently switch between same using the existing controls of the car stereo.

Accordingly, the present invention addresses these needs by providing an audio integration system that allows a plurality of audio devices, such as CD players, CD changers, MP3 players, satellite receivers, DAB receivers, auxiliary input sources,

or a combination thereof, to be integrated into existing car stereos while allowing information to be displayed on, and control to be provided from, the car stereo.

SUMMARY OF THE INVENTION

The present invention relates to an audio device integration system. One or more after-market audio devices, such as a CD player, CD changer, MP3 player, satellite receiver (e.g., XM tuner), digital audio broadcast (DAB) receiver, or auxiliary input source, can be connected to and operate with an existing stereo system in an automobile, such as an OEM car stereo system or an after-market car stereo system installed in the automobile. The integration system connects to and interacts with the car stereo at any available port of the car stereo, such as a CD input port, a satellite input, or other known type of connector. If the car stereo system is an after-market car stereo system, the present invention generates a signal that is sent to the car stereo to keep same in an operational state and responsive to external data and signals. Commands generated at the control panel are received by the present invention and converted into a format recognizable by the after-market audio device. The formatted commands are executed by the audio device, and audio therefrom is channeled to the car stereo. Information from the audio device is received by the present invention, converted into a format recognizable by the car stereo, and forwarded to the car stereo for display thereby. The formatted information could include information relating to a CD or MP3 track being played, channel, song, and artist information from a satellite receiver or DAB receiver, or video information from one or more external devices connected to the present invention. The information can be presented as one or more menus, textual, or graphical prompts for display on an LCD display of the radio, allowing interaction with the user at the radio. A docking port is provided for allowing portable external audio devices to be connected to the interface of the present invention.

In an embodiment of the present invention, a dual-input device is provided for integrating both an external audio device and an auxiliary input with an OEM or after-market car stereo. The user can select between the external audio device and the auxiliary input using the controls of the car stereo. The invention can automatically detect the type of device connected to the auxiliary input, and integrate same with the car stereo.

In another embodiment of the present invention, an interface is provided for integrating a plurality of auxiliary input sources with an existing car stereo system. A

user can select between the auxiliary sources using the control panel of the car stereo. One or more after-market audio devices can be integrated with the auxiliary input sources, and a user can switch between the audio device and the auxiliary input sources using the car stereo. Devices connected to the auxiliary input sources are inter-operable with the car stereo, and are capable of exchanging commands and data via the interface.

BRIEF DESCRIPTION OF THE DRAWINGS

These and other important objects and features of the invention will be apparent from the following Detailed Description of the Invention, taken in connection with the accompanying drawings, in which:

FIG. 1 is a block diagram showing the audio device integration system of the present invention.

FIG. 2a is a block diagram showing an alternate embodiment of the audio device integration system of the present invention, wherein a CD player is integrated with a car radio.

FIG. 2b is a block diagram showing an alternate embodiment of the audio device integration system of the present invention, wherein a MP3 player is integrated with a car radio.

FIG. 2c is a block diagram showing an alternate embodiment of the audio device integration system of the present invention, wherein a satellite or DAB receiver is integrated with a car radio.

FIG. 2d is a block diagram showing an alternate embodiment of the audio device integration system of the present invention, wherein a plurality of auxiliary input sources are integrated with a car radio.

FIG. 2e is a block diagram showing an alternate embodiment of the audio device integration system of the present invention, wherein a CD player and a plurality of auxiliary input sources are integrated with a car radio.

FIG. 2f is a block diagram showing an alternate embodiment of the present invention, wherein a satellite or DAB receiver and a plurality of auxiliary input source are integrated with a car radio.

FIG. 2g is a block diagram showing an alternate embodiment of the present invention, wherein a MP3 player and a plurality of auxiliary input sources are integrated with a car radio.

FIG. 2h is a block diagram showing an alternate embodiment of the present invention, wherein a plurality of auxiliary interfaces and an audio device are integrated with a car stereo.

FIG. 3a is a circuit diagram showing a device according to the present invention for integrating a CD player or an auxiliary input source with a car radio.

FIG. 3b is a circuit diagram showing a device according to the present invention for integrating both a CD player and an auxiliary input source with a car radio, wherein the CD player and the auxiliary input are switchable by a user.

FIG. 3c is a circuit diagram showing a device according to the present invention for integrating a plurality of auxiliary input sources with a car radio.

FIG. 3d is a circuit diagram showing a device according to the present invention for integrating a satellite or DAB receiver with a car radio.

FIG. 4a is a flowchart showing processing logic according to the present invention for integrating a CD player with a car radio.

FIG. 4b is a flowchart showing processing logic according to the present invention for integrating a MP3 player with a car radio.

FIG. 4c is a flowchart showing processing logic according to the present invention for integrating a satellite receiver with a car radio.

FIG. 4d is a flowchart showing processing logic according to the present invention for integrating a plurality of auxiliary input sources with a car radio.

FIG. 4e is a flowchart showing processing logic according to the present invention for integrating a CD player and one or more auxiliary input sources with a car radio.

FIG. 4f is a flowchart showing processing logic according to the present invention for integrating a satellite or DAB receiver and one or more auxiliary input sources with a car radio.

FIG. 4g is a flowchart showing processing logic according to the present invention for integrating a MP3 player and one or more auxiliary input sources with a car stereo.

FIG. 5 is a flowchart showing processing logic according to the present invention for allowing a user to switch between an after-market audio device and one or more auxiliary input sources.

FIG. 6 is a flowchart showing processing logic according to the present invention for determining and handling various device types connected to the auxiliary input ports of the invention.

FIG. 7a is a perspective view of a docking station according to the present invention for retaining an audio device within a car.

FIG. 7b is an end view of the docking station of **FIG. 7a**.

FIGS. 8a-8b are perspective views of another embodiment of the docking station of the present invention, which includes the audio device integration system of the present invention incorporated therewith.

FIG. 9 is a block diagram showing the components of the docking station of **FIGS. 8a-8b**.

DETAILED DESCRIPTION OF THE INVENTION

The present invention relates to an audio device integration system. One or more after-market audio devices, such as a CD player, CD changer, MP3 player, satellite receiver, digital audio broadcast (DAB) receiver, or the like, can be integrated with an existing car radio, such as an OEM car stereo or an after-market car stereo. Control of the audio device is enabled using the car radio, and information from the audio device, such as channel, artist, track, time, and song information, is retrieved form the audio device, processed, and forwarded to the car radio for display thereon. The information channeled to the car radio can include video from the external device, as well as graphical and menu-based information. A user can review and interact with information via the car stereo. Commands from the car radio are received, processed by the present invention into a format recognizable by the audio device, and transmitted thereto for execution. One or more auxiliary input channels can be integrated by the present invention with the car radio. The user can switch between one or more audio devices and one or more auxiliary input channels using the control panel buttons of the car radio.

As used herein, the term "integration" or "integrated" is intended to mean connecting one or more external devices or inputs to an existing car radio or stereo via an interface, processing and handling signals and audio channels, allowing a user to control the devices via the car stereo, and displaying data from the devices on the radio. Thus, for example, integration of a CD player with a car stereo system allows for the CD player to be remotely controlled via the control panel of the stereo system, and data from the CD player to be sent to the display of the stereo. Of course, control of audio devices can be provided at locations other than the control panel of the radio without departing from the spirit or scope of the present invention. Further, as used herein, the term "inter-operable" is intended to mean allowing the external audio device to receive and process commands that have been formatted by the interface of the present invention, as well as allowing a car stereo to display information that is generated by the external audio device and processed by the present invention. Additionally, by the term "inter-operable," it is meant allowing a device that is alien to the environment of an existing OEM or after-market car stereo to be utilized thereby.

Also, as used herein, the terms "car stereo" and "car radio" are used interchangeably and are intended to include all presently existing car stereos and radios, such as physical devices that are present at any location within a vehicle, in addition to software and/or graphically- or display-driven receivers. An example of such a receiver is a software-driven receiver that operates on a universal LCD panel within a vehicle and is operable by a user via a graphical user interface displayed on the universal LCD panel. Further, any future receiver, whether a hardwired or a software/graphical receiver operable on one or more displays, is considered within the definition of the terms "car stereo" and "car radio," as used herein, and is within the spirit and scope of the present invention.

FIG. 1 is a block diagram showing the audio device integration (or interface) system of the present invention, generally indicated at **20**. A plurality of devices and auxiliary inputs can be connected to the interface **20**, and integrated with an OEM or after-market car radio **10**. A CD player or changer **15** can be integrated with the radio **10** via interface **20**. A satellite radio or DAB receiver **25**, such as an XM radio satellite receiver or DAB receiver known in the art, could be integrated with the radio **10**, via the interface **20**. Further, an MP3 player could also be integrated with the radio **10** via interface **20**. Moreover, a plurality of auxiliary input sources, illustratively indicated as auxiliary input sources **35** (comprising input sources 1 through *n*, *n* being any number), could also be integrated with the car radio **10** via interface **20**. Optionally, a control head **12**, such as that commonly used with after-market CD changers and other similar devices, could be integrated with the car radio **10** via interface **20**, for controlling any of the car radio **10**, CD player/changer **15**, satellite/DAB receiver **25**, MP3 player **30**, and auxiliary input sources **35**. Thus, as can be readily appreciated, the interface **20** of the present invention allows for the integration of a multitude of devices and inputs with an OEM or after-market car radio or stereo.

FIG. 2a is a block diagram of an alternate embodiment of the audio device interface system of the present invention, wherein a CD player/changer **15** is integrated with an OEM or after-market car radio **10**. The CD player **15** is electrically connected with the interface **20**, and exchanges data and audio signals therewith. The interface **20** is electrically connected with the car radio **10**, and exchanges data and

audio signals therewith. In a preferred embodiment of the present invention, the car radio **10** includes a display **13** (such as an alphanumeric, electroluminescent display) for displaying information, and a plurality of control panel buttons **14** that normally operate to control the radio **10**. The interface **20** allows the CD player **15** to be controlled by the control buttons **14** of the radio **10**. Further, the interface **20** allows information from the CD player **15**, such as track, disc, time, and song information, to be retrieved therefrom, processed and formatted by the interface **20**, sent to the display **13** of the radio **10**.

Importantly, the interface **20** allows for the remote control of the CD player **15** from the radio **10** (e.g., the CD player **15** could be located in the trunk of a car, while the radio **10** is mounted on the dashboard of the car). Thus, for example, one or more discs stored within the CD player **15** can be remotely selected by a user from the radio **10**, and tracks on one or more of the discs can be selected therefrom. Moreover, standard CD operational commands, such as pause, play, stop, fast forward, rewind, track forward, and track reverse (among other commands) can be remotely entered at the control panel buttons **14** of the radio **10** for remotely controlling the CD player **15**.

FIG. 2b is a block diagram showing an alternate embodiment of the present invention, wherein an MP3 player **30** is integrated with an OEM or after-market car radio **10** via interface **20**. As mentioned earlier, the interface **20** of the present invention allows for a plurality of disparate audio devices to be integrated with an existing car radio for use therewith. Thus, as shown in **FIG. 2b**, remote control of the MP3 player **30** via radio **10** is provided for via interface **20**. The MP3 player **30** is electronically interconnected with the interface **20**, which itself is electrically interconnected with the car radio **10**. The interface **20** allows data and audio signals to be exchanged between the MP3 player **30** and the car radio **10**, and processes and formats signals accordingly so that instructions and data from the radio **10** are processable by the MP3 player **30**, and vice versa. Operational commands, such as track selection, pause, play, stop, fast forward, rewind, and other commands, are entered via the control panel buttons **14** of car radio **10**, processed by the interface **20**, and formatted for execution by the MP3 player **30**. Data from the MP3 player, such as track, time, and song information, is received by the interface **20**, processed thereby,

and sent to the radio **10** for display on display **13**. Audio from the MP3 player **30** is selectively forwarded by the interface **20** to the radio **10** for playing.

FIG. 2c is a block diagram showing an alternate embodiment of the present invention, wherein a satellite receiver or DAB receiver **25** is integrated with an OEM or after-market car radio **10** via the interface **20**. Satellite/DAB receiver **25** can be any satellite radio receiver known in the art, such as XM or Sirius, or any DAB receiver known in the art. The satellite/DAB receiver **25** is electrically interconnected with the interface **20**, which itself is electrically interconnected with the car radio **10**. The satellite/DAB receiver **25** is remotely operable by the control panel buttons **14** of the radio **10**. Commands from the radio **10** are received by the interface **20**, processed and formatted thereby, and dispatched to the satellite/DAB receiver **25** for execution thereby. Information from the satellite/DAB receiver **25**, including time, station, and song information, is received by the interface **20**, processed, and transmitted to the radio **10** for display on display **13**. Further, audio from the satellite/DAB receiver **25** is selectively forwarded by the interface **20** for playing by the radio **10**.

FIG. 2d is a block diagram showing an alternate embodiment of the present invention, wherein one or more auxiliary input sources **35** are integrated with an OEM or after-market car radio **10**. The auxiliary inputs **35** can be connected to analog sources, or can be digitally coupled with one or more audio devices, such as after-market CD players, CD changers, MP3 players, satellite receivers, DAB receivers, and the like, and integrated with an existing car stereo. Preferably, four auxiliary input sources are connectable with the interface **20**, but any number of auxiliary input sources could be included. Audio from the auxiliary input sources **35** is selectively forwarded to the radio **10** under command of the user. As will be discussed herein in greater detail, a user can select a desired input source from the auxiliary input sources **35** by depressing one or more of the control panel buttons **14** of the radio **10**. The interface **20** receives the command initiated from the control panel, processes same, and connects the corresponding input source from the auxiliary input sources **35** to allow audio therefrom to be forwarded to the radio **10** for playing. Further, the interface **20** determines the type of audio devices connected to the auxiliary input ports **35**, and integrates same with the car stereo **10**.

As mentioned previously, the present invention allows one or more external audio devices to be integrated with an existing OEM or after-market car stereo, along with one or more auxiliary input sources, and the user can select between these sources using the controls of the car stereo. Such "dual input" capability allows operation with devices connected to either of the inputs of the device, or both. Importantly, the device can operate in "plug and play" mode, wherein any device connected to one of the inputs is automatically detected by the present invention, its device type determined, and the device automatically integrated with an existing OEM or after-market car stereo. Thus, the present invention is not dependent any specific device type to be connected therewith to operate. For example, a user can first purchase a CD changer, plug same into a dual interface, and use same with the car stereo. At a point later in time, the user could purchase an XM tuner, plug same into the device, and the tuner will automatically be detected and integrated with the car stereo, allowing the user to select from and operate both devices from the car stereo. It should be noted that such plug and play capability is not limited to a dual input device, but is provided for in every embodiment of the present invention. The dual-input configuration of the preset invention is illustrated in **FIGS. 2e-2h** and described below.

FIG. 2e is a block diagram showing an alternate embodiment of the present invention, wherein an external CD player/changer **15** and one or more auxiliary input sources **35** are integrated with an OEM or after-market car stereo **10**. Both the CD player **15** and one or more of the auxiliary input sources **35** are electrically interconnected with the interface **20**, which, in turn, is electrically interconnected to the radio **10**. Using the controls **14** of the radio **10**, a user can select between the CD player **15** and one or more of the inputs **35** to selectively channel audio from these sources to the radio. The command to select from one of these sources is received by the interface **20**, processed thereby, and the corresponding source is channeled to the radio **10** by the interface **20**. As will be discussed later in greater detail, the interface **20** contains internal processing logic for selecting between these sources.

FIG. 2f is a block diagram of an alternate embodiment of the present invention, wherein a satellite receiver or DAB receiver and one or more auxiliary input sources are integrated by the interface **20** with an OEM or after-market car radio

10. Similar to the embodiment of the present invention illustrated in **FIG. 2e** and described earlier, the interface **20** allows a user to select between the satellite/DAB receiver **25** and one or more of the auxiliary input sources **35** using the controls **14** of the radio **10**. The interface **20** contains processing logic, described in greater detail below, for allowing switching between the satellite/DAB receiver **25** and one or more of the auxiliary input sources **35**.

FIG. 2g is a block diagram of an alternate embodiment of the present invention, wherein a MP3 player **30** and one or more auxiliary input sources **35** are integrated by the interface **20** with an OEM or after-market car radio **10**. Similar to the embodiments of the present invention illustrated in **FIGS. 2e** and **2f** and described earlier, the interface **20** allows a user to select between the MP3 player **30** and one or more of the auxiliary input sources **35** using the controls **14** of the radio **10**. The interface **20** contains processing logic, as will be discussed later in greater detail, for allowing switching between the MP3 player **30** and one or more of the auxiliary input sources **35**.

FIG. 2h is a block diagram showing an alternate embodiment of the present invention, wherein a plurality of auxiliary interfaces **40** and **44** and an audio device **17** are integrated with an OEM or after-market car stereo **10**. Importantly, the present invention can be expanded to allow a plurality of auxiliary inputs to be connected to the car stereo **10** in a tree-like fashion. Thus, as can be seen in **FIG. 2h**, a first auxiliary interface **40** is connected to the interface **20**, and allows data and audio from the ports **42** to be exchanged with the car radio **10**. Connected to one of the ports **42** is another auxiliary interface **44**, which, in turn, provides a plurality of input ports **46**. Any device connected to any of the ports **42** or **46** can be integrated with the car radio **10**. Further, any device connected to the ports **42** or **46** can be inter-operable with the car radio **10**, allowing commands to be entered from the car radio **10** (*e.g.*, such as via the control panel **14**) for commanding the device, and information from the device to be displayed by the car radio **10**. Conceivably, by configuring the interfaces **40**, **44**, and successive interfaces in a tree configuration, any number of devices can be integrated using the present invention.

The various embodiments of the present invention described above and shown in **FIGS. 1** through **2h** are illustrative in nature and are not intended to limit the spirit

or scope of the present invention. Indeed, any conceivable audio device or input source, in any desired combination, can be integrated by the present invention into existing car stereo systems. Further, it is conceivable that not only can data and audio signals be exchanged between the car stereo and any external device, but also video information that can be captured by the present invention, processed thereby, and transmitted to the car stereo for display thereby and interaction with a user thereat.

Various circuit configurations can be employed to carry out the present invention. Examples of such configurations are described below and shown in **FIGS. 3a-3d**.

FIG. 3a is an illustrative circuit diagram according to the present invention for integrating a CD player or an auxiliary input source with an existing car stereo system. A plurality of ports **J1C1, J2A1, X2, RCH,** and **LCH** are provided for allowing connection of the interface system of the present invention between an existing car radio, an after-market CD player or changer, or an auxiliary input source. Each of these ports could be embodied by any suitable electrical connector known in the art. Port **J1C1** connects to the input port of an OEM car radio, such as that manufactured by TOYOTA, Inc. Conceivably, port **J1C1** could be modified to allow connection to the input port of an after-market car radio. Ports **J2A1, X2, RCH,** and **LCH** connect to an after-market CD changer, such as that manufactured by PANASONIC, Inc., or to an auxiliary input source.

Microcontroller **U1** is in electrical communication with each of the ports **J1C1, J2A1**, and **X2**, and provides functionality for integrating the CD player or auxiliary input source connected to the ports **J2A1, X2, RCH,** and **LCH**. For example, microcontroller **U1** receives control commands, such as button or key sequences, initiated by a user at control panel of the car radio and received at the connector **J1C1**, processes and formats same, and dispatches the formatted commands to the CD player or auxiliary input source via connector **J2A1**. Additionally, the microcontroller **U1** receives information provided by the CD player or auxiliary input source via connector **J2A1**, processes and formats same, and transmits the formatted data to the car stereo via connector **J1C1** for display on the display of the car stereo. Audio signals provided at the ports **J2A1, X2, RCH** and **LCH** is selectively channeled to the

car radio at port **J1C1** under control of one or more user commands and processing logic, as will be discussed in greater detail, embedded within microcontroller **U1**.

In a preferred embodiment of the present invention, the microcontroller **U1** comprises the 16F628 microcontroller manufactured by MICROCHIP, Inc. The 16F628 chip is a CMOS, flash-based, 8-bit microcontroller having an internal, 4 MHz internal oscillator, 128 bytes of EEPROM data memory, a capture/compare/PWM, a USART, 2 comparators, and a programmable voltage reference. Of course, any suitable microcontroller known in the art can be substituted for microcontroller **U1** without departing from the spirit or scope of the present invention.

A plurality of discrete components, such as resistors **R1** through **R13**, diodes **D1** through **D4**, capacitors **C1** and **C2**, and oscillator **Y1**, among other components, are provided for interfacing the microcontroller **U1** with the hardware connected to the connectors **J1C1, J2A1, X2, RCH**, and **LCH**. These components, as will be readily appreciated to one of ordinary skill in the art, can be arranged as desired to accommodate a variety of microcontrollers, and the numbers and types of discrete components can be varied to accommodate other similar controllers. Thus, the circuit shown in **FIG. 3a** and described herein is illustrative in nature, and modifications thereof are considered to be within the spirit and scope of the present invention.

FIG. 3b is a diagram showing an illustrative circuit configuration according to the present invention, wherein one or more after-market CD changers / players and an auxiliary input source are integrated with an existing car stereo, and wherein the user can select between the CD changer/player and the auxiliary input using the controls of the car stereo. A plurality of connectors are provided, illustratively indicated as ports **J4A, J4B, J3, J5L1, J5R1, J1,** and **J2**. Ports **J4A, J4B,** and **J3** allow the audio device interface system of the present invention to be connected to one or more existing car stereos, such as an OEM car stereo or an after-market car stereo. Each of these ports could be embodied by any suitable electrical connector known in the art. For example, ports **J4A** and **J4B** can be connected to an OEM car stereo manufactured by BMW, Inc. Port **J3** can be connected to a car stereo manufactured by LANDROVER, Inc. Of course, any number of car stereos, by any manufacturer, could be provided. Ports **J1** and **J2** allow connection to an after-market CD changer or player, such as that manufactured by ALPINE, Inc., and an auxiliary input source.

Optionally, ports **J5L1** and **J5R1** allow integration of a standard analog (line-level) source. Of course, a single standalone CD player or auxiliary input source could be connected to either of ports **J1** or **J2**.

Microcontroller **DD1** is in electrical communication with each of the ports **J4A**, **J4B**, **J3**, **J5L1**, **J5R1**, **J1**, and **J2**, and provides functionality for integrating the CD player and auxiliary input source connected to the ports **J1** and **J2** with the car stereo connected to the ports **J4A** and **J4B** or **J3**. For example, microcontroller **DD1** receives control commands, such as button or key sequences, initiated by a user at control panel of the car radio and received at the connectors **J4A** and **J4B** or **J3**, processes and formats same, and dispatches the formatted commands to the CD player and auxiliary input source via connectors **J1** or **J2**. Additionally, the microcontroller **DD1** receives information provided by the CD player and auxiliary input source via connectors **J1** or **J2**, processes and formats same, and transmits the formatted data to the car stereo via connectors **J4A** and **J4B** or **J3** for display on the display of the car stereo. Further, the microcontroller **DD1** controls multiplexer **DA3** to allow selection between the CD player/changer and the auxiliary input. Audio signals provided at the ports **J1, J2, J5L1** and **J5R1** is selectively channeled to the car radio at ports **J4A** and **J4B** or **J3** under control of one or more user commands and processing logic, as will be discussed in greater detail, embedded within microcontroller **DD1**.

In a preferred embodiment of the present invention, the microcontroller **DD1** comprises the 16F872 microcontroller manufactured by MICROCHIP, Inc. The 16F872 chip is a CMOS, flash-based, 8-bit microcontroller having 64 bytes of EEPROM data memory, self-programming capability, an ICD, 5 channels of 10 bit Analog-to-Digital (A/D) converters, 2 timers, capture/compare/PWM functions, a USART, and a synchronous serial port configurable as either a 3-wire serial peripheral interface or a 2-wire inter-integrated circuit bus. Of course, any suitable microcontroller known in the art can be substituted for microcontroller **DD1** without departing from the spirit or scope of the present invention. Additionally, in a preferred embodiment of the present invention, the multiplexer **DA3** comprises the CD4053 triple, two-channel analog multiplexer/demultiplexer manufactured by FAIRCHILD SEMICONDUCTOR, Inc. Any other suitable multiplexer can be substituted for **DA3** without departing from the spirit or scope of the present invention.

A plurality of discrete components, such as resistors **R1** through **R18**, diodes **D1** through **D3**, capacitors **C1-C11**, and **G1-G3**, transistors **Q1-Q3**, transformers **T1** and **T2**, amplifiers **LCH:A** and **LCH:B**, oscillator **XTAL1**, among other components, are provided for interfacing the microcontroller **DD1** and the multiplexer **DA3** with the hardware connected to the connectors **J4A, J4B, J3, J5L1, J5R1, J1,** and **J2**. These components, as will be readily appreciated to one of ordinary skill in the art, can be arranged as desired to accommodate a variety of microcontrollers and multiplexers, and the numbers and types of discrete components can be varied to accommodate other similar controllers and multiplexers. Thus, the circuit shown in **FIG. 3b** and described herein is illustrative in nature, and modifications thereof are considered to be within the spirit and scope of the present invention.

FIG. 3c is a diagram showing an illustrative circuit configuration for integrating a plurality of auxiliary inputs using the controls of the car stereo. A plurality of connectors are provided, illustratively indicated as ports **J1**, **RCH1**, **LCH1**, **RCH2**, **LCH2**, **RCH3**, **LCH3**, **RCH4**, and **LCH4**. Port **J1** allows the audio device integration system of the present invention to be connected to one or more existing car stereos. Each of these ports could be embodied by any suitable electrical connector known in the art. For example, port **J1** could be connected to an OEM car stereo manufactured by HONDA, Inc., or any other manufacturer. Ports **RCH1**, **LCH1**, **RCH2**, **LCH2**, **RCH3**, **LCH3**, **RCH4**, and **LCH4** allow connection with the left and right channels of four auxiliary input sources. Of course, any number of auxiliary input sources and ports/connectors could be provided.

Microcontroller **U1** is in electrical communication with each of the ports **J1**, **RCH1**, **LCH1**, **RCH2**, **LCH2**, **RCH3**, **LCH3**, **RCH4**, and **LCH4**, and provides functionality for integrating one or more auxiliary input sources connected to the ports **RCH1**, **LCH1**, **RCH2**, **LCH2**, **RCH3**, **LCH3**, **RCH4**, and **LCH4** with the car stereo connected to the port **J1**. Further, the microcontroller **U1** controls multiplexers **DA3** and **DA4** to allow selection amongst any of the auxiliary inputs using the controls of the car stereo. Audio signals provided at the ports **RCH1**, **LCH1**, **RCH2**, **LCH2**, **RCH3**, **LCH3**, **RCH4**, and **LCH4** are selectively channeled to the car radio at port **J1** under control of one or more user commands and processing logic, as will be discussed in greater detail, embedded within microcontroller **U1**. In a preferred

embodiment of the present invention, the microcontroller **U1** comprises the 16F872 microcontroller discussed earlier. Additionally, in a preferred embodiment of the present invention, the multiplexers **DA3** and **DA4** comprises the CD4053 triple, two-channel analog multiplexer/demultiplexer, discussed earlier. Any other suitable microcontroller and multiplexers can be substituted for **U1, DA3,** and **DA4** without departing from the spirit or scope of the present invention.

A plurality of discrete components, such as resistors **R1** through **R15**, diodes **D1** through **D3**, capacitors **C1-C5,** transistors **Q1-Q2,** amplifiers **DA1:A** and **DA1:B,** and oscillator **Y1**, among other components, are provided for interfacing the microcontroller **U1** and the multiplexers **DA3** and **DA4** with the hardware connected to the ports **J1**, **RCH1**, **LCH1**, **RCH2**, **LCH2**, **RCH3, LCH3, RCH4,** and **LCH4**. These components, as will be readily appreciated to one of ordinary skill in the art, can be arranged as desired to accommodate a variety of microcontrollers and multiplexers, and the numbers and types of discrete components can be varied to accommodate other similar controllers and multiplexers. Thus, the circuit shown in **FIG. 3c** and described herein is illustrative in nature, and modifications thereof are considered to be within the spirit and scope of the present invention.

FIG. 3d is an illustrative circuit diagram according to the present invention for integrating a satellite receiver with an existing OEM or after-market car stereo system. Ports **J1** and **J2** are provided for allowing connection of the integration system of the present invention between an existing car radio and a satellite receiver. These ports could be embodied by any suitable electrical connector known in the art. Port **J2** connects to the input port of an existing car radio, such as that manufactured by KENWOOD, Inc. Port **1** connects to an after-market satellite receiver, such as that manufactured by PIONEER, Inc.

Microcontroller **U1** is in electrical communication with each of the ports **J1** and **J2**, and provides functionality for integrating the satellite receiver connected to the port **J1** with the car stereo connected to the port **J2**. For example, microcontroller **U1** receives control commands, such as button or key sequences, initiated by a user at control panel of the car radio and received at the connector **J2**, processes and formats same, and dispatches the formatted commands to the satellite receiver via connector **J2**. Additionally, the microcontroller **U1** receives information provided by the

satellite receiver via connector **J1**, processes and formats same, and transmits the formatted data to the car stereo via connector **J2** for display on the display of the car stereo. Audio signals provided at the port **J1** is selectively channeled to the car radio at port **J2** under control of one or more user commands and processing logic, as will be discussed in greater detail, embedded within microcontroller **U1**.

In a preferred embodiment of the present invention, the microcontroller **U1** comprises the 16F873 microcontroller manufactured by MICROCHIP, Inc. The 16F873 chip is a CMOS, flash-based, 8-bit microcontroller having 128 bytes of EEPROM data memory, self-programming capability, an ICD, 5 channels of 10 bit Analog-to-Digital (A/D) converters, 2 timers, 2 capture/compare/PWM functions, a synchronous serial port that can be configured as a either a 3-wire serial peripheral interface or a 2-wire inter-integrated circuit bus, and a USART. Of course, any suitable microcontroller known in the art can be substituted for microcontroller **U1** without departing from the spirit or scope of the present invention.

A plurality of discrete components, such as resistors **R1** through **R7**, capacitors **C1** and **C2**, and amplifier **A1**, among other components, are provided for interfacing the microcontroller **U1** with the hardware connected to the connectors **J1** and **J2**. These components, as will be readily appreciated to one of ordinary skill in the art, can be arranged as desired to accommodate a variety of microcontrollers, and the numbers and types of discrete components can be varied to accommodate other similar controllers. Thus, the circuit shown in **FIG. 3d** and described herein is illustrative in nature, and modifications thereof are considered to be within the spirit and scope of the present invention.

FIGS. 4a through **6** are flowcharts showing processing logic according to the present invention. Such logic can be embodied as software and/or instructions stored in a read-only memory circuit (*e.g.*, and EEPROM circuit), or other similar device. In a preferred embodiment of the present invention, the processing logic described herein is stored in one or more microcontrollers, such as the microcontrollers discussed earlier with reference to **FIGS. 3a-3d**. Of course, any other suitable means for storing the processing logic of the present invention can be employed.

FIG. 4a is a flowchart showing processing logic, indicated generally at **100**, for integrating a CD player or changer with an existing OEM or after-market car

stereo system. Beginning in step **100**, a determination is made as to whether the existing car stereo is powered on. If a negative determination is made, step **104** is invoked, wherein the present invention enters a standby mode and waits for the car stereo to be powered on. If a positive determination is made, step **106** is invoked, wherein a second determination is made as to whether the car stereo is in CD player mode. If a negative determination is made, step **106** is re-invoked.

If a positive determination is made in step **106**, a CD handling process, indicated as block **108**, is invoked, allowing the CD player/changer to exchange data and audio signals with any existing car stereo system. Beginning in step **110**, a signal is generated by the present invention indicating that a CD player/changer is present, and the signal is continuously transmitted to the car stereo. Importantly, this signal prevents the car stereo from shutting off, entering a sleep mode, or otherwise being unresponsive to signals and/or data from an external source. If the car radio is an OEM car radio, the CD player presence signal need not be generated. Concurrently with step **110**, or within a short period of time before or after the execution of step **110**, steps **112** and **114** are invoked. In step **112**, the audio channels of the CD player/changer are connected (channeled) to the car stereo system, allowing audio from the CD player/changer to be played through the car stereo. In step **114**, data is retrieved by the present invention from the CD player/changer, including track and time information, formatted, and transmitted to the car stereo for display by the car stereo. Thus, information produced by the external CD player/changer can be quickly and conveniently viewed by a driver by merely viewing the display of the car stereo. After steps **110**, **112**, and **114** have been executed, control passes to step **116**.

In steps **116**, the present invention monitors the control panel buttons of the car stereo for CD operational commands. Examples of such commands include track forward, track reverse, play, stop, fast forward, rewind, track program, random track play, and other similar commands. In step **118**, if a command is not detected, step **116** is re-invoked. Otherwise, if a command is received, step **118** invokes step **120**, wherein the received command is converted into a format recognizable by the CD player/changer connected to the present invention. For example, in this step, a command issued from a GM car radio is converted into a format recognizable by a CD player/changer manufactured by ALPINE, Inc. Any conceivable command from any

type of car radio can be formatted for use by a CD player/changer of any type or manufacture. Once the command has been formatted, step **122** is invoked, wherein the formatted command is transmitted to the CD player/changer and executed. Step **110** is then re-invoked, so that additional processing can occur.

FIG. 4b is a flowchart showing processing logic, indicated generally at **130**, for integrating an MP3 player with an existing car stereo system. Beginning in step **132**, a determination is made as to whether the existing car stereo is powered on. If a negative determination is made, step **134** is invoked, wherein the present invention enters a standby mode and waits for the car stereo to be powered on. If a positive determination is made, step **136** is invoked, wherein a second determination is made as to whether the car stereo is in CD player mode. If a negative determination is made, step **136** is re-invoked.

If a positive determination is made in step **136**, an MP3 handling process, indicated as block **138**, is invoked, allowing the MP3 player to exchange data and audio signals with any existing car stereo system. Beginning in step **140**, the CD player presence signal, described earlier, is generated by the present invention and continuously transmitted to the car stereo. If the car radio is an OEM car radio, the CD player presence signal need not be generated. In step **142**, the audio channels of the MP3 player are connected (channeled) to the car stereo system, allowing audio from the MP3 player to be played through the car stereo. In step **144**, data is retrieved by the present invention from the MP3 player, including track, time, title, and song information, formatted, and transmitted to the car stereo for display by the car stereo. Thus, information produced by the MP3 player can be quickly and conveniently viewed by a driver by merely viewing the display of the car stereo. After steps **140**, **142**, and **144** have been executed, control passes to step **146**.

In steps **146**, the present invention monitors the control panel buttons of the car stereo for MP3 operational commands. Examples of such commands include track forward, track reverse, play, stop, fast forward, rewind, track program, random track play, and other similar commands. In step **148**, if a command is not detected, step **146** is re-invoked. Otherwise, if a command is received, step **148** invokes step **150**, wherein the received command is converted into a format recognizable by the MP3 player connected to the present invention. For example, in this step, a command

issued from a HONDA car radio is converted into a format recognizable by an MP3 player manufactured by PANASONIC, Inc. Any conceivable command from any type of car radio can be formatted for use by an MP3 player of any type or manufacture. Once the command has been formatted, step **152** is invoked, wherein the formatted command is transmitted to the MP3 player and executed. Step **140** is then re-invoked, so that additional processing can occur.

FIG. 4c is a flowchart showing processing logic, indicated generally at **160**, for integrating a satellite receiver or a DAB receiver with an existing car stereo system. Beginning in step **162**, a determination is made as to whether the existing car stereo is powered on. If a negative determination is made, step **164** is invoked, wherein the present invention enters a standby mode and waits for the car stereo to be powered on. If a positive determination is made, step **166** is invoked, wherein a second determination is made as to whether the car stereo is in CD player mode. If a negative determination is made, step **166** is re-invoked.

If a positive determination is made in step **166**, a satellite/DAB receiver handling process, indicated as block **168**, is invoked, allowing the satellite/DAB receiver to exchange data and audio signals with any existing car stereo system. Beginning in step **170**, the CD player presence signal, described earlier, is generated by the present invention and continuously transmitted to the car stereo. If the car radio is an OEM car radio, the CD player presence signal need not be generated. In step **172**, the audio channels of the satellite/DAB receiver are connected (channeled) to the car stereo system, allowing audio from the satellite receiver or DAB receiver to be played through the car stereo. In step **174**, data is retrieved by the present invention from the satellite/DAB receiver, including channel number, channel name, artist name, song time, and song title, formatted, and transmitted to the car stereo for display by the car stereo. The information could be presented in one or more menus, or via a graphical interface viewable and manipulable by the user at the car stereo. Thus, information produced by the receiver can be quickly and conveniently viewed by a driver by merely viewing the display of the car stereo. After steps **170**, **172**, and **174** have been executed, control passes to step **176**.

In steps **176**, the present invention monitors the control panel buttons of the car stereo for satellite/DAB receiver operational commands. Examples of such commands

include station up, station down, station memory program, and other similar commands. In step **178**, if a command is not detected, step **176** is re-invoked. Otherwise, if a command is received, step **178** invokes step **180**, wherein the received command is converted into a format recognizable by the satellite/DAB receiver connected to the present invention. For example, in this step, a command issued from a FORD car radio is converted into a format recognizable by a satellite receiver manufactured by PIONEER, Inc. Any conceivable command from any type of car radio can be formatted for use by a satellite/DAB receiver of any type or manufacture. Once the command has been formatted, step **182** is invoked, wherein the formatted command is transmitted to the satellite/DAB receiver and executed. Step **170** is then re-invoked, so that additional processing can occur.

FIG. 4d is a flowchart showing processing logic, indicated generally at **190**, for integrating a plurality of auxiliary input sources with a car radio. Beginning in step **192**, a determination is made as to whether the existing car stereo is powered on. If a negative determination is made, step **194** is invoked, wherein the present invention enters a standby mode and waits for the car stereo to be powered on. If a positive determination is made, step **196** is invoked, wherein a second determination is made as to whether the car stereo is in CD player mode. If a negative determination is made, step **196** is re-invoked.

If a positive determination is made in step **196**, an auxiliary input handling process, indicated as block **198**, is invoked, allowing one or more auxiliary inputs to be connected (channeled) to the car stereo. Further, if a plurality of auxiliary inputs exist, the logic of block **198** allows a user to select a desired input from the plurality of inputs. Beginning in step **200**, the CD player presence signal, described earlier, is generated by the present invention and continuously transmitted to the car stereo. If the car radio is an OEM car radio, the CD player presence signal need not be generated. Then, in step **202**, the control panel buttons of the car stereo are monitored.

In a preferred embodiment of the present invention, each of the one or more auxiliary input sources are selectable by selecting a CD disc number on the control panel of the car radio. Thus, in step **204**, a determination is made as to whether the first disc number has been selected. If a positive determination is made, step **206** is invoked, wherein the first auxiliary input source is connected (channeled) to the car

stereo. If a negative determination is made, step **208** is invoked, wherein a second determination is made as to whether the second disc number has been selected. If a positive determination is made, step **210** is invoked, wherein the second auxiliary input source is connected (channeled) to the car stereo. If a negative determination is made, step **212** is invoked, wherein a third determination is made as to whether the third disc number has been selected. If a positive determination is made, step **214** is invoked, wherein the third auxiliary input source is connected (channeled) to the car stereo. If a negative determination is made, step **216** is invoked, wherein a fourth determination is made as to whether the fourth disc number has been selected. If a positive determination is made, step **218** is invoked, wherein the fourth auxiliary input source is connected (channeled) to the car stereo. If a negative determination is made, step **200** is re-invoked, and the process disclosed for block **198** repeated. Further, if any of steps **206**, **210**, **214**, or **218** are executed, then step **200** is re-invoked and block **198** repeated.

The process disclosed in block **198** allows a user to select from one of four auxiliary input sources using the control buttons of the car stereo. Of course, the number of auxiliary input sources connectable with and selectable by the present invention can be expanded to any desired number. Thus, for example, 6 auxiliary input sources could be provided and switched using corresponding selection key(s) or keystroke(s) on the control panel of the radio. Moreover, any desired keystroke, selection sequence, or button(s) on the control panel of the radio, or elsewhere, can be utilized to select from the auxiliary input sources without departing from the spirit or scope of the present invention.

FIG. 4e is a flowchart showing processing logic, indicated generally at **220**, for integrating a CD player and one or more auxiliary input sources with a car radio. Beginning in step **222**, a determination is made as to whether the existing car stereo is powered on. If a negative determination is made, step **224** is invoked, wherein the present invention enters a standby mode and waits for the car stereo to be powered on. If a positive determination is made, step **226** is invoked, wherein a second determination is made as to whether the car stereo is in CD player mode. If a negative determination is made, step **226** is re-invoked.

If a positive determination is made in step **226**, then step **228** is invoked, wherein the CD player presence signal, described earlier, is generated by the present invention and continuously transmitted to the car stereo. Then, in step **230**, a determination is made as to whether a CD player is present (*i.e.*, whether an external CD player or changer is connected to the audio device integration system of the present invention). If a positive determination is made, steps **231** and **232** are invoked. In step **231**, the logic of block **108** of **FIG. 4a** (the CD handling process), described earlier, is invoked, so that the CD player/changer can be integrated with the car stereo and utilized by a user. In step **232**, a sensing mode is initiated, wherein the present invention monitors for a selection sequence (as will be discussed in greater detail) initiated by the user at the control panel of the car stereo for switching from the external CD player/changer to one or more auxiliary input sources. Step **234** is then invoked, wherein a determination is made as to whether such a sequence has been initiated. If a negative determination is made, step **234** re-invokes step **228**, so that further processing can occur. Otherwise, if a positive determination is made (*i.e.*, the user desires to switch from the external CD player/changer to one of the auxiliary input sources), step **236** is invoked, wherein the audio channels of the CD player/changer are disconnected from the car stereo. Then, step **238** is invoked, wherein the logic of block **198** of **FIG. 4d** (the auxiliary input handling process), discussed earlier, is executed, allowing the user to select from one of the auxiliary input sources. In the event that a negative determination is made in step **230** (no external CD player/changer is connected to the present invention), then step **238** is invoked, and the system goes into auxiliary mode. The user can then select from one or more auxiliary input sources using the controls of the radio.

FIG. 4f is a flowchart showing processing logic, indicated generally at **240**, for integrating a satellite receiver or DAB receiver and one or more auxiliary input sources with a car radio. Beginning in step **242**, a determination is made as to whether the existing car stereo is powered on. If a negative determination is made, step **244** is invoked, wherein the present invention enters a standby mode and waits for the car stereo to be powered on. If a positive determination is made, step **246** is invoked, wherein a second determination is made as to whether the car stereo is in CD player mode. If a negative determination is made, step **246** is re-invoked.

If a positive determination is made in step **246**, then step **248** is invoked, wherein the CD player presence signal, described earlier, is generated by the present invention and continuously transmitted to the car stereo. Then, in step **250**, a determination is made as to whether a satellite receiver or DAB receiver is present (*i.e.*, whether an external satellite receiver or DAB receiver is connected to the audio device integration system of the present invention). If a positive determination is made, steps **231** and **232** are invoked. In step **251**, the logic of block **168** of **FIG. 4c** (the satellite/DAB receiver handling process), described earlier, is invoked, so that the satellite receiver can be integrated with the car stereo and utilized by a user. In step **252**, a sensing mode is initiated, wherein the present invention monitors for a selection sequence (as will be discussed in greater detail) initiated by the user at the control panel of the car stereo for switching from the external satellite receiver to one or more auxiliary input sources. Step **254** is then invoked, wherein a determination is made as to whether such a sequence has been initiated. If a negative determination is made, step **254** re-invokes step **258**, so that further processing can occur. Otherwise, if a positive determination is made (*i.e.*, the user desires to switch from the external satellite/DAB receiver to one of the auxiliary input sources), step **256** is invoked, wherein the audio channels of the satellite receiver are disconnected from the car stereo. Then, step **258** is invoked, wherein the logic of block **198** of **FIG. 4d** (the auxiliary input handling process), discussed earlier, is executed, allowing the user to select from one of the auxiliary input sources. In the event that a negative determination is made in step **250** (no external satellite/DAB receiver is connected to the present invention), then step **258** is invoked, and the system goes into auxiliary mode. The user can then select from one or more auxiliary input sources using the controls of the radio.

FIG. 4g is a flowchart showing processing logic according to the present invention for integrating an MP3 player and one or more auxiliary input sources with a car stereo. Beginning in step **262**, a determination is made as to whether the existing car stereo is powered on. If a negative determination is made, step **264** is invoked, wherein the present invention enters a standby mode and waits for the car stereo to be powered on. If a positive determination is made, step **266** is invoked, wherein a

second determination is made as to whether the car stereo is in CD player mode. If a negative determination is made, step **266** is re-invoked.

If a positive determination is made in step **266**, then step **268** is invoked, wherein the CD player presence signal, described earlier, is generated by the present invention and continuously transmitted to the car stereo. Then, in step **270**, a determination is made as to whether an MP3 player is present (*i.e.*, whether an external MP3 player is connected to the audio device integration system of the present invention). If a positive determination is made, steps **271** and **272** are invoked. In step **271**, the logic of block **138** of **FIG. 4b** (the MP3 handling process), described earlier, is invoked, so that the CD player/changer can be integrated with the car stereo and utilized by a user. In step **272**, a sensing mode is initiated, wherein the present invention monitors for a selection sequence (as will be discussed in greater detail) initiated by the user at the control panel of the car stereo for switching from the external CD player/changer to one or more auxiliary input sources. Step **274** is then invoked, wherein a determination is made as to whether such a sequence has been initiated. If a negative determination is made, step **274** re-invokes step **278**, so that further processing can occur. Otherwise, if a positive determination is made (*i.e.*, the user desires to switch from the external MP3 player to one of the auxiliary input sources), step **276** is invoked, wherein the audio channels of the MP3 player are disconnected from the car stereo. Then, step **278** is invoked, wherein the logic of block **198** of **FIG. 4d** (the auxiliary input handling process), discussed earlier, is executed, allowing the user to select from one of the auxiliary input sources. In the event that a negative determination is made in step **270** (no external MP3 player is connected to the present invention), then step **278** is invoked, and the system goes into auxiliary mode. The user can then select from one or more auxiliary input sources using the controls of the radio.

As mentioned previously, to enable integration, the present invention contains logic for converting command signals issued from an after-market or OEM car stereo into a format compatible with one or more external audio devices connected to the present invention. Such logic can be applied to convert any car stereo signal for use with any external device. For purposes of illustration, a sample code portion is shown

in **Table 1**, below, for converting control signals from a BMW car stereo into a format understandable by a CD changer:

Table 1

```
;       ===============================================
;       Radio requests changer to STOP (exit PLAY mode)
;       Decoding 6805183801004C message
;       ===============================================

Encode_RD_stop_msg:

        movlw 0x68
        xorwf BMW_Recv_buff,W
        skpz
        return

        movlw 0x05
        xorwf BMW_Recv_buff+1,W
        skpz
        return

        movlw 0x18
        xorwf BMW_Recv_buff+2,W
        skpz
        return

        movlw 0x38
        xorwf BMW_Recv_buff+3,W
        skpz
        return

        movlw 0x01
        xorwf BMW_Recv_buff+4,W
        skpz
        return

        tstf  BMW_Recv_buff+5
        skpz
        return

        movlw 0x4C
        xorwf BMW_Recv_buff+6,W
        skpz
        return

        bsf   BMW_Recv_STOP_msg
        return
```

The code portion shown in **Table 1** receives a STOP command issued by a BMW stereo, in a format proprietary to BMW stereos. Preferably, the received command is stored in a first buffer, such as BMW_Recv_buff. The procedure "Encode_RD_stop_msg" repetitively applies an XOR function to the STOP command, resulting in a new command that is in a format compatible with the after-market CD

player. The command is then stored in an output buffer for dispatching to the CD player.

Additionally, the present invention contains logic for retrieving information from an after-market audio device, and converting same into a format compatible with the car stereo for display thereby. Such logic can be applied to convert any data from the external device for display on the car stereo. For purposes of illustration, a sample code portion is shown in **Table 2**, below, for converting data from a CD changer into a format understandable by a BMW car stereo:

Table 2

```
;       ========================================
;       Changer replies with STOP confirmation
;       Encoding 180A68390002003F0001027D message
;       ========================================

Load_CD_stop_msg:
        movlw 0x18
        movwf BMW_Send_buff

        movlw 0x0A
        movwf BMW_Send_buff+1

        movlw 0x68
        movwf BMW_Send_buff+2

        movlw 0x39
        movwf BMW_Send_buff+3

        movlw 0x00              ;current status_XX=00, power off
        movwf BMW_Send_buff+4

        movlw 0x02              ;current status_YY=02, power off
        movwf BMW_Send_buff+5

        clrf  BMW_Send_buff+6         ;separate field, always =0

        movfw BMW_MM_stat       ;current   status_MM   ,   magazine
config
        movwf BMW_Send_buff+7

        clrf  BMW_Send_buff+8         ;separate field, always =0

        movfw BMW_DD_stat       ;current status_DD , current disc
        movwf BMW_Send_buff+9

        movfw BMW_TT_stat       ;current   status_TT   ,   current
track
        movwf BMW_Send_buff+10

        xorwf BMW_Send_buff+9,W ;calculate check sum
        xorwf BMW_Send_buff+8,W
        xorwf BMW_Send_buff+7,W
```

```
xorwf BMW_Send_buff+6,W
xorwf BMW_Send_buff+5,W
xorwf BMW_Send_buff+4,W
xorwf BMW_Send_buff+3,W
xorwf BMW_Send_buff+2,W
xorwf BMW_Send_buff+1,W
xorwf BMW_Send_buff,W

movwf BMW_Send_buff+11   ;store check sum
movlw D'12'              ;12 bytes total
movwf BMW_Send_cnt
bsf   BMW_Send_on        ;ready to send
return
```

The code portion shown in **Table 2** receives a STOP confirmation message from the CD player, in a format proprietary to the CD player. Preferably, the received command is stored in a first buffer, such as BMW_Send_buff. The procedure "Load_CD_stop_msg" retrieves status information, magazine information, current disc, and current track information from the CD changer, and constructs a response containing this information. Then, a checksum is calculated and stored in another buffer. The response and checksum are in a format compatible with the BMW stereo, and are ready for dispatching to the car stereo.

While the above code portions are shown using assembler language, it is to be expressly understood that any low or high level language known in the art, such as C or C++, could be utilized without departing from the spirit or scope of the invention. It will be appreciated that various other code portions can be developed for converting signals from any after-market or OEM car stereo for use by an after-market external audio device, and vice versa.

FIG. 5 is a flowchart showing processing logic, indicated generally at **300** for allowing a user to switch between an after-market audio device, and one or more auxiliary input sources. As was discussed earlier, the present invention allows a user to switch from one or more connected audio devices, such as an external CD player/changer, MP3 player, satellite receiver, DAB receiver, or the like, and activate one or more auxiliary input sources. A selection sequence, initiated by the user at the control panel of the car stereo, allows such switching. Beginning in step **302**, the buttons of the control panel are monitored. In step **304**, a determination is made as to whether a "Track Up" button or sequence has been initiated by the user. The "Track Up" button or sequence can for a CD player, MP3 player, or any other device. If a

negative determination is made, step **306** is invoked, wherein the sensed button or sequence is processed in accordance with the present invention and dispatched to the external audio device for execution. Then, step **302** is re-invoked, so that additional buttons or sequences can be monitored.

In the event that a positive determination is made in step **304**, step **308** is invoked, wherein the present invention waits for a predetermined period of time while monitoring the control panel buttons for additional buttons or sequences. In a preferred embodiment of the present invention, the predetermined period of time is 750 milliseconds, but of course, other time durations are considered within the spirit and scope of the present invention. In step **310**, a determination is made as to whether the user has initiated a "Track Down" button or sequence at the control panel of the car stereo within the predetermined time period. The track down button or sequence can be for a CD player, MP3 player, or any other device. If a negative determination is made, step **312** is invoked. In step **312**, a determination is made as to whether a timeout has occurred (*e.g.*, whether the predetermined period of time has expired). If a negative determination is made, step **308** is re-invoked. Otherwise, is a positive determination is made, step **312** invokes step **306**, so that any buttons or key sequences initiated by the user that are not a "Track Down" command are processed in accordance with the present invention and dispatched to the audio device for execution.

In the event that a positive determination is made in step **310** (a "Track Down" button or sequence has been initiated within the predetermined time period), then step **314** is invoked. In step **314**, the audio channels of the audio device are disconnected, and then step **316** is invoked. In step **316**, the logic of block **198** of **FIG. 4d** (the auxiliary input handling process), discussed earlier, is invoked, so that the user can select from one of the auxiliary input sources in accordance with the present invention. Thus, at this point in time, the system has switched, under user control, from the audio device to a desired auxiliary input. Although the foregoing description of the process **300** has been described with reference to "Track Up" and "Track Down" buttons or commands initiated by the user, it is to be expressly understood that any desired key sequence, keystroke, button depress, or any other action, can be sensed in accordance with the present invention and utilized for switching modes.

When operating in auxiliary mode, the present invention provides an indication on the display of the car stereo corresponding to such mode. For example, the CD number could be displayed as "1", and the track number displayed as "99," thus indicating to the user that the system is operating in auxiliary mode and that audio and data is being supplied from an auxiliary input source. Of course, any other indication could be generated and displayed on the display of the car stereo, such as a graphical display (*e.g.*, an icon) or textual prompt.

FIG. 6 is a flowchart showing processing logic, indicated generally at **320**, for determining and handling various device types connected to the auxiliary input ports of the invention. The present invention can sense device types connected to the auxiliary input ports, and can integrate same with the car stereo using the procedures discussed earlier. Beginning in step **322**, the control panel buttons of the car stereo are monitored for a button or sequence initiated by the user corresponding to an auxiliary input selection (such as the disc number method discussed earlier with reference to **FIG. 4d**). In response to an auxiliary input selection, step **324** is invoked, wherein the type of device connected to the selected auxiliary input is sensed by the present invention. Then, step **326** is invoked.

In step **326**, a determination is made as to whether the device connected to the auxiliary input is a CD player/changer. If a positive determination is made, step **328** is invoked, wherein the logic of block **108** of **FIG. 4a** (the CD handling process), discussed earlier, is executed, and the CD player is integrated with the car stereo. If a negative determination is made in step **326**, then step **330** is invoked. In step **330**, a determination is made as to whether the device connected to the auxiliary input is an MP3 player. If a positive determination is made, step 334 is invoked, wherein the logic of block **138** if **FIG. 4b** (the MP3 handling process), discussed earlier, is executed, and the MP3 player is integrated with the car stereo. If a negative determination is made in step **330**, then step **336** is invoked. In step **336**, a determination is made as to whether the device connected to the auxiliary input is a satellite receiver or a DAB receiver. If a positive determination is made, step **338** is invoked, wherein the logic of block **168** of **FIG. 4c** (the satellite/DAB receiver handling process), discussed earlier, is executed, and the satellite receiver is integrated with the car stereo. If a negative determination is made in step **336**, step **322** is re-

invoked, so that additional auxiliary input selections can be monitored and processed accordingly. Of course, process **320** can be expanded to allow other types of devices connected to the auxiliary inputs of the present invention to be integrated with the car stereo.

The present invention can be expanded for allowing video information generated by an external device to be integrated with the display of an existing OEM or after-market car stereo. In such a mode, the invention accepts RGB input signals from the external device, and converts same to composite signals. The composite signals are then forwarded to the car stereo for display thereby, such as on an LCD panel of the stereo. Further, information from the external device can be formatted and presented to the user in one or more graphical user interfaces or menus capable of being viewed and manipulated on the car stereo.

FIG. 7a is a perspective view of a docking station **400** according to the present invention for retaining an audio device within a car. Importantly, the present invention can be adapted to allow portable audio devices to be integrated with an existing car stereo. The docking station **400** allows such portable devices to be conveniently docked and integrated with the car stereo. The docking station **400** includes a top portion **402** hingedly connected at a rear portion **408** to a bottom portion **404**, preferably in a clam-like configuration. A portable audio device **410**, such as the SKYFI radio distributed by DELPHI, Inc., is physically and electrically connected with the docking portion **412**, and contained within the station **100**. A clasp **406** can be provided for holding the top and bottom portions in a closed position to retain the device **410**. Optionally, a video device could also be docked using the docking station **400**, and tabs **413** can be provided for holding the docking station **400** in place against a portion of a car. Conceivably, the docking station **400** could take any form, such as a sleeve-like device for receiving and retaining a portable audio device and having a docking portion for electrically and mechanically mating with the audio device.

FIG. 7b is an end view showing the rear portion **408** of the docking station **400** of **FIG. 7a**. A hinge **414** connects the top portion and the bottom portions of the docking station **400**. A data port **416** is provided for interfacing with the audio device docked within the station **400**, and is in electrical communication therewith. In a preferred embodiment of the present invention, the data port **416** is an RS-232 serial or

USB data port that allows for the transmission of data with the audio device, and which connects with the audio device integration system of the present invention for integrating the audio device with an OEM or after-market car stereo. Any known bus technology can be utilized to interface with any portable audio or video device contained within the docking station **400**, such as FIREWIRE, D2B, MOST, CAN, USB/USB2, IE Bus, T Bus, I Bus, or any other bus technology known in the art.

FIGS. 8a-8b are perspective views of another embodiment of the docking station of the present invention, indicated generally at **500**, which includes the audio device integration system of the present invention, indicated generally at **540**, incorporated therewith. As shown in **FIG. 8a**, the docking station **500** includes a base portion **530**, a bottom member **515** interconnected with the base portion **530** at an edge thereof, and a top member **510** hingedly interconnected at an edge to the base portion **530**. The top member **510** and the bottom member **515** define a cavity for docking and storing a portable audio device **520**, which could be a portable CD player, MP3 player, satellite (*e.g.*, XM, SIRIUS, or other type) tuner, or any other portable audio device. The docking station **500** would be configured to accommodate a specific device, such as an IPOD from Apple Computer, Inc., or any other portable device.

The audio device integration system **540**, in the form of a circuit board, is housed within the base portion **530** and performs the integration functions discussed herein for integrating the portable audio device **520** with an existing car stereo. The integration system **540** is in communication with the portable audio device **520** via a connector **550**, which is connected to a port on the audio device **520**, and a cable **555** interconnected between the connector **550** and the integration system **540**. The connector **550** could be any suitable connector and can vary according to the device type. For example, a MOLEX, USB, or any other connector could be used, depending on the portable device. The integration system **540** is electrically connected with a car stereo by cable **560**. Alternatively, the integration system could wirelessly communicate with the car stereo. A transmitter could be used at the integration system to communicate with a receiver at the car stereo. Where automobiles include Bluetooth systems, such systems can be used to communicate with the integration system. As can be readily appreciated, the docking station **500** provides a convenient device for docking, storing, and integrating a portable audio device for use with a car

stereo. Further, the docking station **500** could be positioned at any desired location within a vehicle, including, but not limited to, the vehicle trunk.

As shown in **FIG. 8b**, the top member **510** can be opened in the general direction indicated by arrow **A** to allow for access to the portable audio device **520**. In this fashion, the device **520** can be quickly accessed for any desired purpose, such as for inserting and removing the device **520** from the docking station **500**, as well as for providing access to the controls of the device **520**.

FIG. 9 is a block diagram showing the components of the docking station of **FIGS. 8a-8b**. The docking station **500** houses both a portable audio device **520** and an audio device integration system (or interface) **540**. The shape and configuration of the docking station **500** can be varied as desired without departing from the spirit or scope of the present invention.

The integration system of the present invention provides for control of a portable audio device, or other device, through the controls of the car stereo system. As such, controls on the steering wheel, where present, may also be used to control the portable audio device or other device.

Having thus described the invention in detail, it is to be understood that the foregoing description is not intended to limit the spirit and scope thereof.

CLAIMS

What is claimed is:

1. An audio device integration system comprising:

a car stereo;

an audio device external to the car stereo;

an interface connected between the car stereo and the audio device for exchanging data and audio signals between the car stereo and the audio device;

means for processing and dispatching commands for controlling the audio device from the car stereo in a format compatible with the audio device; and

means for processing and displaying data from the audio device on a display of the car stereo in a format compatible with the car stereo.

2. The apparatus of claim 1, wherein the car stereo is an OEM car stereo.

3. The apparatus of claim 1, wherein the car stereo is an after-market car stereo.

4. The apparatus of claim 1, wherein the audio device comprises a CD player, CD changer, MP3 player, Digital Audio Broadcast (DAB) receiver, or satellite receiver.

5. The apparatus of claim 1, wherein the interface further comprises a plug-and-play mode for automatically detecting a device type of the audio device and integrating the audio device based upon the device type.

6. The apparatus of claim 1, wherein the interface generates a CD player presence signal for maintaining the car stereo in a state responsive to processed data and audio signals.

7. The apparatus of claim 1, wherein the data comprises track and time information.

8. The apparatus of claim 1, wherein the data comprises song title and artist information.

9. The apparatus of claim 1, wherein the data comprises channel number and channel name information.

10. The apparatus of claim 1, wherein the data comprises video information.

11. The apparatus of claim 1, wherein the data is displayed as a menu on the display of the car stereo.

12. The apparatus of claim 1, wherein the data is displayed in a graphical interface on a graphic panel.

13. The apparatus of claim 1, wherein the commands are input by a user using one or more control buttons or presets on the car stereo.

14. The apparatus of claim 1, further comprising one or more auxiliary input sources connected to the interface.

15. The apparatus of claim 14, wherein audio signals from the one or more auxiliary input sources are selectively channeled to the car stereo by the interface.

16. The apparatus of claim 14, wherein a user can select between the one or more auxiliary input sources by depressing keys on the car stereo.

17. The apparatus of claim 14, wherein a user can select one of the auxiliary input sources by entering a disc number at the car stereo.

18. The apparatus of claim 14, wherein a user can select one of the auxiliary input sources by entering a track number at the car stereo.

19. The apparatus of claim 14, wherein a user can select one of the auxiliary input sources by entering both disc and track numbers at the car stereo.

20. The apparatus of claim 14, wherein a user can select between the audio device and the one or more auxiliary input sources by entering a sequence at the car stereo.

21. The apparatus of claim 20, wherein the sequence comprises a track up selection followed by a track down selection.

22. The apparatus of claim 1, further comprising a second interface connected to the first interface for providing a plurality of auxiliary input sources.

23. The apparatus of claim 22, wherein both the first interface and the second interface are controllable using the car stereo.

24. An audio device integration system comprising:

a car stereo;

a plurality of auxiliary input sources;

an interface connected between the car stereo and the plurality of auxiliary input sources;

means for processing and dispatching commands for controlling an audio device connected to one of the plurality of auxiliary input sources from the car stereo in a format compatible with the audio device;

means for processing and displaying data from the audio device on a display of the car stereo in a format compatible with the car stereo; and

means for selecting one of the plurality of auxiliary input sources from the car stereo.

25. The apparatus of claim 24, wherein the means for selecting one of the plurality of auxiliary input sources comprises a disc or track selection entered by a user using control buttons of the car stereo.

26. The apparatus of claim 24, wherein the audio device comprises a CD player, CD changer, MP3 player, satellite receiver, or DAB receiver.

27. The apparatus of claim 24, wherein a device type of the audio device is automatically detected by the interface and the audio device is automatically integrated with the car stereo based upon the device type.

28. The apparatus of claim 24, wherein the interface is switchable into an auxiliary input mode by issuing a control sequence at the car stereo.

29. The apparatus of claim 28, wherein the control sequence comprises a track up command followed by a track down command.

30. A method for integrating a device with a car stereo comprising:

connecting an interface to the car stereo and the device to the interface;

receiving control commands from the car stereo at the interface;

processing the control commands into a format compatible with the device and dispatching processed control commands to the device;

receiving data and audio from the device at the interface;

processing the data into a second format compatible with the car stereo and dispatching the audio and processed data to the car stereo; and

displaying the processed data on the car stereo and playing the audio through the car stereo.

31. The method of claim 30, wherein the step of receiving data from the device comprises retrieving CD track and time information from the device.

32. The method of claim 30, wherein the step of receiving data from the device comprises retrieving MP3 song, title, track, and time information from the device.

33. The method of claim 30, wherein the step of receiving data from the device comprises retrieving channel number, channel name, artist, and song information from the device.

34. The method of claim 30, wherein the step of receiving data from the device comprises retrieving video information from the device.

35. The method of claim 30, wherein the step of displaying the processed data comprises displaying the data in an LCD panel.

36. The method of claim 30, wherein the step of displaying the processed data comprises displaying the data in a graphical user interface at the car stereo.

37. The method of claim 30, wherein the step of displaying processed data comprises displaying video at the car stereo.

38. The method of claim 30, wherein the step of connecting the audio device to the interface comprises connecting a CD player, CD changer, MP3 player, satellite receiver, or DAB receiver to the interface.

39. The method of claim 30, further comprising connecting an auxiliary input source to the interface.

40. The method of claim 39, further comprising receiving a selection command from the car stereo and channeling data and audio from the auxiliary input source to the interface in response to the selection command.

41. The method of claim 40, further comprising processing the data from the auxiliary input source for display on the car stereo.

42. An apparatus for docking a portable device for integration with a car stereo comprising:

a top member interconnected with a bottom member and defining a storage area for storing the portable device;

a docking portion within the storage area for electrically communicating and physically mating with the portable device; and

a data port disposed on the top member or the bottom member and in electrical communication with the docking portion, the data port connectable with a device for integrating the portable device with the car stereo.

43. The apparatus of claim 42, further comprising a hinge for connecting the top member and bottom member at an edge thereof.

44. The apparatus of claim 42, wherein the data port comprises an RS-232 or USB port.

45. The apparatus of claim 42, wherein the top portion and the bottom portion define a sleeve for holding the portable audio device.

46. The apparatus of claim 42, further comprising a clasp for retaining the top and bottom members in a closed position.

47. A method of integrating an after-market device with an OEM or after-market car stereo comprising:

connecting the after-market device to an interface;

connecting the interface to a car stereo;

determining whether the car stereo is an OEM car stereo or an after-market car stereo;

if the car stereo is an after-market car stereo, generating and transmitting a presence signal to the car stereo to maintain the car stereo in an operational state responsive to external signals; and

selectively channeling data and audio signals from the after-market device to the car stereo using the interface.

48. The method of claim 47, further comprising receiving control commands from the car stereo at the interface.

49. The method of claim 48, further comprising converting the control commands into a format recognizable by the after-market audio device.

50. The method of claim 49, further comprising dispatching formatted commands to the after-market audio device for execution thereby.

51. The method of claim 47, further comprising converting data received at the interface from the after-market audio device into a format compatible with the car stereo.

52. The method of claim 51, further comprising displaying formatted data on the car stereo.

53. The method of claim 52, wherein the step of displaying formatted data comprises displaying channel numbers, channel names, titles, tracks, song names, or artist names on the car stereo.

54. The method of claim 52, wherein the step of displaying formatted data comprises displaying video on the car stereo.

55. A docking station for docking and integrating a portable audio device for use with a car stereo, comprising:

a base portion;

a bottom member connected to the base portion;

a top member connected to the base portion, the base portion, bottom member, and top member defining a cavity for receiving a portable device; and

an integration device positioned within the base portion for integrating the portable device with a car stereo.

56. The apparatus of claim 55, wherein the top member is hingedly connected at an edge to the base portion.

57. The apparatus of claim 55, wherein the base portion comprises a connector for connecting the integration device with the portable device.

58. The apparatus of claim 55, further comprising a cable interconnected at one end to the integration device and at an opposite end to the car stereo.

59. The apparatus of claim 55, wherein the integration device is wirelessly connected to the car stereo.

60. The apparatus of claim 59, wherein the integration device is connected to the car stereo by a Bluetooth wireless connection.

61. The apparatus of claim 55, wherein the portable device comprises a CD player, CD changer, MP3 player, Digital Audio Broadcast (DAB) receiver, or satellite receiver.

62. The apparatus of claim 61, wherein the satellite tuner comprises an XM or SIRIUS satellite tuner.

63. The apparatus of claim 55, wherein the integration device comprises a circuit board housed in the base portion.

64. The apparatus of claim 55, wherein the apparatus is mountable in a vehicle trunk.

65. The apparatus of claim 55, wherein the top member is pivotable away from the bottom member to allow access to the portable device.

66. The apparatus of claim 55, wherein the integration device is connected to the car stereo using a Firewire, D2B, MOST, CAN, USB, USB2, IE Bus, T Bus, I Bus, or serial connection.

67. The apparatus of claim 55, wherein the car stereo is an OEM or after-market car stereo.

68. The apparatus of claim 55, further comprising one or more auxiliary input ports connected to the integration device for integrating additional portable devices external to the docking station.

69. A method for docking and integrating a portable audio device for use with a car stereo, comprising:

providing a docking station having a base portion, a bottom member connected to the base portion, a top member connected to the base portion, and an integration device housed within the base portion;

inserting a portable device into the docking station and connecting the portable device to a connector on the base portion; and

integrating the portable device with the integration device for use with a car stereo.

70. The method of claim 69, further comprising opening the top member away from the bottom member prior to inserting the portable device into the docking station.

71. The method of claim 69, further comprising closing the top member to retain the portable device in the docking station.

72. The method of claim 69, further comprising interconnecting the integration device with the car stereo with a cable.

73. The method of claim 69, further comprising establishing a wireless connection between the integration device and the car stereo.

74. The method of claim 73 further comprising establishing a Bluetooth wireless connection between the integration device and the car stereo.

75. The method of claim 69, further comprising integrating a CD player, CD changer, MP3 player, Digital Audio Broadcast (DAB) receiver, or satellite receiver with the car stereo.

76. The method of claim 69, further comprising integrating an XM or SIRIUS satellite tuner with the car stereo.

77. The method of claim 69, further comprising mounting the docking station in a vehicle trunk.

78. The method of claim 69, further comprising connecting the integration device to the car stereo using a Firewire, D2B, MOST, CAN, USB, USB2, IE Bus, T Bus, I Bus, or serial connection.

79. The method of claim 69, further comprising integrating the portable device with an after-market or OEM car stereo.

80. The method of claim 69, further comprising connecting an external portable device to an auxiliary input port on the docking station and integrating the external portable device with the car stereo.

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FIG. 1

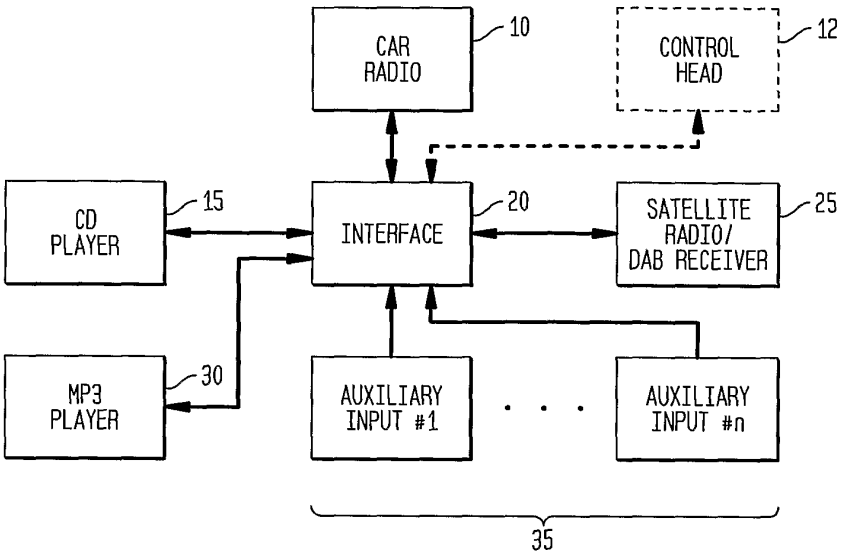

FIG. 2A

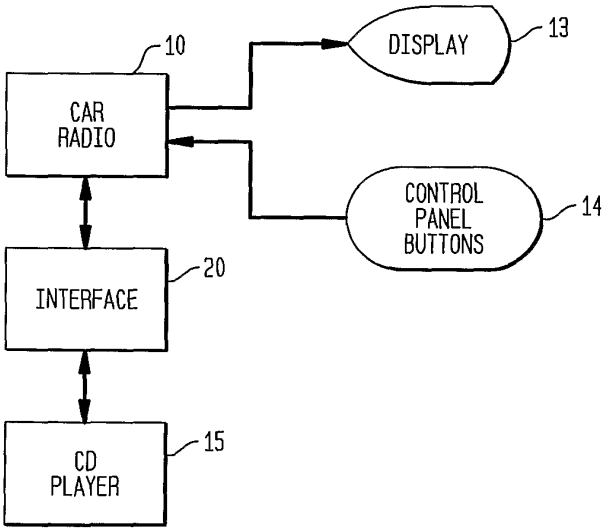

FIG. 2B

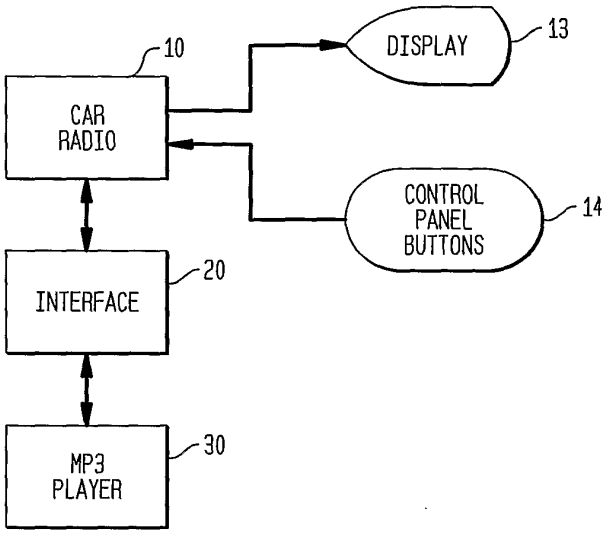

FIG. 2C

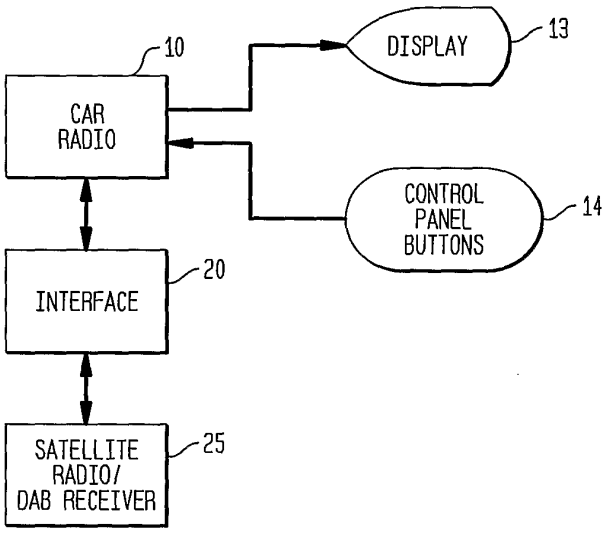

FIG. 2D

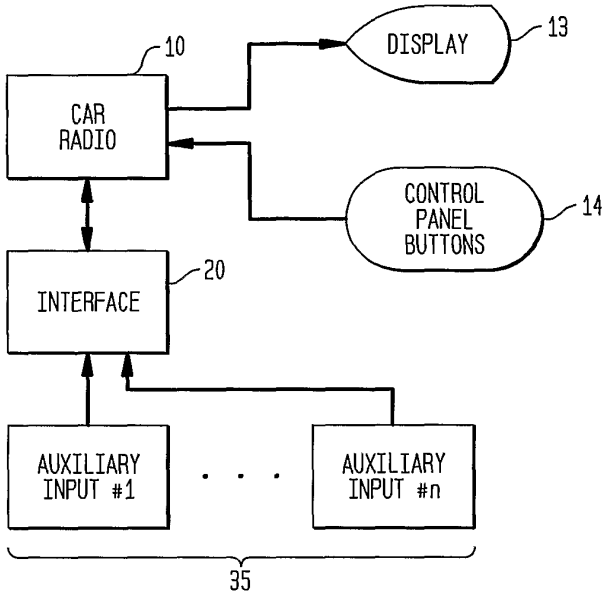

FIG. 2E

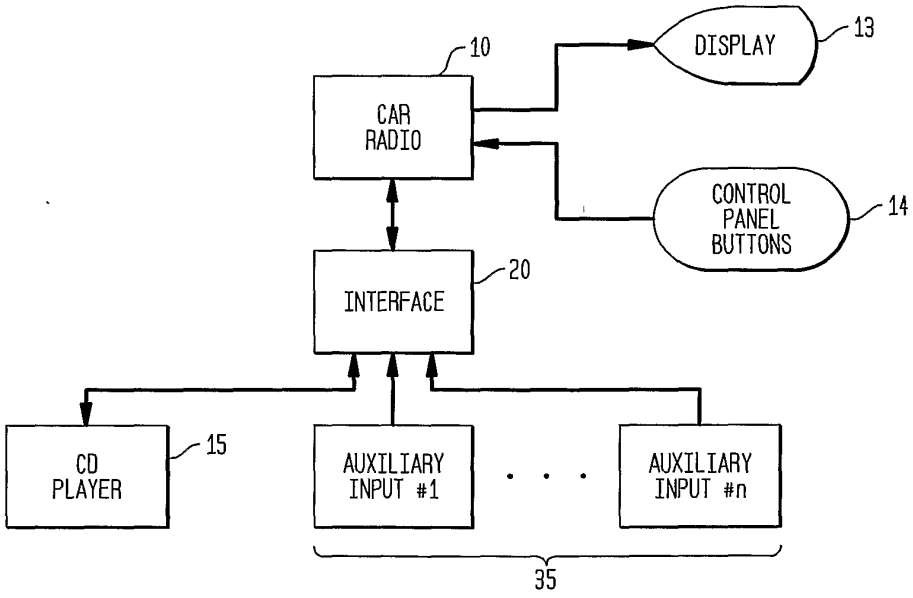

FIG. 2F

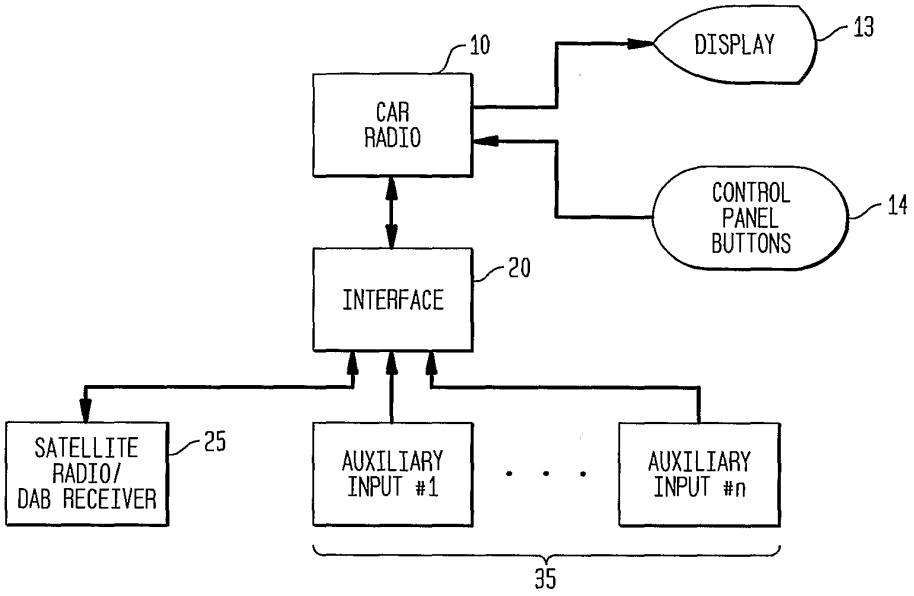

FIG. 2G

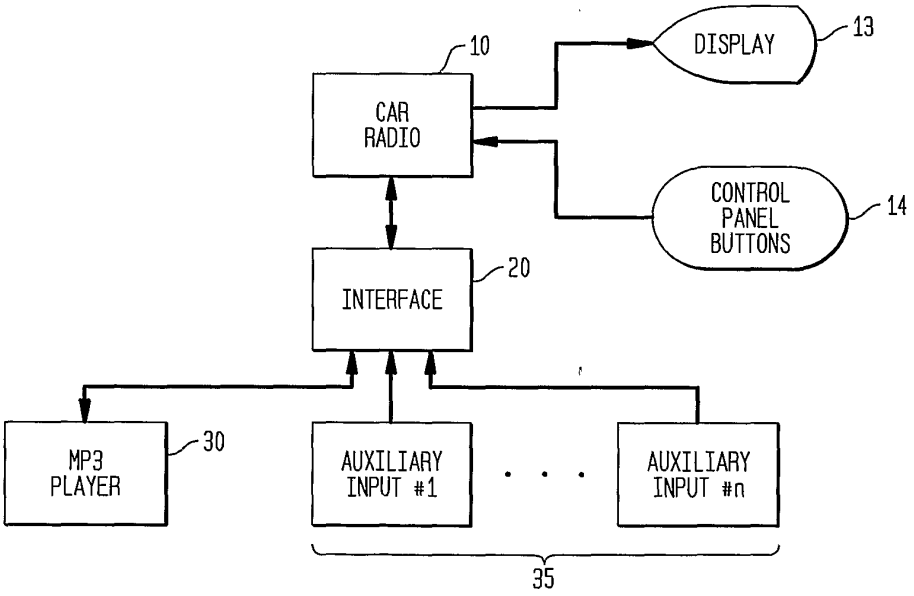

FIG. 2H

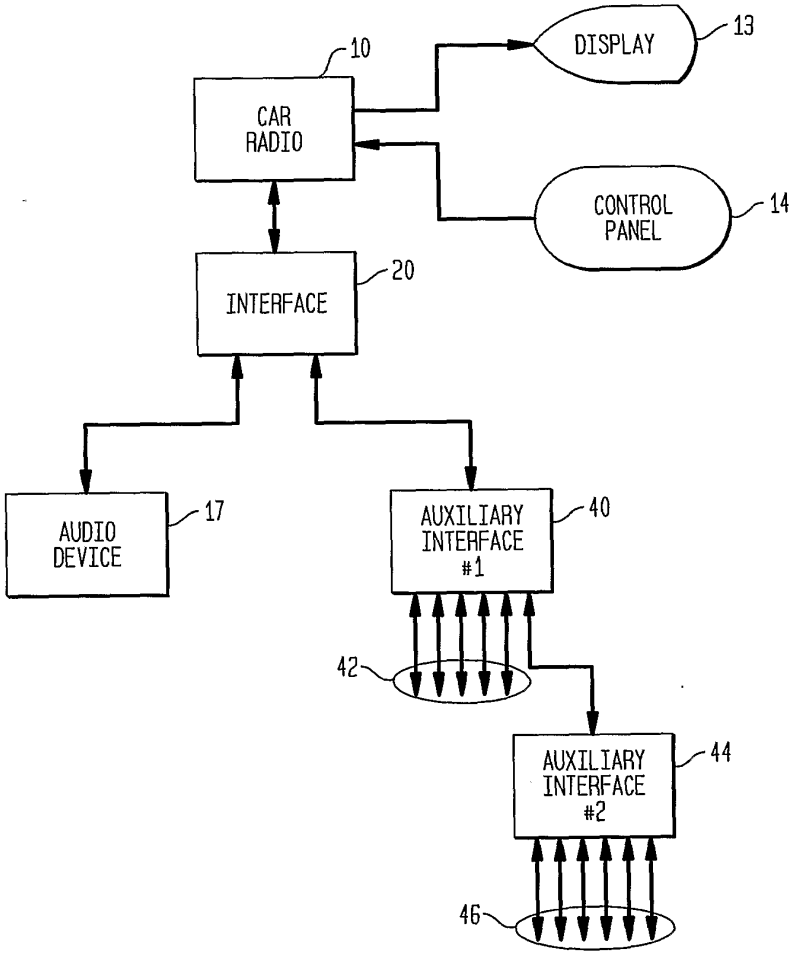

FIG. 3A

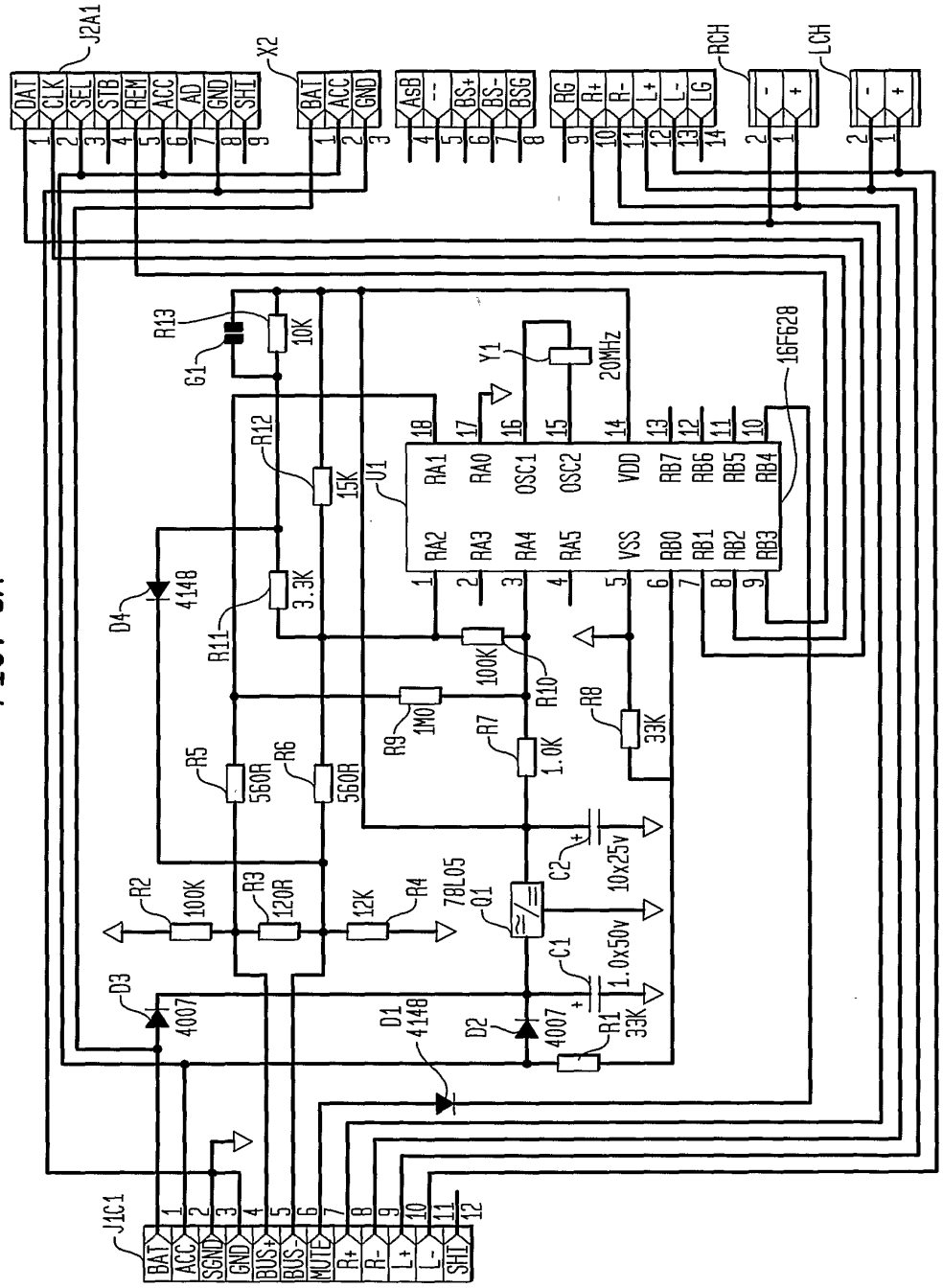

FIG. 3B1

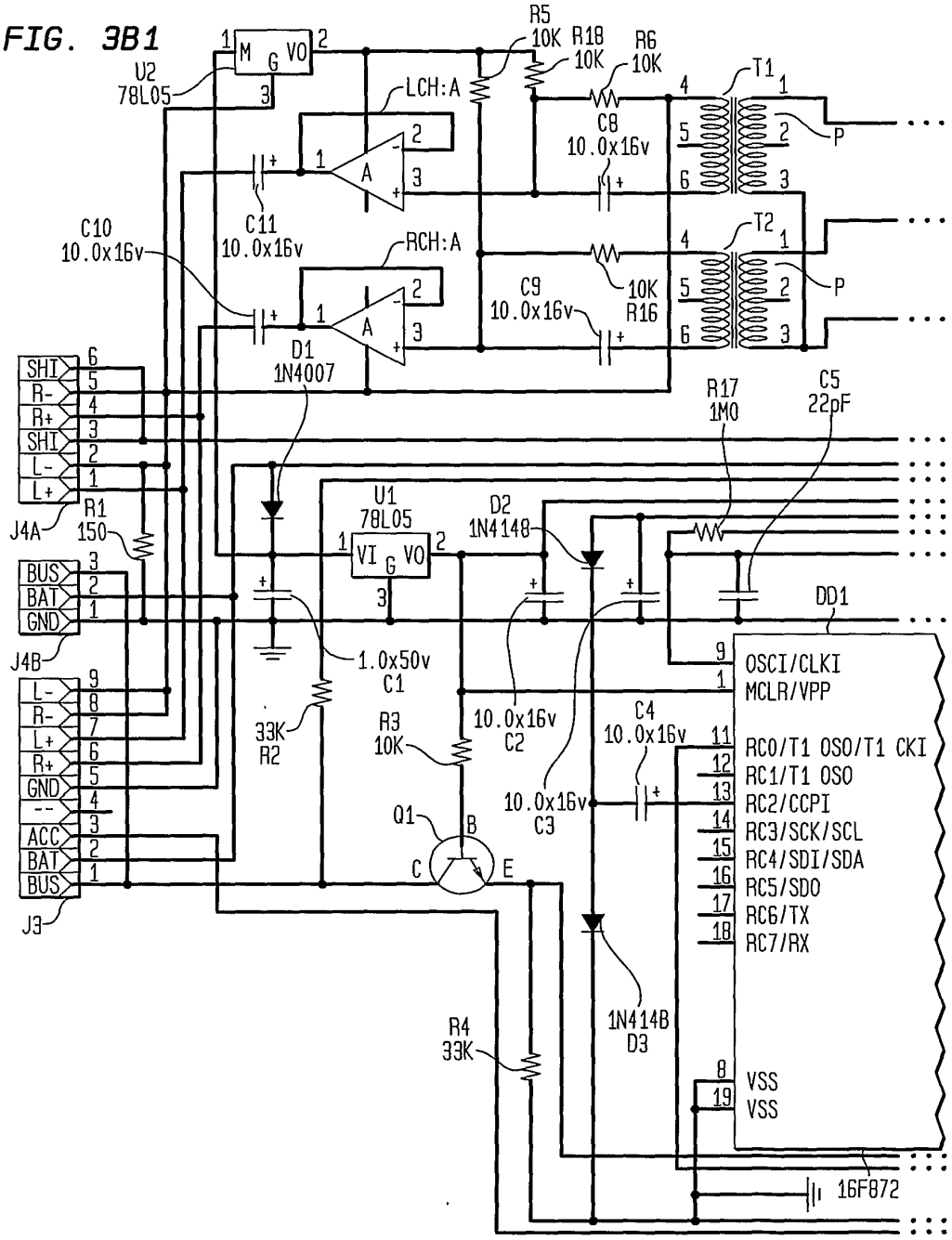

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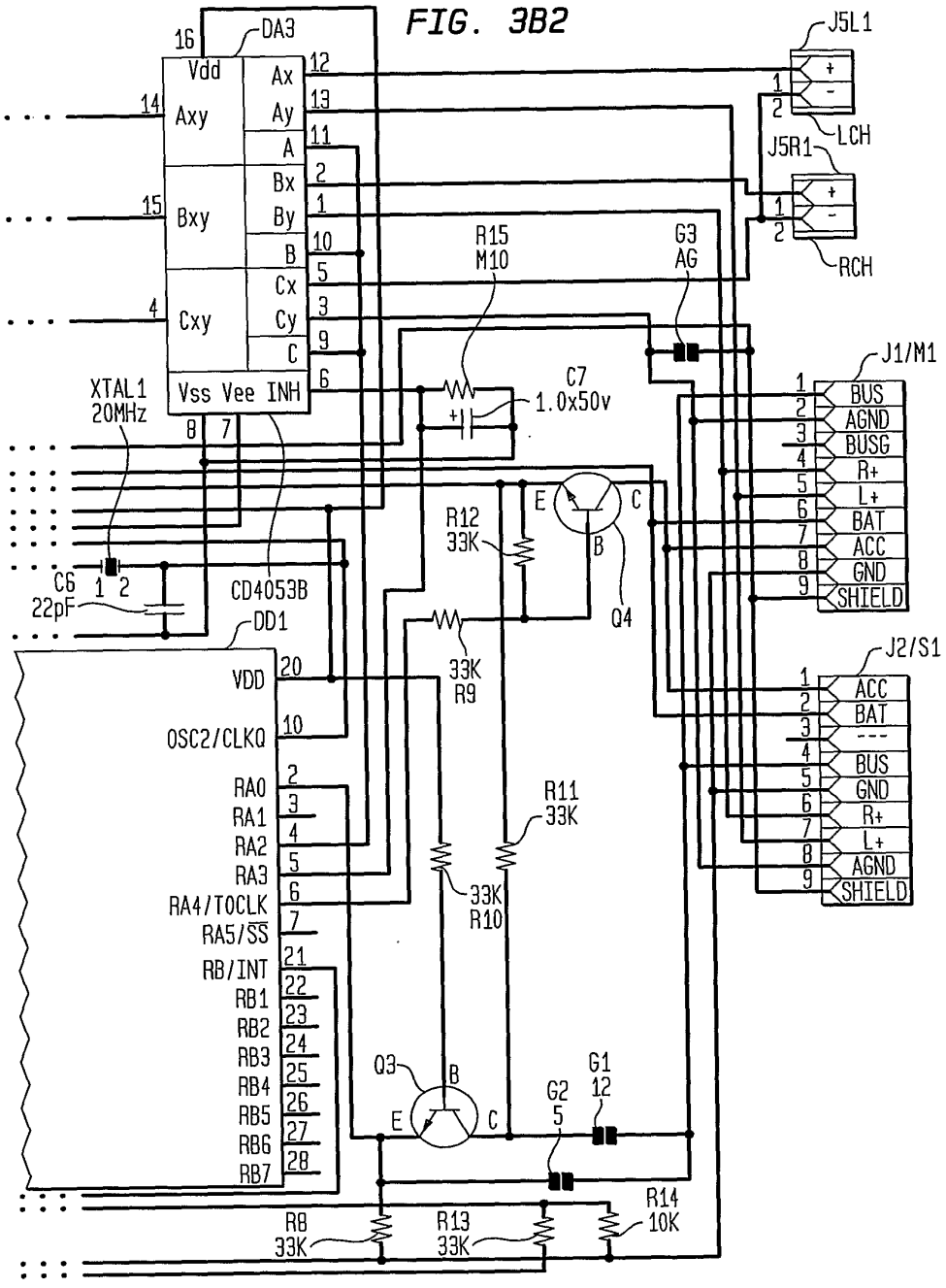
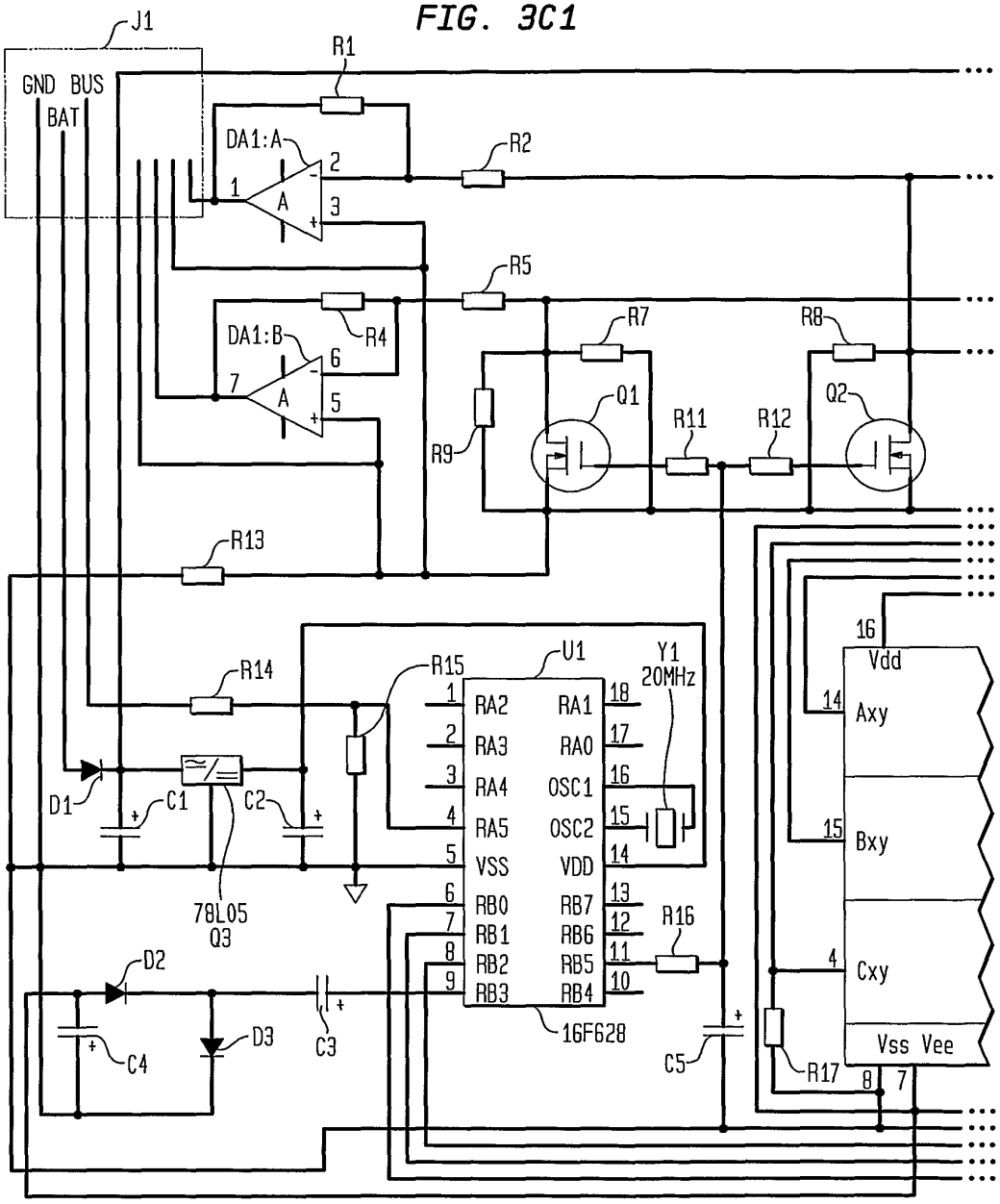
FIG. 3B2



SUBSTITUTE SHEET (RULE 26)

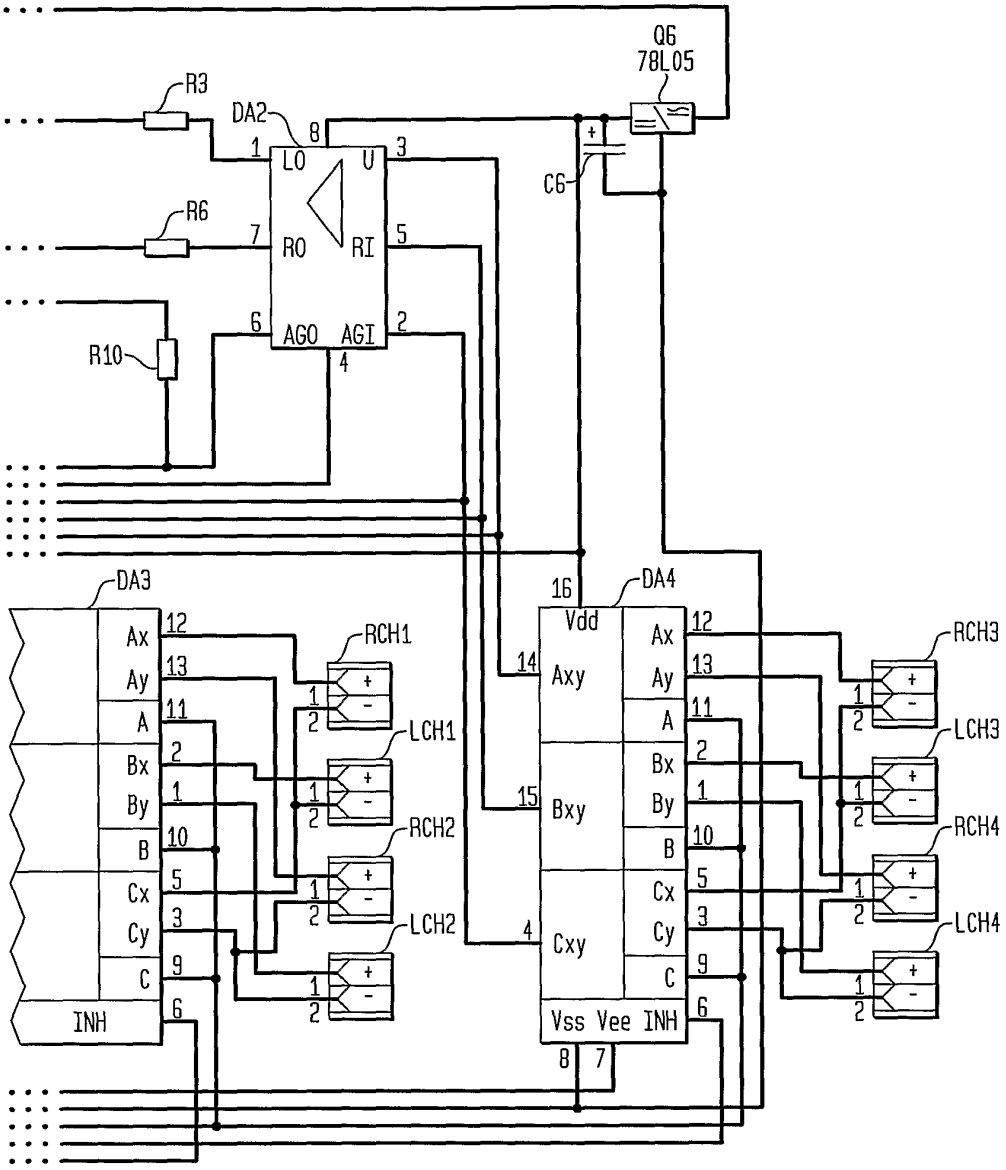
9/23

FIG. 3C1



SUBSTITUTE SHEET (RULE 26)

FIG. 3C2



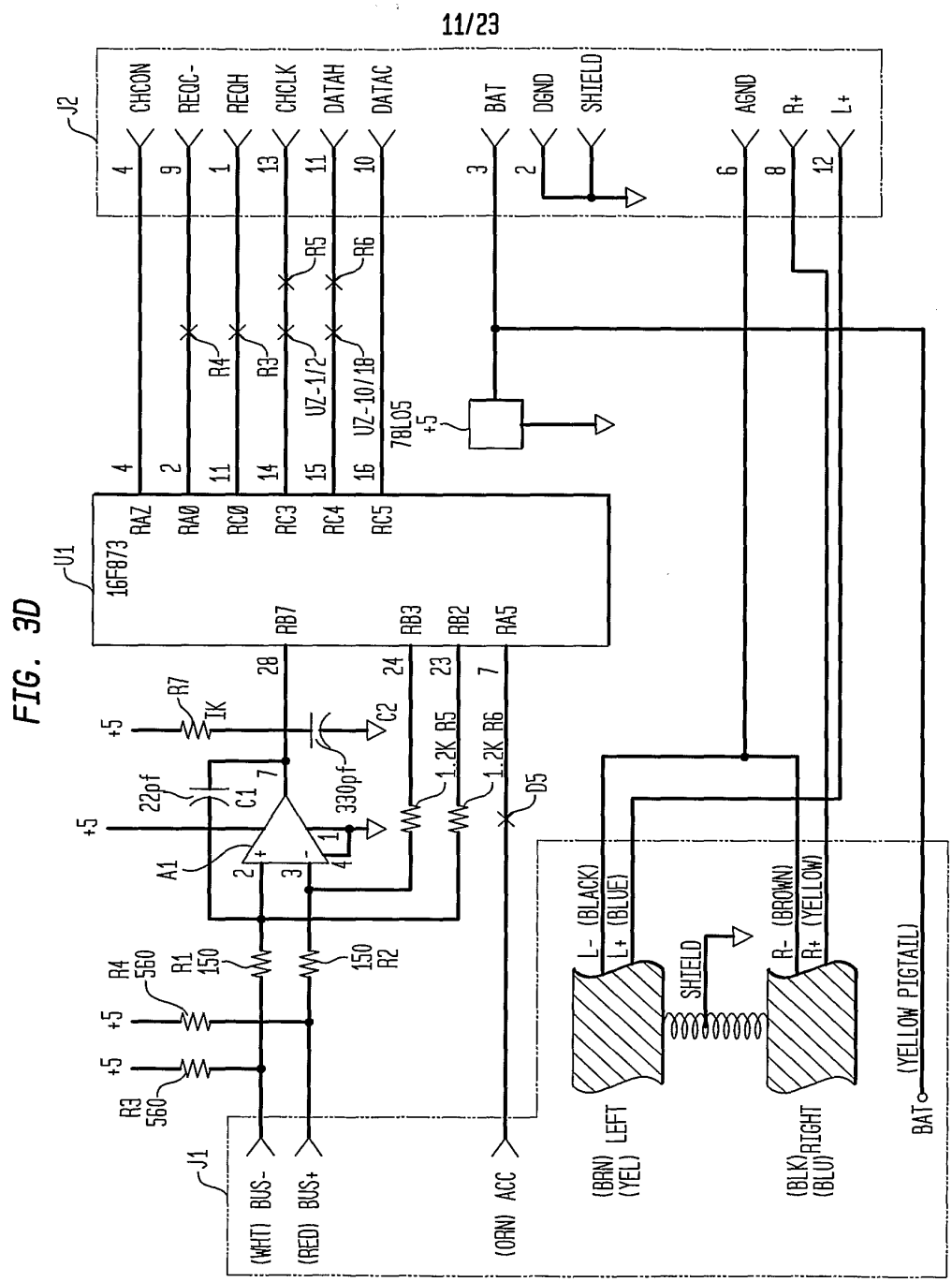

J2
CHCON
REQC-
REQH
CHCLK
DATAH
DATAC
BAT
DGND
SHIELD
AGND
R+
L+
4
9
1
13
11
10
3
2
6
8
12
R5
R6
R4
R3
UZ-1/2
UZ-10/18
78L05
+5
U1
16F873
RA2
RA0
RC0
RC3
RC4
RC5
RB7
RB3
RB2
RA5
28
24
23
7
R7
1K
C2
22pf
C1
330pf
1.2K R5
1.2K R6
D5
A1
R4 560
R1 150
150 R2
R3 560
J1
(WHT) BUS-
(RED) BUS+
(ORN) ACC
(BRN) (YEL) LEFT
(BLK) (BLU) RIGHT
L- (BLACK)
L+ (BLUE)
SHIELD
R- (BROWN)
R+ (YELLOW)
(YELLOW PIGTAIL)
BAT

FIG. 3D

FIG. 4A

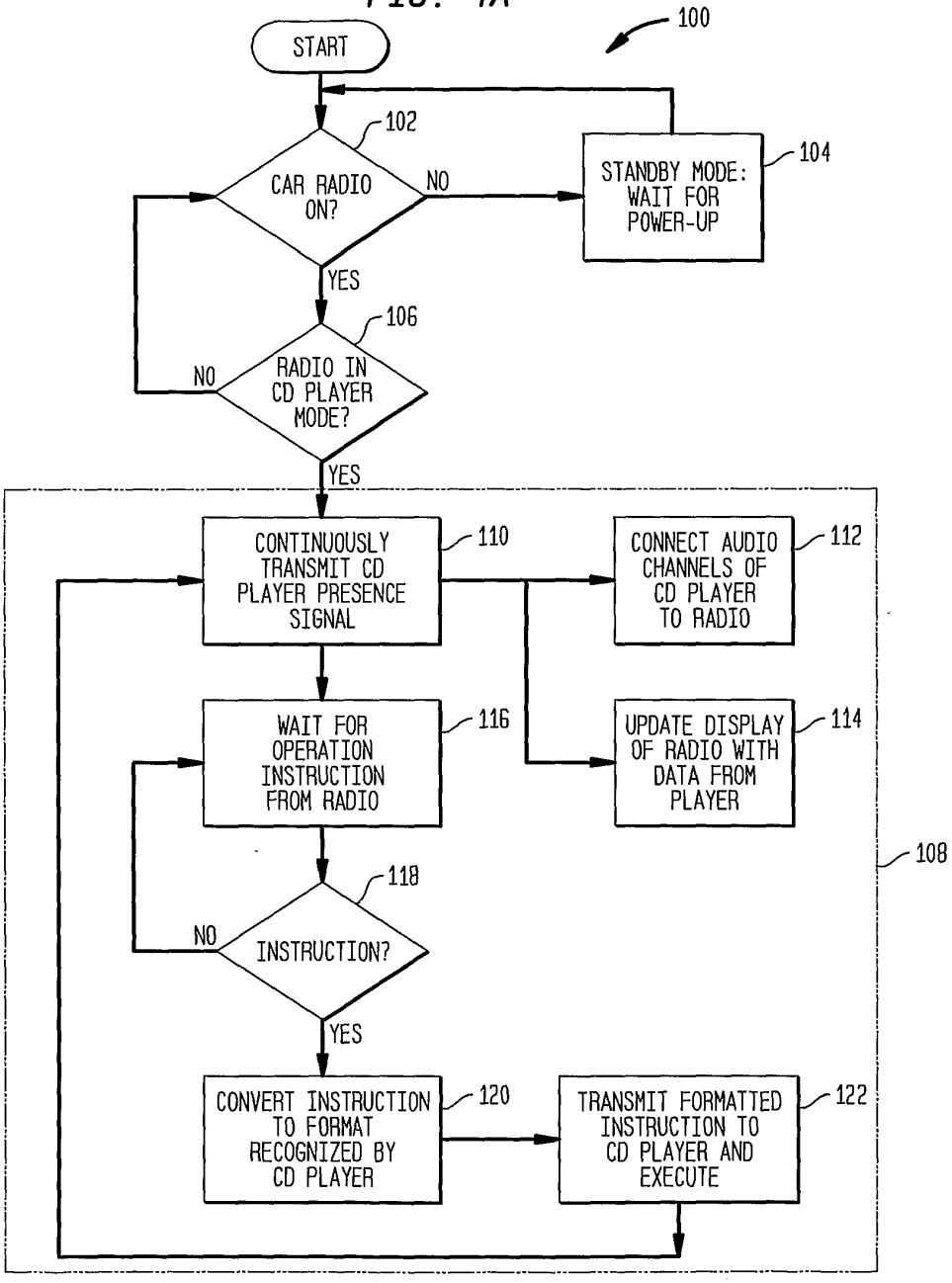

100
START
102
CAR RADIO ON?
NO
104
STANDBY MODE: WAIT FOR POWER-UP
YES
106
RADIO IN CD PLAYER MODE?
NO
YES
108
CONTINUOUSLY TRANSMIT CD PLAYER PRESENCE SIGNAL
110
CONNECT AUDIO CHANNELS OF CD PLAYER TO RADIO
112
WAIT FOR OPERATION INSTRUCTION FROM RADIO
116
UPDATE DISPLAY OF RADIO WITH DATA FROM PLAYER
114
118
INSTRUCTION?
NO
YES
CONVERT INSTRUCTION TO FORMAT RECOGNIZED BY CD PLAYER
120
TRANSMIT FORMATTED INSTRUCTION TO CD PLAYER AND EXECUTE
122

FIG. 4B

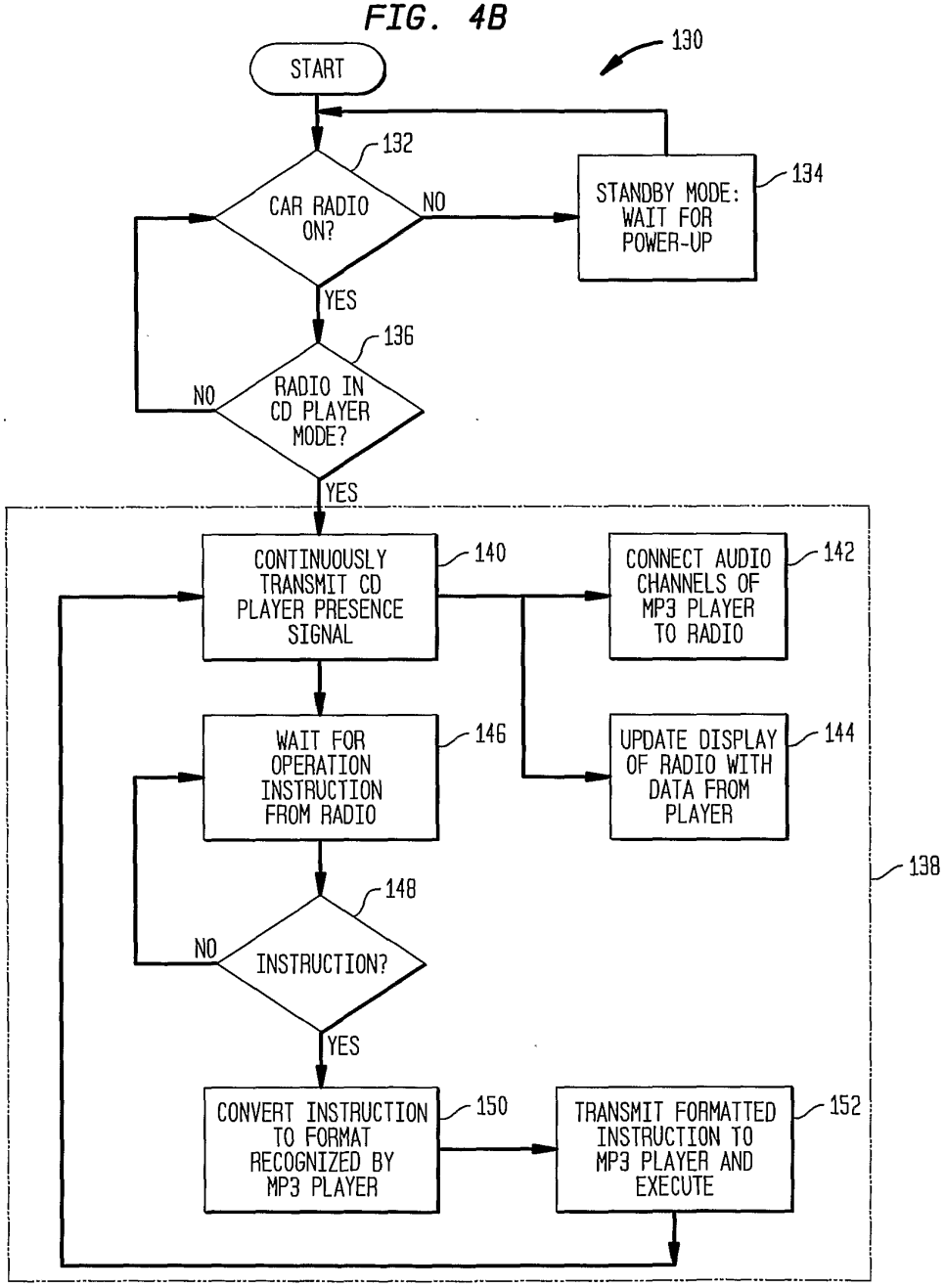


FIG. 4C

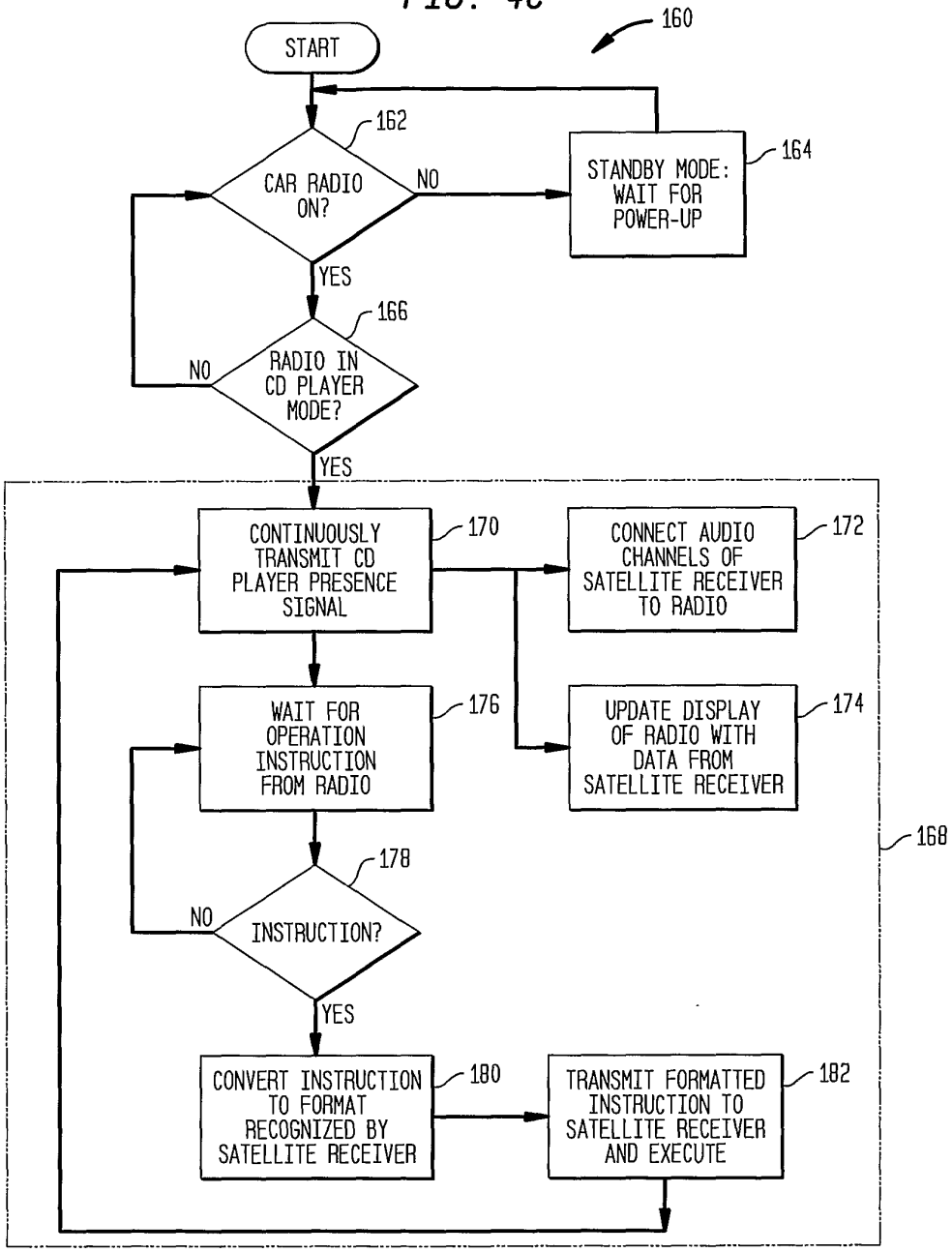


FIG. 4D

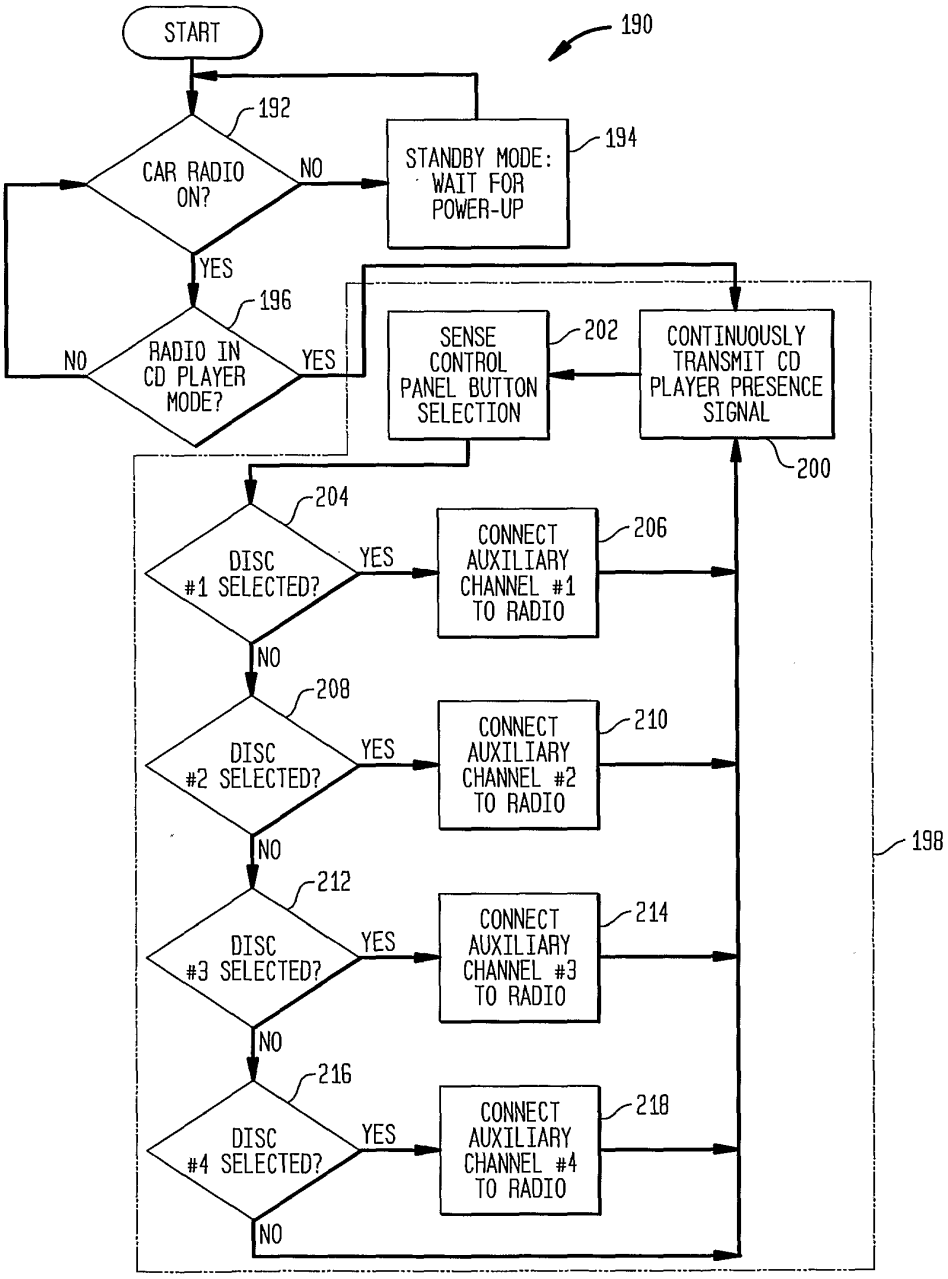


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FIG. 4E

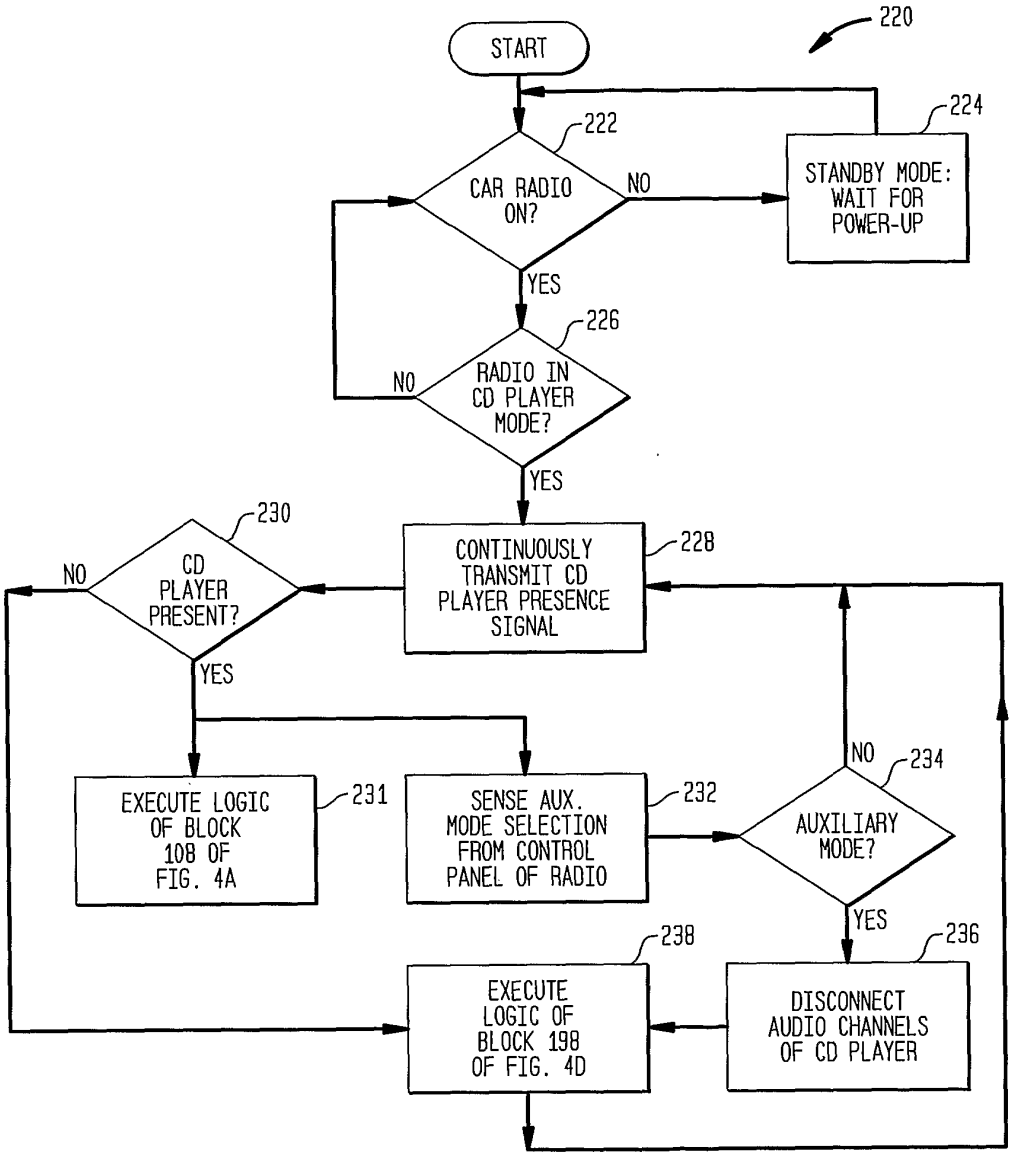

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FIG. 4F

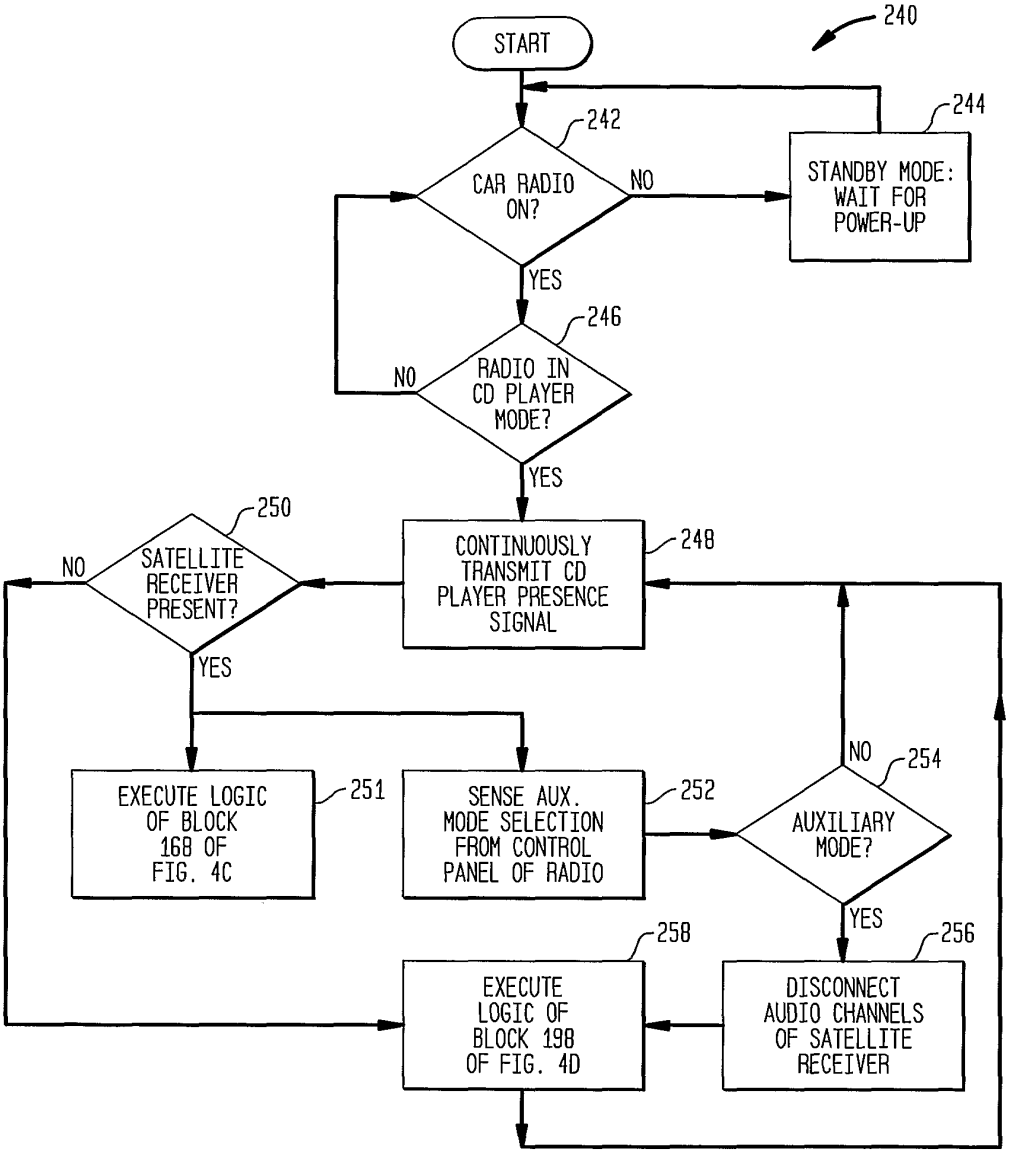

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FIG. 4G

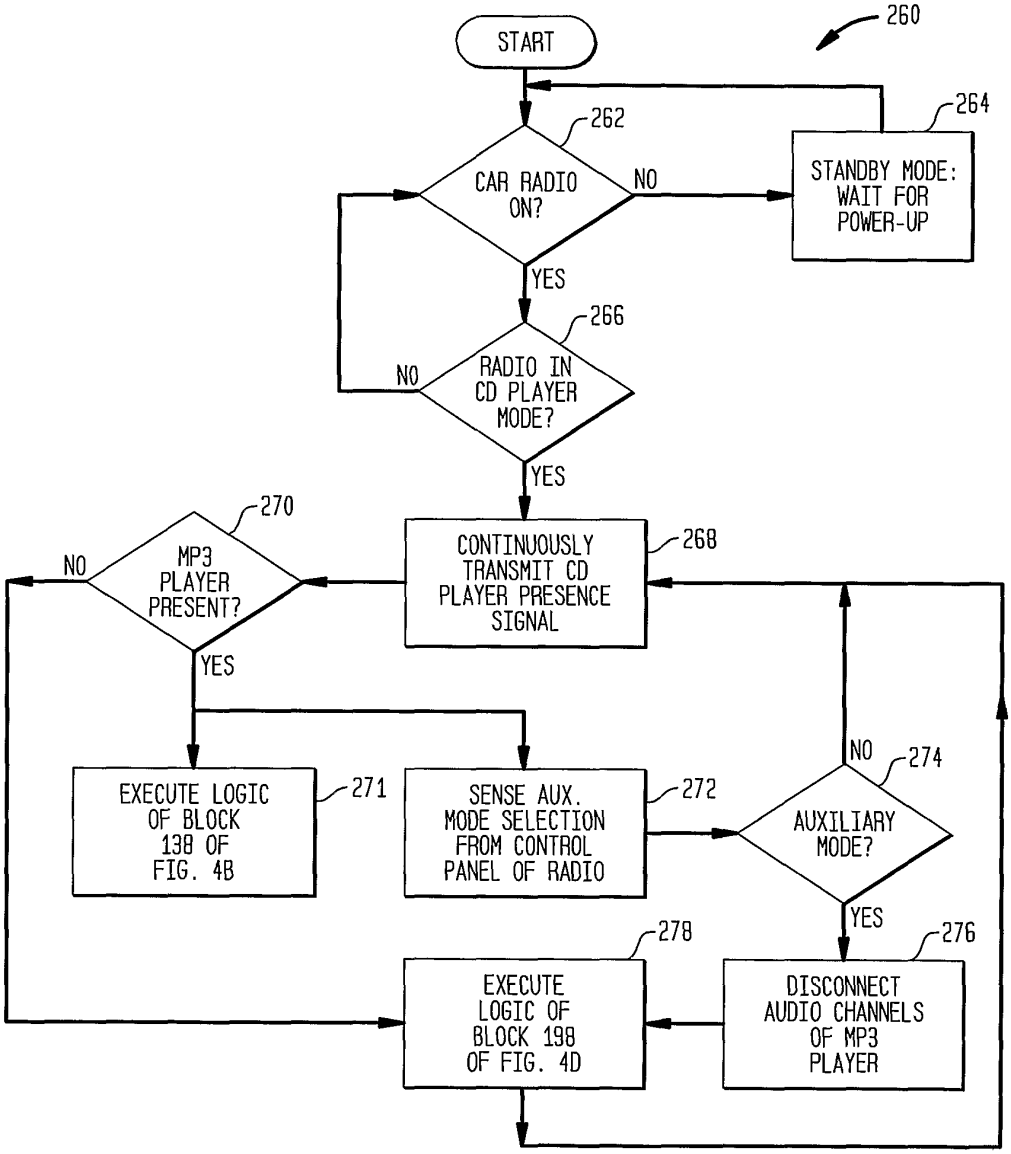


FIG. 5

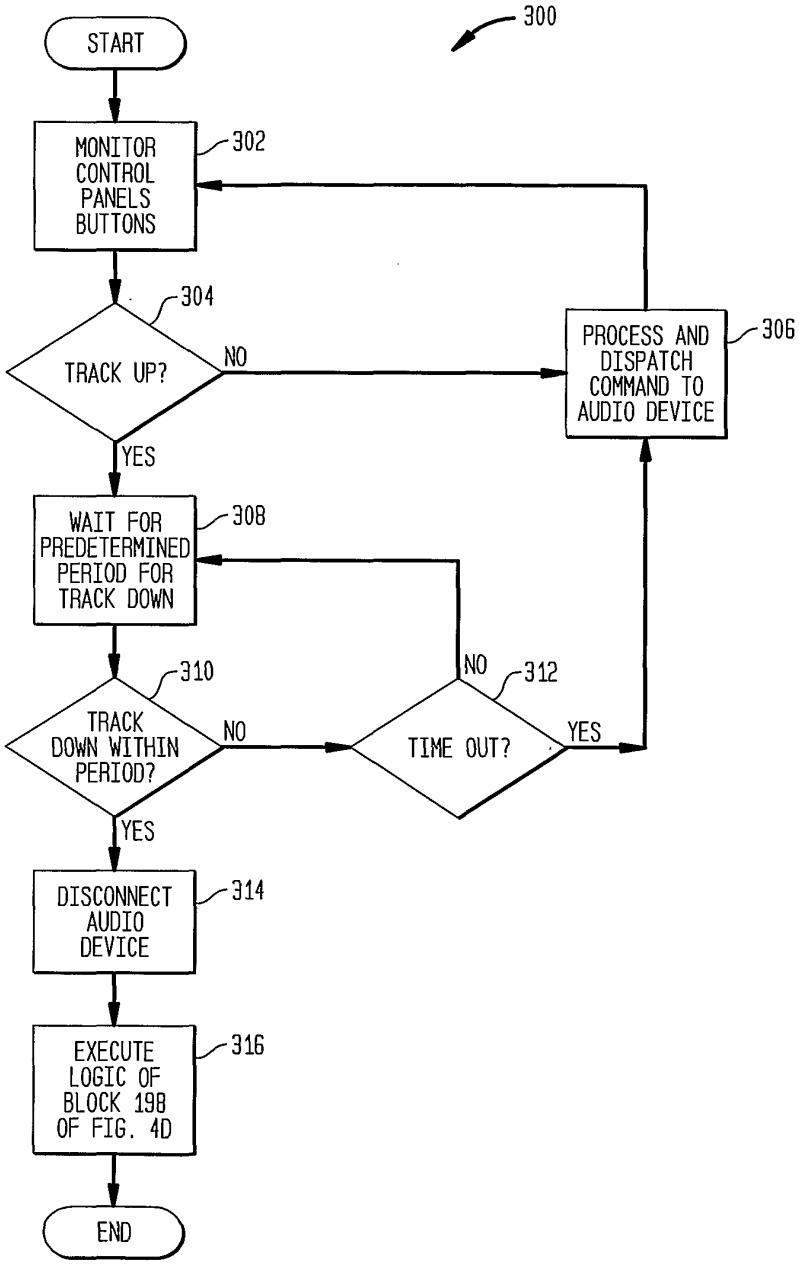


FIG. 6

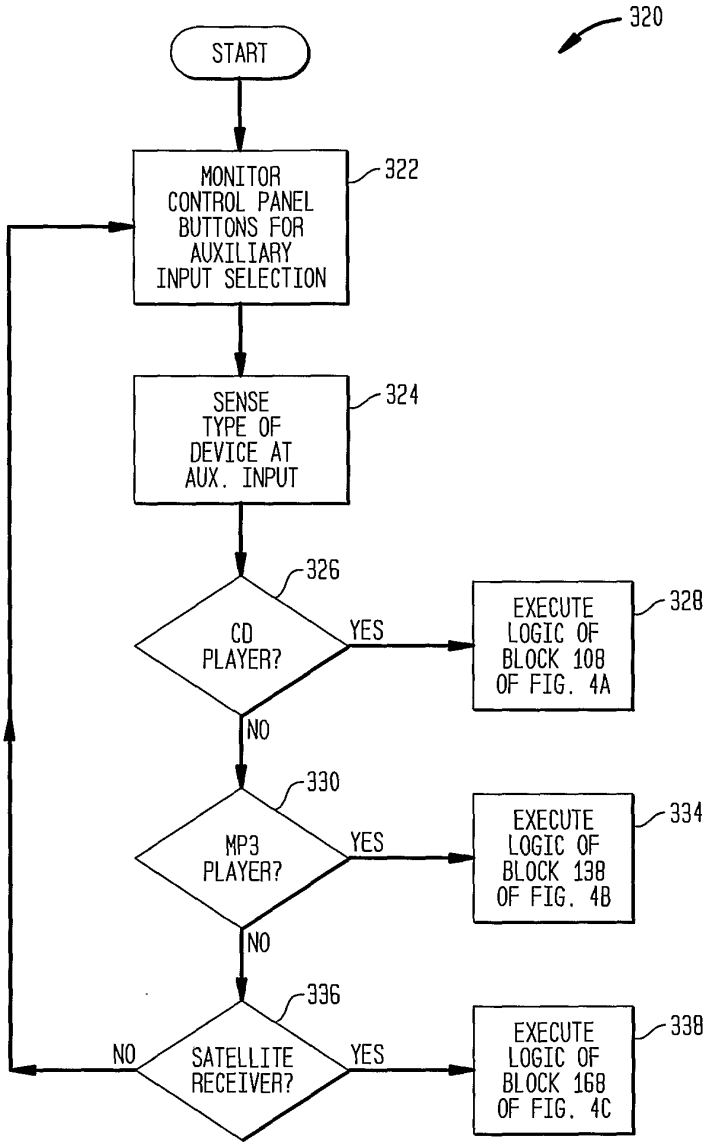


FIG. 7A

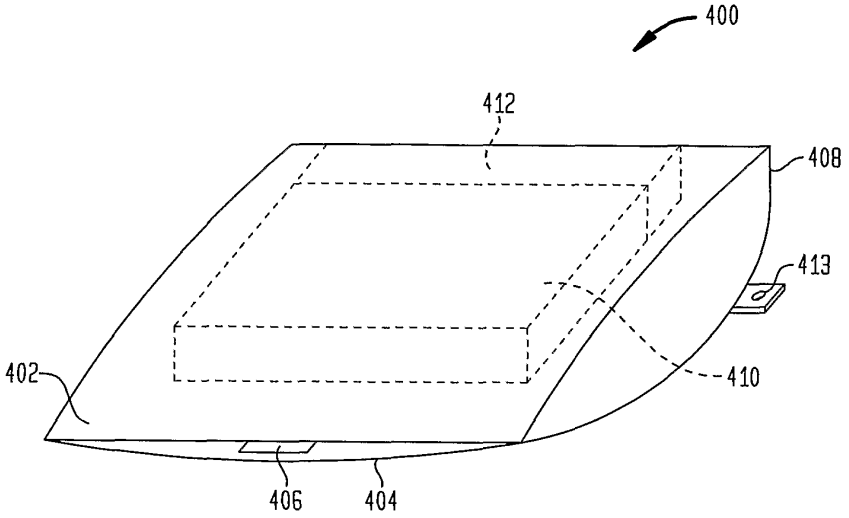


FIG. 7B

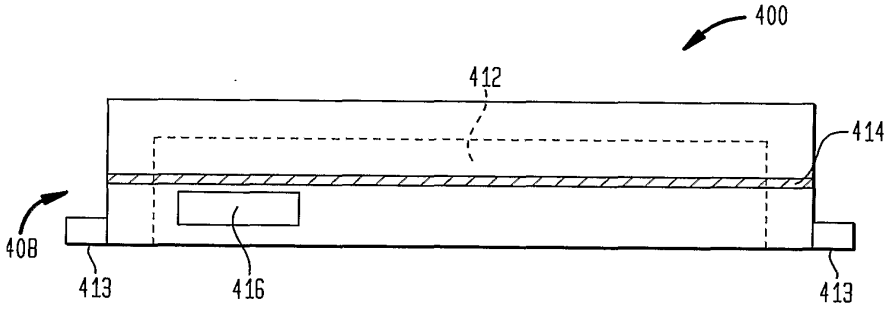


FIG. 8A

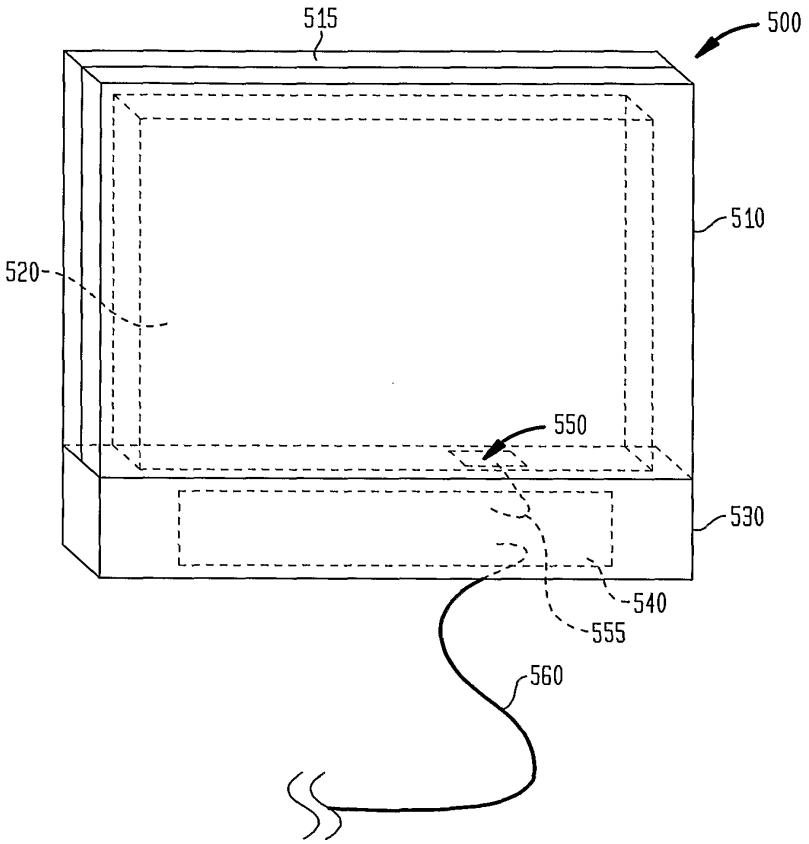


FIG. 8B

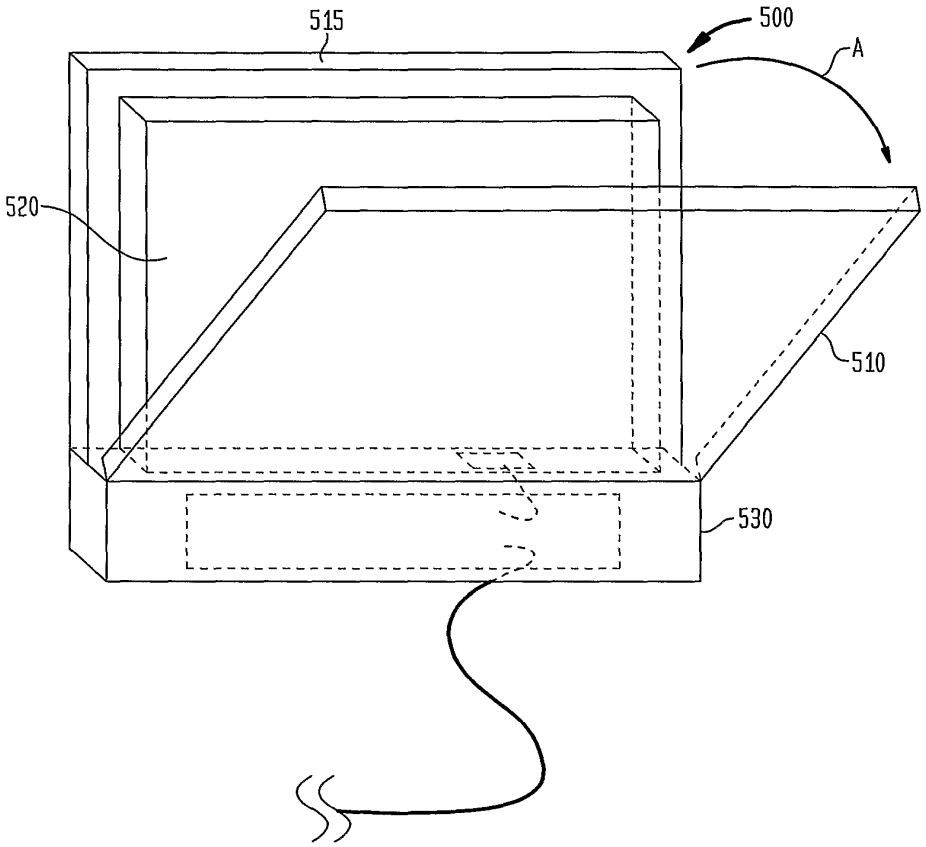
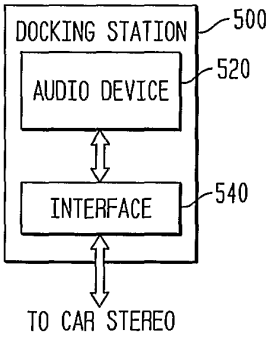


FIG. 9



INTERNATIONAL SEARCH REPORT

International application No.
PCT/US03/39493

A. CLASSIFICATION OF SUBJECT MATTER
IPC(7) : G06F 17/00; H04B 1/00, 3/00;
US CL : 700/94; 381/86, 77
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
U.S. : 700/94; 381/86, 77; 455/346,347; D14/434

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Databases available through EAST (USPAT, US-PGPUB, EPO, JPO, DERWENT)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 6,396,164 B1 (BARNEA ET AL) 28 May 2002 (28.05.2002), see entire document.	1,2,5,11-21,24-25,27-30,35-36,39-41 --- 3,4,6-10,22-23,26,31-34,37-38,42-80
Y, P	US 2003/0007649 A1 (RIGGS) 09 January 2003 (09.01.2003), paragraphs 0037-0040 and 0092-0099.	4,26,38,48-50,57,64,67,73-76, 79
Y	US 6,157,725 A (BECKER) 05 December 2000 (05.12.2000), col. 4, lines 41-58; col. 6, lines 6-46; col 8, line 20-col. 10, line 58.	3,4,6,9-10,26,34-38,44,47-54,61-62,64,66-67,72,75-79
Y	US 5,339,362 A (HARRIS) 16 August 1994 (16.08.1994), col. 3, line 25-col. 4, line 61 and Figures 2,3.	42-46,55-80
Y	US 2001/0044664 A1 (MUELLER et al) 22 November 2001 (22.11.2001), paragraphs 0020-0028,0034-0035.	4,7-12,26,31-38,51-54,61-67,75-76
Y	US 6,330,337 B1 (NICHOLSON) 11 December 2001 (11.12.2001), Figure 2 and col. 3, line 32-col. 4,1 line 28.	22-23,68,80

☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent published on or after the international filing date

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"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search
07 April 2004 (07.04.2004)

Date of mailing of the international search report
12 MAY 2004

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Commissioner for Patents
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Alexandria, Virginia 22313-1450
Facsimile No. (703) 305-3230

Authorized officer
Bill Isen
Telephone No. 703-305-3900

Form PCT/ISA/210 (second sheet) (July 1998)

INTERNATIONAL SEARCH REPORT

PCT/US03/39493

C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 4,772,079 A (DOUGLAS et al) 20 September 1988 (20.09.1988), col. 3, lines 25-64.	42-46,55-80

Form PCT/ISA/210 (second sheet) (July 1998)

(19) KOREAN INTELLECTUAL PROPERTY OFFICE

KOREAN PATENT ABSTRACTS

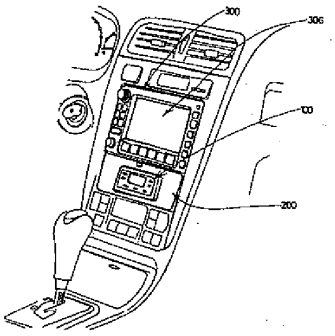
(11)Publication number: 1020010035788 A
(43)Date of publication of application:
07.05.2001

(21)Application number: 1019990042524
(22)Date of filing: 02.10.1999
(30)Priority: ..
(51)Int. Cl G11B 20/10

(71)Applicant: PARK, GYU JIN
(72)Inventor: PARK, GYU JIN

(54) CAR DIGITAL COMBINATION SYSTEM

(57) Abstract:



PURPOSE: A car digital combination system is provided to enhance performance of a car A/V system by permitting a digital data each genre, such as a learning data, a car repair guide, a data for so called singing room realization, and so on which are processed in a caption player by organically coupling a digital caption player to a car A/V system, to be displayed on a large size screen for a car A/V system or a car navigation system. CONSTITUTION: A digital caption player(100) downloads various digital data including a caption synchronized with a digital audio, reproduce the digital data, and digital-records a voice inputted from the outside. A docking station(200) accommodates the digital caption player(100) to fix it on a front face panel of a car and connects a digital caption character output signal and an audio output signal and a control signal for function selection/control from the digital caption layer(100) to a car A/V system(300). The car A/V system(300) receives digital data of the digital caption player (100) inputted through the docking station(200) and outputs the audio and caption data to display devices for a speaker and a monitor, respectively. The digital caption player(100) and the car A/V system(300) having a display device(306) of a large size screen are arranged in the vicinity of centerpesia of the car. The digital caption player(100) is organically coupled to the car A/V system(300) through the docking station(200) for holding the digital caption player(100). The car A/V system(300) may include a car navigation.

Legal Status
Date of request for an examination (19991002)
Notification date of refusal decision (00000000)

Final disposal of an application (rejection)
Date of final disposal of an application (20020621)
Patent registration number ( )
Date of registration (00000000)
Number of opposition against the grant of a patent ( )
Date of opposition against the grant of a patent (00000000)
Number of trial against decision to refuse ( )
Date of requesting trial against decision to refuse ( )

KOREAN PATENT ABSTRACTS XML 2(1-2)

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(19) KOREAN INTELLECTUAL PROPERTY OFFICE

KOREAN PATENT ABSTRACTS

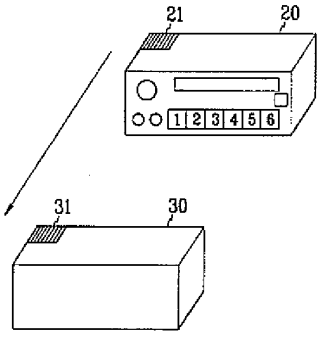
(11)Publication number: 1020010059192 A
(43)Date of publication of application: 06.07.2001

(21)Application number: 1019990066582
(22)Date of filing: 30.12.1999
(30)Priority: ..
(51)Int. Cl G11B 17/02

(71)Applicant: HYUNDAI MOTOR COMPANY
(72)Inventor: LEE, JAE GWANG

(54) COMPACT DISK CHANGER OPERATING SYSTEM

(57) Abstract:



PURPOSE: A compact disk changer operating system is provided to reduce inconvenience caused by installing a cable and a cost by deleting DIN cable. CONSTITUTION: An audio head unit(20) is installed in a vehicle and has a wireless transmitting apparatus to be able to transmit by a wireless. A CD changer(30) has a wireless receiving apparatus receives a signal from the wireless transmitting apparatus and is made an operating control by the audio head unit(20). The wireless transmitting apparatus of the audio head unit(20) is composed of an infrared emitting diode(21). The wireless receiving apparatus of the CD changer(30) is composed of a photo diode(31). The infrared emitting diode(21) and the photo diode(31) are just only one example of practice and is not restricted by practice example if only transmission and reception can be possible by the wireless. In the same manner installation position of the infrared emitting diode(21) and the photo diode (31) also are not limited to a special position.

(19)日本国特許庁（ＪＰ）　(12)公開特許公報（Ａ）　(11)特許出願公開番号
特開2000－286874
（P2000－286874A）
(43)公開日　平成12年10月13日(2000.10.13)

(51)Int.Cl.⁷	識別記号	ＦＩ		テーマコード(参考)
Ｈ０４Ｌ　12/40		Ｈ０４Ｌ　11/00	３２０	３Ｄ０２０
Ｂ６０Ｒ　11/02		Ｂ６０Ｒ　11/02	Ｂ	５Ｋ０３２
Ｈ０４Ｌ　12/28		Ｈ０４Ｌ　11/00	３１０Ｚ	５Ｋ０３３

審査請求　未請求　請求項の数５　ＯＬ　（全６頁）

(21)出願番号　特願平11－90570

(22)出願日　平成11年３月31日(1999.3.31)

(71)出願人　000002082
スズキ株式会社
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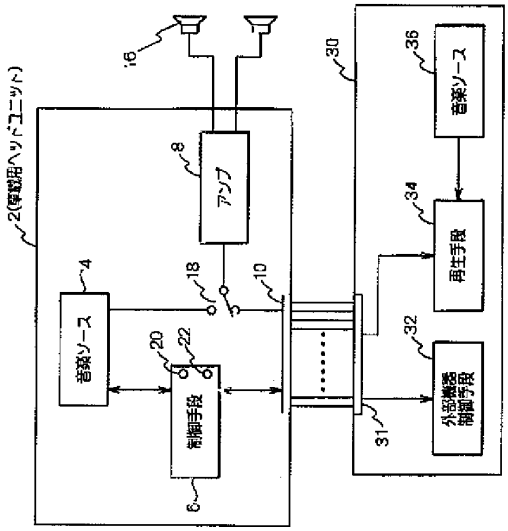
(72)発明者　植村　宏
静岡県浜松市高塚町300番地　スズキ株式会社内
(74)代理人　100079164
弁理士　高橋　勇

Ｆターム(参考)　3D020 BA02 BA05 BA09 BA10 BA13 BB01 BC03 BE03
5K032 BA06 BA08 DB03 DB04
5K033 BA06 BA08 DB03 DB04

(54)【発明の名称】　車載用ヘッドユニット及び車載用外部機器

(57)【要約】
【課題】　車載用オーディオの外部機器を低コストでかつ利用しやすいものとすること。
【解決手段】　内部音楽ソース４からの音声信号を増幅するアンプ８と、外部機器を接続する外部機器コネクタ１０と、この外部機器コネクタ１０にケーブルを介して接続される外部機器から入力される音声信号と前記内部音楽ソースから入力される音声信号とを切替える切替スイッチ１８と、前記内部音楽ソース４と前記外部機器３０との切替えを制御する制御手段６とを備えている。しかも、外部機器コネクタ３１が、バス接続用の複数のバス用ピン１２を接続するバス用ピン接続端子と、このバス用ピンに併設されコントロール信号を送受する２つのコントロール用ピン接続端子と、前記外部機器と接続される前記バス用ピンおよび前記コントロールピンとを有する１本のケーブルを係合するコネクタ本体１１とを備えた。



【特許請求の範囲】
【請求項１】　内部音楽ソースからの音声信号を増幅するアンプと、外部機器を接続する外部機器コネクタと、この外部機器コネクタにケーブルを介して接続される外部機器から入力される音声信号と前記内部音楽ソースから入力される音声信号とを切替える切替スイッチと、前記内部音楽ソースと前記外部機器との切替えを制御する制御手段とを備えた車載用ヘッドユニットにおいて、
前記外部機器コネクタが、バス接続用の複数のバス用ピン接続端子と、このバス用ピンに併設されコントロール信号を送受する２つのコントロール用ピン接続端子と、前記外部機器と接続される前記バス用ピンおよび前記コントロールピンとを有する１本のケーブルを係合するコネクタ本体とを備えたことを特徴とする車載用ヘッドユニット。
【請求項２】　前記制御手段が、前記始動時に前記バス用ピンと前記コントロールピンとに接続チェック信号それぞれ送信すると共に当該接続チェック信号に応答があった側のピン接続端子を有効と設定する第１の接続開始制御部を備えたことを特徴とする請求項１記載の車載用ヘッドユニット。
【請求項３】　前記制御手段が、前記始動時に前記２つのコントロール用ピン接続端子のうち一方を予め定められた一定期間中ハイにすると共に当該一定期間経過後は当該２つのコントロール用ピン接続端子への出力を前記始動時前の状態に戻す第２の接続開始制御部を備えたことを特徴とする請求項１記載の車載用ヘッドユニット。
【請求項４】　ヘッドユニットに対して外部機器となるＴＶ，ＣＤ又はＭＤ等の外部音楽ソースを再生する再生手段と、この再生手段によって再生される音声信号を前記ヘッドユニットへケーブルを介して伝達するためのヘッドユニット用コネクタと、このヘッドユニット用コネクタから入力される制御信号に応じて前記再生手段を制御する外部機器制御手段とを備えた車載用外部機器において、
前記ヘッドユニット用コネクタが、バス接続用の複数のバス用ピン接続端子と、このバス用ピンに併設されコントロール信号を送受する２つのコントロール用ピン接続端子と、前記外部機器と接続される前記バス用ピンおよび前記コントロールピンとを有する１本のケーブルを係合するコネクタ本体とを備えると共に、
前記再生手段に、前記ヘッドユニット用コネクタから入力される接続チェック信号に応じて前記コントロール用ピン接続端子又は前記バス用ピン接続端子の一方を選択する接続切替手段を備えたことを特徴とする車載用外部機器。
【請求項５】　ヘッドユニットに対して外部機器となるＴＶ，ＣＤ又はＭＤ等の外部音楽ソースを再生する再生手段と、前記ヘッドユニットから入力される制御信号に応じて前記再生手段を制御する外部機器制御手段とを備えた車載用外部機器において、
前記外部機器制御手段に、前記ヘッドユニット又は他の外部機器と接続する２以上の拡張コネクタを併設し、
前記拡張コネクタが、バス接続用の複数のバス用ピン接続端子と、このバス用ピンに併設されコントロール信号を送受する２つのコントロール用ピン接続端子と、前記外部機器と接続される前記バス用ピンおよび前記コントロールピンとを有する１本のケーブルを係合するコネクタ本体とを備え、
前記外部機器制御手段が、前記ヘッドユニットが接続されたコネクタに対して前記コントロール用ピン接続端子を有効と設定すると共に前記他の外部機器が接続されたコネクタに対して前記バス用ピン接続端子を有効に設定する複数接続制御部を備えたことを特徴とする車載用外部機器。
【発明の詳細な説明】
【０００１】
【発明の属する技術分野】本発明は、車載用ヘッドユニット及び車載用外部機器に係り、特に、車載用ヘッドユニットに車載用外部機器を増設する際の接続方式に特徴のある車載用ヘッドユニット及び車載用外部機器に関する。
【０００２】
【従来の技術】従来、車載用オーディオのヘッドユニットと外部機器の接続方式は、デッキ接続とバス接続の２通がある。一般的には、ヘッドユニットは例えばＦＭ／ＡＭラジオ付きカセットであり、一方、外部機器はＣＤプレーヤ、ＭＤプレーヤまたはＴＶ等である。
【０００３】
【発明が解決しようとする課題】しかしながら、上記従来例では、デッキ接続とバス接続の接続方式は互換性がないため、ＣＤプレーヤはデッキ接続用とバス接続用の二種類を用意しなければならない、という不都合があった。このため、ユーザは、外部機器を選定する時に、自分のヘッドユニットがデッキ接続用であるのか、それともバス接続用であるのかを確認しなければならなかった。
【０００４】
【発明の目的】本発明は、係る従来例の有する不都合を改善し、特に、車載用オーディオの外部機器を低コストでかつ利用しやすいものとすることのできる車載用ヘッドユニット及び車載用外部機器を提供することを、その目的とする。
【０００５】
【課題を解決するための手段】そこで、本発明による車載用ヘッドユニットでは、内部音楽ソースからの音声信号を増幅するアンプと、外部機器を接続する外部機器コネクタと、この外部機器コネクタにケーブルを介して接続される外部機器から入力される音声信号と前記内部音楽ソースから入力される音声信号とを切替える切替スイ

ッチと、前記内部音楽ソースと前記外部機器との切替えを制御する制御手段とを備えている。そして、外部機器コネクタが、バス接続用の複数のバス用ピン接続端子と、このバス用ピンに併設されコントロール信号を送受する2つのコントロール用ピン接続端子と、前記外部機器と接続される前記バス用ピンおよび前記コントロールピンとを有する1本のケーブルを係合するコネクタ本体とを備えた、という構成を採っている。これにより前述した目的を達成しようとするものである。

【0006】ここでは、外部機器コネクタが、バス接続用のバス用ピン接続端子と、デッキ接続用のコントロール用ピン接続端子とを備えたため、いずれの接続形式の外部機器であっても、同一のケーブルで接続される。このため、外部機器の購入に際して、ヘッドユニットのコネクタ形状に応じて外部機器を選択する必要がない。

【0007】

【発明の実施の形態】以下、本発明の実施の形態を図面を参照して説明する。図1は本発明による車載用ヘッドユニットと当該車載用ヘッドユニットに接続した車載用外部機器との構成を示すブロック図である。図1に示すように、車載用ヘッドユニット2は、内部音楽ソース4からの音声信号を増幅するアンプ8と、外部機器を接続する外部機器コネクタ10と、この外部機器コネクタ10にケーブルを介して接続される外部機器から入力される音声信号と前記内部音楽ソースから入力される音声信号とを切替える切替スイッチ18と、前記内部音楽ソース4と前記外部機器30との切替えを制御する制御手段6とを備えている。

【0008】しかも、図2に示すように、外部機器コネクタ31が、バス接続用の複数のバス用ピン12を接続するバス用ピン接続端子（図2のピン番号1，2のBUS+と-）と、このバス用ピンに併設されコントロール信号を送受する2つのコントロール用ピン接続端子（図2のピン番号5，13のCONT1及び2）と、前記外部機器と接続される前記バス用ピンおよび前記コントロールピンとを有する1本のケーブルを係合するコネクタ本体11とを備えている。

【0009】図2に示すように、本実施形態ではヘッドユニット2と外部機器30とを接続するコネクタ及び信号ラインをデッキ接続用とバス接続用の両方を含む形態としている。デッキ接続Dは、図3（A）に示すように、外部機器を1台のみ接続する方式である。その長所は低コストで製造できる点にあり、対処は、1台のみの接続であることと、CDチェンジャーなどをヘッドユニットの操作により制御することができない点にある。デッキ接続では、例えば、ヘッドユニットの内部音楽ソース（ラジオ、テープ）が動作中はCONT1を”Hi”とし、外部機器が動作中は、CONT2を”Hi”とする。外部機器が動作中にヘッドユニットが動作すると、CONT1を”Hi”とする。これに応じて外部機器は再生を停止し、CONT2を”Lo”とする。

【0010】一方、バス接続は複数台の外部機器の接続が可能であり、また、CDチェンジャャー などの制御をヘッドユニットで行うことができる。バス接続では、各機器にアドレスを割り当ててバスにより接続し、動作、停止等の要求をやりとりすることで連携する。バス接続では、通信用ICが必要となり、マイコン処理が増えるため、コストが高くなってしまう。一般的に、デッキ接続は廉価品に、バス接続は高級品に使用されている。

【0011】本実施形態では、図1に示すように、図2に示した方式の13ピンを用いることで、ヘッドユニットがバス接続であるのかまたはデッキ接続であるのかに関わらず、同一の外部機器を接続することができる。図1に示す例では、外部機器は、ヘッドユニットに対して外部機器となるTV，CD又はMD等の外部音楽ソースを再生する再生手段34と、この再生手段34によって再生される音声信号を前記ヘッドユニットへケーブルを介して伝達するためのヘッドユニット用コネクタ31と、このヘッドユニット用コネクタ31から入力される制御信号に応じて前記再生手段34を制御する外部機器制御手段32とを備えている。そして、ヘッドユニット用コネクタ31は、上述した外部機器コネクタと同一の形状、構造を採っている。そして、ヘッドユニット用コネクタから入力される接続チェック信号に応じて再生手段を前記コントロール用ピン接続端子又は前記バス用ピン接続端子の一方を選択する接続方式切替手段を備えている。この接続方式切替手段が、ヘッドユニットの採用する接続方式に応じて、バス接続またはデッキ接続を選択するため、ユーザがヘッドユニットの接続方式を確認する必要がなくなる。これは、ヘッドユニット側がデッキ接続またはバス接続のみに対応している場合に好適である。

【0012】また、ヘッドユニット側が両方の接続方式に対応していて、外部機器が一方の接続方式にのみ対応している場合には、図1に示したヘッドユニット2の制御手段6が、始動時（ACC　ON時）にバス用ピンと前記コントロールピンとに接続チェック信号それぞれ送信すると共に当該接続チェック信号に応答があった側のピン接続端子を有効と設定する第1の接続開始制御部20を備えるとよい。

【0013】さらに、ヘッドユニットがデッキ接続のみに対応している場合には、第1の接続開始制御部20に代えて、始動時に前記2つのコントロール用ピン接続端子のうち一方を予め定められた一定期間中ハイにすると共に当該一定期間経過後は当該2つのコントロール用ピン接続端子への出力を前記始動時前の状態に戻す第2の接続開始制御部を備えるとよい。この場合、デッキ接続にのみ対応した外部機器や、または両方の接続方式に対応した外部機器との間でデッキ接続を確立する。

【0014】図4は本実施形態による13ピンの接続方

式を使用して複数台の外部機器を接続した例を示すブロック図である。図4に示す例では、ヘッドユニットを低コストとするためにデッキ接続専用としつつ、図2に示すコネクタを採用する。そして、外部機器として操作パネルを有するTVを設け、このTVから2台の他の外部機器をバス接続する。そして、TVの操作パネルを操作することで、デッキ接続を介してヘッドユニットに送信する音楽ソースを選択する。図4に示す他の外部機器30，38は、図2に示すコネクタを有しつつ、さらにデッキ接続とバス接続の両方に対応したものとすると、当該他の外部機器を直接ヘッドユニット2に接続することもでき、接続の形態に応じて外部機器の接続方式及びコネクタを選択する必要がなくなる。

【0015】図4に示す外部機器40は、ヘッドユニット又は他の外部機器と接続する2以上の拡張コネクタ41を備えている。そして、当該拡張コネクタは、図1に示す外部機器コネクタと同様の形式、構造を採っている。そして、この外部機器40のコントローラとなる外部機器制御手段は、ヘッドユニット2が接続されたコネクタ41に対して前記コントロール用ピン接続端子を有効と設定することでデッキ接続を行い、さらに、他の外部機器が接続されたコネクタ41に対して前記バス用ピン接続端子を有効に設定することでバス接続する複数接続制御部を備えている。これにより、ヘッドユニット2を低コストとしつつ、複数台の外部機器を接続でき、そして、すべて同一のケーブルを利用して接続できるため、接続及び機器の選定が容易となる。

【0016】図5は本発明による車載用ヘッドユニットの実施例の構成を示すブロック図である。図5に示す車載用ヘッドユニットは、FM／AMラジオ付カセットである。図5に示すように、FM／AMラジオ付カセット（ヘッドユニット）は、車両アンテナで受信する電波に同調するチューナー回路52と、カセットテープを再生するテープヘッド54からの再生信号を増幅するテープイコライザアンプ53と、外部機器30から入力される音声信号を増幅するグランドアイソレーションアンプ55と、これらの音楽ソースからの音声信号を切替信号に応じて切り替える音声信号切替スイッチ18とを備えている。

【0017】FM／AMラジオ付カセット2はさらに、切替スイッチから入力される音声信号の増幅を調整するボリウム回路7と、このボリウム回路の出力を増幅するパワーアンプ8とを備えている。また、このパワーアンプ8は、スピーカー16に接続されている。そして、外部機器30とデッキ接続される制御手段としての制御用マイコン6を備えている。

【0018】図6に示すように、FM／AMラジオ付カセット2と外部機器との接続の確立は、AccON時の接続チェック信号の送受信により行う。図6（A）はデッキ接続を確立するための接続チェック信号の一例を示す波形図であり、FM／AMラジオ付カセット2は、AccON時に500〔ms〕CONT1を”Hi”とする。これにより、FM／AMラジオ付カセット2がデッキ接続を要求していることを外部機器に伝達する。また、FM／AMラジオ付カセット2がバス接続を外部機器に要求するには、図6（B）に示すように、AccON時直後に接続チェック信号となるパルス信号を各機器に送信し、返事を待つ。外部機器から当該接続チェック信号に応じた信号が入力されると、当該外部機器とバス接続を確立する。

【0019】図7に示すように、外部機器30は、AccON時に、バス信号とCONT1信号とをチェックして現在接続されているヘッドユニットがどちらの方式かを判断する。すなわち、AccONとなると、バス接続用の接続チェック信号が入力されたか否かを確認し（ステップS1）、図6（B）に示す信号が入力された場合にはバス接続を確立する（ステップS2）。一方、バス接続用の接続チェック信号が入力されない場合には、図6（A）に示すCONT1が”Hi”であるか否かを判定する（ステップS3）。そして、CONT1が”Hi”であれば、デッキ接続を確立する（ステップS4）。

【0020】また、AccONから2秒間バス信号、CONT1も入力されないときには、外部機器はヘッドユニットに対して接続要求のバス信号を送信する。

【0021】上述したように本実施形態によると、1つの接続コネクタの中にデッキ接続とバス接続の2つの方式の配線を入れ、そして、外部機器は、接続されたヘッドユニットがどちらの方式のものであるかを識別するため、外部機器は1機種で対応できるため、品種を少なくすることができ、そして、ユーザが外部機器を選定するときに自分のヘッドユニットがどちらの接続方式であるかを考慮する必要がなくなる。

【0022】

【発明の効果】本発明は以上のように構成され機能するので、これによると、外部機器コネクタが、バス接続用のバス用ピン接続端子と、デッキ接続用のコントロール用ピン接続端子とを備えたため、いずれの接続形式の外部機器であっても、同一のケーブルで接続することができ、従って、同一の機能の外部機器についてコネクタ形状別に外部機器の製造を行う必要がなく、また、ユーザは、外部機器の購入に際して、ヘッドユニットのコネクタ形状に応じて外部機器を選択する必要がなく、このため、外部機器の増設作業を簡単に行うことができる、という従来にない優れた車載用ヘッドユニット及び車載用外部機器を提供することができる。

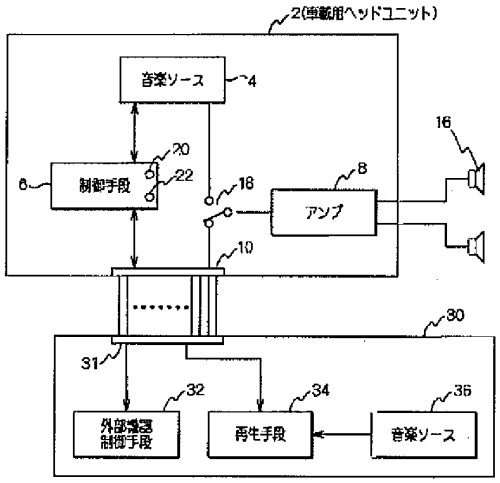
【図面の簡単な説明】

【図1】本発明の一実施形態の構成を示すブロック図である。

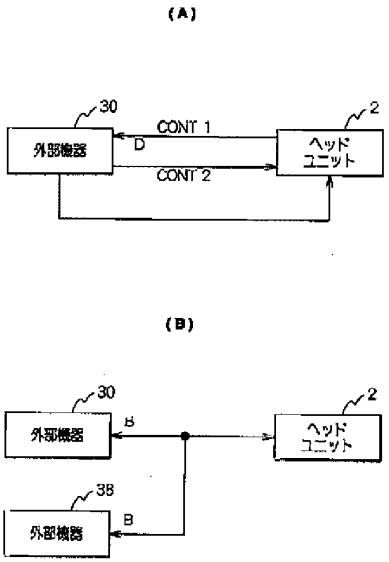
【図2】図1に示した外部機器コネクタ等の形式及び構

造の一例を示す説明図である。
【図３】ヘッドユニットと外部機器の接続の例を示すブロック図であり、図３（Ａ）はデッキ接続の一例を示し、図３（Ｂ）はバス接続の一例を示す図である。
【図４】デッキ接続形式のヘッドユニットに複数の外部機器を接続する例を示すブロック図である。
【図５】本発明の一実施例の構成を示すブロック図である。
【図６】接続チェック信号の一例を示す波形図であり、図６（Ａ）はデッキ接続での接続チェック信号の一例を示す図で、図６（Ｂ）はバス接続での接続チェック信号の一例を示す図である。
【図７】図６に示す接続チェック信号を用いた外部機器側の接続確立処理の一例を示すフローチャートである。
【符号の説明】
２　ヘッドユニット（例えば、ＦＭ／ＡＭラジオ付カセット）
４　ヘッドユニットの音楽ソース（例えば、カセット）
６　制御手段（制御用マイコン）
８　アンプ
１０　外部機器用コネクタ
１６　スピーカ
３０　外部機器（例えば、ＣＤプレーヤ）
３１　ヘッドユニット用コネクタ
３２　外部機器接続制御手段（制御用マイコン及び通信用ＩＣ）

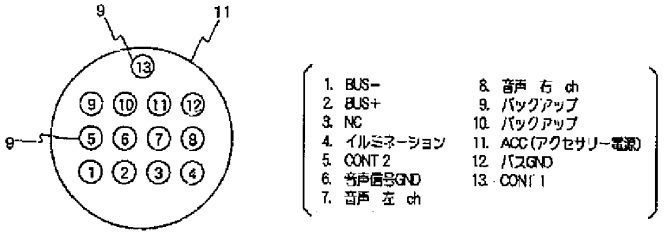
【図１】



【図３】



【図２】



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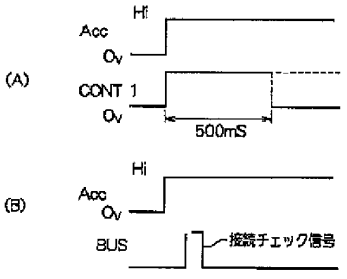
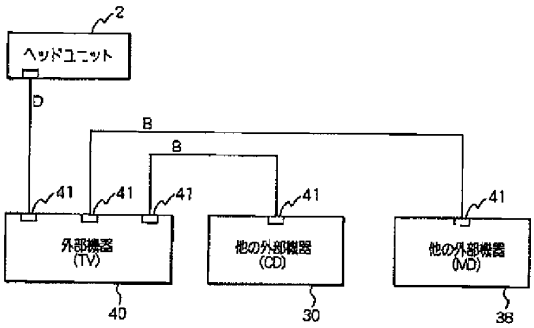
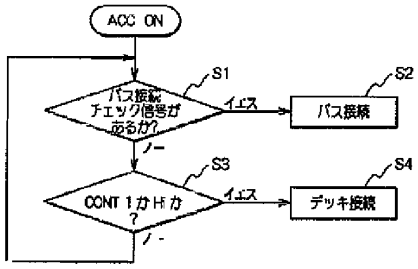


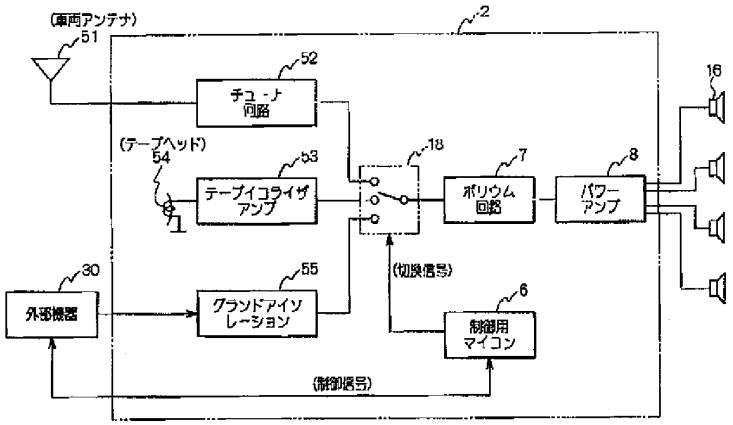
【図4】


2
ヘッドユニット
D
B
B
41
41
41
41
41
外部機器
(TV)
他の外部機器
(CD)
他の外部機器
(MD)
40
30
36

【図7】


ACC ON
S1
バス接続
チェック信号が
ある?
イエス
S2
バス接続
ノー
S3
CONT 1 が H か
?
イエス
S4
デッキ接続
ノー

【図5】


(車両アンテナ)
51
2
52
チューナ
回路
16
(テープヘッド)
54
53
テープイコライザ
アンプ
18
7
ボリウム
回路
8
パワー
アンプ
30
外部機器
55
グランドアイソ
レーション
(切換信号)
6
制御用
マイコン
(制御信号)

PATENT ABSTRACTS OF JAPAN

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H04L 12/28

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(71)Applicant : SUZUKI MOTOR CORP

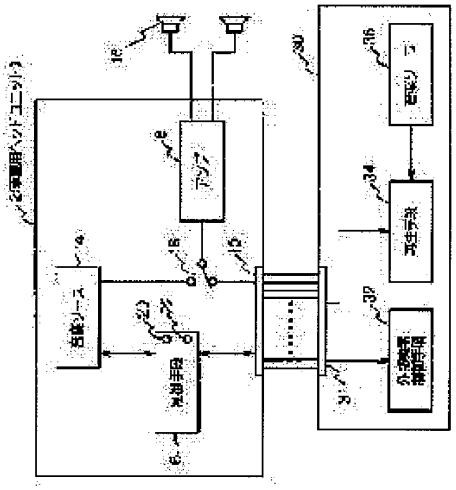
(72)Inventor : UEMURA HIROSHI

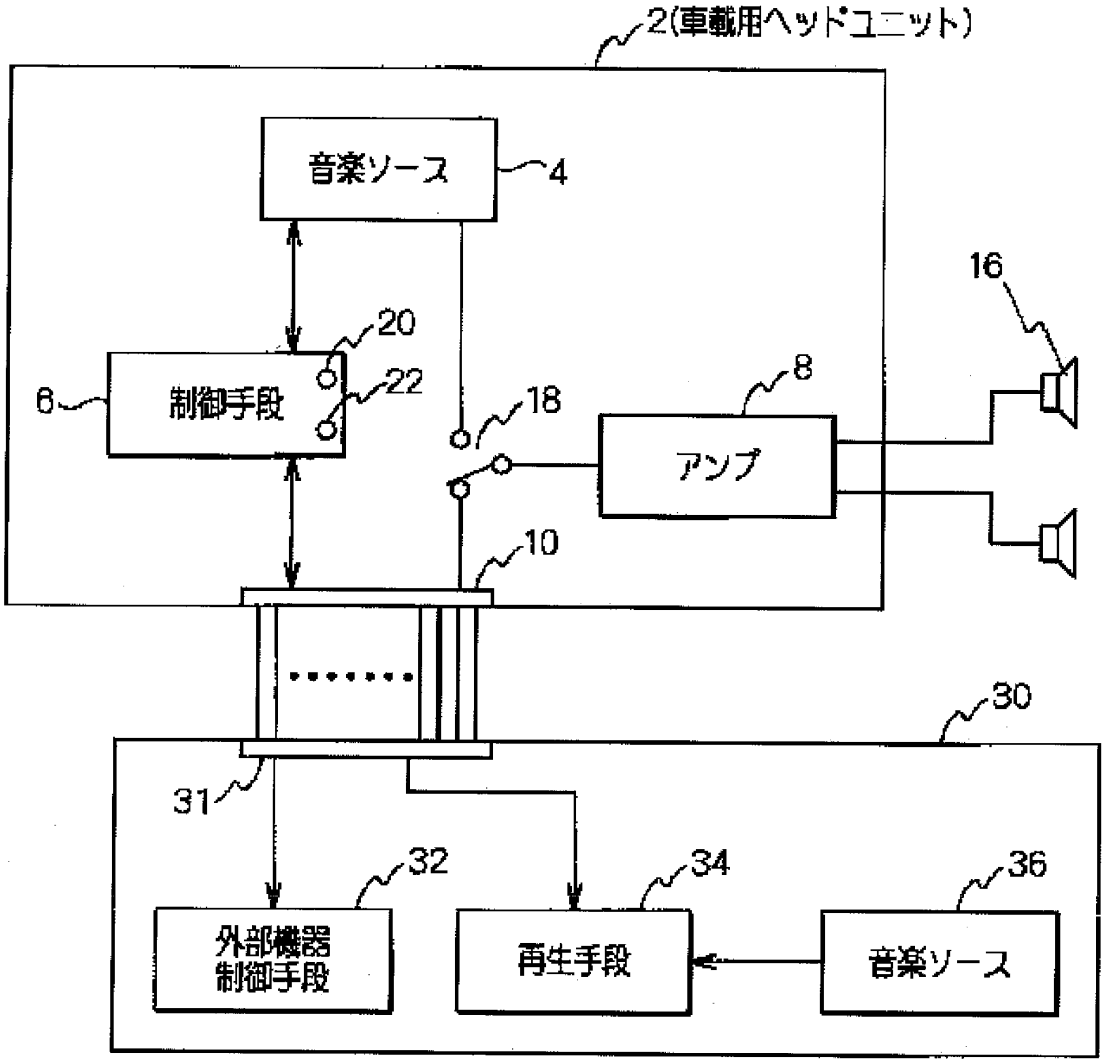
(54) ON-VEHICLE HEAD UNIT AND ON-VEHICLE EXTERNAL DEVICE

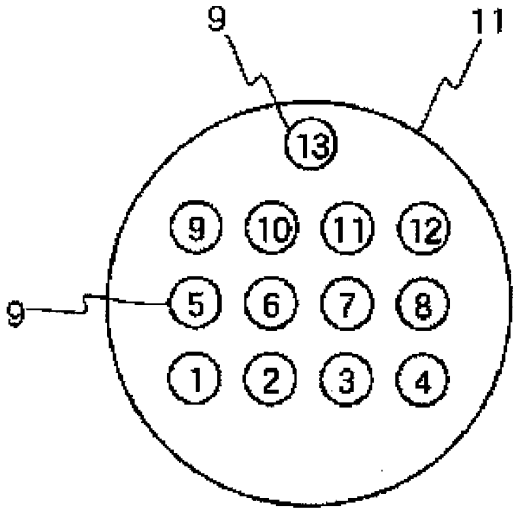
(57)Abstract:

PROBLEM TO BE SOLVED: To provide an external device for an on-vehicle audio unit which device is inexpensive and easily used.

SOLUTION: An on-vehicle head unit 2 is provided with an amplifier 8 that amplifies an audio signal from an internal music source 4, an external unit connector 10 for connecting the head unit 2 to an external device, a changeover switch 18 that selects an audio signal received from the external device connected to the external unit connector 10 via a cable or the audio signal received from the internal music source, and a control means 6 that controls switching between the internal music source 4 and the external device 30. Furthermore, an external device connector 31 is provided with bus use pin connection terminals connected to a plurality of bus pins for bus connection, two control pin connection terminals provided along the bus pins to send/receive a control signal, and a connector main body engaging one cable connected to the external device and having the bus pins and the control pins.

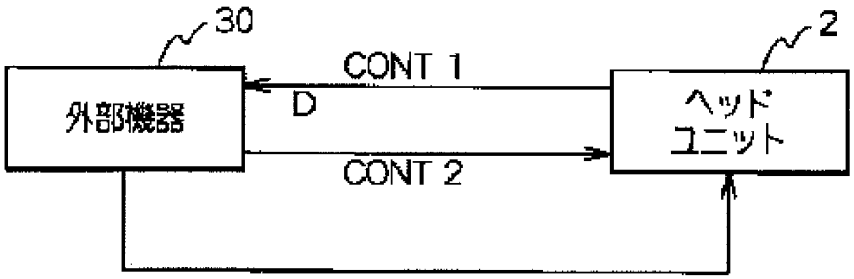




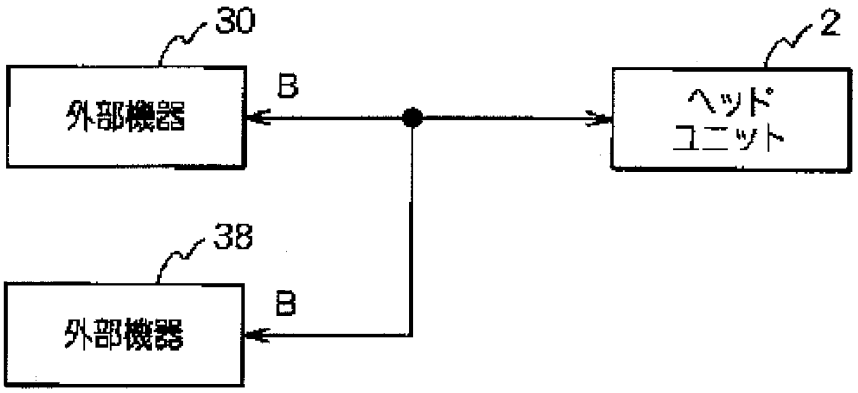


1. BUS−
2. BUS+
3. NC
4. イルミネーション
5. CONT 2
6. 音声信号GND
7. 音声 左 ch
8. 音声 右
9. バック
10. バック
11. ACC(ア
12. バスGN
13. CONT 1

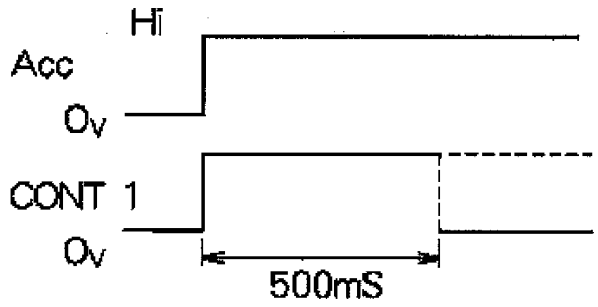
(A)



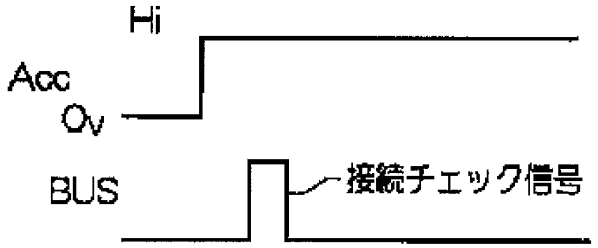
(B)

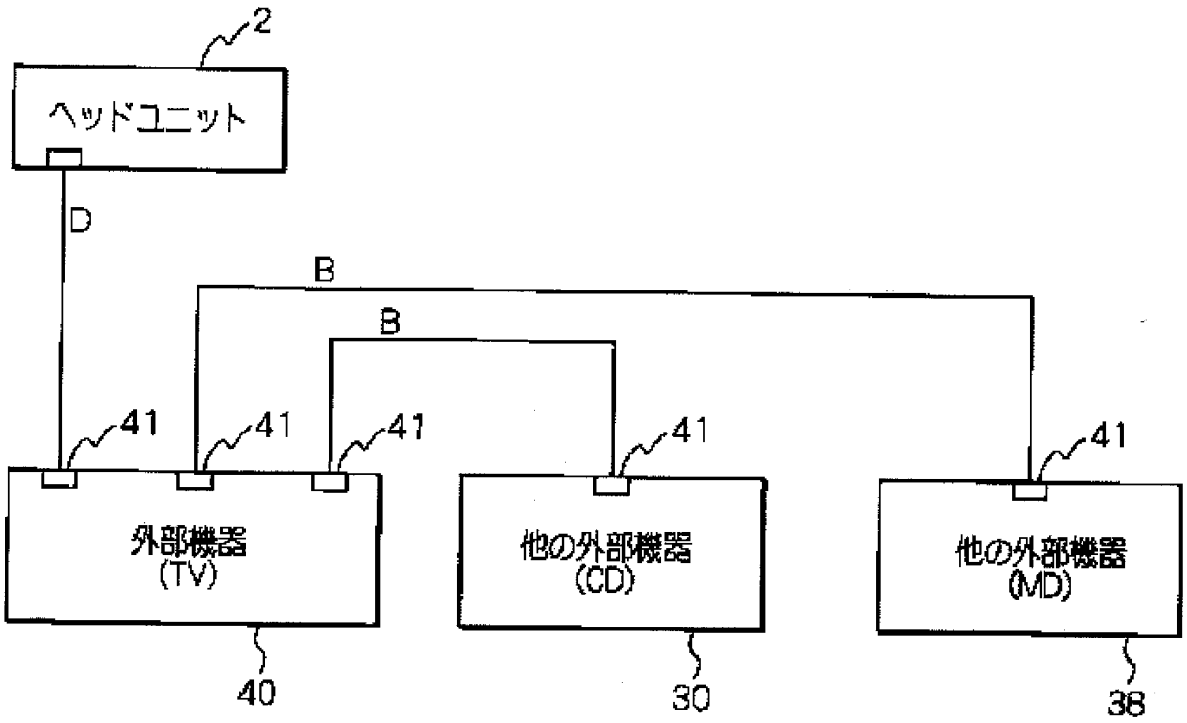


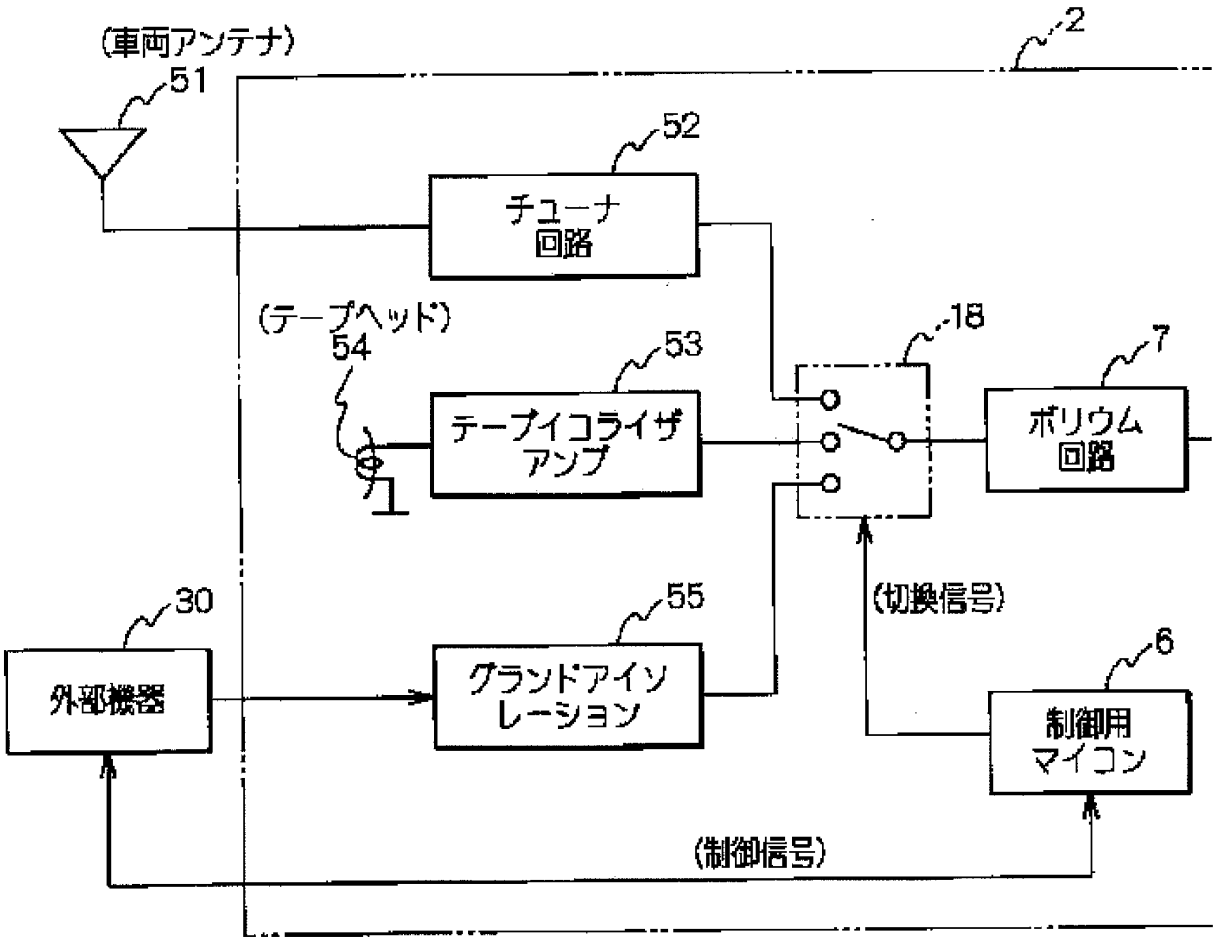
(A)



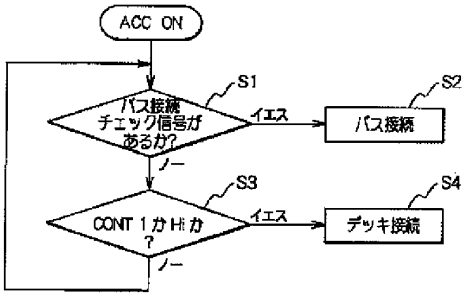
(B)







Drawing selection Drawing 7



[Translation done.]

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CLAIMS

[Claim(s)]
[Claim 1]Amplifier which amplifies an audio signal characterized by comprising the following from an internal music source, A changeover switch which changes an external device connector which connects an external instrument, and an audio signal inputted from an external instrument connected to this external device connector via a cable and an audio signal inputted from said internal music source, A head unit for mount provided with a control means which controls a change to said internal music source and said external instrument.
A pin connection terminal for buses of plurality [external device connector / said] for bus connections.
Two pin connection terminals for control which are put side by side at this pin for buses, and send and receive a control signal.
Said pin for buses connected with said external instrument, and said control pin.

[Claim 2]Said control means, the time of said start up -- said pin for buses, and said control pin -- a connection check signal -- the head unit for mount according to claim 1 provided with the 1st starting connection control section that sets up a pin connection terminal of a side which it each transmitted and had a response in the connection check signal concerned as it is effective.
[Claim 3]Said control means, Make one side into a high in fixed time which was able to be defined beforehand between said two pin connection terminals for control at the time of said start up, and. The head unit for mount according to claim 1, wherein after the fixed time progress concerned is provided with the 2nd starting connection control section that returns an output to the two pin connection terminals for control concerned to a front state at the time of said start up.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention]This invention relates to the head unit for mount, and the external instrument for mount, and relates to the head unit for mount and the external instrument for mount which have the feature in the connection type at the time of extending the external instrument for mount to the head unit for mount especially.
[0002]
[Description of the Prior Art]Conventionally, the head unit of the audio for mount and the connection type of an external instrument have two copies, deck connection and a bus connection. Generally, a head unit is for example, a cassette with FM/AM radio, and, on the other hand, an external instrument is a CD player, an MD player, or TV.
[0003]
[Problem(s) to be Solved by the Invention]However, in the above-mentioned conventional example, since the connection type of deck connection and a bus connection was incompatible, there was inconvenience that the CD player had to prepare two kinds, the object for deck connection and the object for bus connections. for this reason, when a user selects an external instrument, its head unit is an object for deck connection -- or it had to be checked whether it was an object for bus connections.
[0004]
[Objects of the Invention]This invention improves the inconvenience which the starting conventional example has, and sets it as the purpose to provide the head unit for mount which shall be low cost and shall be especially easy to use the external instrument of the audio for mount, and the external instrument for mount.
[0005]
[Means for Solving the Problem]So, in a head unit for mount by this invention. Amplifier which

amplifies an audio signal from an internal music source, and an external device connector which connects an external instrument, It has a changeover switch which changes an audio signal inputted from an external instrument connected to this external device connector via a cable, and an audio signal inputted from said internal music source, and a control means which controls a change to said internal music source and said external instrument. And a pin connection terminal for buses of plurality [external device connector] for bus connections, Composition of having had a connector body engaged in one cable which has two pin connection terminals for control which are put side by side at this pin for buses, and send and receive a control signal, and said pins for buses connected with said external instrument and said control pins is taken. It is going to attain the purpose which this mentioned above.

[0006]Here, since an external device connector was provided with a pin connection terminal for buses for bus connections, and a pin connection terminal for control for deck connection, even if it is an external instrument of which connection form, it is connected by the same cable. For this reason, it is not necessary when purchasing an external instrument to choose an external instrument according to connector shape of a head unit.

[0007]

[Embodiment of the Invention]Hereafter, an embodiment of the invention is described with reference to drawings. Drawing 1 is a block diagram showing composition with the external instrument for mount linked to the head unit for mount by this invention, and the head unit for mount concerned. As shown in drawing 1, the head unit 2 for mount is provided with the following.

Amplifier 8 which amplifies the audio signal from the internal music source 4.

The external device connector 10 which connects an external instrument.

The changeover switch 18 which changes the audio signal inputted from the external instrument connected to this external device connector 10 via a cable, and the audio signal inputted from said internal music source.

The control means 6 which controls the change to said internal music source 4 and said external instrument 30.

[0008]And the pin connection terminal for buses (BUS+ and - of the pin numbers 1 and 2 of drawing 2) to which the external device connector 31 connects two or more pins 12 for buses for bus connections as shown in drawing 2, Two pin connection terminals for control (CONT1 of the pin numbers 5 and 13 of drawing 2, and 2) which are put side by side at this pin for buses, and send and receive a control signal, It has the connector body 11 engaged in one cable which has said pin for buses connected with said external instrument, and said control pin.

[0009]As shown in drawing 2, in this embodiment, the connector and signal line which connect

the head unit 2 and the external instrument 30 are made into the gestalt containing both the object for deck connection, and for bus connections. The deck connection D is a method which accepts one external instrument and connects, as shown in drawing 3 (A). The strong point is in the point which can be manufactured by low cost, and it being only one set of connection and the point which cannot control a CD changer etc. by operation of a head unit have management. In deck connection, while the internal music source (radio, tape) of a head unit operates, CONT1 is made into "Hi", and while the external instrument operates, CONT2 is made into "Hi", for example. An external instrument will make CONT1 "Hi", if the head unit operates working. According to this, an external instrument suspends reproduction and makes CONT2 "Lo".

[0010]On the other hand, connection of two or more sets of external instruments is possible for a bus connection, and it can control CD changer y- etc. by a head unit. At a bus connection, an address is assigned to each apparatus, and it connects by bus, and cooperates by exchanging the demand of operation, a stop, etc. In a bus connection, since IC for communication is needed and microcomputer processing increases, cost will become high. Generally, deck connection is used for low-priced goods, and the bus connection is used for quality articles.

[0011]a head unit is a bus connection in using 13 pins of the method shown in drawing 2 in this embodiment, as shown in drawing 1 -- or although it is deck connection, it cannot be concerned, but the same external instrument can be connected. The reproduction means 34 which plays the alien-frequencies easy sauce in which an external instrument turns into an external instrument to a head unit, such as TV, CD, or MD, in the example shown in drawing 1, The connector 31 for head units for transmitting the audio signal reproduced by this reproduction means 34 to said head unit via a cable, It has the external instrument control means 32 which controls said reproduction means 34 according to the control signal inputted from this connector 31 for head units. And the connector 31 for head units has taken the same shape as the external device connector mentioned above, and structure. And it has the connection type switching means which chooses either said pin connection terminal for control, or said pin connection terminal for buses for a reproduction means according to the connection check signal inputted from the connector for head units. In order that this connection type switching means may choose a bus connection or deck connection according to the connection type which a head unit adopts, it becomes unnecessary for a user to check the connection type of a head unit. This is preferred when the head unit side supports only deck connection or a bus connection.

[0012]When the head unit side supports both connection types and the external instrument supports only one connection type, The control means 6 of the head unit 2 shown in drawing 1, the time of start up (at the time of ACC ON) -- the pin for buses, and said control pin -- a connection check signal -- it each transmits and it is good to have the 1st starting connection

control section 20 that sets up the pin connection terminal of the side which had a response in the connection check signal concerned as it is effective.

[0013]When the head unit supports only deck connection, It replaces with the 1st starting connection control section 20, One side is made into the high in fixed time which was able to be defined beforehand between said two pin connection terminals for control at the time of start up, and after the fixed time progress concerned is good to have the 2nd starting connection control section that returns the output to the two pin connection terminals for control concerned to a front state at the time of said start up. In this case, deck connection is established between the external instrument only corresponding to deck connection, or the external instrument corresponding to both connection types.

[0014]Drawing 4 is a block diagram showing the example which connected two or more sets of external instruments using the connection type of 13 pins by this embodiment. The connector shown in drawing 2 is adopted in the example shown in drawing 4, being only for deck connection, in order to make a head unit into low cost. And TV which has a navigational panel as an external instrument is formed, and the bus connection of two sets of other external instruments is carried out from this TV. And the music source which transmits to a head unit via deck connection by operating the navigational panel of TV is chosen. If other external instruments 30 and 38 shown in drawing 4 should correspond to both deck connection and a bus connection further, having a connector shown in drawing 2, being concerned -- others -- it becomes unnecessary to be also able to connect an external instrument to the head unit 2 directly, and to choose the connection type and connector of an external instrument according to the gestalt of connection

[0015]The external instrument 40 shown in drawing 4 is provided with the two or more expansion connectors 41 linked to a head unit or other external instruments. And the expansion connector concerned has taken the same form as the external device connector shown in drawing 1, and structure. And the external instrument control means used as the controller of this external instrument 40, Deck connection is made by setting up said pin connection terminal for control to the connector 41 to which the head unit 2 was connected, as it is effective, It has two or more connect control part which carries out a bus connection by setting up said pin connection terminal for buses effectively to the connector 41 to which other external instruments were connected. Thereby, making the head unit 2 into low cost, two or more sets of external instruments are connectable, and since it is altogether connectable using the same cable, connection and selection of apparatus become easy.

[0016]Drawing 5 is a block diagram showing the composition of the example of the head unit for mount by this invention. The head unit for mount shown in drawing 5 is a cassette with FM/AM radio. As shown in drawing 5, the cassette with FM/AM radio (head unit) is provided with the following.

The tuner circuit 52 which sides with the electric wave received with a vehicular antenna.
Tape equalizer amplifier 53 which amplifies the regenerative signal from the tape head 54 which plays a cassette tape.
Grand isolation amplifier 55 which amplifies the audio signal inputted from the external instrument 30.
The audio signal changeover switch 18 which changes the audio signal from these music sources according to a switching signal.

[0017]The cassette 2 with FM/AM radio is provided with the BORIUMU circuit 7 which adjusts further amplification of the audio signal inputted from a changeover switch, and the power amplification 8 which amplifies the output of this BORIUMU circuit. This power amplification 8 is connected to the speaker 16. And it has the control oriented microcomputer 6 as a control means by which deck connection is made with the external instrument 30.
[0018]As shown in drawing 6, transmission and reception of the connection check signal at the time of AccON perform establishment of connection between the cassette 2 with FM/AM radio, and an external instrument. Drawing 6 (A) is a wave form chart showing an example of the connection check signal for establishing deck connection, and the cassette 2 with FM/AM radio is 500 at the time of AccON. [ms] CONT1 is made into "Hi". This transmits to an external instrument that the cassette 2 with FM/AM radio is demanding deck connection. In order for the cassette 2 with FM/AM radio to require a bus connection of an external instrument, as shown in drawing 6 (B), he transmits the pulse signal which turns into a connection check signal immediately after at the time of AccON to each apparatus, and waits for the reply. If the signal according to the connection check signal concerned is inputted from an external instrument, the external instrument concerned and bus connection will be established.
[0019]As shown in drawing 7, the head unit which the external instrument 30 checks a bus signal and CONT1 signal at the time of AccON, and is connected now judges which method it is. That is, when it comes to AccON, it checks whether the connection check signal for bus connections has been inputted (Step S1), and a bus connection is established when the signal shown in drawing 6 (B) is inputted (Step S2). On the other hand, when the connection check signal for bus connections is not inputted, it is judged whether CONT1 shown in drawing 6 (A) is "Hi" (Step S3). And deck connection will be established if CONT1 is "Hi" (step S4).
[0020]When a bus signal and CONT1 are not inputted for 2 seconds from AccON, an external instrument transmits the bus signal of a connection request to a head unit.
[0021]According to this embodiment, as mentioned above, put wiring of two methods, deck connection and a bus connection, in one connection connector, and and an external instrument, Variety can be lessened, and when a user selects an external instrument, it becomes unnecessary for its head unit to take into consideration which connection type it is,

since the external instrument can respond by 1 model in order to identify of which method the connected head unit is a thing.

[0022]

[Effect of the Invention]Since this invention was constituted as mentioned above, and functioned and the external device connector was provided with the pin connection terminal for buses for bus connections, and the pin connection terminal for control for deck connection according to this, Even if it is an external instrument of which connection form, can connect by the same cable, therefore it is not necessary to manufacture an external instrument according to connector shape about the external instrument of the same function and, and a user faces the purchase of an external instrument, It is not necessary to choose an external instrument according to the connector shape of a head unit, and, for this reason, the outstanding head unit for mount and the external instrument for mount which are not in the former that the extension work of an external instrument can be done easily can be provided.

[Translation done.]

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3.In the drawings, any words are not translated.

TECHNICAL FIELD

[Field of the Invention]This invention relates to the head unit for mount, and the external instrument for mount, and relates to the head unit for mount and the external instrument for mount which have the feature in the connection type at the time of extending the external instrument for mount to the head unit for mount especially.

[Translation done.]

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PRIOR ART

[Description of the Prior Art]Conventionally, the head unit of the audio for mount and the connection type of an external instrument have two copies, deck connection and a bus connection. Generally, a head unit is for example, a cassette with FM/AM radio, and, on the other hand, an external instrument is a CD player, an MD player, or TV.

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EFFECT OF THE INVENTION

[Effect of the Invention]Since this invention was constituted as mentioned above, and functioned and the external device connector was provided with the pin connection terminal for buses for bus connections, and the pin connection terminal for control for deck connection according to this, Even if it is an external instrument of which connection form, can connect by the same cable, therefore it is not necessary to manufacture an external instrument according to connector shape about the external instrument of the same function and, and a user faces the purchase of an external instrument, It is not necessary to choose an external instrument according to the connector shape of a head unit, and, for this reason, the outstanding head unit for mount and the external instrument for mount which are not in the former that the extension work of an external instrument can be done easily can be provided.

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TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention]However, in the above-mentioned conventional example, since the connection type of deck connection and a bus connection was incompatible, there was inconvenience that the CD player had to prepare two kinds, the object for deck connection and the object for bus connections. for this reason, when a user selects an external instrument, its head unit is an object for deck connection -- or it had to be checked whether it was an object for bus connections.
[0004]
[Objects of the Invention]This invention improves the inconvenience which the starting conventional example has, and sets it as the purpose to provide the head unit for mount which shall be low cost and shall be especially easy to use the external instrument of the audio for mount, and the external instrument for mount.

[Translation done.]

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MEANS

[Means for Solving the Problem]So, in a head unit for mount by this invention. Amplifier which amplifies an audio signal from an internal music source, and an external device connector which connects an external instrument, It has a changeover switch which changes an audio signal inputted from an external instrument connected to this external device connector via a cable, and an audio signal inputted from said internal music source, and a control means which controls a change to said internal music source and said external instrument. And a pin connection terminal for buses of plurality [external device connector] for bus connections, Composition of having had a connector body engaged in one cable which has two pin connection terminals for control which are put side by side at this pin for buses, and send and receive a control signal, and said pins for buses connected with said external instrument and said control pins is taken. It is going to attain the purpose which this mentioned above.
[0006]Here, since an external device connector was provided with a pin connection terminal for buses for bus connections, and a pin connection terminal for control for deck connection, even if it is an external instrument of which connection form, it is connected by the same cable. For this reason, it is not necessary when purchasing an external instrument to choose an external instrument according to connector shape of a head unit.
[0007]
[Embodiment of the Invention]Hereafter, an embodiment of the invention is described with reference to drawings. Drawing 1 is a block diagram showing composition with the external instrument for mount linked to the head unit for mount by this invention, and the head unit for mount concerned. As shown in drawing 1, the head unit 2 for mount is provided with the following.
Amplifier 8 which amplifies the audio signal from the internal music source 4.
The external device connector 10 which connects an external instrument.
The changeover switch 18 which changes the audio signal inputted from the external

instrument connected to this external device connector 10 via a cable, and the audio signal inputted from said internal music source.
The control means 6 which controls the change to said internal music source 4 and said external instrument 30.

[0008]And the pin connection terminal for buses (BUS+ and - of the pin numbers 1 and 2 of drawing 2) to which the external device connector 31 connects two or more pins 12 for buses for bus connections as shown in drawing 2, Two pin connection terminals for control (CONT1 of the pin numbers 5 and 13 of drawing 2, and 2) which are put side by side at this pin for buses, and send and receive a control signal, It has the connector body 11 engaged in one cable which has said pin for buses connected with said external instrument, and said control pin.
[0009]As shown in drawing 2, in this embodiment, the connector and signal line which connect the head unit 2 and the external instrument 30 are made into the gestalt containing both the object for deck connection, and for bus connections. The deck connection D is a method which accepts one external instrument and connects, as shown in drawing 3 (A). The strong point is in the point which can be manufactured by low cost, and it being only one set of connection and the point which cannot control a CD changer etc. by operation of a head unit have management. In deck connection, while the internal music source (radio, tape) of a head unit operates, CONT1 is made into "Hi", and while the external instrument operates, CONT2 is made into "Hi", for example. An external instrument will make CONT1 "Hi", if the head unit operates working. According to this, an external instrument suspends reproduction and makes CONT2 "Lo".
[0010]On the other hand, connection of two or more sets of external instruments is possible for a bus connection, and it can control CD changer y- etc. by a head unit. At a bus connection, an address is assigned to each apparatus, and it connects by bus, and cooperates by exchanging the demand of operation, a stop, etc. In a bus connection, since IC for communication is needed and microcomputer processing increases, cost will become high. Generally, deck connection is used for low-priced goods, and the bus connection is used for quality articles.
[0011]a head unit is a bus connection in using 13 pins of the method shown in drawing 2 in this embodiment, as shown in drawing 1 -- or although it is deck connection, it cannot be concerned, but the same external instrument can be connected. The reproduction means 34 which plays the alien-frequencies easy sauce in which an external instrument turns into an external instrument to a head unit, such as TV, CD, or MD, in the example shown in drawing 1, The connector 31 for head units for transmitting the audio signal reproduced by this reproduction means 34 to said head unit via a cable, It has the external instrument control means 32 which controls said reproduction means 34 according to the control signal inputted

from this connector 31 for head units. And the connector 31 for head units has taken the same shape as the external device connector mentioned above, and structure. And it has the connection type switching means which chooses either said pin connection terminal for control, or said pin connection terminal for buses for a reproduction means according to the connection check signal inputted from the connector for head units. In order that this connection type switching means may choose a bus connection or deck connection according to the connection type which a head unit adopts, it becomes unnecessary for a user to check the connection type of a head unit. This is preferred when the head unit side supports only deck connection or a bus connection.

[0012]When the head unit side supports both connection types and the external instrument supports only one connection type, The control means 6 of the head unit 2 shown in drawing 1, the time of start up (at the time of ACC ON) -- the pin for buses, and said control pin -- a connection check signal -- it each transmits and it is good to have the 1st starting connection control section 20 that sets up the pin connection terminal of the side which had a response in the connection check signal concerned as it is effective.

[0013]When the head unit supports only deck connection, It replaces with the 1st starting connection control section 20, One side is made into the high in fixed time which was able to be defined beforehand between said two pin connection terminals for control at the time of start up, and after the fixed time progress concerned is good to have the 2nd starting connection control section that returns the output to the two pin connection terminals for control concerned to a front state at the time of said start up. In this case, deck connection is established between the external instrument only corresponding to deck connection, or the external instrument corresponding to both connection types.

[0014]Drawing 4 is a block diagram showing the example which connected two or more sets of external instruments using the connection type of 13 pins by this embodiment. The connector shown in drawing 2 is adopted in the example shown in drawing 4, being only for deck connection, in order to make a head unit into low cost. And TV which has a navigational panel as an external instrument is formed, and the bus connection of two sets of other external instruments is carried out from this TV. And the music source which transmits to a head unit via deck connection by operating the navigational panel of TV is chosen. If other external instruments 30 and 38 shown in drawing 4 should correspond to both deck connection and a bus connection further, having a connector shown in drawing 2, being concerned -- others -- it becomes unnecessary to be also able to connect an external instrument to the head unit 2 directly, and to choose the connection type and connector of an external instrument according to the gestalt of connection

[0015]The external instrument 40 shown in drawing 4 is provided with the two or more expansion connectors 41 linked to a head unit or other external instruments. And the

expansion connector concerned has taken the same form as the external device connector shown in drawing 1, and structure. And the external instrument control means used as the controller of this external instrument 40, Deck connection is made by setting up said pin connection terminal for control to the connector 41 to which the head unit 2 was connected, as it is effective, It has two or more connect control part which carries out a bus connection by setting up said pin connection terminal for buses effectively to the connector 41 to which other external instruments were connected. Thereby, making the head unit 2 into low cost, two or more sets of external instruments are connectable, and since it is altogether connectable using the same cable, connection and selection of apparatus become easy.

[0016]Drawing 5 is a block diagram showing the composition of the example of the head unit for mount by this invention. The head unit for mount shown in drawing 5 is a cassette with FM/AM radio. As shown in drawing 5, the cassette with FM/AM radio (head unit) is provided with the following.

The tuner circuit 52 which sides with the electric wave received with a vehicular antenna.

Tape equalizer amplifier 53 which amplifies the regenerative signal from the tape head 54 which plays a cassette tape.

Grand isolation amplifier 55 which amplifies the audio signal inputted from the external instrument 30.

The audio signal changeover switch 18 which changes the audio signal from these music sources according to a switching signal.

[0017]The cassette 2 with FM/AM radio is provided with the BORIUMU circuit 7 which adjusts further amplification of the audio signal inputted from a changeover switch, and the power amplification 8 which amplifies the output of this BORIUMU circuit. This power amplification 8 is connected to the speaker 16. And it has the control oriented microcomputer 6 as a control means by which deck connection is made with the external instrument 30.

[0018]As shown in drawing 6, transmission and reception of the connection check signal at the time of AccON perform establishment of connection between the cassette 2 with FM/AM radio, and an external instrument. Drawing 6 (A) is a wave form chart showing an example of the connection check signal for establishing deck connection, and the cassette 2 with FM/AM radio is 500 at the time of AccON. [ms] CONT1 is made into "Hi". This transmits to an external instrument that the cassette 2 with FM/AM radio is demanding deck connection. In order for the cassette 2 with FM/AM radio to require a bus connection of an external instrument, as shown in drawing 6 (B), he transmits the pulse signal which turns into a connection check signal immediately after at the time of AccON to each apparatus, and waits for the reply. If the signal according to the connection check signal concerned is inputted from an external instrument, the external instrument concerned and bus connection will be established.

[0019]As shown in drawing 7, the head unit which the external instrument 30 checks a bus signal and CONT1 signal at the time of AccON, and is connected now judges which method it is. That is, when it comes to AccON, it checks whether the connection check signal for bus connections has been inputted (Step S1), and a bus connection is established when the signal shown in drawing 6 (B) is inputted (Step S2). On the other hand, when the connection check signal for bus connections is not inputted, it is judged whether CONT1 shown in drawing 6 (A) is "Hi" (Step S3). And deck connection will be established if CONT1 is "Hi" (step S4).
[0020]When a bus signal and CONT1 are not inputted for 2 seconds from AccON, an external instrument transmits the bus signal of a connection request to a head unit.
[0021]According to this embodiment, as mentioned above, put wiring of two methods, deck connection and a bus connection, in one connection connector, and and an external instrument, Variety can be lessened, and when a user selects an external instrument, it becomes unnecessary for its head unit to take into consideration which connection type it is, since the external instrument can respond by 1 model in order to identify of which method the connected head unit is a thing.

[Translation done.]

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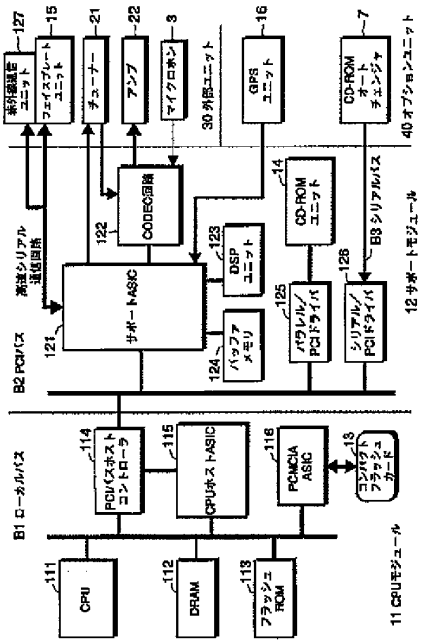
(54)【発明の名称】　カーオーディオシステム、車載用コンピュータ及びカーオーディオシステムの制御方法

(57)【要約】

【課題】　汎用的なＯＳを持つ小形コンピュータとカーオーディオシステムとを組み合わせることで、互いの利点を活かす。

【解決手段】　コンピュータに含まれるＣＰＵ１１１の形式に対応したローカルバスＢ１と、カーオーディオシステムに含まれる機器１５，２１，２２，３，１６，７を接続するためのＰＣＩバスＢ２と、それぞれのバスＢ１，Ｂ２の間でデータの形式を変換するＰＣＩバスホストコントローラ１１４と、を備える。フラッシュＲＯＭ１１３にはＣＰＵ１１１のためのＯＳを格納する。ＣＰＵはメモリ１１２などを効率よくアクセスすることで複雑な処理を高速に行う。コンピュータとカーオーディオシステムの両方の動作をスムースに行う。音の信号を再生しながら別のバスで別の処理を行うといったマルチタスクが容易になる。ＣＰＵの形式を変える場合もＣＰＵの形式に対応したバスだけを変えればよい。



【特許請求の範囲】
【請求項１】　制御用のコンピュータを備えたカーオーディオシステムにおいて、
前記コンピュータはオペレーティングシステムを備え、このオペレーティングシステムは、
コンピュータ上の資源を管理する手段と、
ユーザインタフェースを含む入出力を制御する手段と、
予め決められた形式のプログラムを実行する手段と、
を備えたことを特徴とするカーオーディオシステム。
【請求項２】　制御用のコンピュータを備えたカーオーディオシステムにおいて、
前記コンピュータに含まれるＣＰＵの形式に対応した第１のバスと、
前記カーオーディオシステムに含まれる機器を接続するための第２のバスと、
を備えたことを特徴とするカーオーディオシステム。
【請求項３】　制御用のコンピュータを備えたカーオーディオシステムにおいて、
前記コンピュータに含まれるＣＰＵの形式に対応したローカルバスと、
前記カーオーディオシステムに含まれる機器を接続するためのＰＣＩバスと、
を備えたことを特徴とするカーオーディオシステム。
【請求項４】　それぞれの前記バスの間でデータの形式を変換する手段を備えたことを特徴とする請求項２又は３記載のカーオーディオシステム。
【請求項５】　前記カーオーディオシステムに含まれる複数の機器をデイジーチェイン形式で接続するための第３のバスを備えたことを特徴とする請求項１から４のいずれか１つに記載のカーオーディオシステム。
【請求項６】　予め決められた形式のプログラムを実行するために必要な環境を実現するオペレーティングシステムと、
カーオーディオシステムと、
前記カーオーディオシステムを制御する手段と、
を備えたことを特徴とする車載用コンピュータ。
【請求項７】　カーオーディオシステムを備えた車載用コンピュータにおいて、
前記コンピュータに含まれるＣＰＵの形式に対応した第１のバスと、
前記カーオーディオシステムに含まれる機器を接続するための第２のバスと、
を備えたことを特徴とする車載用コンピュータ。
【請求項８】　カーオーディオシステムを備えた車載用コンピュータにおいて、
前記コンピュータに含まれるＣＰＵの形式に対応したローカルバスと、
前記カーオーディオシステムに含まれる機器を接続するためのＰＣＩバスと、
を備えたことを特徴とする車載用コンピュータ。
【請求項９】　それぞれの前記バスの間でデータの形式を変換する手段を備えたことを特徴とする請求項７又は８記載の車載用コンピュータ。
【請求項１０】　前記カーオーディオシステムに含まれる複数の機器をデイジーチェイン形式で接続するための第３のバスを備えたことを特徴とする請求項６から９のいずれか１つに記載の車載用コンピュータ。
【請求項１１】　オペレーティングシステムを備えたコンピュータを使ってカーオーディオシステムを制御するカーオーディオシステムの制御方法において、
前記オペレーティングシステムが、予め決められた形式のプログラムを実行するために必要な環境を実現するステップと、
前記プログラムが前記カーオーディオシステムを制御するステップと、
を含むことを特徴とするカーオーディオシステムの制御方法。
【請求項１２】　コンピュータを使ってカーオーディオシステムを制御するカーオーディオシステムの制御方法において、
前記コンピュータに含まれるＣＰＵが、このＣＰＵの形式に対応した第１のバスを通してデータをやり取りするステップと、
前記カーオーディオシステムに含まれる機器が、機器を接続するための第２のバスを通してデータをやり取りするステップと、
を含むことを特徴とするカーオーディオシステムの制御方法。
【発明の詳細な説明】
【０００１】
【発明の属する技術分野】本発明は、汎用的なＯＳを持つ小形コンピュータとカーオーディオシステムとを組み合わせることで、互いの利点を活かす技術に関するものである。
【０００２】
【従来の技術】近年、半導体の技術がめざましい進歩をとげており、いろいろな分野の電子機器が、半導体を使うことによって小型化・高性能化している。このように半導体を使うことで小型化・高性能化している電子機器の１つに、パーソナルコンピュータ（以下「パソコン」という）がある。
【０００３】特に最近では、ハンドヘルド（持ち運び型）やパームトップなどと呼ばれる小型のパソコン（以下「ハンドヘルドパソコン」と総称する）も増えている。このようなハンドヘルドパソコンに適した基本ソフトウェア、すなわちオペレーティングシステム（Operating System：以下「ＯＳ」という）として、例えばＷｉｎｄｏｗｓ（マイクロソフト株式会社の登録商標）ＣＥなどが知られている。
【０００４】このような汎用的なＯＳは、コンピュータ

の持っているＣＰＵの処理能力やメモリなどをきめ細かく管理することで高度な処理能力を実現したり、プログラムに依存しない統一的で使いやすいユーザインタフェースを提供したり、予め決められた形式のプログラムであれば、自由に追加変更することでコンピュータの機能を追加変更できるといった利点を持っている。

【０００５】同じように、半導体を使うことで小型化・高性能化している別の電子機器としては、自動車に搭載するカーオーディオシステムやカーナビゲーションシステムが挙げられる。このうちカーオーディオシステムは、俗にカーステレオなどと呼ばれ、ＣＤプレーヤやＡＭやＦＭのチューナーなどを、アンプやスピーカなどと組み合わせたものである。また、カーナビゲーションシステムは、方位磁石、走行距離計、ＧＰＳなどを使って車の現在位置を特定しながら、指定された目的地まで、地図を画面表示したり道案内をするシステムである。

【０００６】なお、最近では、カーオーディオシステムに、カーナビゲーションシステム、ハンズフリーの携帯電話、盗難防止用の警報システムなどを組み合わせることも多いので、以下、これら車載用の電子機器を「カーオーディオシステム」と総称する。

【０００７】

【発明が解決しようとする課題】上に述べたような、ＯＳを備えたハンドヘルドパソコンと、カーオーディオシステムとは、従来では互いに全く別々のものであった。つまり、広い意味でのコンピュータを、制御用に備えたカーオーディオシステムは存在したが、この場合のコンピュータは特定の目的だけのために働く組み込みシステムと呼ばれるものである。

【０００８】この組み込みシステムは、必要最小限の能力を持ったＣＰＵを使い、スイッチ操作を受け付けたりディスク再生機構を作動させる、といったハードウェアに対する必要最小限の処理を、アセンブラなどを使った小さなプログラムで実現したものである。このため、パソコンのようにデータの加工や保存をしたり、プログラムを変更追加することで機能を変更追加するといった使い方はできない。

【０００９】一方、ハンドヘルドパソコンは、自ら音楽を鳴らしたり、カーオーディオシステムを制御する機能は持っていなかった。このため、ユーザは、ハンドヘルドパソコンを事実上車内に持ち込むことはあったが、カーオーディオシステムと関係付けて使うことはなかった。

【００１０】ところで、最近のカーオーディオシステムは、ラジオのチューナー、カセットテープデッキやＣＤプレーヤといった従来の機器だけでなく、ＭＤプレーヤ、ＣＤやＭＤのオートチェンジャ、カーナビゲーションシステム、ユーザの命令を認識する音声認識装置、ハンズフリーの携帯電話、盗難防止用の警報システムという具合に、ますます多くの機器が組み込まれるようになってきている。そして、このように複雑になってゆくカーオーディオシステムを、個々の装置に設けられたスイッチだけで使いこなすことは非常に難しい。

【００１１】つまり、このようにカーオーディオシステムが複雑になると、操作キーやダイヤルといった多くのスイッチが車内のいろいろな場所にあることになる。このため、どれが何の操作キーなのかを覚えるのが大変である。

【００１２】すなわち、複雑になってゆくカーオーディオシステムを使いこなすためには、複雑なシステムを制御する高度な処理能力、使いやすいユーザインタフェース、制御に関する機能を追加変更できるような柔軟性を持った小形コンピュータ、とりわけ汎用的なＯＳを備えたハンドヘルドパソコンと同等の情報処理装置を制御に使うことが望まれる。

【００１３】また、ハンドヘルドパソコンの側から考えても、現代のように自動車を使うことが多く、渋滞も多い社会では、車内でも活用の幅を広げることが望まれる。特に、カーオーディオシステムと組み合わせることで、操作キーやメモリを兼用したり、ユーザが車内で知りたい情報をコンピュータを使った合成音声で読み上げさせ、その声をカーオーディオシステムのスピーカから聞いたり、カーオーディオシステムに組み込まれた携帯電話の回線で外部のコンピュータネットワークにアクセスしたり、といった使い方ができれば、今までよりも活用の幅を広げることができる。

【００１４】なお、汎用的なＯＳを使うような高速なＣＰＵと、カーオーディオシステムに含まれるような機器を組み合わせるときは、両者の動作速度の違いなどから、それぞれに合った別々のバスを備えることが望まれる。さらに、いくつもの機器を組み合わせたカーオーディオシステムでは、複数の機器を、単純なすっきりした配線で容易に接続できることが望まれる。

【００１５】本発明は、上に述べたような従来技術の問題点を解決するために提案されたもので、その目的は、汎用的なＯＳを持つ小形コンピュータとカーオーディオシステムとを組み合わせることで、互いの利点を活かすことである。また、本発明の別の目的は、複数のバスを使うことで、高速なＣＰＵとその他の機器の両方を、無駄なくスムースに働かせることである。また、本発明の別の目的は、いろいろな機器をデイジーチェイン方式で芋づる式につなげるようにすることである。

【００１６】

【課題を解決するための手段】上に述べた目的を達成するため、請求項１の発明は、制御用のコンピュータを備えたカーオーディオシステムにおいて、前記コンピュータはオペレーティングシステムを備え、このオペレーティングシステムは、コンピュータ上の資源を管理する手段と、ユーザインタフェースを含む入出力を制御する手段と、予め決められた形式のプログラムを実行する手段

と、を備えたことを特徴とする。請求項6の車載用コンピュータは、予め決められた形式のプログラムを実行するために必要な環境を実現するオペレーティングシステムと、カーオーディオシステムと、前記カーオーディオシステムを制御する手段と、を備えたことを特徴とする。請求項11の発明は、請求項1の発明を方法という見方からとらえたもので、オペレーティングシステムを備えたコンピュータを使ってカーオーディオシステムを制御するカーオーディオシステムの制御方法において、前記オペレーティングシステムが、予め決められた形式のプログラムを実行するために必要な環境を実現するステップと、前記プログラムが前記カーオーディオシステムを制御するステップと、を含むことを特徴とする。請求項1，6，11の発明では、カーオーディオシステムを制御するコンピュータが汎用的なOSを備えていて、この汎用的なOSは、CPUやメモリといった資源を管理することでコンピュータの能力を最大限発揮させ、また、プログラムに依存しない統一的で使いやすいユーザインタフェースを提供し、さらに、予め決められた形式のプログラムを追加したり変更することで機能の追加や変更を容易にする。このため、複雑なカーオーディオシステムの制御が容易になる。また、車内でもいろいろなプログラムを使ったり、カーオーディオシステムの機器を利用して情報処理をすることが可能になる。

【0017】請求項2の発明は、制御用のコンピュータを備えたカーオーディオシステムにおいて、前記コンピュータに含まれるCPUの形式に対応した第1のバスと、前記カーオーディオシステムに含まれる機器を接続するための第2のバスと、を備えたことを特徴とする。請求項7の発明は、カーオーディオシステムを備えた車載用コンピュータにおいて、前記コンピュータに含まれるCPUの形式に対応した第1のバスと、前記カーオーディオシステムに含まれる機器を接続するための第2のバスと、を備えたことを特徴とする。請求項12の発明は、請求項2の発明を方法という見方からとらえたもので、コンピュータを使ってカーオーディオシステムを制御するカーオーディオシステムの制御方法において、前記コンピュータに含まれるCPUが、このCPUの形式に対応した第1のバスを通してデータをやり取りするステップと、前記カーオーディオシステムに含まれる機器が、機器を接続するための第2のバスを通してデータをやり取りするステップと、を含むことを特徴とする。請求項3の発明は、制御用のコンピュータを備えたカーオーディオシステムにおいて、前記コンピュータに含まれるCPUの形式に対応したローカルバスと、前記カーオーディオシステムに含まれる機器を接続するためのPCIバスと、を備えたことを特徴とする。請求項8の発明は、カーオーディオシステムを備えた車載用コンピュータにおいて、前記コンピュータに含まれるCPUの形式に対応したローカルバスと、前記カーオーディオシステムに含まれる機器を接続するためのPCIバスと、を備えたことを特徴とする。請求項4の発明は、請求項2又は3記載のカーオーディオシステムにおいて、それぞれの前記バスの間でデータの形式を変換する手段を備えたことを特徴とする。請求項9の発明は、請求項7又は8記載の車載用コンピュータにおいて、それぞれの前記バスの間でデータの形式を変換する手段を備えたことを特徴とする。請求項2，3，7，8，12の発明では、コンピュータのCPUと、カーオーディオシステムの機器とが、互いの形式に対応した違ったバスを使ってデータをやり取りし、データは、2つのバスの間では必要に応じて形式を変換して受け渡される（請求項4，9）。このため、各機器の動作よりCPUの動作が速くても、CPUは各機器の動作サイクルに合わせる必要がなく、メモリなどを効率よくアクセスすることで複雑な処理を高速に行うことができる。また、CPUがやり取りするデータと、機器がやり取りするデータとが、同じバスの伝達能力を奪い合うことがないので、コンピュータとカーオーディオシステムの両方の動作をスムースに行うことができる。また、機器を接続するためのバスを使って音の信号を再生しながら、同時に、CPUの形式に対応したバスを使って別の処理を行うといったマルチタスクが容易になる。また、CPUを別の形式のものに変える場合も、各機器と、それら機器を接続するためのバスはそのままで、CPUの形式に対応したバスだけを新しいCPUの形式に合わせて変えればよいので、CPUの変更にも容易に対応することができる。

【0018】請求項5の発明は、請求項1から4のいずれか1つに記載のカーオーディオシステムにおいて、前記カーオーディオシステムに含まれる複数の機器をデイジーチェイン形式で接続するための第3のバスを備えたことを特徴とする。請求項10の発明は、請求項6から9のいずれか1つに記載の車載用コンピュータにおいて、前記カーオーディオシステムに含まれる複数の機器をデイジーチェイン形式で接続するための第3のバスを備えたことを特徴とする。請求項5，10の発明では、複数の機器を芋づる式に次々と、デイジーチェイン形式でつないでゆくことができる。このため、機器の数が増えたり車内のあちこちに機器を分散設置するときも、スター方式のように長い配線が1箇所に集中することがなく、設置が容易になる。また、配線がすっきりわかりやすくなるので、構成を変えたり保守や修理をすることも容易になる。

【0019】

【発明の実施の形態】次に、本発明の実施の形態（以下「実施形態」という）について、図面を参照して具体的に説明する。この実施形態は、CDプレーヤなどのいろいろな機器を備えたカーオーディオシステムであるが、ハンドヘルドパソコンで使うような汎用的なOSを備えたコンピュータを備えていて、カーオーディオシステム

の制御もこのコンピュータで行うものである。なお、以下の説明で使うそれぞれの図について、それより前で説明した図と同じ部材や同じ種類の部材については同じ符号をつけ、説明は省略する。

【００２０】〔１．構成〕

〔１－１．全体の構成〕まず、図１は、この実施形態の全体構成を示すブロック図である。この実施形態は、この図に示すように、メインユニット１の他に、カーオーディオシステムを構成する各機器として、チューナーアンプユニット２と、マイクロホン３と、ＧＰＳアンテナ４と、セキュリティコントロールユニット５と、電話ユニット６と、ＣＤ－ＲＯＭオートチェンジャ７と、電源バックアップ用の補助バッテリ９と、を備えている。

【００２１】このうちメインユニット１は、制御用のコンピュータを内蔵していて、このコンピュータによってシステム全体を制御する部分である。また、チューナーアンプユニット２は、ＡＭとＦＭのアンテナ２ａの他に、図示はしないが、ラジオチューナーと、スピーカを鳴らすためのアンプを備えた部分である。また、マイクロホン３は、音声認識による操作ができるように、ユーザの声を入力するためのものである。この音声認識の機能は、上に述べたコンピュータのプログラムによって実現される。

【００２２】〔１－１－１．メインユニット〕また、メインユニット１は、コンパクトフラッシュカード１３を差し込むためのソケット１３Ｓと、付け外しできるフェイスプレートユニット１５と、を備えている（図１）。コンパクトフラッシュカード１３は、フラッシュメモリを使った記憶媒体で、メインユニット１に設けられたソケット１３Ｓに差し込むことで、メインユニット１からデータを読み書きすることができる。このコンパクトフラッシュカード１３は、データやプログラムなどを他のコンピュータとやり取りしたり、このカーオーディオシステムでのいろいろな設定データをバックアップしておくために使う。

【００２３】また、付け外しできるフェイスプレートユニット１５は、ユーザにいろいろな情報を表示する表示部と、ユーザがいろいろな操作をするための操作キーなどを設けた操作部と、を備えていて、ＤＣＰ(Detachable Control Panel)とも呼ばれるものである。このフェイスプレートユニット１５の表示部は、例えば横２５６ドット縦６４ドットといった大型のカラーＬＣＤ（液晶表示装置）などである。

【００２４】このフェイスプレートユニット１５は、車を降りるときに取り外して持ち出せば、盗人がカーオーディオシステムを物色しても、肝心の表示部も操作部のないのを見て利用も転売もできないことをさとり、盗むことをあきらめるという盗難防止効果がある。取り外したフェイスプレートユニット１５は、ケース１５ａに入れて持ち歩けば、それ自体や周りのものなどを傷つけることがない。

【００２５】また、このフェイスプレートユニット１５は、図１には示さないが、ハンドヘルドパソコン８とＩｒＤＡなどの形式でデータをやり取りするための赤外線通信ユニットを備えている。

【００２６】〔１－１－２．他の機器〕また、ＧＰＳアンテナ４は、ＧＰＳ衛星から電波を受け取るためのアンテナである。このＧＰＳアンテナ４からの信号は、ＧＰＳ受信機４ａを経てメインユニット１内のＧＰＳユニットに送られる。このＧＰＳユニットは、図１には示さないが、受信機のある地球上の位置を電波から計算するものである。また、上に述べたコンピュータ上では、プログラムによってカーナビゲーションシステムの機能が実現され、計算結果はこのカーナビゲーションシステムの機能に渡される。

【００２７】また、セキュリティコントロールユニット５は、振動や衝撃を検出するセンサ５ａで、盗難やいたずらなどを検出すると、サイレン５ｂを鳴らすといった対応をする部分である。また、電話ユニット６は、自動車電話の機能を制御するユニットであり、電話アンテナ６ａやハンドセット６ｂを使った通話を実現する部分である。また、ＣＤ－ＲＯＭオートチェンジャ７は、予めセットされた何枚かのＣＤを自動的に掛け替えることで、ユーザの選んだディスクや曲を再生するユニットである。

【００２８】〔１－１－３．デイジーチェイン接続〕ここで、これらセキュリティコントロールユニット５、電話ユニット６及びＣＤ－ＲＯＭオートチェンジャ７は、ＵＳＢ(Universal Serial Bus)によってメインユニット１に接続されている。このＵＳＢは、複数の機器をデイジーチェイン形式で接続するためのシリアルバス（第３のバス）である。

【００２９】この実施形態では、このようにＵＳＢによって接続される機器は、外部とのデータのやり取りを、このＵＳＢの形式で行うように構成されている。例えば、ＣＤ－ＲＯＭオートチェンジャ７は、アップストリーム用とダウンストリーム用のハブ（ＨＵＢ）を備え、このＣＤ－ＲＯＭオートチェンジャ７の内部では、音楽ＣＤやＣＤ－ＲＯＭからデジタルデータが一旦ＡＴＡＰＩ形式（パラレル形式）で読み出されるが、読み出されたデータは、内蔵されているデータコンバータによって、シリアル形式であるＵＳＢ(Universal Serial Bus)形式に変換されたうえでＵＳＢに送り出される。

【００３０】この様な構成により、ユニット５，６、ＣＤ－ＲＯＭオートチェンジャ７の結線がシリアル結線となるので、それらユニット５，６，７をメインユニット１から離れた場所に設置する場合、その設置が容易となる。なお、図１ではユニット５、ユニット６、オートチェンジャ７の順で接続されているが、接続順は任意であり、また、必要なもののみの接続としても良い。

【0031】〔1－2．メインユニットの内部構成〕次に、図2は、上に述べた各部分のうち主なものを示したブロック図であり、特に、メインユニット1内部の具体的な構成を中心に説明するものである。この図の全体は、破線で4つに区切ってあり、左寄りがCPUモジュール11、中央がサポートモジュール12、右上が外部ユニット30、右下がオプションユニット40になっている。このうち、CPUモジュール11とサポートモジュール12は、メインユニット1の内部に設けられている。

【0032】また、外部ユニット30とオプションユニット40は、メインユニット1に接続されているいくつかずつの機器をまとめて指しているものである。なお、図2では、説明の都合で、コンパクトフラッシュカード13はCPUモジュール11の下の方に、フェイスプレートユニット15は、外部ユニット30の上の方に示している。

【0033】このうちCPUモジュール11とサポートモジュール12は、カーオーディオシステム全体を制御する制御用コンピュータを構成している。このうちCPUモジュール11は、CPU111を中心とした論理的な演算処理をする部分であり、サポートモジュール12は、カーオーディオシステムに含まれる他の機器との入出力を行う部分である。

【0034】CPUモジュール11でデータの主な通り道になっているのは、CPU111を中心として形成されたローカルバスB1（第1のバス）である。一方、サポートモジュール12でデータの主な通り道になっているのは、各機器を接続するためのPCI(Peripheral Component Interconnect) バスB2（第2のバス）である。

【0035】〔1－2－1．CPUモジュールの構成〕CPUモジュール11のローカルバスB1は、CPU111の形式に合わせたもので、このローカルバスB1には、DRAM112と、フラッシュROM113と、PCIバスホストコントローラ114と、CPUホストASIC115と、PCMCIA・ASIC116が接続されている。このうちDRAM112は、CPU111がカーオーディオシステムの制御などの情報処理を行うときに、変数領域などのワークエリアを提供する部分である。

【0036】また、フラッシュROM113は、書き換え可能なROMで、ここでは、OS、BIOS、アプリケーションプログラムといった広い意味でのソフトウェアを格納している部分である。ここに格納されているOSの機能は、コンピュータ上の資源を管理すること、ユーザインタフェースを含む入出力を制御すること、予め決められた形式のプログラムを実行することなどであり、例えば、従来技術のところで述べたWindows CEをベースにしたものなどが考えられる。

【0037】また、PCIバスホストコントローラ114は、ローカルバスB1とPCIバスB2とを接続し、これら2つのバスの間でやり取りするデータの形式を変換する手段である。

【0038】また、CPUホストASIC115などの「ASIC」は、Application Specific Integrated Circuit の略で、ROMやRAM、CPUといった汎用的な集積回路に対して、特定の用途向けに作られたICやLSIを指す。具体的には、このCPUホストASIC115は、ローカルバスB1とPCIバスホストコントローラ114とのインタフェース用のASICである。つまり、このCPUホストASIC115は、PCIバスB2とCPUモジュール11との間でやり取りされるデータの窓口になる部分であり、具体的には、CPUモジュール11と外部との入出力をCPU111に代わって行うほか、PCIバスB2から送られてきたデータについて、CPU111に渡す種類のものかどうかを見分ける。

【0039】そして、CPUホストASIC115は、CPU111に渡すべきものはローカルバスB1を通じてCPU111に送るが、それ以外のもの、例えば送られてきたデータに対してCPU111が演算をするまでもなく、予め決められた反応を機械的に返せば足りるものについては、そのような反応を返す。

【0040】また、PCMCIA・ASIC116は、コンパクトフラッシュカード13が、いわゆるPCカードとしてPCMCIA(Personal Computer Memory Card International Association) の規格に基づいているのに対応したインタフェース用の部分であり、コンパクトフラッシュカード13に対するデータの読み書きを制御する部分である。

【0041】〔1－2－2．サポートモジュールにかかわる構成〕次に、サポートモジュール12のPCIバスB2は、カーオーディオシステムを構成するいろいろな機器との間でデータをやり取りするためのバスである。ここで、このPCIバスB2に接続される機器としては、外部ユニット30とオプションユニット40があり、これらはそれぞれ、いくつかの機器をまとめて指しているものである。

【0042】つまり、外部ユニット30は、図1に示したメインユニット1とは別のユニットになっているもので、この例では具体的には、メインユニット1から付け外しできるフェイスプレートユニット15、チューナーアンプユニット2内に設けられたチューナー21とアンプ22、マイクロホン3である。このうちフェイスプレートユニット15は、赤外線通信ユニット127を備えている。

【0043】また、オプションユニット40は、このカーオーディオシステムに組み込むかどうかをオプションとして選べるユニットであり、この例では具体的には、

ＧＰＳユニット１６とＣＤ－ＲＯＭオートチェンジャ７である。さらに、メインユニット１の内部にはＣＤ－ＲＯＭユニット１４があり、このＣＤ－ＲＯＭユニット１４もＰＣＩバスＢ２に接続されている。このＣＤ－ＲＯＭユニット１４は、１枚のＣＤやＣＤ－ＲＯＭからデジタルデータを読み出すためのプレーヤである。これらＣＤ－ＲＯＭオートチェンジャ７とＣＤ－ＲＯＭユニット１４はどちらも、いわゆる音楽ＣＤからデータを読み出す事もできるし、ＣＤ－ＲＯＭからデータを読み出す事もできるという互換性のある（コンパチブルな）ものである。

【００４４】サポートモジュール１２において、ＰＣＩバスＢ２がこれらの機器との間でデータをやり取りするためには、サポートＡＳＩＣ１２１、ＣＯＤＥＣ回路１２２、ＤＳＰユニット１２３、バッファメモリ１２４、パラレル／ＰＣＩドライバ１２５、シリアル／ＰＣＩドライバ１２６が使われる。

【００４５】このうちサポートＡＳＩＣ１２１は、サポートモジュール１２と各機器との間で、どこから来たデータをどこへ送るかというデータの交通整理をする部分である。また、ＣＯＤＥＣ回路１２２の「ＣＯＤＥＣ」とは"Coder/Decoder" つまりデータの符号化復号化技術の略語であり、このＣＯＤＥＣ回路１２２は、例えば、与えられたデジタルデータをアナログ信号に変換するＤ／Ａ変換をしたり、逆に、アナログ信号をデジタルデータに変換するＡ／Ｄ変換などを行う部分である。

【００４６】また、ＤＳＰユニット１２３の「ＤＳＰ」はデジタルサウンドプロセッサ、つまりデジタル形式の音の信号を専門に処理する回路を意味する略語で、このＤＳＰユニット１２３は、音楽などを表わすデジタルデータを与えられると、システムに設定されている左右のバランス、ボリューム、フェイダー、サラウンド、イコライザといった項目が音の内容に反映されるように、デジタルデータを処理する部分である。

【００４７】また、バッファメモリ１２４は、ＣＤ－ＲＯＭユニットなどの音響機器とＰＣＩバスＢ２とではデータを読み書きするサイクルが違うことから、データを蓄えて少しずつ取り出すことでこの違いを埋めるためのバッファであり、ＳＲＡＭなどで構成されている。

【００４８】また、パラレル／ＰＣＩドライバ１２５は、ＣＤ－ＲＯＭユニット１４から送られてくるパラレル形式のデジタルデータを、ＰＣＩバスＢ２のデータ形式に変換する部分である。また、シリアル／ＰＣＩドライバ１２６は、ＣＤ－ＲＯＭオートチェンジャ７から送られてくるシリアル形式のデジタルデータを、ＰＣＩバスＢ２のデータ形式に変換する部分である。

【００４９】なお、赤外線通信ユニット１２７を含むフェイスプレートユニット１５は、サポートＡＳＩＣ１２１に高速シリアル通信回路で接続され、ＧＰＳユニット１６はサポートＡＳＩＣ１２１に、ＵＡＲＴ(Universal Asynchronous Receiver-Transitter)などの調歩同期シリアル通信回路で接続されている。また、ＣＤ－ＲＯＭユニット１４はパラレル／ＰＣＩドライバ１２５に、ＡＴＡＰＩ(AT Attachment Packet Interface)などのパラレル通信回路で接続されている。また、図示はしないが、赤外線通信ユニット１２７には、赤外線によるデータのやり取りを司るＡＳＩＣが設けられている。

【００５０】〔２．作用〕上に述べたように構成されたこの実施形態は次のように働く。

〔２－１．全体的な作用〕

〔２－１－１．データの入力〕この実施形態では、各機器から入力されてくるデータのうち、デジタルデータは、サポートモジュール１２のサポートＡＳＩＣ１２１に直接入力される。例えば、フェイスプレートユニット１５からは、どのキーが押されたかというデータが送られてくる。また、ＧＰＳユニット１６からは、ＧＰＳ衛星からの電波を使って計算した緯度、経度といったデジタルデータが送られてくる。また、フェイスプレートユニット１５に設けられた赤外線通信ユニット１２７からは、ハンドヘルドパソコン８から赤外線で転送されたデジタルデータが送られてくる。

【００５１】また、ＣＤ－ＲＯＭユニット１４及びＣＤ－ＲＯＭオートチェンジャ７からは、音楽ＣＤから読み出した音のデータ、すなわちオーディオデータや、ＣＤ－ＲＯＭから読み出したデジタルデータ、すなわちＣＤ－ＲＯＭデータが、パラレル／ＰＣＩドライバ１２５やシリアル／ＰＣＩドライバ１２６によってＰＣＩバスＢ２のデータ形式に変換されたうえで、ＰＣＩバスＢ２経由でサポートＡＳＩＣ１２１に送られてくる。

【００５２】さらに、図２には示さないが、図１に示したセキュリティコントロールユニット５からは異常の発生を知らせるデジタルデータが送られてくる。同様に、図１に示した電話ユニット６からは、通話の着信や発信元の電話番号などを知らせるデジタルデータ、すなわち文字データが送られてくるし、通話中には、相手の話し声を伝えるデジタルデータ、すなわち音声データがサポートＡＳＩＣ１２１に送られてくる。

【００５３】なお、これらセキュリティコントロールユニット５や電話ユニット６は、シリアルバスＢ３にデイジーチェイン接続されているので、セキュリティコントロールユニット５や電話ユニット６から送られてくる情報は、ＣＤ－ＲＯＭオートチェンジャ７からのデジタルデータと同じように、シリアル／ＰＣＩドライバ１２６によってＰＣＩバスＢ２のデータ形式に変換されたうえで、ＰＣＩバスＢ２経由で送られてくる。

【００５４】一方、各機器から入力されてくるデータのうち、アナログ信号は、一旦ＣＯＤＥＣ回路１２２に入力され、このＣＯＤＥＣ回路１２２によってデジタルデータに変換（Ａ／Ｄ変換）されたうえで、サポートＡＳＩＣ１２１に渡される。例えば、マイクロホン３からは

ユーザの声がアナログ信号で入力され、チューナー２１からは、チューニングの結果受信されたラジオの放送内容がアナログ信号で入力されてくる。

【００５５】〔２－１－２．入力されたデータの行き先〕このように集まってくる情報に対して、サポートＡＳＩＣ１２１はどの情報をどこに送るかという交通整理の役割を果たす。すなわち、サポートＡＳＩＣ１２１は、大まかには、音のデータはＤＳＰユニット１２３で処理したうえＣＯＤＥＣ回路１２２を通してアンプ２２に送り、音以外のデータはＣＰＵモジュール１１に送る。但し、音のデータのなかでもマイクロホン３から入力されたデータは音声認識のためにＣＰＵモジュール１１に送る。

【００５６】アンプ２２に送られる音のデータとしては、例えば、チューナー２１でチューニングされたラジオ放送の内容、ＣＤ－ＲＯＭユニット１４やＣＤ－ＲＯＭオートチェンジャ７で音楽ＣＤから読み出された録音内容、電話ユニット６から送られてきた通話相手の話し声などが考えられる。

【００５７】また、音以外のデータとしては、例えば、フェイスプレートユニット１５でどの操作キーが押されたかのデータ、赤外線通信ユニット１２７から送られてきたファイルなどのデータ、ＧＰＳユニット１６から送られてきた緯度、経度といったデジタルデータ、ＣＤ－ＲＯＭユニット１４やＣＤ－ＲＯＭオートチェンジャ７で、ＣＤ－ＲＯＭから読み出されたカーナビゲーションシステム用の地図の内容や地域ごとの情報の内容、セキュリティコントロールユニット５から送られてくる異常発生を知らせるデータ、電話ユニット６から送られてくる通話着信や発信元の電話番号などを知らせるデータなどが考えられる。

【００５８】〔２－１－３．ＣＰＵモジュールでの情報処理〕ＣＰＵモジュール１１では、サポートＡＳＩＣ１２１からデジタルデータが送られてくると、ＰＣＩバスホストコントローラ１１４が、送られてきたデータをローカルバスＢ１のデータ形式に変換したうえでＣＰＵホストＡＳＩＣ１１５に渡す。このＣＰＵホストＡＳＩＣ１１５は、ＣＰＵ１１１に代わって入出力を司り、データを渡されると、そのデータがＣＰＵ１１１に渡すべきものかそうでないかを、データの形式などから判断する。

【００５９】つまり、ＣＰＵホストＡＳＩＣ１１５は、機械的に一定の反応を返せば足りるデータに対しては、予め決められた反応を、ＰＣＩバスホストコントローラ１１４を通してサポートモジュール１２に返すが、それ以外のデータはＣＰＵ１１１に渡す。

【００６０】ＣＰＵ１１１は、フラッシュＲＯＭ１１３に記録されているＯＳやプログラムのコードにしたがって、渡されたデータを処理し、この処理の際に必要なワークエリアなどの記憶領域としてはＤＲＡＭ１１２を利用する。例えば、マイクロホン３から入力されたユーザの声が送られてくると、ＣＰＵ１１１は、予め用意している命令語の特徴を表わすパラメータや波形などと、受け取ったユーザの声とを比較し、一番似ている命令語をユーザが言ったものと推定し、その命令語にしたがって動作を行う。

【００６１】また、コンパクトフラッシュカード１３の読み書きは、ＣＰＵモジュール１１において、ＣＰＵ１１１からの依頼にしたがって、ＣＰＵホストＡＳＩＣ１１５がＰＣＭＣＩＡ・ＡＳＩＣ１１６を制御することによって行われる。

【００６２】そして、ＣＰＵ１１１による情報処理の結果は、ＰＣＩバスホストコントローラ１１４によってＰＣＩバスＢ２のデータ形式に変換されたうえで、サポートモジュール１２に送られる。情報処理の結果としてサポートモジュール１２に送られるデータとしては、サポートモジュール１２の各部分や各機器に対する動作の指令などであり、サポートモジュール１２では、このように送られてきたデータにしたがって入出力などの処理が行われる。

【００６３】〔２－１－４．サポートモジュールでの入出力などの処理〕例えば、ＣＤからのデータ読み出しやラジオのチューニングをさせる指令がＣＰＵモジュール１１から届くと、ＣＤ－ＲＯＭユニット１４、ＣＤ－ＲＯＭオートチェンジャ７やチューナー２１がそれにしたがった動作を行う。また、スピーカから出ている音の音源を現在とは別の機器に切り替える指令がＣＰＵモジュール１１から届くと、サポートＡＳＩＣ１２１はＣＯＤＥＣ回路１２２に送り出すデジタルデータを、それまでの機器のものから、新しく指定された機器によるものに切り替える。

【００６４】なお、デジタルデータをアンプ２２に出力する場合、アンプ２２はアナログ信号しか受け付けないので、ＣＯＤＥＣ回路１２２は、デジタルデータをアナログ信号に変換（Ｄ／Ａ変換）したうえでアンプ２２に出力する。

【００６５】また、例えばユーザに対する表示データが、ＣＰＵモジュール１１やその他の機器からサポートＡＳＩＣ１２１に送られてくると、サポートＡＳＩＣ１２１は、この表示データを高速シリアル通信回路を通してフェイスプレートユニット１５に転送する。この場合、フェイスプレートユニット１５では、転送されてきた表示データにしたがって、ユーザに対する情報が表示部に表示される。

【００６６】続いて、上に述べたような各部分の働きによって、ユーザがこの実施形態のカーオーディオシステムをどのように使うことができるのかを具体的に説明する。

【００６７】〔２－２．操作と情報の表示〕この実施形態のカーオーディオシステムを操作するときは、ユーザ

は、フェイスプレートユニット１５に設けられている操作キーを押してもよいし、操作の内用ごとに予め決められている語句を発話してもよい。例えば、ユーザがＣＤやＦＭチューナーを利用したいときは、ＣＤに切り替える操作キーを押してもよいし、予め決められた語句として例えば「しーでぃー」や「えふえむ」などとマイクロホン３に向かって発話すればよい。

【００６８】ユーザが操作キーを押したときは、そのデータがサポートＡＳＩＣ１２１からＣＰＵモジュール１１に転送され、ＣＰＵ１１１が新たな表示データをサポートＡＳＩＣ１２１に送り、フェイスプレートユニット１５の表示部は、この表示データを使って、ラジオを操作するための画面表示やＣＤを操作するための画面表示などに切り替わる。

【００６９】また、例えば、ユーザが「しーでぃー」といった語句を発話すると、マイクロホン３からアナログ信号がＣＯＤＥＣ回路１２２によってデジタルデータに変換され、このデジタルデータが、サポートＡＳＩＣ１２１からＰＣＩバスホストコントローラとＣＰＵホストＡＳＩＣ１１５を経てＣＰＵ１１１に送られ、ＣＰＵ１１１は、このデジタルデータに基づいて、ユーザがどの言葉を言ったのかを認識し、認識結果に応じて、操作キーが押されたときと同じような対応をする。

【００７０】なお、例えば、フェイスプレートユニット１５の表示部をタッチパネルにしておき、コンピュータのグラフィカルユーザインタフェースとして、例えばその時点で使える機能をアイコンで表示部に表示し、ユーザが使いたい機能のアイコンを指で触るとその機能が働くようにすることもできる。さらに、例えば、そのようなアイコンによる表示と音声認識を合わせて使えば、一度にいくつかのアイコンが表示され、ユーザが「つぎ」と発話すれば画面が切り替わって次のいくつかのアイコンが表示され、ユーザが「もどる」と発話すれば画面が１つ前の状態に戻る、といった使い方も可能である。

【００７１】〔２－３．ラジオを聞く場合〕上に述べたような操作で、例えばユーザが「えふえむ」と発話してラジオのＦＭ放送を選び、ＣＰＵ１１１がそれを認識すると、サポートＡＳＩＣ１２１はＣＰＵ１１１からの命令にしたがってチューナー２１をＦＭの受信状態に切り替え、また、アンプ２２に送り出すデータのソースをチューナー２１からの音声のデータに切り替える。この場合、チューナー２１は、前回選局した周波数を受信してもよいし、また、例えば、ユーザが「シークアップ」といった語句を発話することで、周波数を少しずつ変えながら受信状態のよい次の周波数を自動的に探す（自動掃引）ようにしてもよい。

【００７２】このようにラジオを聞く場合は、チューナー２１から送られてくる受信内容はアナログ信号なので、このアナログ信号はＣＯＤＥＣ回路１２２に入力され、デジタルデータに変換されたうえでサポートＡＳＩＣ１２１に送られる。サポートＡＳＩＣ１２１は、ＣＯＤＥＣ回路１２２から受け取ったデジタルデータをＤＳＰユニット１２３に渡し、ＤＳＰユニット１２３は、予めシステムの上で設定されているバランスやボリュームといった設定項目にしたがってこのデジタルデータを処理し、サポートＡＳＩＣ１２１に送り返す。

【００７３】そして、サポートＡＳＩＣ１２１は、このように返ってきたデジタルデータをＣＯＤＥＣ回路１２２に再び送り返し、ＣＯＤＥＣ回路１２２はこのデジタルデータを再びアナログ信号に変換して戻したうえで、今度はアンプ２２に送ってスピーカから流れるようにする。

【００７４】〔２－４．ＣＤの再生〕また、ユーザは、音楽ＣＤを聞きたいときは、ＣＤ－ＲＯＭユニット１４やＣＤ－ＲＯＭオートチェンジャ７に聞きたい音楽ＣＤをセットし、「すたーと」などと音声などで再生を指示したり、次の曲へ飛ぶといった指示をすればよい。例えば、ＣＤ－ＲＯＭユニット１４内の音楽ＣＤを再生するときは、サポートＡＳＩＣ１２１からの指令によってＣＤ－ＲＯＭユニット１４が作動し、ＣＤ－ＲＯＭユニット１４からはデジタルデータであるオーディオデータが送られてくる。

【００７５】そして、パラレル／ＰＣＩドライバ１２５は、このオーディオデータをＰＣＩバスＢ２のデータ形式に変換してサポートＡＳＩＣ１２１に送り、サポートＡＳＩＣ１２１は、ＰＣＩバスＢ２からオーディオデータを受け取ると、このオーディオデータを一旦ＤＳＰユニット１２３に渡して処理させ、処理されたオーディオデータを再びＤＳＰユニット１２３から受け取ると、処理されたオーディオデータをデジタル入出力ポートからＣＯＤＥＣ回路１２２に渡し、アナログ信号の形でアンプ２２に出力させる。

【００７６】音楽ＣＤを再生するのがＣＤ－ＲＯＭオートチェンジャ７のときは、シリアルバスＢ３から送られてくるシリアル形式のオーディオデータを、シリアル／ＰＣＩドライバ１２６がＰＣＩバスＢ２のデータ形式に変換するが、それ以降の処理はＣＤ－ＲＯＭユニット１４の場合と同じように行われる。

【００７７】なお、ＣＤ－ＲＯＭユニット１４やＣＤ－ＲＯＭオートチェンジャ７と、ＣＯＤＥＣ回路１２２やＤＳＰユニット１２３とを相対的に比べると、前者は長い時間のサイクルでまとまった量のデータを送ってくるのに対して、後者は短い時間のサイクルでデータを少しずつ処理するため、両者の間にサイクルにずれがある。このため、サポートＡＳＩＣ１２１は、ＣＤ－ＲＯＭユニット１４又はＣＤ－ＲＯＭオートチェンジャ７がまとめて送ってきたデジタルデータをバッファメモリ１２４に格納し、一番古い部分から次々と取り出してはＤＳＰユニット１２３に渡して処理させることで、上に述べたようなずれを埋めて再生が滑らかに行われるようにす

る。

【0078】〔2-5．CD-ROMとカーナビゲーションの利用〕また、ユーザが例えばカーナビゲーションシステムの機能を使いたいときは、例えばCD-ROMユニット14に、カーナビゲーションシステム用のデータ（アプリケーションソフト、地図等）が記録されたCD-ROMをセットしたうえで、カーナビゲーションシステムの機能を起動する。このようなカーナビゲーションシステムの機能は、例えばコンピュータのプログラムとしてCPUモジュール11のフラッシュROM113に記録しておき、CPU111にこのようなプログラムを実行させることによって実現することができる。

【0079】このようなカーナビゲーションシステムが、CD-ROMに記録された地図のデータや地域ごとのいろいろな情報などを読み出そうとするときは、例えばCD-ROMユニット14から読み出されたデジタルデータがパラレル／PCIドライバ125、PCIバスホストコントローラ114、CPUホストASIC115を経てCPU111に渡される。CPU111は、このように受け取った地図などのデータに基づいてフェイスプレートユニット15の表示部に表示するためのビットマップイメージをDRAM112上に作成したうえ、サポートモジュール12に送り出す。

【0080】また、このようにカーナビゲーションシステムを使うときは、図1に示したGPSアンテナ4でGPS衛星からの電波を受信し、図2のGPSユニット16がこの電波から緯度や経度などを計算し、このデータがCPU111に送られてくる。すると、CPU111は、これらの緯度や経度などのデータから、このカーオーディオシステムを積んだ車が現在どこを走っているのかを地図上で特定する事ができる。この結果、ユーザが入力しなくても出発地点として現在地を設定したり、現在の地点が中心となるような大まかな地図を表示したり、次の右折や左折を指示する図形を表示したりすることができる。

【0081】なお、ナビゲーション用のデータは、コンパクトフラッシュカード13（又はDRAM112）、又はフラッシュROM113に記憶しておいても良い。

【0082】また、すでに説明したような音声認識による操作の仕方は、このようにカーナビゲーションシステムの機能を使うときにも利用することができ、例えば、曲がり角ごとに右折や左折といった指示を出すカーナビゲーションシステムを使う場合、1つ前の指示や1つ先の指示をユーザが見たいときは、「つぎ」とか「もどる」といった語句を発話することで次々と表示を切り替えることもできる。

【0083】さらに、このような道案内はアンプ22を通して合成音声を出力することでユーザに知らせることもでき、このようにすれば、次にどこを曲がるか知るために表示部に視線を移す必要がなくなる。

【0084】〔2-6．電話の利用〕また、ユーザは、電話ユニット6を使って通話するとき、次のようにコンピュータの利点とカーオーディオシステムの利点を活かすことができる。例えば、ユーザは、コンピュータのプログラムを使って、自分の知っている人の電話番号と名前をシステムの、例えばDRAM112、コンパクトフラッシュカード13に予め登録しておく。

【0085】電話が着信すると、図2には図示しないが、電話ユニット6からシリアルバスB3とシリアル／PCIドライバ126を通じて、電話が着信したことを知らせるデジタルデータと、発信元の電話番号を表わすデジタルデータがサポートASIC121に送られる。これらのデータはさらに、CPUモジュール11のCPU111に送られ、CPU111は、予め登録された電話番号の中に、今かかってきている発信元の電話番号が登録されているかどうか検索する。

【0086】予め登録された電話番号の中に、今かかってきている発信元の電話番号があったときは、CPU111はその電話番号に対応する名前をサポートモジュール12に送り返すことで、フェイスプレートユニット15に電話をかけてきている人の名前を表示させたり、合成音声による「○○さんからです」といった案内を車載スピーカから流すことで、誰が電話をかけてきているのかをユーザに知らせることができる。

【0087】このような表示や案内、また呼び出し音などで電話がかかってきていることを知ったユーザが、予め決められた語句を発話して電話をつなぐように指示すると、相手の声がスピーカから流れると同時に、マイクロホン3から入力されるユーザの声がCODEC回路122によってデジタルデータに変換され、サポートASIC121、シリアル／PCIドライバ126、シリアルバスB3を経て電話ユニット6に送られ、ユーザは手を使わずにいわゆるハンズフリーの状態で通話を行うことができる。

【0088】なお、呼び出し音が一定の回数だけ鳴ったところで、例えば電話ユニット6やCPUモジュール11に用意された留守番電話機能などが電話に応答する。

【0089】また、ユーザの側から発信しようとするときも、例えば、予め登録してある電話番号と名前を表示画面の上でつぎつぎに表示させ、電話を掛けたい相手が表示されたところで発信のアイコンなどを指でタッチすると、その電話番号がCPUモジュール11からデジタルデータとして電話ユニット6に転送されて自動的に電話がかかり、相手が出ればそのまま話すことができる。

【0090】また、ユーザが登録した名前を発話し、CPUモジュール11がこれを認識することでその名前に対応する電話番号に自動的に発信したり、掛けたい電話番号を1桁ずつ発話して認識させたり、ユーザが「りだいやる」と発話したことを認識して電話を掛ける先を決めるようにすることもできる。

【0091】〔2－7．セキュリティコントロールユニットの利用〕また、セキュリティコントロールユニット5は、単独で使うこともできるし、上に述べた電話ユニット6と連動させて使うこともできる。例えば（図1）、ユーザは車を離れるときに、セキュリティコントロールユニット5を作動させ、送信機5cを持って降りる。車両のユーザと何ら関係のない第三者がドアノブに触れたり、鍵穴をいじったり、ドアやトランクをこじ開けようとしたり、車を無断で移動させようとすると、それによる衝撃や振動をセンサ5aが感じ取り、センサ5aからの信号を受けたセキュリティコントロールユニット5は、例えばサイレン5bを大音量で鳴らす。これにより車外の環境に対し警報の効果がもたらされる。

【0092】ユーザ自身は、車に戻ってきたとき、持っている送信機5cを操作すれば、予め決められた暗号がセキュリティコントロールユニット5に送られ、セキュリティコントロールユニット5の機能は解除されるので、鍵を使ったり車を動かしてもサイレンが鳴ったりすることはない。

【0093】このようなセキュリティコントロールユニット5は、電話ユニット6と連動させて使えばさらに効果がある。つまり、センサ5aが異常を感知したとき、セキュリティコントロールユニット5は、サイレンを鳴らすだけでなく、割り込み信号を送ってCPUモジュール11及びサポートモジュール12を含むカーオーディオシステムを起動させる。このような起動を可能にするためには、カーオーディオシステムの電源と起動スイッチに接続した電子回路を用意し、割り込み信号が来ていないかをこの電子回路に常に監視させておき、割り込み信号が来るとただちに電源と起動スイッチをオンにしてカーオーディオシステムを起動させればよい。

【0094】このように起動されたCPU111は、セキュリティコントロールユニット5から異常発生を知らせるデータを受け取ると、電話ユニット6に指令を送ることで電話を掛けさせる。このときに電話を掛ける先は、異常時の通報先として予め設定しておけばよく、例えば、警察、ユーザの持っている携帯電話、警備会社などとすればよい。そして、掛けた先に電話がつながると、合成音声や予め録音したアナウンスを相手に聞かせることで異常を知らせる。このようにすれば、知らせを受けた者が現場に急行できる。

【0095】〔2－8．ユーティリティプログラムの利用〕また、通常のハンドヘルドパソコンと同じように、OSやアプリケーションプログラムの機能として、アドレス帳、カレンダー、スケジュール管理、音声録音、時計、電卓、ゲームといった機能を利用すれば、車の中でもいろいろな情報処理を行うことが可能となる。さらに、これらの機能を実現するアプリケーションプログラムを削除したり、新しいものに入れ替えたり、追加することで、個々のユーザが自分にあった情報処理の環境を整えることができる。

【0096】〔2－9．コンパクトフラッシュカードの利用〕また、この実施形態のカーオーディオシステムでは、コンパクトフラッシュカード13を使うことで、他のハンドヘルドパソコンや他のカーオーディオシステムなどとの間で情報をやり取りすることができる。

【0097】例えば、コンパクトフラッシュカード13から新しいアプリケーションプログラムやOSをフラッシュROM113に読み込ませることで、新しい機能を追加するしたりOSを更新することが容易になる。特に、汎用のOSを使うことによって、一般のソフトウェアメーカーがアプリケーションプログラムやOSの機能モジュールなどを作りやすくなるので、それを記録したコンパクトフラッシュカード13も出回って手に入れやすくなり、ユーザはこのカーオーディオシステムを、コンピュータとしても、より便利に使えるようになる。

【0098】また、他のパソコンやハンドヘルドパソコンで作ったアドレス帳のような個人的なデータを、コンパクトフラッシュカード13でこのカーオーディオシステムに持ち込めば、それまでの作業をこのカーオーディオシステム上で続けることができる。さらに、これとは逆に、このカーオーディオシステムで作ったデータをコンパクトフラッシュカード13で他のパソコンやハンドヘルドパソコンに移して作業を続けることもできる。

【0099】また、上に述べたようなユーティリティプログラムを使って自分が作ったデータを、コンパクトフラッシュカード13にバックアップコピーしておけば、カーオーディオシステムの不調や他人が使ったためにデータが消えたような場合でも、コンパクトフラッシュカード13からデータを再びメインユニット1に読み込ませて情報処理を続けることができる。

【0100】また、自分に合ったカーオーディオシステムのいろいろな設定をコンパクトフラッシュカード13にバックアップコピーしておけば、たとえ家族の他の誰かが設定を変えても、自分が車を使うときは自分の持っていたコンパクトフラッシュカード13をメインユニット1に差し込んで内容を読み込ませることで、自分にとって使い勝手のよい元通りの設定でカーオーディオシステムを使うことができる。

【0101】〔2－10．ハンドヘルドパソコンとの通信〕さらに、この実施形態では、赤外線通信ユニット127を使うことで、ハンドヘルドパソコン8との間で、コンパクトフラッシュカード13を抜き差ししたりケーブルなどで接続するといった手間をかけずに、容易にデータをやり取りすることができる。このため、ハンドヘルドパソコン8内に記録しておいたファイルなどを使ってOSやアプリケーションプログラムを更新したり、カーオーディオシステム上で作った個人的なデータをハンドヘルドパソコン8に直接移し替えたり、そのような個人的なデータのバックアップを、ハンドヘルドパソコン

8の持っている比較的大きな記憶領域に保存しておいたり、カーオーディオシステムの設定などをハンドヘルドパソコン8を通して他の車のカーオーディオシステムに移し替えたり、といったいろいろな使い方も可能になる。

【0102】〔3．効果〕以上のように、この実施形態では、カーオーディオシステムを制御するコンピュータが汎用的なOSを備えていて、この汎用的なOSは、CPUやメモリといった資源を管理することでコンピュータの能力を最大限発揮させ、また、プログラムに依存しない統一的で使いやすいユーザインタフェースを提供し、さらに、予め決められた形式のプログラムを追加したり変更することで機能の追加や変更も容易にする。このため、複雑なカーオーディオシステムの制御が容易になる。

【0103】また、OSの規格にあったプログラムであれば、車内でもいろいろなプログラムを使うことが可能になり、カーオーディオシステムの表示部や操作キー、スピーカといった機器を利用して情報処理をすることも可能になる。もちろん、この場合でも、ハンドヘルドパソコン並の大きなメモリを使ってユーザが自分の個人的な情報を保存したり、パソコンのように情報を編集することができる。

【0104】また、この実施形態では、コンピュータのCPUと、カーオーディオシステムの機器とが、互いの形式に対応した違ったバスを使ってデータをやり取りし、データは、2つのバスの間では必要に応じて形式を変換して受け渡される。このため、各機器の動作よりCPUの動作が速くても、CPUは各機器の動作サイクルに合わせる必要がなく、メモリなどを効率よくアクセスすることで複雑な処理を高速に行うことができる。また、CPUがやり取りするデータと、機器がやり取りするデータとが、同じバスの伝達能力を奪い合うことがないので、コンピュータとカーオーディオシステムの両方がそれぞれの動作をスムースに行うことができる。

【0105】また、機器を接続するためのバスを使って音の信号を再生しながら、同時に、CPUの形式に対応したバスを使って別の処理を行うといったマルチタスクが容易になる。また、CPUを別の形式のものに変える場合も、各機器と、それら機器を接続するためのバスはそのままで、CPUの形式に対応したバスだけを新しいCPUの形式に合わせて変えればよいので、CPUの変更にも容易に対応することができる。

【0106】特に、この実施形態では、複数の機器を芋づる式に次々と、デイジーチェイン形式でつないでゆくことができる。このため、機器の数が増えたり車内のあちこちに機器を分散設置するときも、スター方式のように長い配線が1箇所に集中することがなく設置が容易になる。また、配線がすっきりわかりやすくなるので、カーオーディオシステムの構成を変えたり保守や修理をすることも容易になる。

【0107】加えて、この実施形態では、オーディオデータであるか文字データであるかといったデータの種類とは関係なく、どのようなデータもUSBなどを通してデジタルデータとしてやり取りされ、処理されるので、環境変化やノイズの影響を受けにくく、オーディオ特性も安定する。

【0108】〔4．他の実施の形態〕なお、本発明は上に述べた実施形態に限定されるものではなく、次に例示するような他の実施の形態も含むものである。例えば、上に述べた実施形態では、コンピュータのOSの具体例としてWindows　CEを挙げたが、これは単なる例示に過ぎないので、他の種類の既にあるOSを使ったり、今後新しく登場するOSを使うことも本発明の範囲に含まれる。

【0109】また、上に述べた実施形態では車載用のカーオーディオシステムを制御する例を示したが、本発明は、家庭内で据え置き型ステレオなどの電気製品を制御するのに使うことも可能で、この場合も、新しいアプリケーションソフトウェアを使ったり、全体が小型で済むといった本発明の利点を活かすことができる。

【0110】また、上に述べた実施形態では、いろいろなバスや通信回路について具体的な規格を挙げたが、そのような規格は例示に過ぎず、同じような使い方ができるほかの規格に置き換えることもできる。また、例えば、第1のバスや第2のバスは、CPUモジュールとサポートモジュールをワンチップ化することで内部バスにすることもできる。

【0111】

【発明の効果】以上のように、本発明によれば、汎用的なOSを持つコンピュータとカーオーディオシステムを組み合わせることで互いの利点を活かし、複雑なカーオーディオシステムも容易に制御し、コンピュータの使い方も広げることができる。

【図面の簡単な説明】

【図1】この発明の実施形態の全体構成を示すブロック図。

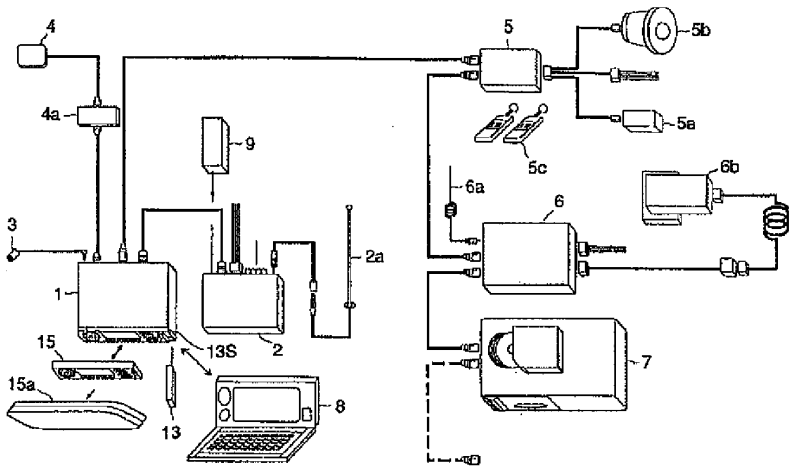
【図2】この発明の実施形態について、メインユニットの内部構成を中心に示したブロック図。

【符号の説明】

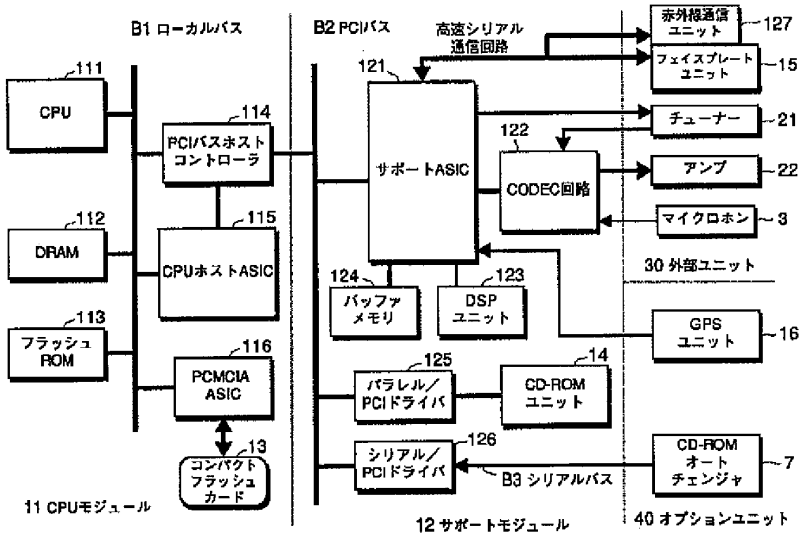
1…メインユニット1
11…CPUモジュール
111…CPU
112…DRAM
113…フラッシュROM
114…PCIバスホストコントローラ
115…CPUホストASIC
116…PCMCIA・ASIC
12…サポートモジュール
121…サポートASIC

122…CODEC回路
123…DSPユニット
124…バッファメモリ
125…パラレル／PCIドライバ
126…シリアル／PCIドライバ
127…赤外線通信ユニット
13…コンパクトフラッシュカード
13S…ソケット
14…CD－ROMユニット
15…フェイスプレートユニット
15a…ケース
16…GPSユニット
2…チューナーアンプユニット
2a…アンテナ
21…チューナー
22…アンプ
3…マイクロホン
4…GPSアンテナ
4a…受信機
5…セキュリティコントロールユニット
5a…センサ
5b…サイレン
5c…送信機
6…電話ユニット
6a…アンテナ
6b…ハンドセット
7…CD－ROMオートチェンジャ
8…ハンドヘルドパソコン
9…補助バッテリ
30…外部ユニット
40…オプションユニット

【図1】



【図2】



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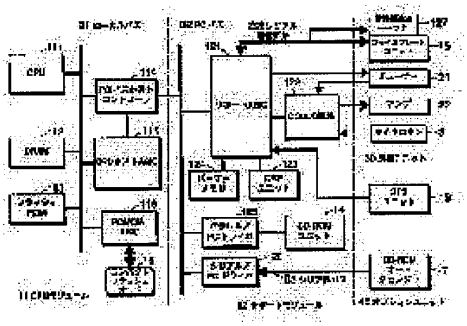
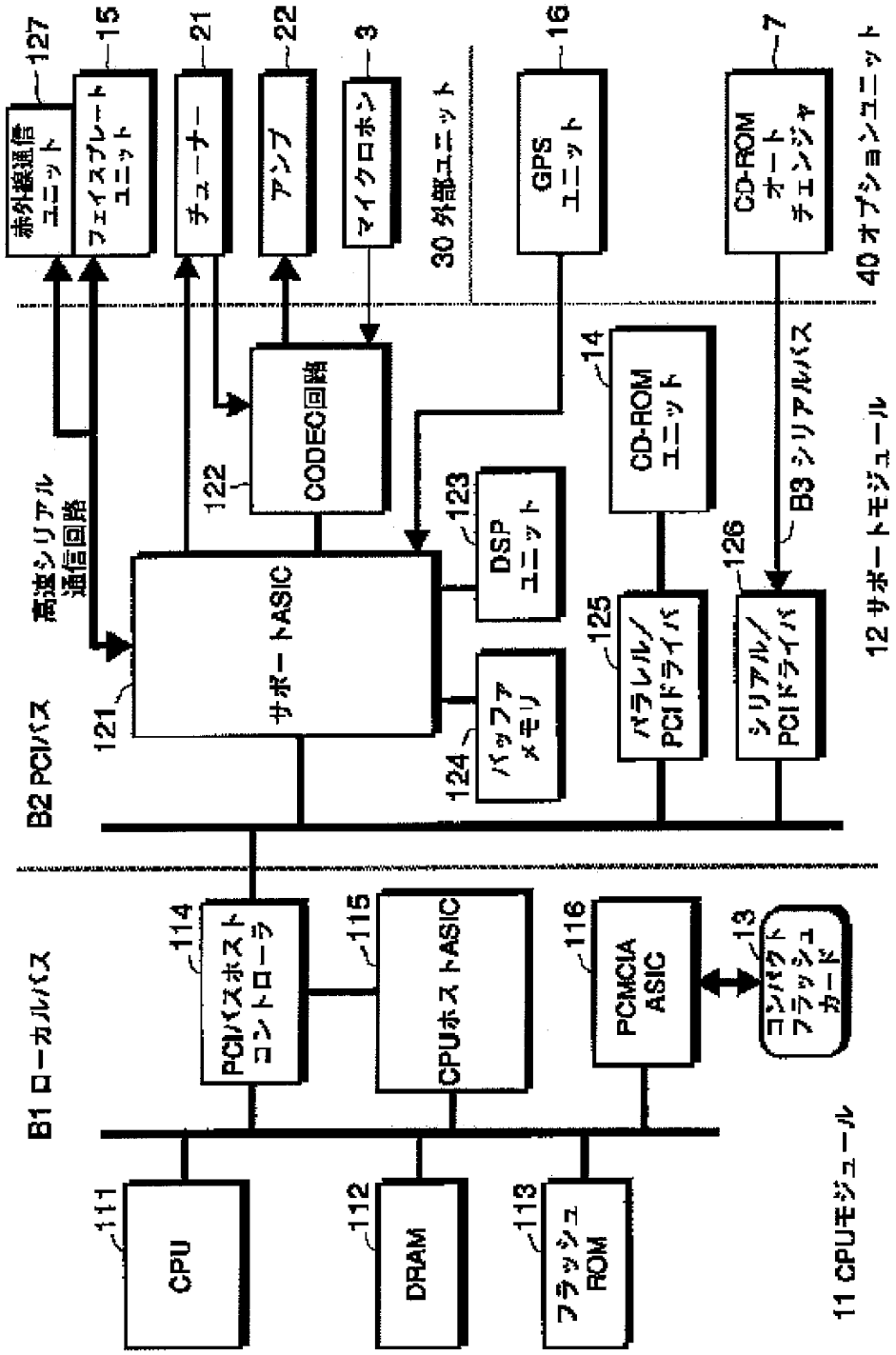
(54) CAR AUDIO SYSTEM, VEHICLE-MOUNTED COMPUTER, AND METHOD FOR CONTROLLING CAR AUDIO SYSTEM

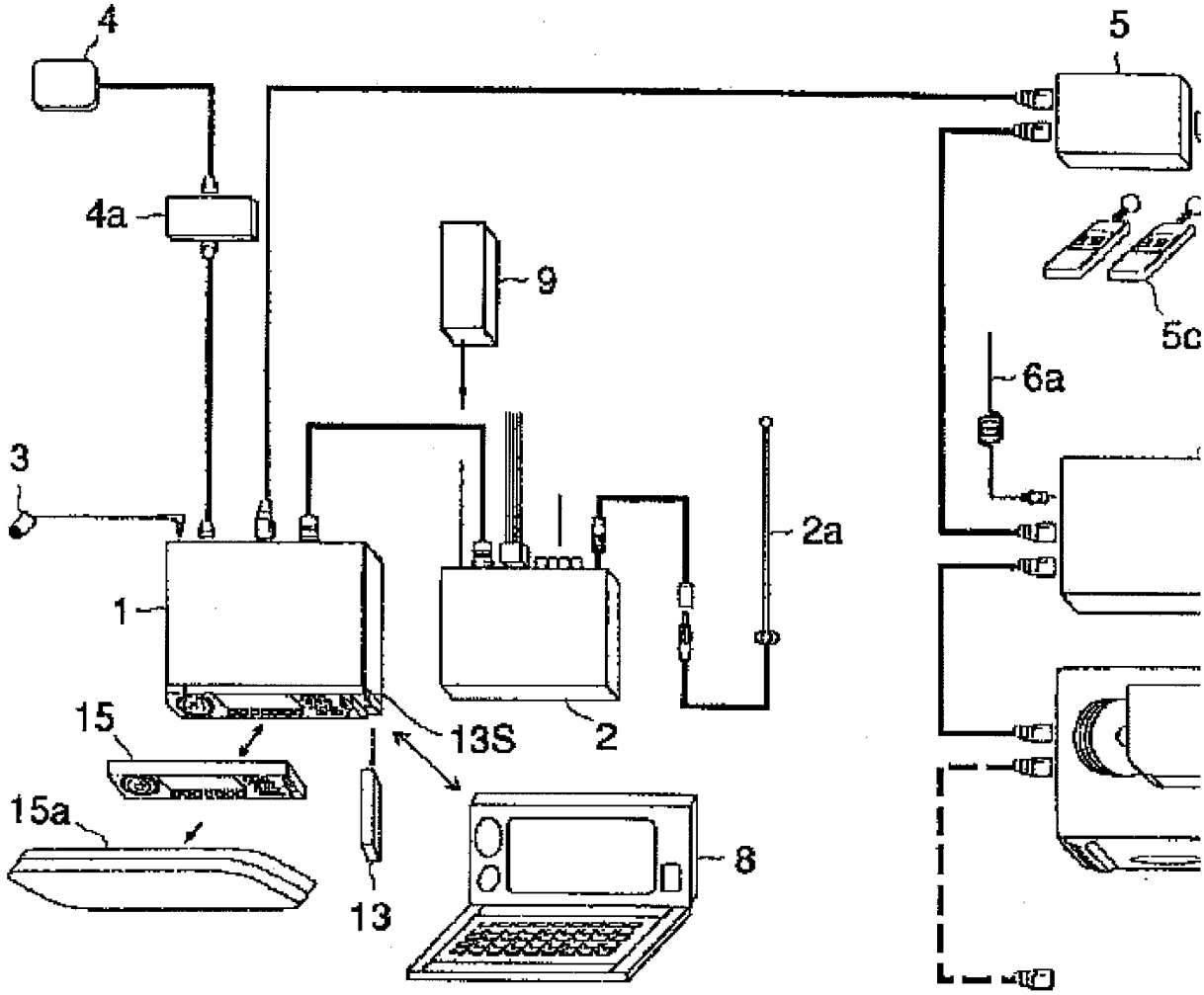
(57)Abstract:

PROBLEM TO BE SOLVED: To utilize both advantages by combining a compact computer with a universal OS and a car audio system.

SOLUTION: A local bus B1 corresponding to the form of a CPU 11 included in a computer, a PCI bus B2 for connecting equipment 15, 21, 22, 3, 16, and 7 included in a car audio system, and a PCI bus host controller 114 for converting data form between the buses B1 and B2 are provided. An OS for the CPU 111 is stored in a flash ROM 113. The CPU 111 can speedily perform complex processing by efficiently accessing a memory 112 or the like. The computer and the car audio system can be operated smoothly. A multi-task can be facilitated, where another processing can be made with another path while an audio signal is being reproduced. Only the path corresponding to the form of the CPU 111 may be changed when the form of the CPU 111 is to be changed.







* NOTICES *

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2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

CLAIMS

[Claim(s)]
[Claim 1]A car audio system comprising provided with a computer for control:
A means by which said computer is provided with an operating system and this operating system manages resources on a computer.
A means to execute a program of form beforehand decided to be a means to control input and output containing a user interface.

[Claim 2]A car audio system comprising provided with a computer for control:
The 1st bus corresponding to form of CPU contained in said computer.
The 2nd bus for connecting apparatus contained in said car audio system.

[Claim 3]A car audio system comprising provided with a computer for control:
A local bus corresponding to form of CPU contained in said computer.
A PCI bus for connecting apparatus contained in said car audio system.

[Claim 4]The car audio system according to claim 2 or 3 provided with a means to change form of data between said each bus.
[Claim 5]A car audio system of any one statement of four from claim 1 provided with the 3rd bus for connecting two or more apparatus contained in said car audio system in daisy chain form.
[Claim 6]A computer for mount characterized by comprising the following.
An operating system which realizes environment required in order to execute a program of form decided beforehand.
A means to control a car audio system and said car audio system.

[Claim 7]A computer for mount provided with a car audio system characterized by comprising the following.
The 1st bus corresponding to form of CPU contained in said computer.
The 2nd bus for connecting apparatus contained in said car audio system.

[Claim 8]A computer for mount provided with a car audio system characterized by comprising the following.
A local bus corresponding to form of CPU contained in said computer.
A PCI bus for connecting apparatus contained in said car audio system.

[Claim 9]The computer for mount according to claim 7 or 8 provided with a means to change form of data between said each bus.
[Claim 10]A computer for mount of any one statement of nine from claim 6 provided with the 3rd bus for connecting two or more apparatus contained in said car audio system in daisy chain form.
[Claim 11]A control method of a car audio system which controls a car audio system using a computer provided with an operating system characterized by comprising the following.
A step which realizes environment which needs said operating system in order to execute a program of form decided beforehand.
A step by which said program controls said car audio system.

[Claim 12]A control method of a car audio system which controls a car audio system using a computer characterized by comprising the following.
A step with which CPU contained in said computer exchanges data through the 1st bus corresponding to form of this CPU.
A step which exchanges data through the 2nd bus for apparatus contained in said car audio system to connect apparatus.

[Translation done.]

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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention]This invention is combining a small computer with general-purpose OS, and a car audio system, and relates to the art of harnessing a mutual advantage.
[0002]
[Description of the Prior Art]In recent years, progress with remarkable art of a semiconductor is accomplished and the electronic equipment of various fields has become a miniaturization and highly efficient by using a semiconductor. Thus, one of the electronic equipment made a miniaturization and highly efficient by using a semiconductor has a personal computer (henceforth a "personal computer").
[0003]The small personal computers (it names generically the following "hand-held PC") called [especially] a handheld computer (carried type), a palm top, etc. these days are also increasing in number. Windows(registered trademark of Microsoft Corp.) CE etc. are known, for example as base software (it is called below Operating System: "OS") suitable for such a hand-held PC, i.e., an operating system.
[0004]Such a general-purpose OS realizes advanced throughput by managing finely throughput, a memory, etc. of CPU which the computer has, or, If it is a program of the form which provided the user interface independent of a program which it is unific and is easy to use, or was decided beforehand, it has the advantage that the current update of the function of a computer can be carried out by carrying out a current update freely.
[0005]As another electronic equipment which similarly has been made a miniaturization and highly efficient by using a semiconductor, the car audio system and car-navigation system which are carried in a car are mentioned. Among these, a car audio system is commonly called a car stereo etc., and combines the tuner of a CD player, AM, or FM, etc. with amplifier, a loudspeaker, etc. A car-navigation system is a shown system to which a screen display of the

map is carried out to the specified destination, pinpointing the current position of a car using an azimuth magnet, an odometer, GPS, etc.

[0006]These days, since a car-navigation system, a handsfree cellular phone, an anti-theft alarm system, etc. are combined with a car audio system in many cases, the electronic equipment for these mount is hereafter named a "car audio system" generically.

[0007]

[Problem(s) to be Solved by the Invention]The hand-held PC provided with OS which was described above, and the car audio system were mutual completely separate in the former. That is, although the car audio system which prepared the computer in the large meaning for control existed, the computer in this case is called the embedded system which works only for the specific purpose.

[0008]CPU with necessary minimum capability is used for this embedded system, and it realizes necessary minimum processing to the hardware of receiving an operation switch or operating a disk reproduction mechanism, by the small program using an assembler etc. For this reason, usage of carrying out the change addition of the function by carrying out processing and preservation of data like a personal computer, or carrying out the change addition of the program cannot be done.

[0009]On the other hand, it did not have a function which a hand-held PC sounds music itself, or controls a car audio system. For this reason, although the user might carry the hand-held PC into in the car as a matter of fact, he did not use, having connected with the car audio system.

[0010]By the way, the latest car audio system, Not only in conventional apparatus called the tuner, cassette tape deck, and CD player of radio, Many apparatus is increasingly built into the condition of an MD player, CD, the autochanger of MD, a car-navigation system, the voice recognition equipment that recognizes a user's command, a handsfree cellular phone, and an anti-theft alarm system. And it is dramatically difficult to master the car audio system which becomes complicated in this way only with the switch in which it was provided by each device.

[0011]That is, when a car audio system becomes complicated in this way, many switches, such as an operation key and a dial, will be in various places in the car. For this reason, it is serious to memorize which is what operation key.

[0012]Namely, in order to master the car audio system which becomes complicated. To use for control an information processor equivalent to the hand-held PC provided with the small computer with the pliability which can carry out the current update of the function about the advanced throughput which controls a complicated system, the user interface, and control which are easy to use, and especially general-purpose OS is desired.

[0013]Even if it thinks from the hand-held PC side, a car is used like the present age in many cases, and in the car is wanted to expand the width of practical use in society also with much

traffic congestion. By combining with a car audio system especially, make an operation key and a memory serve a double purpose, or, The information which a user wants to know in the car is made to be read out by the synthesized speech using a computer, If usage of hearing the voice from the loudspeaker of a car audio system, or accessing an external computer network by the circuit of the cellular phone built into the car audio system can be done, the width of practical use can be expanded rather than former.

[0014]When combining high-speed CPU which uses general-purpose OS, and apparatus which is contained in a car audio system, to have a separate bus suitable for each from the difference in both working speed, etc. is desired. In the car audio system which combined a lot of apparatus, two or more apparatus is wanted to be easily connectable with simple refreshed wiring.

[0015]Proposed in order that this invention might solve the problem of conventional technology which was described above, it is combining a small computer with general-purpose OS, and a car audio system, and the purpose is to harness a mutual advantage. Another purpose of this invention is to use two or more buses, and is using both high-speed apparatus of CPU and others smoothly without futility. Another purpose of this invention is to connect various apparatus one after another with a daisy chain mode.

[0016]

[Means for Solving the Problem]In order to attain the purpose described above, an invention of claim 1 equips a car audio system provided with a computer for control with the following.

A means by which said computer is provided with an operating system and this operating system manages resources on a computer.

A means to control input and output containing a user interface.

A means to execute a program of form decided beforehand.

A computer for mount of claim 6 is provided with the following.

An operating system which realizes environment required in order to execute a program of form decided beforehand.

Car audio system.

A means to control said car audio system.

An invention of claim 11 is what caught an invention of claim 1 from a view of a method, In a control method of a car audio system which controls a car audio system using a computer provided with an operating system, A step which realizes environment which needs said operating system in order to execute a program of form decided beforehand, and a step by which said program controls said car audio system are included. A computer which controls a car audio system by invention of claims 1, 6, and 11 is provided with general-purpose OS, and it this general-purpose OS, A user interface which carries out the maximum exertion of the capability of a computer by managing resources, such as CPU and a memory, and is not

dependent on a program and which it is unific and is easy to use is provided, and an addition and change of a function are made easy by adding a program of form decided further beforehand, or changing. For this reason, control of a complicated car audio system becomes easy. It becomes possible for in the car to use various programs, or to process information using apparatus of a car audio system.

[0017]An invention of claim 2 was provided with the 1st bus corresponding to form of CPU contained in said computer, and the 2nd bus for connecting apparatus contained in said car audio system in a car audio system provided with a computer for control. An invention of claim 7 was provided with the 1st bus corresponding to form of CPU contained in said computer, and the 2nd bus for connecting apparatus contained in said car audio system in a computer for mount provided with a car audio system. An invention of claim 12 is what caught an invention of claim 2 from a view of a method, In a control method of a car audio system which controls a car audio system using a computer, A step with which CPU contained in said computer exchanges data through the 1st bus corresponding to form of this CPU, Apparatus contained in said car audio system contains a step which exchanges data through the 2nd bus for connecting apparatus. An invention of claim 3 was provided with a PCI bus for connecting apparatus contained in said car audio system with a local bus corresponding to form of CPU contained in said computer in a car audio system provided with a computer for control. An invention of claim 8 was provided with a PCI bus for connecting apparatus contained in said car audio system with a local bus corresponding to form of CPU contained in said computer in a computer for mount provided with a car audio system. An invention of claim 4 was provided with a means to change form of data between said each bus, in the car audio system according to claim 2 or 3. An invention of claim 9 was provided with a means to change form of data between said each bus, in the computer for mount according to claim 7 or 8. In an invention of claims 2, 3, 7, 8, and 12, data is exchanged using a bus CPU of a computer and apparatus of a car audio system made the mistake in corresponding to a mutual form, and between two buses, if needed, data changes form, wins popularity and is passed (claims 4 and 9). For this reason, even if operation of CPU is quicker than operation of each apparatus, it is not necessary to double CPU with a motion cycle of each apparatus, and complicated processing can be performed at high speed by accessing a memory etc. efficiently. Since data which CPU exchanges, and data which apparatus exchanges do not scramble for communicative competence of the same bus, it can operate smoothly in both a computer and a car audio system. Multitasking of performing another processing using a bus corresponding to form of CPU becomes easy simultaneously, reproducing a signal of a sound using a bus for connecting apparatus. Also when changing CPU into a thing of another form, a bus for connecting these apparatus with each apparatus remains as it is, and since what is necessary is to change only a bus corresponding to form of CPU according to form of new CPU, it can

respond also to change of CPU easily.

[0018]An invention of claim 5 was provided with the 3rd bus for connecting two or more apparatus contained in said car audio system in a car audio system of any one statement of four from claim 1 in daisy chain form. An invention of claim 10 was provided with the 3rd bus for connecting two or more apparatus contained in said car audio system in a computer for mount of any one statement of nine from claim 6 in daisy chain form. In an invention of claims 5 and 10, two or more apparatus can be connected in daisy chain form one after another, and it can die. For this reason, also when the number of apparatus increases or distributed installation of the apparatus is carried out here and there [in the car], long wiring is not concentrated in one place like a star method, and installation becomes easy. Since wiring becomes intelligible shapely, it also becomes easy to change composition or to carry out maintenance and repair.

[0019]

[Embodiment of the Invention]Next, an embodiment of the invention (henceforth a "embodiment") is concretely described with reference to drawings. Although this embodiment is the car audio system provided with various apparatus, such as a CD player, it is provided with the computer provided with general-purpose OS which is used for a hand-held PC, and also performs control of a car audio system by this computer. The same numerals are attached about the member same about each figure used by the following explanation as the figure explained before it, or the same kind of member, and explanation is omitted.

[0020][1. composition]

[Composition of whole 1-1.] First, drawing 1 is a block diagram showing the entire configuration of this embodiment. As shown in this figure, this embodiment as each apparatus which constitutes a car audio system other than the main unit 1, It has the tuner amplifier unit 2, the microphone 3, the GPS antenna 4, the security control unit 5, the telephone unit 6, the CD-ROM autochanger 7, and the auxiliary battery 9 for power supply backup.

[0021]Among these, the main unit 1 is a portion which builds in the computer for control and controls the whole system by this computer. Although the tuner amplifier unit 2 does not carry out the graphic display other than the antenna 2a of AM and FM, it is the portion provided with a radio tuner and the amplifier for sounding a loudspeaker. The microphone 3 is for inputting a user's voice so that operation by speech recognition can be performed. The function of this speech recognition is realized by the program of the computer described above.

[0022][1-1-1. main unit] The main unit 1 is provided with the socket 13S for inserting CompactFlash card 13, and the face plate unit 15 removed [attach and] and made (drawing 1). CompactFlash card 13 is a storage using a flash memory, and data can be written from the main unit 1 by inserting in the socket 13S formed in the main unit 1. This CompactFlash card 13 is used in order to exchange data, a program, etc. with other computers or to back up

various information sets in this car audio system.

[0023]The face plate unit 15 attached, removed and made, It has the indicator which displays various information on a user, and the final controlling element which provided the operation key for a user to do various operations etc., and is referred to also as DCP (Detachable Control Panel). The indicator of this face plate unit 15 is large-sized color LCD (liquid crystal display) of 64 dots by 256 dots, etc., for example.

[0024]if it removes and carries out when getting off a car, even if a thief looks for a car audio system, neither use nor resale can do this face plate unit 15, also seeing an important indicator not have a final controlling element -- there are ** and a theft preventive effect of giving up stealing. If the removed face plate unit 15 is put into the case 15a and it carries around, it will damage neither itself nor a surrounding thing.

[0025]Although this face plate unit 15 is not shown in drawing 1, it is provided with the infrared-ray-communication unit for exchanging data in the form of the hand-held PC 8, IrDA, etc.

[0026][Apparatus] besides 1-1-2. The GPS antenna 4 is an antenna for receiving an electric wave from a GPS Satellite. The signal from this GPS antenna 4 is sent to the GPS unit in the main unit 1 through GPS receiver 4a. Although this GPS unit is not shown in drawing 1, it calculates the position on the earth with a receiver from an electric wave. On the computer described above, by a program, the function of a car-navigation system is realized and a calculation result is passed to the function of this car-navigation system.

[0027]The security control unit 5 is the sensor 5a which detects vibration and a shock, and when a theft, a mischief, etc. are detected, it is a portion which carries out correspondence of sounding the siren 5b. The telephone unit 6 is a unit which controls the function of a car telephone, and is a portion which realizes the telephone call using the telephone antenna 6a or the hand set 6b. The CD-ROM autochanger 7 is hanging automatically some CDs set beforehand again, and is a unit which plays the disk which the user chose, and music.

[0028][1-1-3. daisy chain connection] Here, these security control unit 5, the telephone unit 6, and the CD-ROM autochanger 7 are connected to the main unit 1 by USB (Universal Serial Bus). This USB is a serial bus (the 3rd bus) for connecting two or more apparatus in daisy chain form.

[0029]The apparatus connected by USB in this way comprises this embodiment so that data with the exterior may be exchanged in the form of this USB. For example, the CD-ROM autochanger 7, Although it has the hub (HUB) the object for upstreams, and for downstreams and digital data is once read from an audio CD or CD-ROM according to ATAPI form (parallel form) inside this CD-ROM autochanger 7, After the read data is changed into the USB (Universal Serial Bus) form which is serial form by the data converter built in, it is sent out to USB.

[0030]The installation becomes easy when installing these units 5, 6, and 7 in the place distant

from the main unit 1, since connection of the units 5 and 6 and the CD-ROM autochanger 7 turns into serial connection with such composition. Although connected in order of the unit 5, the unit 6, and the autochanger 7 in drawing 1, connection order is good also as connection of only arbitrary and required things.

[0031][The internal configuration of a 1-2. main unit] Next, drawing 2 is a block diagram showing the main things among each portion described above, and is especially explained focusing on the concrete composition of main unit 1 inside. This whole figure is divided into four with the dashed line, in the left, CPU module 11 and a center become the support module 12, the upper right becomes the external unit 30, and the lower right has become the option unit 40. Among these, CPU module 11 and the support module 12 are formed in the inside of the main unit 1.

[0032]The external unit 30 and the option unit 40 have pointed out collectively the apparatus of every some connected to the main unit 1. On account of explanation, CompactFlash card 13 is shown in the direction under CPU module 11, and drawing 2 shows the face plate unit 15 to the direction on the external unit 30.

[0033]Among these, CPU module 11 and the support module 12 constitute the computer for control which controls the whole car audio system. Among these, CPU module 11 is a portion which carries out logical data processing centering on CPU111, and the support module 12 is a portion which performs input and output with other apparatus contained in a car audio system.

[0034]The local bus B1 (the 1st bus) formed considering CPU111 as a center is a way with CPU module 11 as [main] data. PCI (Peripheral Component Interconnect) for that it is a way by the support module 12 as [main] data to connect each apparatus on the other hand It is bus B-2 (the 2nd bus).

[0035][Composition of a 1-2-1. CPU module] The local bus B1 of CPU module 11, It is what was doubled with the form of CPU111, and DRAM112, the flash ROM 113, the PCI bus host controller 114, CPU host ASIC115, and PCMCIA-ASIC116 are connected to this local bus B1. Among these, DRAM112 is a portion which provides work areas, such as a variable area, when CPU111 processes information in control of a car audio system, etc.

[0036]The flash ROM 113 is rewritable ROM and is a portion which stores the software in large meanings, such as OS, BIOS, and an application program, here. The function of OS stored here manages the resources on a computer, It is controlling the input and output containing a user interface, executing the program of the form decided beforehand, etc., for example, what used as the base Windows CE which conventional technology described by the way can be considered.

[0037]The PCI bus host controller 114 is a means to change the form of the data which connects the local bus B1 and PCI bus B-2, and is exchanged between these two buses.

[0038]"ASIC", such as CPU host ASIC115, is the abbreviation for Application Specific Integrated Circuit, and points out IC and LSI which were made for specific uses to general-purpose integrated circuits, such as ROM, RAM, and CPU. Specifically, this CPU host ASIC115 is ASIC for the interface of the local bus B1 and the PCI bus host controller 114. This CPU host ASIC115 [that is,], Between PCI bus B-2 and CPU module 11, are a portion which becomes a window of the data exchanged and specifically, Input and output with CPU module 11 and the exterior are performed instead of CPU111, and also it is recognized whether it is a thing of the kind passed to CPU111 about the data sent from PCI bus B-2.
[0039]And although what should pass CPU host ASIC115 to CPU111 is sent to CPU111 through the local bus B1, CPU111 does not need to calculate to the other thing, for example, the sent data, and such a reaction is returned about that for which it is sufficient if the reaction for which it opted beforehand is returned mechanically.
[0040]PCMCIA-ASIC116 CompactFlash card 13, It is a portion for an interface corresponding to being based on the standard of PCMCIA (Personal Computer Memory Card International Association) as what is called a PC card, It is a portion which controls the reading and writing of data to CompactFlash card 13.
[0041][Composition in connection with a 1-2-2. support module] Next, PCI bus B-2 of the support module 12 is a bus for exchanging data among various apparatus which constitutes a car audio system. Here, as apparatus connected to this PCI bus B-2, there are the external unit 30 and the option unit 40, and these have pointed out some apparatus collectively, respectively.
[0042]That is, the external unit 30 is unit with the another main unit 1 shown in drawing 1, and in this example specifically, It is the tuner 21, the amplifier 22, and the microphone 3 which were formed in the face plate unit 15 attached, removed and made from the main unit 1, and the tuner amplifier unit 2. Among these, the face plate unit 15 is provided with the infrared-ray-communication unit 127.
[0043]The option unit 40 is a unit from which it can choose whether to include in this car audio system as an option, and, specifically, are GPS unit 16 and the CD-ROM autochanger 7 in this example. There is the CD-ROM unit 14 in the inside of the main unit 1, and this CD-ROM unit 14 is also connected to PCI bus B-2. This CD-ROM unit 14 is a player for reading digital data from one CD or CD-ROM. These CD-ROM autochanger 7 and the CD-ROM unit 14 have the compatibility that data can also be read from what is called an audio CD, and both can also read data from CD-ROM (it is compatible).
[0044]In the support module 12, in order for PCI bus B-2 to exchange data among these apparatus, Support ASIC121, CODEC circuit 122, DSP unit 123, the buffer memory 124, the parallel / PCI driver 125, and the serial / PCI driver 126 are used.
[0045]Among these, support ASIC121 is a portion which controls traffic in the data where to

send the data which came from where between the support module 12 and each apparatus. "CODEC" of CODEC circuit 122 is an abbreviation of "Coder/Decoder", i.e., the coding decryption art of data, and this CODEC circuit 122, For example, it is a portion which performs the A/D conversion etc. which carry out D/A conversion which changes the given digital data into an analog signal, or change an analog signal into digital data conversely.

[0046]"DSP" of DSP unit 123 is an abbreviation to mean a digital sound processor, i.e., the circuit which processes the signal of the sound of digital format specially, and this DSP unit 123, When the digital data showing music etc. can be given, as items, such as balance of the right and left set as the system, volume, Feder, surround, and an equalizer, are reflected in the contents of the sound, it is a portion which processes digital data.

[0047]By audio equipment and PCI bus B-2s, such as a CD-ROM unit, since the buffer memory 124 differs in the cycle which write data, it is a buffer for this difference to be filled up with storing data and taking it out little by little, and comprises SRAM etc.

[0048]Parallel / PCI driver 125 is portions which change into the data format of PCI bus B-2 the digital data of parallel form sent from the CD-ROM unit 14. A serial / PCI driver 126 is portions which change into the data format of PCI bus B-2 the digital data of serial form sent from the CD-ROM autochanger 7.

[0049]The face plate unit 15 containing the infrared-ray-communication unit 127, It is connected to support ASIC121 in a high-speed serial communication circuit, and GPS unit 16 is connected to support ASIC121 in start-stop serial communication circuits, such as UART (UniversalAsynchronous Receiver-Transitter). The CD-ROM unit 14 is connected to parallel / PCI driver 125 by parallel communication circuits, such as ATAPI (AT Attachment Packet Interface). Although a graphic display is not carried out, ASIC which manages an exchange of the data based on infrared rays is provided in the infrared-ray-communication unit 127.

[0050][2. operation] This embodiment constituted as stated above works as follows.

[2-1. -- overall operation]

[2-1-1. entry of data] According to this embodiment, the direct entry of the digital data is carried out to support ASIC121 of the support module 12 among the data inputted from each apparatus. For example, the data which key was pressed is sent from the face plate unit 15. From GPS unit 16, digital data called the latitude and longitude which were calculated using the electric wave from a GPS Satellite is sent. From the infrared-ray-communication unit 127 provided in the face plate unit 15, the digital data transmitted with infrared rays from the hand-held PC 8 is sent.

[0051]From the CD-ROM unit 14 and the CD-ROM autochanger 7. The data of the sound read from the audio CD, i.e., audio information, After the digital data read from CD-ROM, i.e., CD-ROM data, is changed into the data format of PCI bus B-2 by parallel / PCI driver 125, and the serial / PCI driver 126, it is sent to support ASIC121 via PCI bus B-2.

[0052]Although not shown in drawing 2, the digital data which tells generating of abnormalities is sent from the security control unit 5 shown in drawing 1. Similarly, from the telephone unit 6 shown in drawing 1, the digital data which tells the telephone number of the mail arrival and dispatch origin of a telephone call, etc., i.e., alphabetic data, is sent, and the digital data which tells a partner's voice, i.e., voice data, is sent during a telephone call support ASIC121.
[0053]These security control unit 5 and the telephone unit 6, Since daisy chain connection is carried out to the serial bus B3, the information sent from the security control unit 5 or the telephone unit 6, Like the digital data from the CD-ROM autochanger 7, after being changed into the data format of PCI bus B-2 by a serial / PCI driver 126, it is sent via PCI bus B-2.
[0054]On the other hand, among the data inputted from each apparatus, after the analog signal was once inputted into CODEC circuit 122 and is changed into digital data by this CODEC circuit 122 (A/D conversion), it is passed to support ASIC121. For example, from the microphone 3, a user's voice is inputted with an analog signal, and the contents of broadcast of the radio received as a result of tuning are inputted with an analog signal from the tuner 21.
[0055]Destination [of the data of which the [2-1-2. input was done]] The role of traffic control which information support ASIC121 sends where is played to the information for which it gathers in this way. That is, roughly, support ASIC121 was processed with DSP unit 123, and also it sends the data of a sound to the amplifier 22 through CODEC circuit 122, and data other than a sound is sent to CPU module 11. However, the data inputted from the microphone 3 also in the data of a sound is sent to CPU module 11 for speech recognition.
[0056]The contents of the radio broadcast tuned up by the tuner 21 as data of a sound sent to the amplifier 22, for example, The voice etc. of the contents of sound recording read from the audio CD with the CD-ROM unit 14 or the CD-ROM autochanger 7 and the call partner seen off from the telephone unit 6 can be considered.
[0057]The data of which operation key was pressed by the face plate unit 15 as data other than a sound, for example, With the digital data, the CD-ROM unit 14, and the CD-ROM autochanger 7 which are called the latitude and longitude which have been sent from the data of the file etc. which have been sent from the infrared-ray-communication unit 127, and GPS unit 16. The contents of the map for car-navigation systems and the contents of the information for every area which were read from CD-ROM, The data which tells the abnormal occurrence led from the security control unit 5, the data which tells the telephone number etc. of telephone call arrival [which is sent from the telephone unit 6] and dispatch origin, etc. can be considered.
[0058][Information processing with a 2-1-3. CPU module] In CPU module 11, if digital data is sent from support ASIC121, after the PCI bus host controller 114 changes the sent data into the data format of the local bus B1, CPU host ASIC115 will be passed. If this CPU host ASIC115 manages input and output instead of CPU111 and is passed data, it will judge [what

that data should pass to CPU111, or] from the form of data, etc. whether that is right.
[0059]That is, the other data is passed to CPU111 although the reaction for which it opted beforehand to the data for which it is sufficient if CPU host ASIC115 returns a fixed reaction mechanically is returned to the support module 12 through the PCI bus host controller 114.
[0060]CPU111 processes the passed data according to the code of OS and the program which are recorded on the flash ROM 113, and uses DRAM112 as storage areas, such as a work area required in the case of this processing. For example, when a user's voice inputted from the microphone 3 is sent, CPU111, The parameter showing the feature of the instruction word currently prepared beforehand, a waveform, etc. are compared with the voice of the user who received, a most alike instruction word is presumed to be what the user said, and it operates according to the instruction word.
[0061]In CPU module 11, according to the request from CPU111, reading and writing of CompactFlash card 13 are performed, when CPU host ASIC115 controls PCMCIA-ASIC116.
[0062]And the result of information processing by CPU111 is sent to the support module 12, after being changed into the data format of PCI bus B-2 by the PCI bus host controller 114. As data sent to the support module 12 as a result of information processing, it is instructions of the operation to each portion and each apparatus of the support module 12, etc., and processing of input and output etc. is performed in the support module 12 according to the data sent in this way.
[0063][Processing of input and output with a 2-1-4. support module etc.] For example, if the instructions which tuning of the data read from CD or radio is made arrive from CPU module 11, the CD-ROM unit 14, the CD-ROM autochanger 7, and the tuner 21 will perform operation according to it. If the instructions which change the sound source of the sound which has come out of the loudspeaker to apparatus different from the present arrive from CPU module 11, support ASIC121 will change the digital data sent out to CODEC circuit 122 from the thing of the apparatus till then to what is depended on the apparatus specified newly.
[0064]When outputting digital data to the amplifier 22, since the amplifier 22 receives only an analog signal, after CODEC circuit 122 changes digital data into an analog signal (D/A conversion), it outputs it to the amplifier 22.
[0065]If the indicative data to a user is sent to support ASIC121 from CPU module 11 or other apparatus, for example, support ASIC121 will transmit this indicative data to the face plate unit 15 through a high-speed serial communication circuit. In this case, in the face plate unit 15, the information to a user is displayed on an indicator according to the transmitted indicative data.
[0066]Then, work of each portion which was described above explains concretely how a user can use the car audio system of this embodiment.
[0067][Presenting of 2-2. operation and information] When operating the car audio system of this embodiment, a user may press the operation key provided in the face plate unit 15, and

may utter the words and phrases beforehand decided for every internal use of operation. as the words and phrases which may press the operation key changed to CD when a user wants to use CD and an FM tuner and which carried out and were decided beforehand -- for example, -- "-- carrying out - ****-" -- "-- what is necessary is to obtain, to increase and just to speak toward **" etc. and the microphone 3

[0068]When a user presses the operation key, the data is transmitted to CPU module 11 from support ASIC121, CPU111 sends a new indicative data to support ASIC121, and the indicator of the face plate unit 15 changes to a screen display for operating a screen display and CD for operating radio using this indicative data, etc.

[0069]a user -- ", if it carries out and the words and phrases - ****-" are uttered, An analog signal is changed into digital data from the microphone 3 by CODEC circuit 122, From support ASIC121, through PCI bus host controller and CPU host ASIC115, it is sent to CPU111 by this digital data and CPU111, Based on this digital data, it recognizes which language the user said, and the same correspondence as the time of the operation key being pressed is carried out according to a recognition result.

[0070]For example, use the indicator of the face plate unit 15 as the touch panel, and as a graphical user interface of a computer, For example, the function which can be used at the time is displayed on an indicator by an icon, and if the icon of the function which a user wants to use is touched with a finger, the function can work. If they use, for example, a display and speech recognition in one voice by such an icon, The usage that a screen will return to the state in front of one if a screen will change, some following icons will be displayed if some icons are displayed at once and a user speaks with the "next", and a user speaks, saying "It returns" is also possible.

[0071][When 2-3. radio is listened to] it is the operation which was described above -- a user -- ", if obtain, and increase, it speaks with **", FM broadcasting of radio is chosen and CPU111 recognizes it, Support ASIC121 changes the sauce of the data which changes the tuner 21 to the receive state of FM according to the command from CPU111, and is sent out to the amplifier 22 to the data of the sound from the tuner 21. in this case, the good next frequency of a receive state is looked for automatically, the tuner 21 being that carry out and a user utters the words and phrases "a seeking rise" which may receive the frequency tuned in last time, for example, and changing frequency little by little (automatic scanning) -- it may be made like.

[0072]Thus, since the receiving contents sent from the tuner 21 are analog signals when listening to radio, this analog signal is inputted into CODEC circuit 122, and after being changed into digital data, it is sent to support ASIC121. Support ASIC121 passes the digital data received from CODEC circuit 122 to DSP unit 123, and DSP unit 123, This digital data is processed according to the setting-out item of the balance and volume which are beforehand set up on the system, and it returns to support ASIC121.

[0073]And support ASIC121 returns again the digital data which has returned in this way to CODEC circuit 122, and after it changed this digital data into the analog signal again and CODEC circuit 122 returns it, it is sent to the amplifier 22 and it is made to flow through it from a loudspeaker shortly.
[0074][Playback of 2-4.CD] A user sets an audio CD to ask the CD-ROM unit 14 and the CD-ROM autochanger 7 and should just do directions of pointing to playback with "**** -", etc. a sound, etc., or flying to the following music to hear an audio CD. For example, when playing the audio CD in the CD-ROM unit 14, the CD-ROM unit 14 operates by the instructions from support ASIC121, and the audio information which is digital data is sent from the CD-ROM unit 14.
[0075]And parallel / PCI driver 125, Change this audio information into the data format of PCI bus B-2, send to support ASIC121 and support ASIC121, If the audio information which once passes this audio information to DSP unit 123, made process it, and was processed when audio information was received from PCI bus B-2 is again received from DSP unit 123, The processed audio information is passed to CODEC circuit 122 from a digital-input/output port, and it is made to output to the amplifier 22 in the form of an analog signal.
[0076]When the CD-ROM autochanger 7 reproduces an audio CD, a serial / PCI driver 126 changes into the data format of PCI bus B-2 the audio information of the serial form sent from the serial bus B3, but. Processing after it is performed like the case of the CD-ROM unit 14.
[0077]The CD-ROM unit 14 and the CD-ROM autochanger 7, If CODEC circuit 122 and DSP unit 123 are compared relatively, in order that the latter may process data little by little in the cycle of short time to the former sending the data of the quantity collected in the cycle of long time, a cycle has a gap among both. For this reason, support ASIC121 stores in the buffer memory 124 the digital data which the CD-ROM unit 14 or the CD-ROM autochanger 7 has sent collectively, A gap which was described above is filled up with passing DSP unit 123 and making it process, if it takes out from the oldest portion one after another, and reproduction is made to be performed smoothly.
[0078][Use of 2-5.CD-ROM and car navigation] A user for example, to use the function of a car-navigation system. For example, after setting to the CD-ROM unit 14 CD-ROM on which the data for car-navigation systems (application software, a map, etc.) was recorded, the function of a car-navigation system is started. The function of such a car-navigation system is realizable by recording on the flash ROM 113 of CPU module 11, for example as a program of a computer, and making CPU111 execute such a program.
[0079]When such a car-navigation system tries to read the data of the map recorded on CD-ROM, various information for every area, etc., For example, the digital data read from the CD-ROM unit 14 is passed to CPU111 through parallel / PCI driver 125, PCI bus host controller 114, and CPU host ASIC115. CPU111 created on DRAM112 the bitmapped image for

displaying on the indicator of the face plate unit 15 based on the data of the map etc. which were received in this way, and also it is sent out to the support module 12.

[0080]When using a car-navigation system in this way, the GPS antenna 4 shown in drawing 1 receives the electric wave from a GPS Satellite, GPS unit 16 of drawing 2 calculates latitude, longitude, etc. from this electric wave, and this data is sent to CPU111. Then, CPU111 can specify on a map where the car loading with this car audio system is running from the data of such latitude, longitude, etc. now. As a result, even if a user does not input, a its present location can be set up as a departure point, or the rough map that the present point takes the lead can be displayed, or the figure which directs next right-turn and left turn can be displayed.

[0081]The data for navigation may be memorized to CompactFlash card 13 (or DRAM112) or the flash ROM 113.

[0082]The method of operation by speech recognition which was already explained, Thus, also when using the function of a car-navigation system, it can use, For example, when using the car-navigation system which issues directions, such as right-turn and left turn, for every corner of a street and a user wants to see the directions before one, and directions of one beyond, one display after another can also be changed by uttering the "next" and the words and phrases of "returning."

[0083]In order to know where it will next turn, it becomes unnecessary to turn a look to an indicator, if a user can also be told about such guidance and it does in this way with outputting synthesized speech through the amplifier 22.

[0084][Use of a 2-6. telephone] The user can harness the advantage of a computer, and the advantage of a car audio system as follows, when talking over the telephone using the telephone unit 6. For example, the user registers into DRAM112 and CompactFlash card 13 of the system beforehand people's telephone number and name which he knows using the program of a computer.

[0085]If a telephone receives a message, it will not illustrate to drawing 2, but the digital data which tells that the telephone received a message from the telephone unit 6 through the serial bus B3, and the serial / PCI driver 126, and the digital data showing the telephone number of a sending agency are sent to support ASIC121. These data is further sent to CPU111 of CPU module 11, and CPU111 searches whether the telephone number of the dispatch origin which is hanging now into the telephone number registered beforehand is registered.

[0086]When there is a telephone number of the dispatch origin which is hanging now into the telephone number registered beforehand, CPU111 is returning the name corresponding to the telephone number to the support module 12, A user can be told about who is telephoning by displaying the name of those who are telephoning the face plate unit 15, or pouring the guidance by synthesized speech "it is from Mr. OO" from a mounted loudspeaker.

[0087]If the user who knew geting a telephone call in such a display, guidance, a calling

sound, etc. directs to utter the words and phrases decided beforehand and to connect a telephone, A user's voice inputted from the microphone 3 is changed into digital data by CODEC circuit 122 at the same time a partner's voice flows from a loudspeaker, It is sent to the telephone unit 6 through support ASIC121, the serial / PCI driver 126, and the serial bus B3, and the user can talk over the telephone in what is called the handsfree state, without using a hand.

[0088]The answering machine function etc. which were prepared for the telephone unit 6 or CPU module 11, for example answer a telephone in the place where only the number of times with a constant calling sound sounded.

[0089]If the icon of dispatch, etc. are touched with a finger in the place which displayed the telephone number and name which have been registered beforehand one after another on the display screen, for example and where the partner who wants to telephone was displayed also when it is going to send from the user side, The telephone number is transmitted to the telephone unit 6 as digital data from CPU module 11, and a telephone call is got automatically, and if a partner comes out, it can talk as it is.

[0090]Send to the telephone number corresponding to the name automatically because utter the name which the user registered and CPU module 11 recognizes this, or, a single figure speaks at a time, and a telephone number to hang is made to recognize, or a user is "person -- are and it does -- " -- the point which recognizes having spoken and telephones can be decided.

[0091][Use of a 2-7. security control unit] The security control unit 5 can also be used alone, and it can also be used for it, making it the telephone unit 6 described above interlocked with. For example, when leaving a car, (drawing 1) and a user operate the security control unit 5, and get down with the transmitter 5c. If the third party who is unrelated to the user of vehicles in any way is going to touch a doorknob, tamper with a keyhole, wrench a door and a suitcase open or is going to move a car without notice, The sensor 5a takes in the shock and vibration by it, and the security control unit 5 which received the signal from the sensor 5a sounds the siren 5b with Ryo Oto, for example. Thereby, the effect of an alarm is brought about to the environment outside a car.

[0092]Since the code decided beforehand will be sent to the security control unit 5 and the function of the security control unit 5 will be canceled if he operates the transmitter 5c which it has when the user itself has returned to the car, A key is not used, or even if it moves a car, a siren does not sound.

[0093]It is further effective if such a security control unit 5 uses making it the telephone unit 6 interlocked with. That is, when the sensor 5a has detected abnormalities, the security control unit 5 starts the car audio system which sends an interrupt signal and it not only sounds a siren, but contains CPU module 11 and the support module 12. In order to enable such

starting, the electronic circuit linked to the power supply and start switch of the car audio system is prepared, What is necessary is to make a power supply and a start switch one immediately, and just to start a car audio system, if this electronic circuit is made to always supervise whether the interrupt signal is coming and an interrupt signal comes it.

[0094]CPU111 started in this way makes it telephone by sending instructions to the telephone unit 6, when the data which tells an abnormal occurrence is received from the security control unit 5. The point which telephones at this time should just be taken as a cellular phone, a security company, etc. which what is necessary is just to set up beforehand as an information destination at the time of abnormalities, and the police and a user have. And abnormalities are told by the thing which hung and which will be told synthesized speech and against the announcement recorded beforehand if a telephone is connected previously. If it does in this way, those who received the notice can hasten at the spot.

[0095][Use of a 2-8. utility program] Like the usual hand-held PC, if functions, such as an address book, a calendar, schedule management, voice recording, a clock, a calculator, and a game, are used as a function of OS or an application program, it will become possible to perform information processing various also in a car. The environment of information processing which suited to itself can be improved by deleting the application program which realizes these functions, changing to a new thing, or adding.

[0096][Use of a 2-9. CompactFlash card] In the car audio system of this embodiment, information can be exchanged between other hand-held PCs, other car audio systems, etc. by using CompactFlash card 13.

[0097]For example, it becomes easy to add a new function, and it to be sufficient to make a new application program and OS read into the flash ROM 113 from CompactFlash card 13, and to update OS. Since it becomes easy for ordinary software makers to make an application program, the functional module of OS, etc. by using general-purpose OS especially, CompactFlash card 13 which recorded it also appears on the market, it becomes easy to get, and the user can use this car audio system now for convenience more also as a computer.

[0098]If individual data like the address book made with other personal computers and hand-held PCs is carried into this car audio system by CompactFlash card 13, the work till then can be continued on this car audio system. Contrary to this, the data made with this car audio system can be moved to other personal computers and hand-held PCs by CompactFlash card 13, and work can also be continued.

[0099]If the backup copy of the data which he made using a utility program which was described above is carried out to CompactFlash card 13, Since the bad condition and others of the car audio system used, even when data disappears, data can be made to be able to read into the main unit 1 from CompactFlash card 13 again, and information processing can be continued.

[0100]If the backup copy of various setting out of the car audio system suitable for itself is carried out to CompactFlash card 13, Even if someone of other families change setting out, inserting in the main unit 1 CompactFlash card 13 which he had, and making the contents read, when he uses a car can use a car audio system by user-friendly original setting out for itself.

[0101][Communication with a 2-10. hand-held PC] At this embodiment, data can be easily exchanged by using the infrared-ray-communication unit 127, without applying the time and effort of taking out and inserting CompactFlash card 13 or connecting by a cable etc., between the hand-held PCs 8. For this reason, update OS and an application program using the file etc. which were recorded in the hand-held PC 8, or. Move to the hand-held PC 8 directly the individual data made on the car audio system, or, Save backup of such individual data in the comparatively big storage area which the hand-held PC 8 has, or, Various usage of moving setting out of a car audio system, etc. to the car audio system of other cars through the hand-held PC 8 also becomes possible.

[0102][3. effect] As mentioned above, the computer which controls a car audio system by this embodiment is provided with general-purpose OS, and it this general-purpose OS, The user interface which carries out the maximum exertion of the capability of a computer by managing resources, such as CPU and a memory, and is not dependent on a program and which it is unific and is easy to use is provided, and an addition and change of a function are also made easy by adding the program of the form decided further beforehand, or changing. For this reason, control of a complicated car audio system becomes easy.

[0103]If it is the program which suited the standard of OS, it will become possible to use a program also with in the car [various], and it will also become possible to process information using apparatus, such as an indicator of a car audio system, an operation key, and a loudspeaker. Of course, a user can save his individual information even in this case using about the same big memory as a hand-held PC, or information can be edited like a personal computer.

[0104]In this embodiment, data is exchanged using the bus CPU of a computer and the apparatus of the car audio system made the mistake in corresponding to a mutual form, and between two buses, if needed, data changes form, wins popularity and is passed. For this reason, even if operation of CPU is quicker than operation of each apparatus, it is not necessary to double CPU with the motion cycle of each apparatus, and complicated processing can be performed at high speed by accessing a memory etc. efficiently. Since the data which CPU exchanges, and the data which apparatus exchanges do not scramble for the communicative competence of the same bus, both a computer and a car audio system can perform each operation smoothly.

[0105]Multitasking of performing another processing using the bus corresponding to the form

of CPU becomes easy simultaneously, reproducing the signal of a sound using the bus for connecting apparatus. Also when changing CPU into the thing of another form, the bus for connecting these apparatus with each apparatus remains as it is, and since what is necessary is to change only the bus corresponding to the form of CPU according to the form of new CPU, it can respond also to change of CPU easily.

[0106]In particular, in this embodiment, two or more apparatus can be connected in daisy chain form one after another, and it can die. For this reason, also when the number of apparatus increases or distributed installation of the apparatus is carried out here and there [in the car], long wiring is not concentrated in one place like a star method, and installation becomes easy. Since wiring becomes intelligible shapely, it also becomes easy to change the composition of a car audio system or to carry out maintenance and repair.

[0107]In addition, since any data is exchanged as digital data and processed through USB etc. in this embodiment regardless of the kind of data whether to be audio information or to be alphabetic data, It is hard to be influenced by the environmental variation or a noise, and an audio characteristic is also stabilized.

[0108][An embodiment] besides 4. This invention is not limited to the embodiment described above, and contains other embodiments which are illustrated next. For example, in the embodiment described above, although Windows CE was mentioned as an example of OS of a computer, since this is only mere illustration, using OS of other kinds which already uses a certain OS or will appear newly from now on is also included in the range of this invention.

[0109]Although the example which controls the car audio system for mount by the embodiment described above was shown, This invention can harness the advantage of this invention that it is also possible to use for controlling electric products, such as a non-portable stereo, new application software is used also in this case, or the whole is small and can be managed in a home.

[0110]Although the standard concrete about various buses and communication circuits was mentioned in the embodiment described above, such a standard is only illustration and can also be transposed to other standards which can do same usage. For example, the 1st bus and 2nd bus can also make a CPU module and a support module an internal bus by one-chip-izing.

[0111]

[Effect of the Invention]As mentioned above, according to this invention, taking advantage of a mutual advantage, a complicated car audio system and how to use a computer by controlling easily can be extended by combining a computer with general-purpose OS, and a car audio system.

[Translation done.]

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TECHNICAL FIELD

[Field of the Invention]This invention is combining a small computer with general-purpose OS, and a car audio system, and relates to the art of harnessing a mutual advantage.

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PRIOR ART

[Description of the Prior Art]In recent years, progress with remarkable art of a semiconductor is accomplished and the electronic equipment of various fields has become a miniaturization and highly efficient by using a semiconductor. Thus, one of the electronic equipment made a miniaturization and highly efficient by using a semiconductor has a personal computer (henceforth a "personal computer").
[0003]The small personal computers (it names generically the following "hand-held PC") called [especially] a handheld computer (carried type), a palm top, etc. these days are also increasing in number. Windows(registered trademark of Microsoft Corp.) CE etc. are known, for example as base software (it is called below Operating System: "OS") suitable for such a hand-held PC, i.e., an operating system.
[0004]Such a general-purpose OS realizes advanced throughput by managing finely throughput, a memory, etc. of CPU which the computer has, or, If it is a program of the form which provided the user interface independent of a program which it is unific and is easy to use, or was decided beforehand, it has the advantage that the current update of the function of a computer can be carried out by carrying out a current update freely.
[0005]As another electronic equipment which similarly has been made a miniaturization and highly efficient by using a semiconductor, the car audio system and car-navigation system which are carried in a car are mentioned. Among these, a car audio system is commonly called a car stereo etc., and combines the tuner of a CD player, AM, or FM, etc. with amplifier, a loudspeaker, etc. A car-navigation system is a shown system to which a screen display of the map is carried out to the specified destination, pinpointing the current position of a car using an azimuth magnet, an odometer, GPS, etc.
[0006]These days, since a car-navigation system, a handsfree cellular phone, an anti-theft alarm system, etc. are combined with a car audio system in many cases, the electronic equipment for these mount is hereafter named a "car audio system" generically.

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EFFECT OF THE INVENTION

[3. effect] As mentioned above, the computer which controls a car audio system by this embodiment is provided with general-purpose OS, and it this general-purpose OS, The user interface which carries out the maximum exertion of the capability of a computer by managing resources, such as CPU and a memory, and is not dependent on a program and which it is unific and is easy to use is provided, and an addition and change of a function are also made easy by adding the program of the form decided further beforehand, or changing. For this reason, control of a complicated car audio system becomes easy.
[0103]If it is the program which suited the standard of OS, it will become possible to use a program also with in the car [various], and it will also become possible to process information using apparatus, such as an indicator of a car audio system, an operation key, and a loudspeaker. Of course, a user can save his individual information even in this case using about the same big memory as a hand-held PC, or information can be edited like a personal computer.
[0104]In this embodiment, data is exchanged using the bus CPU of a computer and the apparatus of the car audio system made the mistake in corresponding to a mutual form, and between two buses, if needed, data changes form, wins popularity and is passed. For this reason, even if operation of CPU is quicker than operation of each apparatus, it is not necessary to double CPU with the motion cycle of each apparatus, and complicated processing can be performed at high speed by accessing a memory etc. efficiently. Since the data which CPU exchanges, and the data which apparatus exchanges do not scramble for the communicative competence of the same bus, both a computer and a car audio system can perform each operation smoothly.
[0105]Multitasking of performing another processing using the bus corresponding to the form of CPU becomes easy simultaneously, reproducing the signal of a sound using the bus for connecting apparatus. Also when changing CPU into the thing of another form, the bus for

connecting these apparatus with each apparatus remains as it is, and since what is necessary is to change only the bus corresponding to the form of CPU according to the form of new CPU, it can respond also to change of CPU easily.

[0106]In particular, in this embodiment, two or more apparatus can be connected in daisy chain form one after another, and it can die. For this reason, also when the number of apparatus increases or distributed installation of the apparatus is carried out here and there [in the car], long wiring is not concentrated in one place like a star method, and installation becomes easy. Since wiring becomes intelligible shapely, it also becomes easy to change the composition of a car audio system or to carry out maintenance and repair.

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[0108][An embodiment] besides 4. This invention is not limited to the embodiment described above, and contains other embodiments which are illustrated next. For example, in the embodiment described above, although Windows CE was mentioned as an example of OS of a computer, since this is only mere illustration, using OS of other kinds which already uses a certain OS or will appear newly from now on is also included in the range of this invention.

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TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention]The hand-held PC provided with OS which was described above, and the car audio system were mutual completely separate in the former. That is, although the car audio system which prepared the computer in the large meaning for control existed, the computer in this case is called the embedded system which works only for the specific purpose.
[0008]CPU with necessary minimum capability is used for this embedded system, and it realizes necessary minimum processing to the hardware of receiving an operation switch or operating a disk reproduction mechanism, by the small program using an assembler etc. For this reason, usage of carrying out the change addition of the function by carrying out processing and preservation of data like a personal computer, or carrying out the change addition of the program cannot be done.
[0009]On the other hand, it did not have a function which a hand-held PC sounds music itself, or controls a car audio system. For this reason, although the user might carry the hand-held PC into in the car as a matter of fact, he did not use, having connected with the car audio system.
[0010]By the way, the latest car audio system, Not only in conventional apparatus called the tuner, cassette tape deck, and CD player of radio, Many apparatus is increasingly built into the condition of an MD player, CD, the autochanger of MD, a car-navigation system, the voice recognition equipment that recognizes a user's command, a handsfree cellular phone, and an anti-theft alarm system. And it is dramatically difficult to master the car audio system which becomes complicated in this way only with the switch in which it was provided by each device.
[0011]That is, when a car audio system becomes complicated in this way, many switches, such as an operation key and a dial, will be in various places in the car. For this reason, it is serious to memorize which is what operation key.
[0012]Namely, in order to master the car audio system which becomes complicated. To use for

control an information processor equivalent to the hand-held PC provided with the small computer with the pliability which can carry out the current update of the function about the advanced throughput which controls a complicated system, the user interface, and control which are easy to use, and especially general-purpose OS is desired.

[0013]Even if it thinks from the hand-held PC side, a car is used like the present age in many cases, and in the car is wanted to expand the width of practical use in society also with much traffic congestion. By combining with a car audio system especially, make an operation key and a memory serve a double purpose, or, The information which a user wants to know in the car is made to be read out by the synthesized speech using a computer, If usage of hearing the voice from the loudspeaker of a car audio system, or accessing an external computer network by the circuit of the cellular phone built into the car audio system can be done, the width of practical use can be expanded rather than former.

[0014]When combining high-speed CPU which uses general-purpose OS, and apparatus which is contained in a car audio system, to have a separate bus suitable for each from the difference in both working speed, etc. is desired. In the car audio system which combined a lot of apparatus, two or more apparatus is wanted to be easily connectable with simple refreshed wiring.

[0015]Proposed in order that this invention might solve the problem of conventional technology which was described above, it is combining a small computer with general-purpose OS, and a car audio system, and the purpose is to harness a mutual advantage. Another purpose of this invention is to use two or more buses, and is using both high-speed apparatus of CPU and others smoothly without futility. Another purpose of this invention is to connect various apparatus one after another with a daisy chain mode.

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MEANS

[Means for Solving the Problem]In order to attain the purpose described above, an invention of claim 1 equips a car audio system provided with a computer for control with the following.
A means by which said computer is provided with an operating system and this operating system manages resources on a computer.
A means to control input and output containing a user interface.
A means to execute a program of form decided beforehand.
A computer for mount of claim 6 is provided with the following.
An operating system which realizes environment required in order to execute a program of form decided beforehand.
Car audio system.
A means to control said car audio system.
An invention of claim 11 is what caught an invention of claim 1 from a view of a method, In a control method of a car audio system which controls a car audio system using a computer provided with an operating system, A step which realizes environment which needs said operating system in order to execute a program of form decided beforehand, and a step by which said program controls said car audio system are included. A computer which controls a car audio system by invention of claims 1, 6, and 11 is provided with general-purpose OS, and it this general-purpose OS, A user interface which carries out the maximum exertion of the capability of a computer by managing resources, such as CPU and a memory, and is not dependent on a program and which it is unific and is easy to use is provided, and an addition and change of a function are made easy by adding a program of form decided further beforehand, or changing. For this reason, control of a complicated car audio system becomes easy. It becomes possible for in the car to use various programs, or to process information using apparatus of a car audio system.
[0017]An invention of claim 2 was provided with the 1st bus corresponding to form of CPU

contained in said computer, and the 2nd bus for connecting apparatus contained in said car audio system in a car audio system provided with a computer for control. An invention of claim 7 was provided with the 1st bus corresponding to form of CPU contained in said computer, and the 2nd bus for connecting apparatus contained in said car audio system in a computer for mount provided with a car audio system. An invention of claim 12 is what caught an invention of claim 2 from a view of a method, In a control method of a car audio system which controls a car audio system using a computer, A step with which CPU contained in said computer exchanges data through the 1st bus corresponding to form of this CPU, Apparatus contained in said car audio system contains a step which exchanges data through the 2nd bus for connecting apparatus. An invention of claim 3 was provided with a PCI bus for connecting apparatus contained in said car audio system with a local bus corresponding to form of CPU contained in said computer in a car audio system provided with a computer for control. An invention of claim 8 was provided with a PCI bus for connecting apparatus contained in said car audio system with a local bus corresponding to form of CPU contained in said computer in a computer for mount provided with a car audio system. An invention of claim 4 was provided with a means to change form of data between said each bus, in the car audio system according to claim 2 or 3. An invention of claim 9 was provided with a means to change form of data between said each bus, in the computer for mount according to claim 7 or 8. In an invention of claims 2, 3, 7, 8, and 12, data is exchanged using a bus CPU of a computer and apparatus of a car audio system made the mistake in corresponding to a mutual form, and between two buses, if needed, data changes form, wins popularity and is passed (claims 4 and 9). For this reason, even if operation of CPU is quicker than operation of each apparatus, it is not necessary to double CPU with a motion cycle of each apparatus, and complicated processing can be performed at high speed by accessing a memory etc. efficiently. Since data which CPU exchanges, and data which apparatus exchanges do not scramble for communicative competence of the same bus, it can operate smoothly in both a computer and a car audio system. Multitasking of performing another processing using a bus corresponding to form of CPU becomes easy simultaneously, reproducing a signal of a sound using a bus for connecting apparatus. Also when changing CPU into a thing of another form, a bus for connecting these apparatus with each apparatus remains as it is, and since what is necessary is to change only a bus corresponding to form of CPU according to form of new CPU, it can respond also to change of CPU easily.

[0018]An invention of claim 5 was provided with the 3rd bus for connecting two or more apparatus contained in said car audio system in a car audio system of any one statement of four from claim 1 in daisy chain form. An invention of claim 10 was provided with the 3rd bus for connecting two or more apparatus contained in said car audio system in a computer for mount of any one statement of nine from claim 6 in daisy chain form. In an invention of claims

5 and 10, two or more apparatus can be connected in daisy chain form one after another, and it can die. For this reason, also when the number of apparatus increases or distributed installation of the apparatus is carried out here and there [in the car], long wiring is not concentrated in one place like a star method, and installation becomes easy. Since wiring becomes intelligible shapely, it also becomes easy to change composition or to carry out maintenance and repair.

[0019]

[Embodiment of the Invention]Next, an embodiment of the invention (henceforth a "embodiment") is concretely described with reference to drawings. Although this embodiment is the car audio system provided with various apparatus, such as a CD player, it is provided with the computer provided with general-purpose OS which is used for a hand-held PC, and also performs control of a car audio system by this computer. The same numerals are attached about the member same about each figure used by the following explanation as the figure explained before it, or the same kind of member, and explanation is omitted.

[0020][1. composition]

[Composition of whole 1-1.] First, drawing 1 is a block diagram showing the entire configuration of this embodiment. As shown in this figure, this embodiment as each apparatus which constitutes a car audio system other than the main unit 1, It has the tuner amplifier unit 2, the microphone 3, the GPS antenna 4, the security control unit 5, the telephone unit 6, the CD-ROM autochanger 7, and the auxiliary battery 9 for power supply backup.

[0021]Among these, the main unit 1 is a portion which builds in the computer for control and controls the whole system by this computer. Although the tuner amplifier unit 2 does not carry out the graphic display other than the antenna 2a of AM and FM, it is the portion provided with a radio tuner and the amplifier for sounding a loudspeaker. The microphone 3 is for inputting a user's voice so that operation by speech recognition can be performed. The function of this speech recognition is realized by the program of the computer described above.

[0022][1-1-1. main unit] The main unit 1 is provided with the socket 13S for inserting CompactFlash card 13, and the face plate unit 15 removed [attach and] and made (drawing 1). CompactFlash card 13 is a storage using a flash memory, and data can be written from the main unit 1 by inserting in the socket 13S formed in the main unit 1. This CompactFlash card 13 is used in order to exchange data, a program, etc. with other computers or to back up various information sets in this car audio system.

[0023]The face plate unit 15 attached, removed and made, It has the indicator which displays various information on a user, and the final controlling element which provided the operation key for a user to do various operations etc., and is referred to also as DCP (Detachable Control Panel). The indicator of this face plate unit 15 is large-sized color LCD (liquid crystal display) of 64 dots by 256 dots, etc., for example.

[0024]if it removes and carries out when getting off a car, even if a thief looks for a car audio system, neither use nor resale can do this face plate unit 15, also seeing an important indicator not have a final controlling element -- there are ** and a theft preventive effect of giving up stealing. If the removed face plate unit 15 is put into the case 15a and it carries around, it will damage neither itself nor a surrounding thing.
[0025]Although this face plate unit 15 is not shown in drawing 1, it is provided with the infrared-ray-communication unit for exchanging data in the form of the hand-held PC 8, IrDA, etc.
[0026][Apparatus] besides 1-1-2. The GPS antenna 4 is an antenna for receiving an electric wave from a GPS Satellite. The signal from this GPS antenna 4 is sent to the GPS unit in the main unit 1 through GPS receiver 4a. Although this GPS unit is not shown in drawing 1, it calculates the position on the earth with a receiver from an electric wave. On the computer described above, by a program, the function of a car-navigation system is realized and a calculation result is passed to the function of this car-navigation system.
[0027]The security control unit 5 is the sensor 5a which detects vibration and a shock, and when a theft, a mischief, etc. are detected, it is a portion which carries out correspondence of sounding the siren 5b. The telephone unit 6 is a unit which controls the function of a car telephone, and is a portion which realizes the telephone call using the telephone antenna 6a or the hand set 6b. The CD-ROM autochanger 7 is hanging automatically some CDs set beforehand again, and is a unit which plays the disk which the user chose, and music.
[0028][1-1-3. daisy chain connection] Here, these security control unit 5, the telephone unit 6, and the CD-ROM autochanger 7 are connected to the main unit 1 by USB (Universal Serial Bus). This USB is a serial bus (the 3rd bus) for connecting two or more apparatus in daisy chain form.
[0029]The apparatus connected by USB in this way comprises this embodiment so that data with the exterior may be exchanged in the form of this USB. For example, the CD-ROM autochanger 7, Although it has the hub (HUB) the object for upstreams, and for downstreams and digital data is once read from an audio CD or CD-ROM according to ATAPI form (parallel form) inside this CD-ROM autochanger 7, After the read data is changed into the USB (Universal Serial Bus) form which is serial form by the data converter built in, it is sent out to USB.
[0030]The installation becomes easy when installing these units 5, 6, and 7 in the place distant from the main unit 1, since connection of the units 5 and 6 and the CD-ROM autochanger 7 turns into serial connection with such composition. Although connected in order of the unit 5, the unit 6, and the autochanger 7 in drawing 1, connection order is good also as connection of only arbitrary and required things.
[0031][The internal configuration of a 1-2. main unit] Next, drawing 2 is a block diagram showing the main things among each portion described above, and is especially explained

focusing on the concrete composition of main unit 1 inside. This whole figure is divided into four with the dashed line, in the left, CPU module 11 and a center become the support module 12, the upper right becomes the external unit 30, and the lower right has become the option unit 40. Among these, CPU module 11 and the support module 12 are formed in the inside of the main unit 1.

[0032]The external unit 30 and the option unit 40 have pointed out collectively the apparatus of every some connected to the main unit 1. On account of explanation, CompactFlash card 13 is shown in the direction under CPU module 11, and drawing 2 shows the face plate unit 15 to the direction on the external unit 30.

[0033]Among these, CPU module 11 and the support module 12 constitute the computer for control which controls the whole car audio system. Among these, CPU module 11 is a portion which carries out logical data processing centering on CPU111, and the support module 12 is a portion which performs input and output with other apparatus contained in a car audio system.

[0034]The local bus B1 (the 1st bus) formed considering CPU111 as a center is a way with CPU module 11 as [main] data. PCI (Peripheral Component Interconnect) for that it is a way by the support module 12 as [main] data to connect each apparatus on the other hand It is bus B-2 (the 2nd bus).

[0035][Composition of a 1-2-1. CPU module] The local bus B1 of CPU module 11, It is what was doubled with the form of CPU111, and DRAM112, the flash ROM 113, the PCI bus host controller 114, CPU host ASIC115, and PCMCIA-ASIC116 are connected to this local bus B1. Among these, DRAM112 is a portion which provides work areas, such as a variable area, when CPU111 processes information in control of a car audio system, etc.

[0036]The flash ROM 113 is rewritable ROM and is a portion which stores the software in large meanings, such as OS, BIOS, and an application program, here. The function of OS stored here manages the resources on a computer, It is controlling the input and output containing a user interface, executing the program of the form decided beforehand, etc., for example, what used as the base Windows CE which conventional technology described by the way can be considered.

[0037]The PCI bus host controller 114 is a means to change the form of the data which connects the local bus B1 and PCI bus B-2, and is exchanged between these two buses.

[0038]"ASIC", such as CPU host ASIC115, is the abbreviation for Application Specific Integrated Circuit, and points out IC and LSI which were made for specific uses to general-purpose integrated circuits, such as ROM, RAM, and CPU. Specifically, this CPU host ASIC115 is ASIC for the interface of the local bus B1 and the PCI bus host controller 114. This CPU host ASIC115 [that is,], Between PCI bus B-2 and CPU module 11, are a portion which becomes a window of the data exchanged and specifically, Input and output with CPU module

11 and the exterior are performed instead of CPU111, and also it is recognized whether it is a thing of the kind passed to CPU111 about the data sent from PCI bus B-2.
[0039]And although what should pass CPU host ASIC115 to CPU111 is sent to CPU111 through the local bus B1, CPU111 does not need to calculate to the other thing, for example, the sent data, and such a reaction is returned about that for which it is sufficient if the reaction for which it opted beforehand is returned mechanically.
[0040]PCMCIA-ASIC116 CompactFlash card 13, It is a portion for an interface corresponding to being based on the standard of PCMCIA (Personal Computer Memory Card International Association) as what is called a PC card, It is a portion which controls the reading and writing of data to CompactFlash card 13.
[0041][Composition in connection with a 1-2-2. support module] Next, PCI bus B-2 of the support module 12 is a bus for exchanging data among various apparatus which constitutes a car audio system. Here, as apparatus connected to this PCI bus B-2, there are the external unit 30 and the option unit 40, and these have pointed out some apparatus collectively, respectively.
[0042]That is, the external unit 30 is unit with the another main unit 1 shown in drawing 1, and in this example specifically, It is the tuner 21, the amplifier 22, and the microphone 3 which were formed in the face plate unit 15 attached, removed and made from the main unit 1, and the tuner amplifier unit 2. Among these, the face plate unit 15 is provided with the infrared-ray-communication unit 127.
[0043]The option unit 40 is a unit from which it can choose whether to include in this car audio system as an option, and, specifically, are GPS unit 16 and the CD-ROM autochanger 7 in this example. There is the CD-ROM unit 14 in the inside of the main unit 1, and this CD-ROM unit 14 is also connected to PCI bus B-2. This CD-ROM unit 14 is a player for reading digital data from one CD or CD-ROM. These CD-ROM autochanger 7 and the CD-ROM unit 14 have the compatibility that data can also be read from what is called an audio CD, and both can also read data from CD-ROM (it is compatible).
[0044]In the support module 12, in order for PCI bus B-2 to exchange data among these apparatus, Support ASIC121, CODEC circuit 122, DSP unit 123, the buffer memory 124, the parallel / PCI driver 125, and the serial / PCI driver 126 are used.
[0045]Among these, support ASIC121 is a portion which controls traffic in the data where to send the data which came from where between the support module 12 and each apparatus. "CODEC" of CODEC circuit 122 is an abbreviation of "Coder/Decoder", i.e., the coding decryption art of data, and this CODEC circuit 122, For example, it is a portion which performs the A/D conversion etc. which carry out D/A conversion which changes the given digital data into an analog signal, or change an analog signal into digital data conversely.
[0046]"DSP" of DSP unit 123 is an abbreviation to mean a digital sound processor, i.e., the

circuit which processes the signal of the sound of digital format specially, and this DSP unit 123, When the digital data showing music etc. can be given, as items, such as balance of the right and left set as the system, volume, Feder, surround, and an equalizer, are reflected in the contents of the sound, it is a portion which processes digital data.

[0047]By audio equipment and PCI bus B-2s, such as a CD-ROM unit, since the buffer memory 124 differs in the cycle which write data, it is a buffer for this difference to be filled up with storing data and taking it out little by little, and comprises SRAM etc.

[0048]Parallel / PCI driver 125 is portions which change into the data format of PCI bus B-2 the digital data of parallel form sent from the CD-ROM unit 14. A serial / PCI driver 126 is portions which change into the data format of PCI bus B-2 the digital data of serial form sent from the CD-ROM autochanger 7.

[0049]The face plate unit 15 containing the infrared-ray-communication unit 127, It is connected to support ASIC121 in a high-speed serial communication circuit, and GPS unit 16 is connected to support ASIC121 in start-stop serial communication circuits, such as UART (UniversalAsynchronous Receiver-Transitter). The CD-ROM unit 14 is connected to parallel / PCI driver 125 by parallel communication circuits, such as ATAPI (AT Attachment Packet Interface). Although a graphic display is not carried out, ASIC which manages an exchange of the data based on infrared rays is provided in the infrared-ray-communication unit 127.

[Translation done.]

* NOTICES *

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

OPERATION

[2. operation] This embodiment constituted as stated above works as follows.

[Translation done.]

* NOTICES *

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1]The block diagram showing the entire configuration of the embodiment of this invention.
[Drawing 2]The block diagram shown focusing on the internal configuration of a main unit about the embodiment of this invention.
[Description of Notations]
1 -- Main unit 1
11 -- CPU module
111 -- CPU
112 -- DRAM
113 -- Flash ROM
114 -- PCI bus host controller
115 -- CPU host ASIC
116 -- PCMCIA-ASIC
12 -- Support module
121 -- Support ASIC
122 -- CODEC circuit
123 -- DSP unit
124 -- Buffer memory
125 -- Parallel / PCI driver
126 -- A serial / PCI driver
127 -- Infrared-ray-communication unit
13 -- CompactFlash card
13S -- Socket
14 -- CD-ROM unit

15 -- Face plate unit
15a -- Case
16 -- GPS unit
2 -- Tuner amplifier unit
2a -- Antenna
21 -- Tuner
22 -- Amplifier
3 -- Microphone
4 -- GPS antenna
4a -- Receiver
5 -- Security control unit
5a -- Sensor
5b -- Siren
5c -- Transmitter
6 -- Telephone unit
6a -- Antenna
6b -- Hand set
7 -- CD-ROM autochanger
8 -- Hand-held PC
9 -- Auxiliary battery
30 -- External unit
40 -- Option unit

[Translation done.]

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 9809/1/4	**FOR FURTHER ACTION**	see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.
International application No. PCT/US03/39493	International filing date (*day/month/year*) 11 December 2003 (11.12.2003)	(Earliest) Priority Date (*day/month/year*) 11 December 2002 (11.12.2002)
Applicant BLITZSAFE OF AMERICA, INC.		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 1 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the Report**
   a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
   ☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).
   b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing:
   ☐ contained in the international application in written form.
   ☐ filed together with the international application in computer readable form.
   ☐ furnished subsequently to this Authority in written form.
   ☐ furnished subsequently to this Authority in computer readable form.
   ☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
   ☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.
2. ☐ **Certain claims were found unsearchable** (See Box I).
3. ☐ **Unity of invention is lacking** (See Box II).
4. With regard to the **title**,
   ☒ the text is approved as submitted by the applicant.
   ☐ the text has been established by this Authority to read as follows:
5. With regard to the **abstract**,
   ☐ the text is approved as submitted by the applicant.
   ☒ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.
6. The figure of the **drawings** to be published with the abstract is Figure No. 1
   ☐ as suggested by the applicant. ☐ None of the figures
   ☒ because the applicant failed to suggest a figure.
   ☐ because this figure better characterizes the invention.

Form PCT/ISA/210 (first sheet) (July 1998)

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/39493

Box III TEXT OF THE ABSTRACT (Continuation of Item 5 of the first sheet)

The technical features mentioned in the abstract do not include a reference sign between parentheses (PCT Rule 8.1(d)).

NEW ABSTRACT

An audio device integration system is provided. One or more after market audio devices, such as a CD player(15), CD changer, MP3 player(30), satellite receiver(25), DAB receiver(25), or the like, is integrated for use with an existing OEM or after-market car stereo system, wherein control commands can be issued at the car stereo (10) and responsive data from the audio device (15,25,30) can be displayed on the stereo. Control commands generated at the car stereo (10) are received, processed, converted into a format recognizable by the audio device (15,25,30), and dispatched to the audio device (15,25,30) for execution. Information from the audio device (15,25,30), including track, disc, song, station, time and other information is received, processed, converted into a format recognizable by the car stereo, and dispatched to the car stereo (10) for display thereon.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/39493

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : G06F 17/00; H04B 1/00, 3/00;

US CL : 700/94; 381/86, 77

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 700/94; 381/86, 77; 455/346,347; D14/434

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Databases available through EAST (USPAT, US-PGPUB, EPO, JPO, DERWENT)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 6,396,164 B1 (BARNEA ET AL) 28 May 2002 (28.05.2002), see entire document.	1,2,5,11-21,24-25,27-30,35-36,39-41 --- 3,4,6-10,22-23,26,31-34,37-38,42-80
Y, P	US 2003/0007649 A1 (RIGGS) 09 January 2003 (09.01.2003), paragraphs 0037-0040 and 0092-0099.	4,26,38,48-50,57,64,67,73-76, 79
Y	US 6,157,725 A (BECKER) 05 December 2000 (05.12.2000), col. 4, lines 41-58; col. 6, lines 6-46; col 8, line 20-col. 10, line 58.	3,4,6,9-10,26,34-38,44,47-54,61-62,64,66-67,72,75-79
Y	US 5,339,362 A (HARRIS) 16 August 1994 (16.08.1994), col. 3, line 25-col. 4, line 61 and Figures 2,3.	42-46,55-80
Y	US 2001/0044664 A1 (MUELLER et al) 22 November 2001 (22.11.2001), paragraphs 0020-0028,0034-0035.	4,7-12,26,31-38,51-54,61-67,75-76
Y	US 6,330,337 B1 (NICHOLSON) 11 December 2001 (11.12.2001), Figure 2 and col. 3, line 32-col. 4,l line 28.	22-23,68,80

☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
07 April 2004 (07.04.2004)	12 MAY 2004
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230	Authorized officer Bill Isen Telephone No. 703-305-3900

Form PCT/ISA/210 (second sheet) (July 1998)

PCT/US03/39493

INTERNATIONAL SEARCH REPORT

C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 4,772,079 A (DOUGLAS et al) 20 September 1988 (20.09.1988), col. 3, lines 25-64.	42-46,55-80

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 99879-00011	**FOR FURTHER ACTION**	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
International application No. PCT/US06/08043	International filing date *(day/month/year)* 03 March 2006	(Earliest) Priority Date *(day/month/year)* 03 March 2005
Applicant IRA MARLOWE		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 4 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**
   a. With regard to the **language**, the international search was carried out on the basis of:
      ☒ the international application in the language in which it was filed
      ☐ a translation of the international application into _____ , which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))
   b. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (see Box No. II)

3. ☒ **Unity of invention is lacking** (see Box No. III)

4. With regard to the **title**,
   ☒ the text is approved as submitted by the applicant
   ☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,
   ☐ the text is approved as submitted by the applicant
   ☒ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority

6. With regard to the **drawings**,
   a. the figure of the **drawings** to be published with the abstract is Figure No. 10
      ☒ as suggested by the applicant
      ☐ as selected by this Authority, because the applicant failed to suggest a figure
      ☐ as selected by this Authority, because this figure better characterizes the invention
   b. ☐ none of the figures is to be published with the abstract

Box No. IV Text of the abstract (Continuation of item 5 of the first sheet)

An multimedia device integration system is provided. One or more aftermarket audio or video devices, such as a CD player, CD changer, digital media device (e:g., MP3 player, MP4 player, WMV player, Apple iPod, portable music 5 center, or other device) satellite receiver (e.g., XM or Sirius receiver), DAB receiver, video device (e.g., DVD player), cellular telephone, or any other device or combinations thereof, is integrated for use with an existing OEM or after-market car stereo or video system, wherein control commands can be issued at the car stereo or video system and data from the after-market device can be displayed on 10 the car stereo or video system. Control commands generated at the car stereo or video system are received, processed, converted into a format recognizable by the after-market device, and dispatched to the after-market device for execution.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US06/08043

A. CLASSIFICATION OF SUBJECT MATTER
IPC(8) - H04B 1/06 (2007.01)
USPC - 455/345
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC(8) - H04B 1/06 (2007.01)
USPC - 455/345

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
MicroPatent

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 2003/0215102 A1 (MARLOWE) 20 November 2003 (20.11.2003) entire document	1-4, 36 ---------- 5-13
Y	US 2004/0145457 A1 (SCHOFIELD et al) 29 July 2004 (29.07.2004) entire document	5, 8, 11-13
Y	US 2004/0266336 A1 (PATSIOKAS et al) 30 December 2004 (30.12.2004) entire document	6, 7, 9, 10
A	US 6,529,804 B1 (DRAGGON et al) 04 March 2003 (04.03.2003) entire document	1-13, 36

☐ Further documents are listed in the continuation of Box C. ☐

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent but published on or after the international filing date
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"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
25 July 2007	24 SEP 2007
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Blaine R. Copenheaver PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

Form PCT/ISA/210 (second sheet) (April 2005)

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US06/08043

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claims 1-13 and 36, drawn to controlling after-market-devices in a multimedia device integration system.
Group II, claims 14-31, drawn to protocol conversion in a multimedia device integration system.
Group III, claims 32-35, drawn to a method for retrieving a song from an after-market device from a car stereo system.

The inventions listed as Groups I, II, and III do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the special technical feature of the Group I invention is means for processing and dispatching commands for controlling the after-market device from the car multimedia system and displaying data from the aftermarket device and the display of the car multimedia system as claimed therein is not present in the invention of Groups II and III; the special technical feature of the Group II invention is selecting by an interface using settings of the plurality of configuration jumpers an at least one of a plurality protocol conversion software blocks stored in memory in the interface for converting signals from an after-market device into a format compatible with a car multimedia device system (and from the car multimedia system into a format compatible with the after-market device) as claimed therein is not present in the invention of Groups I and III; and the special technical feature of the Group III invention is allowing a user to select a desired song from the list of potentially matching songs for playing the desired song on the car stereo system as claimed therein is not present in the invention of Groups I and II.

Since none of the special technical features of the Group I, II and III inventions is found in more than one of the inventions, unity of invention is lacking.

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
MICHAEL R. FRISCIA
MCCARTER & ENGLISH, LLP
FOUR GATEWAY CENTER
100 MULBERRY STREET
NEWARK, NEW JERSEY 07102

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing *(day/month/year)*	24 SEP 2007
Applicant's or agent's file reference 99879-00011	**FOR FURTHER ACTION** See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US06/08043	03 March 2006	03 March 2005

International Patent Classification (IPC) or both national classification and IPC
IPC(8) - H04B 1/06 (2007.01)
USPC - 455/345

Applicant IRA MARLOWE

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☒ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/US	Date of completion of this opinion	Authorized officer:
Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	25 July 2007	Blaine Copenheaver PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

Form PCT/ISA/237 (cover sheet) (April 2005)

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US06/08043

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of:

   ☒ the international application in the language in which it was filed

   ☐ a translation of the international application into _____ , which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

   a. type of material

      ☐ a sequence listing

      ☐ table(s) related to the sequence listing

   b. format of material

      ☐ on paper

      ☐ in electronic form

   c. time of filing/furnishing

      ☐ contained in the international application as filed

      ☐ filed together with the international application in electronic form

      ☐ furnished subsequently to this Authority for the purposes of search

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US06/08043

Box No. IV Lack of unity of invention

1. ☒ In response to the invitation (Form PCT/ISA/206) to pay additional fees the applicant has, within the appicable time limit:

   ☐ paid additional fees

   ☐ paid additional fees under protest and, where applicable, the protest fee

   ☐ paid additional fees under protest but the applicable protest fee was not paid

   ☒ not paid additional fees

2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is

   ☐ complied with

   ☒ not complied with for the following reasons:

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claims 1-13 and 36, drawn to controlling after-market-devices in a multimedia device integration system.
Group II, claims 14-31, drawn to protocol conversion in a multimedia device integration system.
Group III, claims 32-35, drawn to a method for retrieving a song from an after-market device from a car stereo system.

The inventions listed as Groups I, II, and III do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the special technical feature of the Group I invention is means for processing and dispatching commands for controlling the after-market device from the car multimedia system and displaying data from the aftermarket device and the display of the car multimedia system as claimed therein is not present in the invention of Groups II and III; the special technical feature of the Group II invention is selecting by an interface using settings of the plurality of configuration jumpers an at least one of a plurality protocol conversion software blocks stored in memory in the interface for converting signals from an after-market device into a format compatible with a car multimedia device system (and from the car multimedia system into a format compatible with the after-market device) as claimed therein is not present in the invention of Groups I and III; and the special technical feature of the Group III invention is allowing a user to select a desired song from the list of potentially matching songs for playing the desired song on the car stereo system as claimed therein is not present in the invention of Groups I and II.

Since none of the special technical features of the Group I, II and III inventions is found in more than one of the inventions, unity of invention is lacking.

4. Consequently, this opinion has been established in respect of the following parts of the international application:

   ☐ all parts

   ☒ the parts relating to claims Nos. 1-13, 36

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US06/08043

Box No. V **Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Claims	5-13	YES
	Claims	1-4, 36	NO
Inventive step (IS)	Claims	NONE	YES
	Claims	1-13, 36	NO
Industrial applicability (IA)	Claims	1-13, 36	YES
	Claims	NONE	NO

2. Citations and explanations:

Claims 1-4 and 36 lack novelty under PCT Article 33(2) as being anticipated by Marlowe (US 2003/0215102 A1).

Regarding claim 1, Marlowe discloses a multimedia device integration system comprising: a car stereo (par. 0039, existing car radio or stereo) system; an after-market device (par. 0038, after-market CD player) external to the car stereo system; an interface (Fig. 1, interface 20) positioned within the car stereo system and connected between the car stereo system and the after-market device for exchanging data and audio signals between the car stereo system and the after-market device; means for processing and dispatching commands (par. 0055, dispatches the formatted command to the CD player) for controlling the after-market device from the car stereo system in a format compatible with the after-market device; and means for processing and displaying data (par. 0055, display the formatted data on the display of the car stereo) from the after-market device (par. 0038, after-market CD player) on a display of the car stereo system in a format compatible with the car stereo system.

Regarding claim 2, Marlowe (as discussed in lack of novelty of claim 1 above) discloses the after-market device comprises a CD player (par. 0038, after-market CD player).

Regarding claim 3, Marlowe (as discussed in lack of novelty of claim 2 above) discloses the digital media player comprises an MP3 player (par. 0038, after-market MP3 player).

Regarding claim 4, Marlowe (as discussed in lack of novelty of claim 1 above) further discloses one or more auxiliary input sources (Fig. 1, auxiliary inputs 35) connected to the interface.

Regarding claim 36, Marlowe discloses a multimedia device integration system comprising: a car audiovisual system (par. 0039, existing car radio or stereo); a plurality of after-market devices (Fig. 1, par. 0038, MP3 player, satellite receiver, DAB receiver, or the like) external to the car audiovisual system; an interface (Fig. 1, interface 20) connected between the car audiovisual system and the plurality of after-market devices for exchanging data, audio, and video signals between the car audiovisual system and the plurality of after-market devices; means for processing and dispatching commands (par. 0038 and par. 0055, dispatches the formatted command to the CD player or other after-market devices) for controlling the plurality of after-market devices from the car audiovisual system in at least one format compatible with at least one of the plurality of after-market devices; and means for processing and displaying data (par. 0038 and par. 0055, display the formatted command to the CD player or other after-market devices on the car stereo) from the plurality of after-market devices on a display of the car audiovisual system in a format compatible with the car audiovisual system.

Claims 5, 8 and 11-13 lack an inventive step under PCT Article 33(3) as being obvious over Marlowe (US 2003/0215102 A1) in view of Schofield et al (US 2004/0145457 A1; hereinafter Schofield).

Regarding claim 5, Marlowe discloses a multimedia device integration system comprising: a car stereo system (par. 0039, existing car radio or stereo); a CD player (par. 0038, after-market CD player) external to the car stereo system; an interface (Fig. 1, interface 20) connected between the car stereo system and the CD player for exchanging data and audio signals between the car stereo system and the cellular telephone; means for processing and dispatching commands (par. 0055, dispatches the formatted command to the CD player) for controlling the CD player from the car stereo system in a format compatible with CD player; and means for processing and displaying data (par. 0055, display the formatted data on the display of the car stereo) from the CD player (par. 0038, after-market CD player) on a display of the car stereo system in a format compatible with the car stereo system. Marlowe lacks a cellular telephone as an after-market device. However, Schofield discloses, in the art of multimedia system, a cellular telephone as an after-market device (Par. 272, cellular phone). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include a cellular telephone as an after-market device in the device of Marlowe as taught by Schofield in order to enhance the utility of the multimedia device.

(Continued in Supplemental Box)

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US06/08043

Supplemental Box

In case **the space in any of the preceding boxes is not sufficient.**
Continuation of:
Box No. V
2. Citations and explanations:

Regarding claim 8, Marlowe discloses a multimedia device integration system comprising: a car stereo system (par. 0039, existing car radio or stereo); a CD player (par. 0038, after-market CD player) external to the car stereo system; an interface (Fig. 1, interface 20) connected between the car stereo system and the CD player for exchanging data and audio signals between the car stereo system and the cellular telephone; means for processing and dispatching commands (par. 0055, dispatches the formatted command to the CD player) for controlling the CD player from the car stereo system in a format compatible with CD player; and means for processing and displaying data (par. 0055, display the formatted data on the display of the car stereo) from the CD player (par. 0038, after-market CD player) on a display of the car stereo system in a format compatible with the car stereo system. Marlowe lacks a car video system and a cellular telephone as an after-market device. However, Schofield discloses, in the art of multimedia system, a car video system (par. 0398, car video display system) and a cellular telephone as an after-market device ((Par. 272, cellular phone) in order to enhance utility of multimedia device. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include a car video system and a cellular telephone as an after-market device in the device of Marlowe as taught by Schofield in order to enhance the utility of the multimedia device.

Regarding claim 11, Marlowe discloses a multimedia device integration system comprising: a car stereo system (par. 0039, existing car radio or stereo); a CD player (par. 0038, after-market CD player) external to the car stereo system; an interface (Fig. 1, interface 20) connected between the car stereo system and the CD player for exchanging data and audio signals between the car stereo system and the cellular telephone; means for processing and dispatching commands (par. 0055, dispatches the formatted command to the CD player) for controlling the CD player from the car stereo system in a format compatible with CD player; and means for processing and displaying data (par. 0055, display the formatted data on the display of the car stereo) from the CD player (par. 0038, after-market CD player) on a display of the car stereo system in a format compatible with the car stereo system. Marlowe lacks a car video system and video device as an after-market device. However, Schofield discloses, in the art of multimedia system, a car video system (par. 0380, vehicular video display system) and video device as an after-market device (Par. 380, camera device). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include a car video system and video device as an after-market device in the device of Marlowe as taught by Schofield in order to enhance the utility of the multimedia device.

Regarding claim 12, Marlowe (as discussed in lack of inventive step of claim 11 above) disclose the CD player (par. 0038, after-market CD player) on a display of the car stereo system in a format compatible with the car stereo system. Marlowe lacks the after-market video device comprises a DVD player. However, Schofield discloses, in the art of multimedia system, the after-market video device comprises a DVD player (par. 309, after-market of display element associated with DVD player (par. 0311, DVD video system)). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include the after-market video device comprises a DVD player in the device of Marlowe as taught by Schofield in order to enhance the utility of the multimedia device.

Regarding claim 13, Marlowe (as discussed in lack of inventive step of claim 11 above) disclose the CD player (par. 0038, after-market CD player) on a display of the car stereo system in a format compatible with the car stereo system. Marlowe lacks the interface is positioned within the car video system. However, Schofield discloses, in the art of multimedia system, the interface is positioned within the car video system (par. 0302, interface associated with control 3580 of car video system). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include the interface is positioned within the car video system in the device of Marlowe as taught by Schofield in order to enhance utility of multimedia device.

Claims 6, 7, 9 and 10 lack an inventive step under PCT Article 33(3) as being obvious over Marlowe (US 2003/0215102 A1) in view of Patsiokas et al (US 2004/0266336 A1; hereinafter Patsiokas).

Regarding claims 6 and 9, Marlowe in view of Schofield (as discussed in lack of inventive step of claims 5 and 8 above) further discloses songs or music downloadable through the CD player (par. 0042, play song from CD player). Marlowe lacks songs or music downloadable through the cellular telephone. However, Patsiokas discloses, in the art of multimedia system, songs or music downloadable through the cellular telephone (par. 0064, download song file over the cellular phone). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include songs or music downloadable through the cellular telephone in the device of Marlowe in view of Schofield as taught by Patsiokas in order to enhance utility of multimedia device.

Regarding claims 7 and 10, Marlowe (as discussed in lack of inventive step of claims 6 and 9 above) discloses the songs or music are playable through the car stereo system (par. 0039, existing car radio or stereo) using the interface (Fig. 1, interface 20).

Claims 1-13 and 36 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44*bis*)

Applicant's or agent's file reference 99879-00011	**FOR FURTHER ACTION**	See item 4 below
International application No. PCT/US2006/008043	International filing date *(day/month/year)* 03 March 2006 (03.03.2006)	Priority date *(day/month/year)* 03 March 2005 (03.03.2005)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant MARLOWE, Ira		

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 *bis*.1(a).

2. This REPORT consists of a total of 6 sheets, including this cover sheet.

   In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

☒	Box No. I	Basis of the report
☐	Box No. II	Priority
☐	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
☒	Box No. IV	Lack of unity of invention
☒	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
☐	Box No. VI	Certain documents cited
☐	Box No. VII	Certain defects in the international application
☐	Box No. VIII	Certain observations on the international application

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44*bis*.3(c) and 93*bis*.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44*bis* .2).

	Date of issuance of this report 16 October 2007 (16.10.2007)
The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. +41 22 338 82 70	Authorized officer Nora Lindner e-mail: pt02.pct@wipo.int

Form PCT/IB/373 (January 2004)

AUSTRALIAN PATENT OFFICE

WRITTEN OPINION

	Date of mailing *day/month/year* 28 AUG 2007
Applicant's or agent's file reference LPN/LWC/NJ/M.2006001623	**REPLY DUE** within FIVE MONTHS of the date of the Registrar's letter enclosing the written opinion

Application No.	Application Filing Date *(day/month/year)*	Priority Date *(day/month/year)*
SG 200601303-1	28 February 2006	3 March 2005

International Patent Classification (IPC) (as indicated in the search report)

Int. Cl.

H04B 1/00 (2006.01) ***G06F 17/00*** (2006.01) ***H04B 3/00*** (2006.01)

Applicant

IRA M. MARLOWE

1. This First written opinion consists of a total of 6 sheets.

2. This opinion contains indications relating to the following items:.

I	[X]	Basis of the opinion
II	[ ]	Priority
III	[ ]	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
IV	[X]	Lack of unity of invention
V	[X]	Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
VI	[ ]	Certain documents cited
VII	[ ]	Certain defects in the application
VIII	[X]	Certain observations on the application

3. The search report used was issued by the **Australian Patent Office**, and the date of completion is: **28 August 2006**

4. If no reply is filed, the examination report will be established on the basis of this opinion.

5. The date by which the examination report will be established is: **3 June 2008**

Name and mailing address	Authorized Officer
AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustralia.gov.au Facsimile no. 61 2 62853929	**JUZER KHANBHAI**

Form APO/SG/408 (Cover Sheet)(Dec 2006)

AUSTRALIAN PATENT OFFICE

WRITTEN OPINION

Application No.
SG 200601303-1

I. Basis of the opinion

1. This opinion has been drawn on the basis of:

[X] the application as originally filed.

[ ] the description, pages , as originally filed,
pages , filed with the request,
pages , received on with the letter of

[ ] the claims, pages , as originally filed,
pages , filed with the request,
pages , received on with the letter of

[ ] the drawings, sheets/fig. , as originally filed,
sheets/fig. , filed with the request,
sheets/fig. , received on with the letter of

[ ] the sequence listing part of the description:
pages , as originally filed
pages , filed with the demand
pages , received on with the letter of

2. The amendments have resulted in the cancellation of: pages:
sheets of drawings/figures No :

3 [ ] This opinion has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box.

4. Additional observations, if necessary:

IV. Lack of unity of invention

1. This Office found multiple invention in this application, as follows:

The application does not comply with the requirements of unity of invention because it does not relate to one invention or to a group of inventions so linked as to form a single general inventive concept. In coming to this conclusion this Office has found that there are two inventions:

1. Claims 1-31 & 36 are directed to a multimedia device integration system including an interface which allows devices to be integrated to an OEM or after-market car stereo and video systems. It is considered that allowing the integration of devices to an OEM or after-market car stereo and video systems comprises a first "special technical feature".
2. Claims 32-35 are directed to a method for retrieving a song from an after-market device from a car stereo system and which allows the user to select a desired song from the list of potentially matching songs for playing the desired song on the car stereo system. It is considered that allowing the selection of a desired song from the list of potentially matching songs for playing the desired song on the car stereo system comprises a second "special technical feature".

Since the abovementioned groups of claims do not share either of the technical features identified, a "technical relationship" between the inventions, as defined in PCT Rule 13.2 does not exist. Accordingly, the application does not relate to one invention or to a single inventive concept.

2. Consequently, the following parts of the application were the subject of examination in establishing this report:

☐ all parts.

☒ the parts relating to claims Nos. **1-31 & 36**

V. Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims **5-7**	YES
	Claims **1-4, 8-31, 36**	NO
Inventive step (IS)	Claims -	YES
	Claims **1-31, 36**	NO
Industrial applicability (IA)	Claims **1-31, 36**	YES
	Claims -	NO

2. Citations and explanations

NOVELTY (N) claims 1-4, 8-31, 36

D1 - WO 2004/053722 A1 (BLITZSAFE OF AMERICA, INC.) 24 June 2004

D1 discloses an Audio device integration system wherein one or more after-market devices, such as a CD player, CD changer, MP3 player, satellite receiver, DAB receiver, or the like is integrated for use with an existing OEM or after-market car stereo system. In this system, control commands can be issued at the car stereo and responsive data from the audio device can be displayed on the stereo.

The above citation D1 discloses all of the features of all the above claims. For example, the features of claim 1, see:

- A multimedia device integration system	fig. 1 and Page 10 line 11
- a car stereo system	Page 10 lines 1 to 2 and lines 13 & 14
- an after-market device external to car stereo system	Page 10 line 25
- an interface positioned within the car stereo system and connected between the car stereo system and the after-market device for exchanging data and audio signals between the car stereo system and the after-market device	Page 10 line 30 to Page 11 line 1

INVENTIVE STEP (IS) claims 1-31, 36

Claims 1-4, 8-31, 36: as above.

Claims 5-7:

D1- WO 2004/053722 A1 (BLITZSAFE OF AMERICA, INC.) 24 June 2004

D2- US 2002/0197954 A1 (SCHMITT et al.) 26 December 2002

D3- US 6058319 A (SADLER) 2 May 2000

D4- US 6052603 A (KINZALOW et al.) 18 April 2000

These citations do not individually disclose all of the features of the claims, but when combined, as would be obvious to a person skilled in the art, disclose all of the features of the claims.

Supplemental Box
(To be used when the space in any of Boxes I to VIII is not sufficient)

Continuation of Box [No.]: V (2)

Claims 1-13, 24, 27, 28, 31, 36:

D5- US 2003/0007649 A1 (RIGGS) 9 January 2003

D6- US 6396164 B1 (BARNEA et al.) 28 May 2002

D7- US 6330337 B1 (NICHOLSON et al.) 11 December 2001

D8- US 2001/0044664 A1 (MUELLER et al.) 22 November 2001

D9- US 6157725 A (BECKER) 5 December 2000

These citations do not individually disclose all of the features of the claims, but when combined, as would be obvious to a person skilled in the art, disclose all of the features of the claims.

AUSTRALIAN PATENT OFFICE

WRITTEN OPINION

Application No.

SG 200601303-1

VIII. Certain observations on the application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

[X] The claimed invention is patentable according to Section 13(2); or

[ ] The claimed invention is unpatentable according to Section 13(2) because:

[ ] This application is a Divisional application filed under Section 26(6) of the Patents Act and discloses no additional matter extending beyond that disclosed in the Parent application.

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 99879-00028	**FOR FURTHER ACTION**	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
International application No. PCT/US07/72182	International filing date (*day/month/year*) 27 June 2007 (27.06.2007)	(Earliest) Priority Date (*day/month/year*) 27 June 2006 (27.06.2006)
Applicant MARLOWE, IRA		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 3 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the Report**
   a. With regard to the **language**, the international search was carried out on the basis of:
      ☒ the international application in the language in which it was filed.
      ☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))
   b. ☐ This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 Rule 43.6 *bis(a)*
   c. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.
2. ☐ **Certain claims were found unsearchable** (See Box No. II)
3. ☐ **Unity of invention is lacking** (See Box No. III)
4. With regard to the **title**,
   ☒ the text is approved as submitted by the applicant.
   ☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,
   ☒ the text is approved as submitted by the applicant.
   ☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings**,
   a. the figure of the **drawings** to be published with the abstract is Figure No. 1
      ☐ as suggested by the applicant.
      ☒ as selected by this Authority, because the applicant failed to suggest a figure.
      ☐ as selected by this Authority, because this figure better characterizes the invention.
   b. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US07/72182

A. CLASSIFICATION OF SUBJECT MATTER
IPC: **H04B 1/00**(2006.01);**G05B 19/02**(2006.01);**G06F 17/00**(2006.01)

USPC: 381/86;340/825.24;700/94
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
U.S. : 381/86; 340/825.24,825.25; 700/94; 307/9.1,10.1; 455/345,346; 710/303,304; 348/207.1,207.11

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6,163,079 (Miyazaki et al) 19 Dec. 2000 (19.12.2000), figure 7	91
Y	US 2002/0084910 A1 (Owens et al) 4 July 2002 (04.07.2002), fig.1	1-70,111-154
Y	US 6,993,615 B2 (Falcon) 31 Jan 2006 (31.01.2006), fig.2-4	1-90, 117-154
Y	US 6,175,789 B1 (Beckert et al) 16 Jan 2001 (16.01.2001), fig.1-2	1-70,78-80,88-90,117-150
Y	US 6,389,560 B1 (Chew) 14 May 2002 (14.05.2002), col.4-5	1-90,92-110,117-154
Y	US 2003/0026440 A1 (Lazzeroni et al) 6 Feb 2003 (06.02.2003), fig.1	13,32,52,68,92-116
Y	US 2005/0172001 A1 (Zaner et al) 4 Aug 2005 (04.08.2005), fig.1	92-103

☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search
12 September 2008 (12.09.2008)

Date of mailing of the international search report
25 SEP 2008

Name and mailing address of the ISA/US
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Form PCT/ISA/210 (second sheet) (April 2007)

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US07/72182

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2003/0156200 A1 (Romano et al) 21 Aug 2003 (21.08.2003), fig.7	104-110
Y	US 7,288,918 B2 (DiStefano) 30 Oct 2007 (30.10.2007), fig.1	151-154

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
MICHAEL R. FRISCIA
MCCARTER & ENGLISH, LLP
FOUR GATEWAY CENTER
100 MULBERRY STREET
NEWARK, NJ 07102

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing *(day/month/year)*	25 SEP 2008
Applicant's or agent's file reference 99879-00028	**FOR FURTHER ACTION** See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US07/72182	27 June 2007 (27.06.2007)	27 June 2006 (27.06.2006)

International Patent Classification (IPC) or both national classification and IPC

IPC: **H04B 1/00**(2006.01);**G05B 19/02**(2006.01);**G06F 17/00**(2006.01)
USPC: 381/86;340/825.24;700/94

Applicant

MARLOWE, IRA

1. This opinion contains indications relating to the following items:

- ☒ Box No. I — Basis of the opinion
- ☐ Box No. II — Priority
- ☐ Box No. III — Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV — Lack of unity of invention
- ☒ Box No. V — Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI — Certain documents cited
- ☐ Box No. VII — Certain defects in the international application
- ☒ Box No. VIII — Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1*bis(b)* that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/ US	Date of completion of this opinion	Authorized officer
Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201	12 September 2008 (12.09.2008)	Jason Kurr Telephone No. (571) 272-0552

Form PCT/ISA/237 (cover sheet) (April 2007)

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US07/72182

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of:

☒ the international application in the language in which it was filed

☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a))

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of:

a. type of material

☐ a sequence listing

☐ table(s) related to the sequence listing

b. format of material

☐ on paper

☐ in electronic form

c. time of filing/furnishing

☐ contained in the international application as filed.

☐ filed together with the international application in electronic form.

☐ furnished subsequently to this Authority for the purposes of search.

4. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

5. Additional comments:

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US07/72182

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the questions whether the claims are fully supported by the description, are made:

Claim 10 is objected to under PCT Rule 66.2(a)(v) as lacking clarity under PCT Article 6 because claim 10 is indefinite for the following reason(s): Claim 10 may not depend upon itself. For the purposes of examination the Examiner has view claim 10 as if it were dependent upon claim 1.

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
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Supplemental Box
In case the space in any of the preceding boxes is not sufficient.

V. 2. Citations and Explanations:
Claim 91 lacks novelty under PCT Article 33(2) as being anticipated by Miyazaki et al (US 6,163,079).

With respect to claim 91, Miyazaki discloses a docking station for docking and integrating a portable device for use with a car stereo, comprising: a base portion (fig.7 #50); a bottom member (fig.1 #11) connected to the base portion; a top member (fig.7 #17) removably connected to the base portion, the base portion, bottom member, and top member defining a cavity (fig.7 #51) for receiving a portable device; and an integration device (fig.7 #38) connected to the base portion for integrating the portable device with a car stereo.

Claims 1-12, 14-31, 33-51, 53-67, 69-70 and 117-150 lack an inventive step under PCT Article 33(3) as being obvious over Owens et al (US 2002/0084910 A1) in view of Beckert (US 6,175,789 B1) and in view of Chew (US 6,389,560) and in view of Falcon (US 6,993,615 B2).

With respect to claims 1, 20, 117, 132, 147 Owens discloses a multimedia device integration system comprising: a car audio system (fig.1 #10) having a display; a portable device (fig.1 #42,44,46,48) external to the car audio system; an interface (fig.1 #30,40) in communication with the portable device and the car audio system for transmitting processed video information from the portable device to the car audio system.
Owens does not disclose expressly wherein an integration subsystem processes the video information into a format compatible with the car audio system. Beckert discloses a vehicle computer interface system in cooperation with a vehicles audio system that allows for the operation of incompatible devices (col.1 ln.63-67, col.2 ln.1-30). At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the compatibility processing of Beckert in the interface of Owens. The motivation for doing so would have been allow for a consumer to use external devices from different companies with the car stereo.
Owens does not disclose expressly wherein an integration subsystem generates a device presence signal for maintaining the car audio system in a state responsive to the portable device. Chew discloses a integration subsystem (fig.1 #17,18) for connecting a plurality of external devices to a computing system wherein the subsystem transmits a presence signal ("port number") to the computing system as an indication of a connected external device (col.4 ln.58-67, col.5 ln.1-14). At the time of the invention it would have been obvious to a person of ordinary skill in the art to include the integration subsystem of Chew in the interface of Owens. The motivation for doing so would have been to notify the car audio system of a newly attached or detached external device.
Owens does not disclose expressly wherein the interface communicates wirelessly. Falcon discloses an interfacing system (fig.2 #142,146) for communication a portable device (fig.4 #102) with a car audio system (fig.4 #200) wherein the communication is of a

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
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Supplemental Box
In case the space in any of the preceding boxes is not sufficient.

wireless nature (col.3 ln.65-67, col.4 ln.1-15). At the time of the invention it would have been obvious to a person of ordinary skill in the art to allow the portable device of Owens to communicate with the car audio system wirelessly. The motivation for doing so would have been to allow a user to move the portable device about the cabin of the vehicle. Falcon also discloses that the portable device may be charged when docked to the audio system (col.3 ln.56-64).

With respect to claims 39, 55 Owens discloses a multimedia device integration system comprising: a car audio/video system (fig.1 #10); a portable device (fig.1 #42,44,46,48) external to the car audio system; an integration system (fig.1 #30,40) in communication with the portable device and the car audio system for transmitting processed information from the portable device to the car audio system. Owens does not disclose expressly wherein an integration subsystem processes the information into a format compatible with the car audio system. Beckert discloses a vehicle computer interface system in cooperation with a vehicles audio system that allows for the operation of incompatible devices (col.1 ln.63-67, col.2 ln.1-30). At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the compatibility processing of Beckert in the interface of Owens. The motivation for doing so would have been allow for a consumer to use external devices from different companies with the car stereo.
Owens does not disclose expressly wherein an integration subsystem generates a device presence signal for maintaining the car audio system in a state responsive to the portable device. Chew discloses a integration subsystem (fig.1 #17,18) for connecting a plurality of external devices to a computing system wherein the subsystem transmits a presence signal ("port number") to the computing system as an indication of a connected external device (col.4 ln.58-67, col.5 ln.1-14). At the time of the invention it would have been obvious to a person of ordinary skill in the art to include the integration subsystem of Chew in the interface of Owens. The motivation for doing so would have been to notify the car audio system of a newly attached or detached external device.
Owens does not disclose expressly wherein the system comprises a docking slot formed in the car stereo for receiving the portable device. Falcon discloses an interfacing system (fig.2 #142,146) for communication a portable device (fig.4 #102) with a car audio system (fig.4 #200) wherein system comprises a docking slot formed in the car stereo for receiving the portable device (col.3 ln.65-67, col.4 ln.1-15). At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the docking slot of Falcon in the car audio system of Owens. The motivation for doing so would have been to provide a stable mount for the portable device.
With respect to claims 2-3, 21-22, 40-42, 56-58, 118-120, 133-135, 149-150, Owens discloses wherein the integration system processes data into a format compatible with the car audio system (Beckert: col.1 ln.63-67, col.2 ln.1-30) and dispatches commands to the external devices (Owens: pg.2 [0034]) for execution thereby.
With respect to claims 4-6, 23-25, 43-45, 59-61, Owens discloses wherein the integration system is responsive to voice commands (Beckert: col.4 ln.17-32).
With respect to claims 7-8, 26-27, 46-47, 62-63, Owens discloses wherien the car audio system comprises an OEM and after-market car audio system (Owens: fig.1 #10).
With respect to claims 9-10, 28-29, 48-49, 64-65, Owens discloses wherein the portable device comprises a portable receiver (Owens: fig.1 #46).
With respect to claims 11-12, 30-31, 50-51, 66-67, Owens discloses wherein the portable device comprises a portable digital media player (Falcon: fig.3 #102).
With respect to claims 14-16, 33-35, Owens discloses wherein the system comprises a non-wireless connection (Owens: fig.1) and wherein the interface is within the portable device and the car audio system (Falcon: fig.2 #142,146).
With respect to claims 17-19, 36-38, Owens discloses wherien the video information is stored, a picture and comprises a TV signal (Owens: fig.1 #42,44).
With respect to claims 53, 54, 69-70, Owens discloses wherein the interface is within the portable device and the car audio system (Falcon: fig.2 #142,146).
With respect to claim 121-122, 136-137, Owens discloses where the system further comprises a communications port allowing communication between the interface and the portable audio device (Owens: fig.8 #40), and wherein the communication port is USB (Beckert: fig.2 #70).
With respect to claims 123-124, 138-139, see the rejection of claim 117 above (Falcon: fig.2).
With respect to claim 125-128, 140-143, Owens discloses wherein the transmitted signals are recorded by the portable device and the car audio system (Falcon: col.6 ln.54-60).
With respect to claims 129-131, 144-146, Owens discloses wherein the interface comprises a microchip (Owens: fig.9 :Master Processor).
With respect to claim 148, Owens discloses wherein the charging circuit comprises first and second inductive charging circuits associated with the interface and the portable device (Falcon: col.3 ln.56-64).

Claims 13, 32, 52 and 68 lack an inventive step under PCT Article 33(3) as being obvious over Owens et al (US 2002/0084910 A1) in view of Beckert (US 6,175,789 B1) and in view of Chew (US 6,389,560) and in view of Falcon (US 6,993,615 B2) in view of Lazzeroni (US 2003/0026440 A1).

With respect to claims 13, 32, 52, 68, Owens discloses the system of claim 1 however does not disclose expressly wherein the portable device is a cell phone. Lazzeroni discloses an integration system comprising a cell phone (fig.1 #110). At the time of the invention it would have been obvious to a person of ordinary skill in the art intgrate a cell phone into the audio system of Owens. The motivation for doing so would have been to allow a user receive phone calls through the car audio system.

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Supplemental Box
In case **the space in any of the preceding boxes is not sufficient.**

Claims 71-77 and 81-87 lack an inventive step under PCT Article 33(3) as being obvious over Falcon (US 6,993,615 B2) in view of Chew (US 6,389,560).

With respect to claims 71, 81 Falcon discloses a method for wirelessly integrating a portable device (fig.4 #102) for use with a car audio/video system (fig.4 #200) comprising: establishing a wireless communications link between the car audio system and the portable device (col.3 ln.65-67, col.4 ln.1-15); processing video information into a format compatible with the car audio /video system (col.4 ln.25-42) and transmitting the processed video information generated by the portable device to the car audio/video system (col. 9 ln.13-24 "map"), displaying the processed video information and playing the audio signals over the car stereo system.
Owens does not disclose expressly wherein an integration subsystem generates a device presence signal for maintaining the car audio system in a state responsive to the portable device. Chew discloses a integration subsystem (fig.1 #17,18) for connecting a plurality of external devices to a computing system wherein the subsystem transmits a presence signal ("port number") to the computing system as an indication of a connected external device (col.4 ln.58-67, col.5 ln.1-14). At the time of the invention it would have been obvious to a person of ordinary skill in the art to include the integration subsystem of Chew in the interface of Owens. The motivation for doing so would have been to notify the car audio system of a newly attached or detached external device.
With respect to claims 72-77, 82-87, Falcon discloses wherein the integration system processes data into a format compatible with the car audio system and dispatches commands to the external devices for execution thereby (Falcon: col.3 ln.65-67, col.4 ln.1-42).

Claims 78-80 and 88-90 lack an inventive step under PCT Article 33(3) as being obvious over Falcon (US 6,993,615 B2) in view of Chew (US 6,389,560) in view of Beckert (US 6,175,789 B1).

With respect to claims 78-80, 88-90, Falcon does not disclose expressly receiving spoken control commands. Beckert discloses a method of integrating a portable device with a car audio system wherein spoken commands are received to control the portable device and car ausio system (Beckert: col.4 ln.17-32). At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the voice input system of Beckert in the integration system of Falcon. The motivation for doing so would be to supply a user with a hands free control of the system.

Claims 92-103 lack an inventive step under PCT Article 33(3) as being obvious over Zaner et al (US 2005/0172001 A1) in view of Lazzeroni et al (US 2003/0026440 A1) in view of Chew (US 6,389,560).

With respect to claim 92, Zaner discloses a multimedia device integration system comprising: a audiovisual system (fig.1 #106,108) having a display associated therewith; a cellular telephone (fig.1 #102,104) external to the car audiovisual system, the cellular telephone including a receiver for receiving a broadcast radio transmission transmitted to the cell phone; and an interface in communication with the car audiovisual system that processes the broadcast radio tranmission into a format compatible with the audiovisual system, and transmits the processed radio transmission to the audio visual system for playing (pg.2 [0022]).
Zaner does not disclose expressly wherein the audio visual system is a car audiovisual system. Lazzeroni discloses an integration system for integrating a cell phone with a car audio visual system (pg.3 [0043]). At the time of the invention it would have been obvoius to a person of ordinary skill in the art to allow the cell phone of Zaner to communicate with a car audio system as taught by Lazzeroni. The motivation for doing so would have been to communicate information received by a cell phone to the audio system of a vehicle.
Zaner does not disclose expressly wherein an integration subsystem generates a device presence signal for maintaining the car audio system in a state responsive to the portable device. Chew discloses a integration subsystem (fig.1 #17,18) for connecting a plurality of external devices to a computing system wherein the subsystem transmits a presence signal ("port number") to the computing system as an indication of a connected external device (col.4 ln.58-67, col.5 ln.1-14). At the time of the invention it would have been obvious to a person of ordinary skill in the art to include the integration subsystem of Chew in the interface of Zaner. The motivation for doing so would have been to notify the car audio system of a newly attached or detached external device.
With respect claims 93-98, Zaner discloses wherein the broadcast radio transmission comprises a satellite radio transmission, live radio transmission, streamed audio, video transmission, live video transmission, streamed video transmission (Zaner: pg,2 [0031]).
With respect to claims 99-100, Zaner discloses wherein the received information is processed into a format compatible with the audiovisual system (pg.2 [0032]).
With resepect to claims101-103, Zaner discloses wherein the cell phone receives navigational information (pg.5 [0069]).

Claims 104-110 lack an inventive step under PCT Article 33(3) as being obvious over Romano et al (US 2003/0156200 A1) in view of Lazzeroni et al (US 2003/0026440 A1) in view of Chew (US 6,389,560).

With respect to claim 104, Romano discloses a multimedia device integration system comprising: a visual system (fig.7), a digital camera (fig.7 #332) external to the visual system, and a an interface (fig.7 #342) for processing and transmitting signals in a format compatible with the visual system for display upon the visual system.
Romano does not disclose expressly wherein the the visual system is a car audiovisual system. Lazzeroni discloses an integration system for integrating an external device with a car audio visual system (pg.3 [0043]). At the time of the invention it would have been obvoius to a person of ordinary skill in the art to allow the digital camera of Romano to communicate with a car audio system as taught

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US07/72182

Supplemental Box
In case **the space in any of the preceding boxes is not sufficient**.

by Lazzeroni. The motivation for doing so would have been to communicate information stored on the camera to the audio system of a vehicle.
Romano does not disclose expressly wherein an integration subsystem generates a device presence signal for maintaining the car audio system in a state responsive to the portable device. Chew discloses a integration subsystem (fig.1 #17,18) for connecting a plurality of external devices to a computing system wherein the subsystem transmits a presence signal ("port number") to the computing system as an indication of a connected external device (col.4 ln.58-67, col.5 ln.1-14). At the time of the invention it would have been obvious to a person of ordinary skill in the art to include the integration subsystem of Chew in the interface of Romano. The motivation for doing so would have been to notify the car audio system of a newly attached or detached external device.
With respect to claims 105-106, Romano discloses wherein the transmitted data is controlled by the visual system, wherein the data is processed into a format compatible with the visual system (Romano: pg.2 [0024]).
With respect to claims 107-110, Romano discloses wherein the data is a video image (pg.3 [0030]).

Claims 111-116 lack an inventive step under PCT Article 33(3) as being obvious over Lazzeroni et al (US 2003/0026440 A1) in view of Owens et al (US 2002/0084910 A1).

With respect to claim 111, Lazzeroni discloses a multimedia device integration ssytem comprising: a car audio visual system (fig.1 #100); a portable navigation device (fig.1 #112) external to the car audio visual system and an interface (fig.1 #120) in electrical communication with the car audiovisual system and the portable device, wherein interface processes data from the navigational unit and transmits them to the car audiovisual system.
Lazzeroni does not disclose expressly wherein the interface transmits video signals to the audio visual system for display. Owens discloses an integration device that transmits video data through car audiovisual system (pg.3 [0037]). At the time of the invention it would have been obvious to a person of ordinary skill in the art to display available auxilairy selections such as "GPS" on the head unit of a car audio system. The motivation for doing so would have been to allow a user a visual display of available auxiliary units.
With respect to claim 112, Lazzeroni discloses wherein the data is processed into a format compatible with the car audio visual system (Lazzeroni: pg.5 [0058]).
With respect to claim 113-116, Lazzeroni discloses wherein the data comprises a map and audio signal for reproduction (Lazzeroni: fig.1 #112).

Claims 151-154 lack an inventive step under PCT Article 33(3) as being obvious over Owens et al (US 2002/0084910 A1) in view of Chew (US 6,389,560) and in view of Falcon (US 6,993,615 B2) in view of DiStefano (US 7,288,918 B2).

With respect to claims 151 Owens discloses a multimedia device integration system comprising: a car audio system (fig.1 #10) having a display; a portable device (fig.1 #42,44,46,48) external to the car audio system; an interface (fig.1 #30,40) in communication with the portable device and the car audio system for transmitting processed video information from the portable device to the car audio system.
Owens does not disclose expressly wherein an integration subsystem generates a device presence signal for maintaining the car audio system in a state responsive to the portable device. Chew discloses a integration subsystem (fig.1 #17,18) for connecting a plurality of external devices to a computing system wherein the subsystem transmits a presence signal ("port number") to the computing system as an indication of a connected external device (col.4 ln.58-67, col.5 ln.1-14). At the time of the invention it would have been obvious to a person of ordinary skill in the art to include the integration subsystem of Chew in the interface of Owens. The motivation for doing so would have been to notify the car audio system of a newly attached or detached external device.
Owens does not disclose expressly wherein the interface communicates wirelessly. Falcon discloses an interfacing system (fig.2 #142,146) for communication a portable device (fig.4 #102) with a car audio system (fig.4 #200) wherein the communication is of a wireless nature (col.3 ln.65-67, col.4 ln.1-15). At the time of the invention it would have been obvious to a person of ordinary skill in the art to allow the portable device of Owens to communicate with the car audio system wirelessly. The motivation for doing so would have been to allow a user to move the portable device about the cabin of the vehicle. Falcon also discloses that the portable device may be charged when docked to the audio system (col.3 ln.56-64).
Falcon does not disclose expressly wherien the charging circuit charges the portable device wirelessly. DiStefano discloses a wireless battery charging circuit (fig.1). At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the wireless battery charging circuit of DiStefano in the invention of Falcon in combination with Owens. The motivation for doing so would have been to charge the portable device when not docket to the car audio system.
With respect to claim 152, Owens discloses wherein the charging circuit comprises first and second inductive charging circuits associated with the interface and the portable device (Falcon: col.3 ln.56-64).
With respect to claims 153-154, Owens discloses wherein the integration system processes data into a format compatible with the car audio system (Beckert: col.1 ln.63-67, col.2 ln.1-30) and dispatches commands to the external devices (Owens: pg.2 [0034]) for execution thereby.

Electronic Acknowledgement Receipt	
EFS ID:	4931022
Application Number:	11475847
International Application Number:	
Confirmation Number:	9001
Title of Invention:	Multimedia device integration system
First Named Inventor/Applicant Name:	Ira Marlowe
Customer Number:	27614
Filer:	Mark E. Nikolsky/Diane Bodzioch
Filer Authorized By:	Mark E. Nikolsky
Attorney Docket Number:	99879-00026
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Time Stamp:	17:03:03
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Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$1175
RAM confirmation Number	2784
Deposit Account	503571
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees) Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Miscellaneous Incoming Letter	Transmittal_001.pdf	46453 036d22f20f356946405ff1cb1188d5e7ffcea596	no	1
Warnings:					
Information:					
2	Response to Election / Restriction Filed	Response_001.pdf	718773 6320c282f86170cc3c4d9ff2c5fc4b1716f3a438	no	22
Warnings:					
Information:					
3	Extension of Time	ExtensionPetition_001.pdf	59109 3c6edc7466d8ae83eaf50cd025a8a95a07b537ef	no	1
Warnings:					
Information:					
4	Information Disclosure Statement (IDS) Filed (SB/08)	IDS_001.pdf	694831 17891d3a2257a77043b77a0e414a614042d704c6	no	9
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
5	Foreign Reference	Ref20.pdf	5136983 45bd9200a80aae56b540cf17bdd938a3c2a09abf	no	129
Warnings:					
Information:					
6	Foreign Reference	Ref21.pdf	3750900 66cd68b966c600c7161f58b13ca2e0029bc3383e	no	108
Warnings:					
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7	Foreign Reference	Ref22.pdf	2859364 863a37dbaacf7f5c702e98a7749009b2a3d8bff1	no	71
Warnings:					
Information:					

8	Foreign Reference	Ref23.pdf	48125 665c24bafcc351a58daa042fe47c6f0fe1d5810e	no	2
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Information:					
9	Foreign Reference	Ref24.pdf	50181 9f42f8cc2a0d2d7b93effd8e39435c95b05f93e6	no	1
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10	Foreign Reference	Ref25.pdf	3250394 4f88f73a2103c21a8e1dbb88d4e0f85cb53752f5	no	30
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11	Foreign Reference	Ref29.pdf	7658095 7e1b5f89a43a10bcfe01358d60ebd3489c1f4979	no	55
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13	NPL Documents	Ref31.pdf	49553 4204f9d8d68dfda013a7ff9410bd7b14f43e41b2	no	2
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37	NPL Documents	Ref55.pdf	3447032 4c691fd4fc7f9dabfe8b8fc3079dce1d5c7bec38	no	52
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44	NPL Documents	Ref62.pdf	727194 ab1c73b225920d4f8ceaeb1978d938d6519276d2	no	28
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46	NPL Documents	Ref64.pdf	126093 8f28c1398ac7a82f4c55d5da69279885b698ae97	no	4
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55	NPL Documents	Ref73.pdf	1025069 519a0723b74994d568fb0dcf14608fa15bfe 190c	no	12
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57	NPL Documents	Ref75.pdf	1395102 17b6b8c48996b3876effea909ef9ab1b0e51 5b5e	no	20
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Information:					
		Total Files Size (in bytes):	53785051		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Electronic Patent Application Fee Transmittal

Application Number:	11475847
Filing Date:	27-Jun-2006
Title of Invention:	Multimedia device integration system
First Named Inventor/Applicant Name:	Ira Marlowe
Filer:	Mark E. Nikolsky
Attorney Docket Number:	99879-00026

Filed as Small Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Extension - 5 months with $0 paid	2255	1	1175	1175

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
		Total in USD ($)		**1175**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/475,847	06/27/2006	Ira Marlowe	99879-00026	9001

27614 7590 05/28/2009

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100 MULBERRY STREET
NEWARK, NJ 07102

EXAMINER	
KURR, JASON RICHARD	
ART UNIT	PAPER NUMBER
2614	

MAIL DATE	DELIVERY MODE
05/28/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	11/475,847	MARLOWE, IRA	
	Examiner	Art Unit	
	JASON R. KURR	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 March 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-91* is/are pending in the application.

4a) Of the above claim(s) *39-70 and 91* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-38 and 71-90* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *2/20/07 3/9/09*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Claims 39-70 and 91 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected group and species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on March 9, 2009.

Claim Objections

Claim 10 objected to because of the following informalities:

Claim 10 depends upon claim 10. A dependent claim may not be dependent upon itself. For the purposes of examination, claim 10 will be viewed as if it were dependent upon claim 9. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-38 and 71-90 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coon et al (US 6,539,358 B1) in view of Dukach et al (US 2002/0009978 A1).

With respect to claim 1, Coon discloses a multimedia device integration system (fig.3) comprising: a car audio system (fig.3 #66); a portable device (fig.3 #72) external to the car audio system; a first wireless interface (fig.3 #70) in communication with the car audio system; a second wireless interface (fig.3 #68) in communication with the portable device, the first and second wireless interfaces establishing a wireless communications link between the car audio system and the portable device (col.4 ln.27-34); and an integration subsystem (fig.3 #12) for generating a device presence signal for maintaining the car audio system in a state responsive to the portable device, wherein the integration subsystem transmits the device presence signal to the car audio system, channels audio from the portable device to the car audio system using the wireless communications link, processes audio information generated by the portable device into a format compatible with the car audio system, and transmits the processed video information to the car audio system using the wireless communications link for displaying the processed video information on the display of the car audio system (col.4 ln.10-26). It is implied that the wireless cellular system of Coon remains in a responsive state to incoming signals from cellular network #74, wherein these signals are forwarded through the interface to the audio system #66.

Coon does not disclose expressly wherein the car audio system has a display and wherein the integration system processes video information.

Dukach discloses a car audio system (fig.1 #104) comprising a display (fig.1 #142,144) wherein an integration system (fig.1 #140) processes video information received through a wireless communications link (fig.1 #152)(pg.8,9 [0145]). At the time

of the invention it would have been obvious to a person of ordinary skill in the art to use the video processing integration system of Dukach to process and display received video signals on a display of the radio of Coon. The motivation for doing so would have been to display video messages sent through cellular phones on a larger screen of a vehicle, thus not distracting a driver of vehicle by limiting the use of cellular phones while driving.

With respect to claim 2, Coon discloses the system of claim 1, wherein the integration subsystem processes data generated by the portable device into a format compatible with the car audio system and displays the processed data on the display of the car audio system (Dukach: pg.4 [0049]).

With respect to claim 3, Coon discloses the system of claim 1, wherein the integration subsystem receives control commands issued at the car audio system and transmitted over the wireless communications link, processes the commands into a format compatible with the portable device, and dispatches the processed commands to the portable device for execution thereby (Dukach: pg.9 [0154]).

With respect to claim 4, Coon discloses the system of claim 1, wherein the integration subsystem further comprises a voice recognition subsystem for processing spoken control commands issued by a user (col.2 ln.54-65).

With respect to claim 5, Coon discloses the system of claim 4, wherein the integration subsystem retrieves an audio file or a video file from the portable device in response to a spoken command (col.2 ln.60-65).

With respect to claim 6, Coon discloses the system of claim 4, wherein the integration subsystem further comprises a speech synthesizer (fig.2 #42) for generating synthesized speech corresponding to data generated by the portable device (col.2 ln.54-65).

With respect to claim 7, Coon discloses the system of claim 1, wherein the car audio system comprises an OEM car audio system (fig.3 #66).

With respect to claim 8, Coon discloses the system of claim 1, wherein the car audio system comprises an after-market car audio system. It is implied that the system of Coon would operate identically with either an OEM car stereo or an after-market system that comprises an antenna for receiving wireless audio transmissions.

With respect to claim 9, Coon discloses the system of claim 1, wherein the portable device comprises a portable receiver. It is implied that cellular phones comprise both a wireless transmitter and receiver.

With respect to claim 10, Coon discloses the system of claim 9, however does not disclose expressly wherein the portable receiver comprises a digital audio broadcast (DAB) receiver, a high-definition (HD) radio receiver, or a satellite receiver. Official Notice is taken that satellite phones are well known in the art and at the time of the invention it would have been obvious to a person of ordinary skill in the art that a satellite phone may be used in place of the cellular phone of Coon. The motivation for doing so would have been to receive transmissions in areas where cellular transmission towers are not present.

With respect to claim 11, Coon discloses the system of claim 1, however does not disclose expressly wherein the portable device comprises a portable digital media player. Official Notice is taken that it is well known in the art that cellular phones may contain a media playing function. At the time of the invention it would have been obvious to a person of ordinary skill in the art to use a cellular phone with media playing options in the invention of Coon. The motivation for doing so would have been to reproduce media such as MP3's stored on a cellular phone on a vehicles audio system.

With respect to claim 12, Coon discloses the system of claim 11, wherein the portable digital media player comprises a video device (Dukach: fig.1 #142,144), a portable media center, a portable media player, an MP3 player, an MP4 player, a WMV player, an Apple iPod, or an Apple video iPod.

With respect to claim 13, Coon discloses the system of claim 1, wherein the portable device comprises a cellular telephone (fig.1 #28).

With respect to claim 14, Coon discloses the system of claim 1, further comprising a non-wireless connection established between the car audio system and the portable device for exchanging data, commands, audio and video signals between the car audio system and the portable device (fig.3 #68,70).

With respect to claim 15, Coon discloses the system of claim 1, wherein the integration subsystem (fig.1 #12) is positioned within the portable device (fig.1 #20,28).

With respect to claim 16, Coon discloses the system of claim 1, wherein the integration subsystem is positioned within the car audio system (fig.1).

With respect to claim 17, Coon discloses the system of claim 1, wherein the video information comprises a video file stored on the portable device (Dukach: fig.1 #108, pg.8,9 [0145]).

With respect to claim 18, Coon discloses the system of claim 1, wherein the video information comprises a picture stored on the portable device (Dukach: fig.1 #108, pg.8,9 [0145]).

With respect to claim 19, Coon discloses the system of claim 1, wherein the video information comprises a television signal received by the portable device (Dukach: pg.10 [0160]).

With respect to claim 20, Coon discloses a multimedia device integration system (fig.3) comprising: a car audio system (fig.3 #66); a portable device (fig.3 #72) external to the car audio system; a first wireless interface (fig.3 #70) in communication with the car audio system; a second wireless interface (fig.3 #68) in communication with the portable device, the first and second wireless interfaces establishing a wireless communications link between the car audio system and the portable device (col.4 ln.27-34); and an integration subsystem (fig.3 #12) for generating a device presence signal for maintaining the car audio system in a state responsive to the portable device, wherein the integration subsystem transmits the device presence signal to the car audio system, channels audio from the portable device to the car video system using the wireless communications link, processes audio information generated by the portable device into a format compatible with the car audio system, and transmits the processed audio information to the car audio system using the wireless communications link (col.4

ln.10-26). It is implied that the wireless cellular system of Coon remains in a responsive state to incoming signals from cellular network #74, wherein these signals are forwarded through the interface to the audio system #66.

Coon does not disclose expressly wherein the car audio system has a display and wherein the integration system processes video information.

Dukach discloses a car audio system (fig.1 #104) comprising a display (fig.1 #142,144) wherein an integration system (fig.1 #140) processes video information received through a wireless communications link (fig.1 #152)(pg.8,9 [0145]). At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the video processing integration system of Dukach to process and display received video signals on a display of the radio of Coon. The motivation for doing so would have been to display video messages sent through cellular phones on a larger screen of a vehicle, thus not distracting a driver of vehicle by limiting the use of cellular phones while driving.

With respect to claim 21, Coon discloses the system of claim 20, wherein the integration subsystem processes data generated by the portable device into a format compatible with the car video system and displays the processed data on the display of the car video system (Dukach: pg.4 [0049]).

With respect to claim 22, Coon discloses the system of claim 20, wherein the integration subsystem receives control commands issued at the car video system and transmitted over the wireless communications link, processes the commands into a

format compatible with the portable device, and dispatches the processed commands to the portable device for execution thereby (Dukach: pg.9 [0154]).

With respect to claim 23, Coon discloses the system of claim 20, wherein the integration subsystem further comprises a voice recognition subsystem for processing spoken control commands issued by a user (col.2 ln.54-65).

With respect to claim 24, Coon discloses the system of claim 23, wherein the integration subsystem retrieves an audio file or a video file from the portable device in response to a spoken command (col.2 ln.60-65).

With respect to claim 25, Coon discloses the system of claim 23, wherein the integration subsystem further comprises a speech synthesizer (fig.2 #42) for generating synthesized speech corresponding to data generated by the portable device (col.2 ln.54-65).

With respect to claim 26, Coon discloses the system of claim 20, wherein the car video system comprises an OEM car video system (fig.3 #66).

With respect to claim 27, Coon discloses the system of claim 20, wherein the car video system comprises an after-market car video system. It is implied that the system of Coon would operate identically with either an OEM car stereo or an after-market system that comprises an antenna for receiving wireless audio transmissions.

With respect to claim 28, Coon discloses the system of claim 20, wherein the portable device comprises a portable receiver. It is implied that cellular phones comprise both a wireless transmitter and receiver.

With respect to claim 29, Coon discloses the system of claim 28, however does not disclose expressly wherein the portable receiver comprises a digital audio broadcast (DAB) receiver, a high-definition (HD) radio receiver, or a satellite receiver. Official Notice is taken that satellite phones are well known in the art and at the time of the invention it would have been obvious to a person of ordinary skill in the art that a satellite phone may be used in place of the cellular phone of Coon. The motivation for doing so would have been to receive transmissions in areas where cellular transmission towers are not present.

With respect to claim 30, Coon discloses the system of claim 20, however does not disclose expressly wherein the portable device comprises a portable digital media player. Official Notice is taken that it is well known in the art that cellular phones may contain a media playing function. At the time of the invention it would have been obvious to a person of ordinary skill in the art to use a cellular phone with media playing options in the invention of Coon. The motivation for doing so would have been to reproduce media such as MP3's stored on a cellular phone on a vehicles audio system.

With respect to claim 31, Coon discloses the system of claim 30, wherein the portable digital media player comprises a video device (Dukach: fig.1 #142,144), a portable media center, a portable media player, an MP3 player, an MP4 player, a WMV player, an Apple iPod, or an Apple video iPod.

With respect to claim 32, Coon discloses the system of claim 20, wherein the portable device comprises a cellular telephone (fig.1 #28).

With respect to claim 33, Coon discloses the system of claim 20, further comprising a non-wireless connection established between the car video system and the portable device for exchanging data, commands, audio and video signals between the car video system and the portable device (fig.3 #68,70).

With respect to claim 34, Coon discloses the system of claim 20, wherein the integration subsystem (fig.1 #12) is positioned within the portable device (fig.1 #20,28).

With respect to claim 35, Coon discloses the system of claim 20, wherein the integration subsystem is positioned within the car video system (fig.1).

With respect to claim 36, Coon discloses the system of claim 20, wherein the video information comprises a video file stored on the portable device (Dukach: fig.1 #108, pg.8,9 [0145]).

With respect to claim 37, Coon discloses the system of claim 20, wherein the video information comprises a picture stored on the portable device (Dukach: fig.1 #108, pg.8,9 [0145]).

With respect to claim 38, Coon discloses the system of claim 20, wherein the video information comprises a television signal received by the portable device (Dukach: pg.10 [0160]).

With respect to claim 71, Coon discloses a method for wirelessly integrating a portable device (fig.3 #20,72) for use with a car audio system comprising: establishing a wireless communications link between the car audio system and the portable device (fig.3 #68,70); generating a device presence signal for maintaining the car audio system in a state responsive to the portable device; transmitting the device presence signal to

the car audio system over the wireless communications link; processing audio information generated by the portable device into a format compatible with the car audio system (col.4 ln.10-26); transmitting the processed audio signals generated by the portable device to the car audio system over the wireless communications link; and playing the audio signals over the car audio system (col.1 ln.55-59). It is implied that the wireless cellular system of Coon remains in a responsive state to incoming signals from cellular network #74, wherein these signals are forwarded through the interface to the audio system #66.

Coon does not disclose expressly wherein the car audio system has a display and wherein the integration system processes video information.

Dukach discloses a car audio system (fig.1 #104) comprising a display (fig.1 #142,144) wherein an integration system (fig.1 #140) processes video information received through a wireless communications link (fig.1 #152)(pg.8,9 [0145]). At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the video processing integration system of Dukach to process and display received video signals on a display of the radio of Coon. The motivation for doing so would have been to display video messages sent through cellular phones on a larger screen of a vehicle, thus not distracting a driver of vehicle by limiting the use of cellular phones while driving.

With respect to claim 72, Coon discloses the method of claim 71, further comprising processing data generated by the portable device into a format compatible with the car audio system (Dukach: pg.4 [0049]).

With respect to claim 73, Coon discloses the method of claim 72, further comprising transmitting the processed data over the wireless communications link to the car audio system (col.4 ln.27-34).

With respect to claim 74, Coon discloses the method of claim 73, further comprising displaying the processed data on a display of the car audio system (Dukach: pg.10 [0157]).

With respect to claim 75, Coon discloses the method of claim 71, further comprising transmitting control commands issued by a user at the car audio system over the wireless communications link (Dukach: pg.9 [0154]).

With respect to claim 76, Coon discloses the method of claim 75, further comprising receiving the control commands at the portable device and processing the control commands into a format compatible with the portable device (Dukach: pg.9 [0154]).

With respect to claim 77, Coon discloses the method of claim 76, further comprising dispatching the processed control commands to the portable device for execution thereby (Dukach: pg.9 [0154]).

With respect to claim 78, Coon discloses the method of claim 71, further comprising receiving spoken control commands with a voice recognition subsystem and processing the spoken control commands into a format compatible with the portable device (col.2 ln.54-65).

With respect to claim 79, Coon discloses the method of claim 78, further comprising dispatching the processed control commands to the portable device for execution thereby (col.2 ln.54-65).

With respect to claim 80, Coon discloses the method of claim 71, further comprising generating synthesized speech corresponding to data generated by the portable device (col.3 ln.11-24).

With respect to claim 81, Coon discloses a method for wirelessly integrating a portable device (fig.3 #20,72) for use with a car audio system (fig.3 #66) comprising: establishing a wireless communications link between the car audio system and the portable device (fig.3 #68,70); generating a device presence signal for maintaining the car audio system in a state responsive to the portable device; transmitting the device presence signal to the car audio system over the wireless communications link; processing audio information generated by the portable device into a format compatible with the car audio system (col.4 ln.10-26); transmitting the processed audio information and audio signals generated by the portable device to the car audio system over the wireless communications link; and playing the audio signals over the car audio system (col.1 ln.55-59). It is implied that the wireless cellular system of Coon remains in a responsive state to incoming signals from cellular network #74, wherein these signals are forwarded through the interface to the audio system #66.

Coon does not disclose expressly wherein the car audio system has a display and wherein the integration system processes video information.

Dukach discloses a car audio system (fig.1 #104) comprising a display (fig.1 #142,144) wherein an integration system (fig.1 #140) processes video information received through a wireless communications link (fig.1 #152)(pg.8,9 [0145]). At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the video processing integration system of Dukach to process and display received video signals on a display of the radio of Coon. The motivation for doing so would have been to display video messages sent through cellular phones on a larger screen of a vehicle, thus not distracting a driver of vehicle by limiting the use of cellular phones while driving.

With respect to claim 82, Coon discloses the method of claim 81, further comprising processing data generated by the portable device into a format compatible with the car video system (Dukach: pg.4 [0049]).

With respect to claim 83, Coon discloses the method of claim 82, further comprising transmitting the processed data over the wireless communications link to the car video system (col.4 ln.27-34).

With respect to claim 84, Coon discloses the method of claim 83, further comprising displaying the processed data on a display of the car video system (Dukach: pg.10 [0157]).

With respect to claim 85, Coon discloses the method of claim 81, further comprising transmitting control commands issued by a user at the car video system over the wireless communications link (Dukach: pg.9 [0154]).

With respect to claim 86, Coon discloses the method of claim 85, further comprising receiving the control commands at the portable device and processing the control commands into a format compatible with the portable device (Dukach: pg.9 [0154]).

With respect to claim 87, Coon discloses the method of claim 86, further comprising dispatching the processed control commands to the portable device for execution thereby (Dukach: pg.9 [0154]).

With respect to claim 88, Coon discloses the method of claim 81, further comprising receiving spoken control commands with a voice recognition subsystem and processing the spoken control commands into a format compatible with the portable device (col.2 ln.54-65).

With respect to claim 89, Coon discloses the method of claim 88, further comprising dispatching the processed control commands to the portable device for execution thereby (col.2 ln.54-65).

With respect to claim 90, Coon discloses the method of claim 81, further comprising generating synthesized speech corresponding to data generated by the portable device (col.3 ln.11-24).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Lazzeroni et al (US 2003/0026440 A1) discloses a multi-accessory vehicle audio system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JASON R. KURR whose telephone number is (571)272-0552. The examiner can normally be reached on M-F 10:00am to 6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on (571) 273-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jason R Kurr/
Examiner, Art Unit 2614

/Vivian Chin/
Supervisory Patent Examiner, Art Unit 2614

Notice of References Cited	Application/Control No. 11/475,847	Applicant(s)/Patent Under Reexamination MARLOWE, IRA	
	Examiner JASON R. KURR	Art Unit 2614	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-6,539,358	03-2003	Coon et al.	704/275
*	B	US-2002/0009978	01-2002	Dukach et al.	455/99
*	C	US-2003/0026440	02-2003	Lazzeroni et al.	381/86
	D	US-			
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FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
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NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
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	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Index of Claims

Application/Control No.	Applicant(s)/Patent under Reexamination
11/475,847	MARLOWE, IRA
Examiner	**Art Unit**
JASON R. KURR	2614

√	Rejected	–	(Through numeral) Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

Claim		Date								
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Search Notes	Application/Control No.	Applicant(s)/Patent under Reexamination	
	11/475,847	MARLOWE, IRA	
	Examiner	Art Unit	
	JASON R. KURR	2614	

SEARCHED			
Class	Subclass	Date	Examiner
381	86	5/18/2009	JK
340	825.24	5/18/2009	JK
700	94	5/18/2009	JK
710	303	5/18/2009	JK
455	99	5/18/2009	JK

INTERFERENCE SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES (INCLUDING SEARCH STRATEGY)		
	DATE	EXMR
Inventor Search USC 101 Reviewed	5/18/2009	JK
Searched related apps 10/316961 11/805799 reviewed tagged docs	5/18/2009	JK

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	47	(US-20050239434-$ or US-20030215102-$ or US-20040151327-$ or US-20020085730-$ or US-20030053638-$ or US-20030007649-$ or US-20010001319-$ or US-20030026440-$ or US-20040090121-$ or US-20020140289-$ or US-20050049002-$ or US-20070015486-$ or US-20020197954-$ or US-20020084910-$ or US-20070293183-$ or US-20050266879-$ or US-20050172001-$ or US-20030156200-$). did. or (US-6791907-$ or US-6993615-$ or US-6346917-$ or US-6591085-$ or US-6330337-$ or US-6956952-$ or US-6728531-$ or US-5339362-$ or US-6295033-$ or US-7006642-$ or US-6374177-$ or US-7020289-$ or US-5794164-$ or US-4787040-$ or US-6396164-$ or US-5515345-$ or US-5625350-$ or US-5436851-$ or US-6608399-$ or US-6163079-$ or US-7069510-$ or US-6653948-$ or US-6052603-$ or US-5187645-$ or US-5305355-$ or US-5280281-$).did. or (US-6175789-$ or US-6389560-$ or US-	US-PGPUB; USPAT	OR	OFF	2009/05/18 15:52

		7288918-$).did.				
L2	838	381/86.ccls.	US-PGPUB; USPAT	OR	OFF	2009/05/18 15:53
L3	257	340/825.24.ccls.	US-PGPUB; USPAT	OR	OFF	2009/05/18 15:53
L4	1885	700/94.ccls.	US-PGPUB; USPAT	OR	OFF	2009/05/18 15:53
L5	531	710/303.ccls.	US-PGPUB; USPAT	OR	OFF	2009/05/18 15:54
L6	346	455/99.ccls.	US-PGPUB; USPAT	OR	OFF	2009/05/18 15:54
L7	3802	l2 l3 l4 l5 l6	US-PGPUB; USPAT	OR	OFF	2009/05/18 15:54
L8	3185	l7 and ((@ad @rlad) <="20060627")	US-PGPUB; USPAT	OR	OFF	2009/05/18 15:54
L9	645	l8 and presence	US-PGPUB; USPAT	OR	OFF	2009/05/18 15:54

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PTO/SB/08A (10-07)
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

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Complete if Known	
Application Number	11/475,847
Filing Date	06/27/2006
First Named Inventor	Ira Marlowe
Art Unit	2614
Examiner Name	Kurr, Jason R.
Attorney Docket Number	99879-00026

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
/JK/	1	US- 6,608,399	08/19/2003	McConnell, et al.	
/JK/	2	US- 6,629,197	09/30/2003	Bhogal, et al.	
/JK/	3	US- 6,529,804	03/04/2003	Draggon, et al.	
/JK/	4	US- 6,175,789	01/16/2001	Beckert, et al.	
/JK/	5	US- 2007/0293183	12/20/2007	Marlowe	
/JK/	6	US- 2004/0145457	07/29/2004	Schofield, et al.	
/JK/	7	US- 2004/0266336	12/30/2004	Patsiokas, et al.	
/JK/	8	US- 2003/0026440	02/03/2003	Lazzeroni, et al.	
/JK/	9	US- 2002/0084910	07/04/2002	Owens, et al.	
/JK/	10	US- 7,489,786	02/10/2009	Marlowe	
/JK/	11	US- 7,288,918	10/30/2007	DiStefano	
/JK/	12	US- 6,622,083	09/16/2003	Knockeart, et al.	
/JK/	13	US- 6,389,560	05/14/2002	Chew	
/JK/	14	US- 5,859,628	01/12/1999	Ross, et al.	
/JK/	15	US- 5,808,373	09/15/1998	Hamanishi, et al.	
/JK/	16	US- 2008/0125031 A1	05/29/2008	Fadell, et al.	
/JK/	17	US- 2008/0123285 A1	05/29/2008	Fadell, et al.	
/JK/	18	US- 2005/0172001 A1	08/04/2005	Zaner, et al.	
/JK/	19	US- 2003/0156200 A1	08/21/2003	Romano, et al.	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]-Number[4]-Kind Code[5] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T[6]
/JK/	20	WO 2008/002954	01/03/2008	Ira Marlowe		
/JK/	21	WO 2006/094281	09/08/2006	Ira Marlowe		
/JK/	22	WO 2004/053722	06/24/2004	BlitzSafe of America, Inc		
/JK/	23	KR 1020010035788 English Abstract	05/07/2001	Gyu Jin Park		
/JK/	24	KR 1020010059192 English Abstract	07/06/2001	Hyundai Motor Company		
/JK/	25	JP 2000-286874 with English translation	10/13/2000	Suzuki Motor Corp.		

Examiner Signature	/Jason Kurr/	Date Considered	05/18/2009

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Complete if Known	
Application Number	11/475,847
Filing Date	06/27/2006
First Named Inventor	Ira M. Marlowe
Art Unit	2614
Examiner Name	Kurr, Jason R.
Attorney Docket Number	99879-00026

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
/JK/	26	US- 6,539,358	03/25/2003	Coon, et al.	
/JK/	27	US- 5,897,155	04/27/1999	Kerner, et al.	
/JK/	28	US- 6,397,086	05/28/2002	Chen	
		US-			
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		US-			
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FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]-Number[4]-Kind Code[5] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T[6]
/JK/	29	JP 11-273321 with English Translation	10/08/1999	Clarion Co. Ltd.		

Examiner Signature	/Jason Kurr/	Date Considered	05/18/2009

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Complete if Known	
Application Number	11/475,847
Filing Date	06/27/2006
First Named Inventor	Ira Marlowe
Art Unit	2614
Examiner Name	Kurr, Jason R.
Attorney Docket Number	99879-00026

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
/JK/	30	Gilroy, Amy, "Blitz Safe Bows New SkyLink," This Week in Consumer Electronics (TWICE), November 24, 2003 (1 page)	
/JK/	31	Gilroy, Amy, "XM Exceeds Forecasts," This Week in Consumer Electronics (TWICE), November 24, 2003 (2 pages)	
/JK/	32	"BlitzSafe News," http://www.blitzsafe.com/blitz_news/news031124/body_news031124.html, November 24, 2003 (1 page)	
/JK/	33	"XM Satellite Radio Introduces XM Direct," http://www.blitzsafe.com/blitz_news/news031117/body_news031117.html, November 17, 2003 (3 pages)	
/JK/	34	"Digital Audio Radio," http://www.blitzsafe.com/blitz_news/news052003a/body_news052003a.html, 2003 (4 pages)	
/JK/	35	"BlitzSafe Winner of 2003 Autosound Grand Prix Accessories Supplier of the Year," Audiovideo Magazine, March 3, 2003 (1 page)	
/JK/	36	"BlitzSafe Releases World's First XM Satellite Radio, Auxiliary and CD Interfaces for Landrover Freelander 2003," http://www.blitzsafe.com/blitz_news/news092002b/body_news09002b.html, September 16, 2002 (1 page)	
/JK/	37	"BlitzSafe Releases World's First XM Satellite Radio, Auxiliary and CD Interfaces for Lexus," http://www.blitzsafe.com/blitz_news/news092002a/body_news09002a.html, September 14, 2002 (1 page)	
/JK/	38	Pohlmann, et al. "Satellite Radio A to Z," http://www.blitzsafe.com/blitz_news/news072002a/body_news072002a.html, 2002 (7 pages)	
/JK/	39	"BlitzSafe Launches XM and Six Interfaces for the 'Mini Cooper'," http://www.blitzsafe.com/blitz_news/news062002a/body_news062002a.html, June 25, 2002 (1 page)	

Examiner Signature	/Jason Kurr/	Date Considered	05/18/2009

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 4 of 7

Complete if Known	
Application Number	11/475,847
Filing Date	06/27/2006
First Named Inventor	Ira Marlowe
Art Unit	2614
Examiner Name	Kurr, Jason R.
Attorney Docket Number	99879-00026

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
/JK/	40	"Digital Connect," Mobile Electronics, May, 2002 (1 page)	
/JK/	41	Solomon, Brett, "Selling 12V: OEM Integration," Dealerscope, May, 2002 (1 page)	
/JK/	42	"XM Xtra:," Mobile Entertainment, April/May, 2002 (1 page)	
/JK/	43	"Blitzsafe Introduces New Line of XM Digital Connect Cables," The 12 Volt News, February 20, 2002 (2 pages)	
/JK/	44	"XM Radio Losses Mount As Do Subscribers," http://www.blitzsafe.com/blitz_news/news012002d/body_news012002d.html, January 24, 2002 (3 pages)	
/JK/	45	"Blitzsafe Expects 3 Mil. XM Subscribers Within Three Years," http://www.blitzsafe.com/blitz_news/news012002c/body_news012002c.html., January, 2002 (1 page)	
/JK/	46	"XM Signs Over 30,000 Subscribers in First 8 Weeks," XM Radio, January 7, 2002 (4 pages)	
/JK/	47	"BlitzSafe Unveils the First DVD Interface," Automedia, February, 1999 (1 page)	
/JK/	48	"MBALP V.2A2 CD Changer Converter Mercedes Benz Model for 1997 and 1996," http://www.blitzsafe.com/blitz_news/pr02111996/body_pr02111996.html, June 11, 1996 (1 page)	
/JK/	49	"CD Changer Converter - Porsche Model Year 1996," http://www.blitzsafe.com/blitz_news/pr02071996/body_pr02071996.html, February 7, 1996 (1 page)	

Examiner Signature	/Jason Kurr/	Date Considered	05/18/2009

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Sheet 5 of 7

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/JK/	50	"CD Changer Converter - Mercedes Benz 1996 MY," http://www.blitzsafe.com/blitz_news/pr08231995/body_pr08231995.html, August 23, 1995 (1 page)	
/JK/	51	Copy of Office Action dated June 5, 2006, from co-pending Application Serial No.: 10/316,961 (40 pages)	
/JK/	52	Copy of Office Action dated November 14, 2006, from co-pending Application Serial No.: 10/316,961 (51 pages)	
/JK/	53	Copy of Office Action dated April 19, 2007, from co-pending Application Serial No.: 10/316,961 (69 pages)	
/JK/	54	Copy of Office Action dated July 12, 2007, from co-pending Application Serial No.: 10/316,961 (71 pages)	
/JK/	55	Copy of Office Action dated February 20, 2008, from co-pending Application Serial No.: 10/316,961 (52 pages)	
/JK/	56	Copy of Interview Summary dated April 9, 2008, from co-pending Application Serial No.: 10/316,961 (4 pages)	
/JK/	57	Copy of Interview Summary dated April 21, 2008, from co-pending Application Serial No.: 10/316,961 (4 pages)	
/JK/	58	Copy of Office Action dated August 8, 2006, from co-pending Application Serial No.: 10/732,909 (29 pages)	
/JK/	59	Copy of Interview Summary dated December 15, 2006, from co-pending Application Serial No.: 10/732,909 (3 pages)	

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/JK/	60	Copy of Interview Summary dated January 3, 2007, from co-pending Application Serial No.: 10/732,909 (3 pages)	
/JK/	61	Copy of Office Action dated April 20, 2007, from co-pending Application Serial No.: 10/732,909 (20 pages)	
/JK/	62	Copy of Office Action dated October 3, 2007, from co-pending Application Serial No.: 10/732,909 (28 pages)	
/JK/	63	Copy of Interview Summary dated October 26, 2007, from co-pending Application Serial No.: 10/732,909 (3 pages)	
/JK/	64	International Search Report of the International Searching Authority mailed May 12, 2004, issued in connection with International Patent Appln. No. PCT/US03/39493 (4 pages)	
/JK/	65	International Search Report of the International Searching Authority mailed Sept. 24, 2007, issued in connection with International Patent Appln. No. PCT/US06/008043 (4 pages)	
/JK/	66	Written Opinion of the International Searching Authority mailed Sept. 24, 2007, issued in connection with International Patent Appln. No. PCT/US06/008043 (5 pages)	
/JK/	67	International Preliminary Report on Patentability issued Oct. 16, 2007, issued in connection with International Patent Appln. No. PCT/US06/008043 (1 page)	
/JK/	68	Russian Official Action with translation, issued by the Patent Office of the Russian Federation on Dec. 24, 2007, in connection with Russian App. No. 2006101060 (21 pages)	
/JK/	69	Written Opinion, mailed by the Australian Patent Office on Aug. 28, 2007, in connection with Singapore App. No. 200601303-1 (6 pages)	

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/JK/	70	International Search Report of the International Searching Authority mailed September 25, 2008, issued in connection with International Patent Appln. No. PCT/US07/72182 (3 pages)	
/JK/	71	Written Opinion of the International Searching Authority mailed September 25, 2008, issued in connection with International Patent Appln. No. PCT/US07/72182 (7 pages)	
/JK/	72	Copy of Office Action dated July 9, 2008, from co-pending Application Serial No.: 10/732,909 (33 pages)	
/JK/	73	Notice of Allowance mailed July 31, 2008, issued in connection with co-pending Application Serial No. 10/316,961 (12 pages)	
/JK/	74	Notice of Allowance mailed December 29, 2008, issued in connection with co-pending Application Serial No. 10/316,961 (8 pages)	
/JK/	75	Copy of Office Action dated February 24, 2009, from co-pending Application Serial No. 10/732,909 (20 pages)	

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99879-00026	11/475,847
Applicant(s) Ira Marlowe	
Filing Date 06/27/2006	**Group Art Unit** 2618

U.S. PATENT DOCUMENTS

EXAMINER		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
/JK/	1	6,993,615	01/31/2006	Falcon	710	303	11/15/2002
/JK/	2	6,629,164	09/30/2003	Bhogal, et al.	711	111	11/03/2000
/JK/	3	6,653,948	11/25/2003	Kunimatsu, et al.	340	995.19	06/05/2000
/JK/	4	6,648,661	11/18/2003	Byrne, et al.	439	188	11/08/2002
/JK/	5	6,591,085	07/08/2003	Grady	455	42	07/17/2002

U.S. PATENT APPLICATION PUBLICATIONS

*EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
/JK/	6	US 2005/0239434 A1	10/27/2002	Marlowe	455	345	03/03/2005
/JK/	7	US 2004/0151327 A1	08/05/2004	Marlowe	381	86	12/10/2003
/JK/	8	US 2004/0091123 A1	05/13/2004	Stark, et al.	381	86	11/08/2002
/JK/	9	US 2003/0215102 A1	11/20/2003	Marlowe	381	77	12/11/2002

FOREIGN PATENT DOCUMENTS

	REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation YES	Translation NO

OTHER DOCUMENTS *(Including Author, Title, Date, Pertinent Pages, Etc.)*

/JK/	10	VoiceBox Technologies, printout from website http://www.voiceboxtechnologies.com/auto.php (2 pages).
/JK/	11	"Video: A Dashboard That is Really a PC," printout from website http://news.com.com/1606-2_3-6052333.html (3 pages).

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U.S. PATENT DOCUMENTS

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/JK/	12	6,396,164	05/28/2002	Barnea, et al.	307	10.1	10/20/1999
/JK/	13	6,389,332	05/14/2002	Hess, et al.	701	1	05/01/2000
/JK/	14	6,374,177	04/16/2002	Lee, et al.	701	200	09/20/2000
/JK/	15	6,346,917	02/12/2002	Fuchs, et al.	343	713	11/09/2000
/JK/	16	6,330,337	12/11/2001	Nicholson, et al.	381	86	01/19/2000

U.S. PATENT APPLICATION PUBLICATIONS

*EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
/JK/	17	US 2003/0086699 A1	05/08/2003	Benyamin, et al.	386	96	02/15/2002
/JK/	18	US 2003/0053638 A1	03/20/2003	Yasuhara	381	86	09/13/2002
/JK/	19	US 2003/0007649 A1	01/09/2003	Riggs	381	86	06/14/2002
/JK/	20	US 2002/0197954 A1	12/26/2002	Schmitt, et al.	455	41	12/31/2001

FOREIGN PATENT DOCUMENTS

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OTHER DOCUMENTS *(Including Author, Title, Date, Pertinent Pages, Etc.)*

/JK/	21	"Blitz Safe Offers XM Cables for Radios," printout from website http://www.twice.com/article/CA190041.html?text=blitz+safe (2 pages)
/JK/	22	"Integration Products May Impact Satellite Radio," printout from website http://www.twice.com/article/CA200541.html?text=blitz+safe (3 pages)

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U.S. PATENT DOCUMENTS

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/JK/	23	6,295,033	09/25/2001	Chatzipetros, et al.	343	713	05/25/1999
/JK/	24	6,278,697	08/21/2001	Brody, et al.	370	310	07/29/1997
/JK/	25	6,163,079	12/19/2000	Miyazaki, et al.	307	10.1	07/23/1998
/JK/	26	6,157,725	12/05/2000	Becker	381	86	12/10/1997
/JK/	27	6,058,319	05/02/2000	Sadler	455	569	03/05/1997

U.S. PATENT APPLICATION PUBLICATIONS

*EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
/JK/	28	US 2002/0180767 A1	12/05/2002	Northway, et al.	345	698	06/04/2001
/JK/	29	US 2002/0133610 A1	09/19/2002	Hadland	709	230	05/03/2002
/JK/	30	US 2002/0091863 A1	07/11/2002	Schug	709	250	10/19/2001
/JK/	31	US 2002/0085730 A1	07/04/2002	Holland	381	334	11/19/2001

FOREIGN PATENT DOCUMENTS

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/JK/	32	"OEM Integration Poised for Strong Growth," printout from website http://www.twice.com/article/CA200523.html?text=blitz+safe (3 pages)
/JK/	33	"Blitzsafe Overview," from Blitzsafe.com website-"The Worldwide Leader in Aftermarket Interfaces and OEM Engineering" (1 page).

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/JK/	34	6,052,603	04/18/2000	Kinzalow, et al.	455	557	09/18/1997
/JK/	35	6,005,488	12/21/1999	Symanov, et al.	340	825.56	12/03/1997
/JK/	36	5,794,164	08/11/1998	Beckert, et al.	701	1	11/29/1995
/JK/	37	5,410,675	04/25/1995	Shreve, et al.	395	500	09/17/1993
/JK/	38	5,339,362	08/16/1994	Harris	381	86	01/07/1992

U.S. PATENT APPLICATION PUBLICATIONS

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/JK/	39	US 2001/0044664 A1	11/22/2001	Mueller, et al.	700	94	03/23/2001

FOREIGN PATENT DOCUMENTS

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OTHER DOCUMENTS *(Including Author, Title, Date, Pertinent Pages, Etc.)*

/JK/	40	"Delphi XM SKYFI(TM) RADIO," product description from XM Satellite Radio website (2 pages).
/JK/	41	The New Delphi XM SKYFi Radio Add it to Any Car or Home Audio System, product description from www.xmradio.com (1 page).

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/JK/	42	4,943,978	07/24/1990	Rice	375	1	01/17/1989
/JK/	43	4,817,130	03/28/1989	Frimmel, Jr.	379	88	12/05/1986
/JK/	44	Re. 34,536	02/08/1994	Frimmel, Jr.	379	88	06/28/1990
/JK/	45	4,772,079	09/20/1988	Douglas, et al.	312	257	09/26/1986
/JK/	46	4,562,533	12/31/1985	Hodel, et al.	364	200	08/20/1984

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/JK/	47	Mobile Electronics: News, "Soundgate to Release New GM and BMW Interfaces," December 2, 2002, ME-Mag.com (1 page).
/JK/	48	"Welcome to Ventura Technology," from Venturatechnology.com (2 pages).

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/JK/	49	4,234,919	11/18/1980	Bruce, et al.	364	200	10/31/1978
/JK/	50	4,091,455	05/23/1978	Woods, et al.	364	200	12/20/1976
/JK/	51	4,068,104	01/10/1978	Werth, et al.	179	175.3	05/14/1976
/JK/	52	4,047,162	09/06/1977	Dorey, et al.	364	200	04/28/1975
/JK/	53	3,940,743	02/24/1976	Fitzgerald	340	172.5	11/05/1973

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/JK/	54	Ventura Technology product descriptions from www.venturatechnology.net (1 page).
/JK/	55	"Phatnoise Digital Media Players," product description from http:\www.phatnoise.com (2 pages).

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/JK/	56	"Automedia," magazine pages from June/July 1996 issue (2 pages).
/JK/	57	"Automedia," magazine pages from January 1998 issue (2 pages).
/JK/	58	"Automedia," magazine pages from February 1998 issue (2 pages).
/JK/	59	"Automedia," magazine pages from July 1998 issue (2 pages).
/JK/	60	"Automedia," magazine pages from September 1998 issue (2 pages).
/JK/	61	"Automedia," magazine pages from November 1998 issue (12 pages).
/JK/	62	"Automedia," magazine pages from February 1999 issue (2 pages).
/JK/	63	"Automedia," magazine pages from February 1999 issue (2 pages).
/JK/	64	"Car Stereo Review," magazine pages from June 1998 issue (5 pages).
/JK/	65	"Car Stereo Review," magazine pages from January 1999 issue (2 pages).
/JK/	66	"Car Stereo Review," magazine pages from April 1999 issue (3 pages).
/JK/	67	"Car Audio and Electronics," magazine pages from December 1998 issue (2 pages).

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	Filing Date 06/27/2006	Group Art Unit 2618

*EXAMINER INITIAL		OTHER DOCUMENTS *(Including Author, Title, Date, Pertinent Pages, Etc.)*
/JK/	68	"Car Audio and Electronics," magazine pages from April 1999 issue (2 pages).
/JK/	69	"Car Audio and Electronics," magazine pages from June 1999 issue (2 pages).
/JK/	70	"Carsound," magazine pages from May/June 1999 issue (3 pages).
/JK/	71	"Mobile Electronics Retailer," magazine pages from August 1997 issue (4 pages).
/JK/	72	"Mobile Electronics," magazine pages from July 1999 issue (7 pages).
/JK/	73	"Mobile Electronics," magazine pages from August 2000 issue (2 pages).
/JK/	74	"Cesmobile," magazine pages from January 1999 issue (3 pages).
/JK/	75	"The 12 Volt News," magazine pages from March 2002 issue (2 pages).
/JK/	76	"P.I.E. Millennium Price Guide Make the Precision Decision," Precision Interface Electronics, Inc. (6 pages).
/JK/	77	"PIE 1999 Price Guide," Precision Interface Electronics, Inc. (4 pages).
/JK/	78	"Design & Engineering Showcase Award," award presented to Precision Interface Electronics, Inc. for DPX Technology Digital Protocol Converter FRDN/PC-KNW, 2000 International CES (1 page).
/JK/	79	"Design & Engineering Showcase Award," award presented to Precision Interface Electronics, Inc. for DPX Technology Digital Protocol Converter GM9/PC-KNW, 2000 International CES (1 page).

EXAMINER	/Jason Kurr/	DATE CONSIDERED	05/18/2009

*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP Section 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

INFORMATION DISCLOSURE CITATION

(Use several sheets if necessary)

Docket Number (Optional)	Application Number
99879-00026	11/475,847
Applicant(s) Ira Marlowe	
Filing Date 06/27/2006	**Group Art Unit** 2618

*EXAMINER INITIAL		OTHER DOCUMENTS *(Including Author, Title, Date, Pertinent Pages, Etc.)*
/JK/	80	Invoice dated January 28, 1998 from Precision Interface Electronics, Inc. for "Ford FCU-Sanyo Protocol," and "Ford RCU Sanyo Protocol" (1 page).
/JK/	81	Invoice dated January 29, 1999 from Precision Interface Electronics, Inc. for "Ford NCU-Sanyo Protocol" (1 page).
/JK/	82	Invoice dated April 26, 1999 from Precision Interface Electronics, Inc. for "9 Pin GM-Kenwood Protocol," and "10 Pin GM-Kenwood Protocol" (1 page).
/JK/	83	Invoice dated April 27, 1999 from Precision Interface Electronics, Inc. for "9 Pin GM-Kenwood Protocol" (1 page).
/JK/	84	Invoice dated May 27, 1999 from Precision Interface Electronics, Inc. for "10 Pin GM-Kenwood Protocol," and "9 Pin GM-Kenwood Protocol" (1 page).
/JK/	85	Invoice dated March 20, 2000 from Precision Interface Electronics, Inc. for "98-2000 Pre-Wired VW 6 DIS" (1 page).
/JK/	86	Invoice dated March 20, 2000 from Precision Interface Electronics, Inc. for "98-2000 Pre-Wired VW 8 DIS," and "1998-2000 Audi to Pan 8 PC" (1 page).
/JK/	87	Invoice dated December 17, 2001 from Precision Interface Electronics, Inc. for "98-02 Ford/Lincoln/Mercury" (1 page).
/JK/	88	Invoice dated December 17, 2001 from Precision Interface Electronics, Inc. for "98-02 Ford/Lincoln/Mercury" (1 page).
/JK/	89	Invoice dated May 29, 2002 from Precision Interface Electronics, Inc. for "95-01 GMC/Chev/Pontiac AUX," and "98-02 Ford/Lincoln/Merc AU" (1 page).
/JK/	90	Toyota/Avox Interface Rev. Eng., Peripheral Model TIAS, created February 15, 1998 (1 page).
/JK/	91	GM/Kenwood Translator diagram, created February 4, 1999 (2 pages).

EXAMINER	/Jason Kurr/	DATE CONSIDERED	05/18/2009

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INFORMATION DISCLOSURE CITATION *(Use several sheets if necessary)*	Docket Number (Optional) 99879-00026	Application Number 11/475,847
	Applicant(s) Ira Marlowe	
	Filing Date 06/27/2006	Group Art Unit 2618

*EXAMINER INITIAL		OTHER DOCUMENTS *(Including Author, Title, Date, Pertinent Pages, Etc.)*
/JK/	92	Ford/Audiovox Translator diagram, created December 29, 1997 (2 pages).
/JK/	93	Component Side Silkscreen, created December 31, 1997 (2 pages).
/JK/	94	Component Xray, created February 4, 1992 (2 pages).
/JK/	95	"SoundGate, Ventura Announce Sophisticated OEM-Integration Interfaces," article from The 12 Volt News, December 2002 (1 page).
/JK/	96	"XMDirect Smart Digital Adapter," product description (3 pages).
/JK/	97	"Breaking Protocol A Look at BlitzSafe's New DMX Protocol Converter Technology," November 1998 printout from http://www.blitzsafe.com/blitz_news/news101998/body_news101998.html (2 pages).
/JK/	98	"PIE Virtual Catalog," printout from http://web.archive.org/web/19981205005802/http:/www.pie.net/sec12sbl.htm (2 pages).
/JK/	99	"The UniLink Project," printout from website (2 pages).
/JK/	100	"CD Changer Interfaces, "printout from http://web.archive.org/web/19991012021952/soundgate.com/cd-inter.html (1 page).
/JK/	101	"Digital Obsessions A Spotlight on Audio Gadgetry, ZDNet Music: The PhatNoise Car Audio System," printout from http://web.archive.org/web/20000815203327/music.zdnet.com/features/phatnoise (3 pages).
/JK/	102	"Bypassing and Switching With the CD4053 CMOS Analog MUX," printout from website (4 pages).
/JK/	103	"Device Profile: PhatNoise PhatBox Car MP3 Player," November 1, 2000, printout from http://techupdate.zdnet.com/techupdate/stories/main/0,14179,2649276,00.htm (4 pages).

EXAMINER	/Jason Kurr/	DATE CONSIDERED	05/18/2009

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(Use several sheets if necessary)

Docket Number (Optional)	Application Number
99879-00026	11/475,847
Applicant(s) Ira Marlowe	
Filing Date 06/27/2006	**Group Art Unit** 2618

*EXAMINER INITIAL		OTHER DOCUMENTS *(Including Author, Title, Date, Pertinent Pages, Etc.)*
/JK/	104	"The EZ Protoboard," printout from http://web.archive.org/web/20010613095105/http:/www.ajusd.org/~edward/ezproto (2 pages).
/JK/	105	"TDIClub Forums: Reverse Engineering CD Changer Progress,," April 3, 2001, printout from website (3 pages).
/JK/	106	"TDIClub Forums: Reverse Engineering CD Changer Progress Reports,," April 5, 2001, printout from website (8 pages).
/JK/	107	"Multi Technology Equipment - Home of the Neo MP3 Player," printout from http://web.archive.org/web/20010413222617/ssiamerica.com/products/neo35/ (1 page).
/JK/	108	"TDIClub Forums: Reverse Engineering CD Changer Protocol Update," April 18, 2001, printout from website (3 pages).
/JK/	109	"The Car CD Changer Interface Page," printout from website (10 pages).
/JK/	110	"SourceForge.net: Project Info - GNUlink," printout from http://sourceforge.net/projects/gnunilink/ (3 pages).
/JK/	111	"EZ Protoboard News," printout from website (3 pages).
/JK/	112	"GNUnilink - For All Your AUX-IN Needs..., "printout from http://gnunilink.sourceforge.net/ (4 pages).
/JK/	113	"VWCDPIC News, "printout from http://web.archive.org/web/20020701101541/http:/www.ajusd.org/~edward/vwcdpic/ (8 pages).
/JK/	114	"VWCDPIC News, "printout from http://web.archive.org/web/20021009014959/http:/www.ajusd.org/~edward/vwcdpic/ (10 pages).
/JK/	115	"Neo Car Jukebox MP3 Player," printout from website (3 pages).

EXAMINER	/Jason Kurr/	DATE CONSIDERED	05/18/2009

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(Use several sheets if necessary)

Docket Number (Optional)	Application Number
99879-00026	11/475,847
Applicant(s) Ira Marlowe	
Filing Date 06/27/2006	**Group Art Unit** 2618

*EXAMINER INITIAL		OTHER DOCUMENTS *(Including Author, Title, Date, Pertinent Pages, Etc.)*
/JK/	116	"Mobile Electronic E-Newsletter" dated January 13, 2005 (4 pages)
/JK/	117	"Axxess Introduces Two iPod Integration Units" product description dated January 19, 2005 (1 page).
/JK/	118	"Even More iPod Adapters On the Way," printout from twice.com website (2 pages).
/JK/	119	"Alpine Showing First MOST-Ready Product," printout from twice.com website (2 pages).
/JK/	120	"Bluetooth Gradually Enters Car Audio," prinout from twice.com website (2 pages).

EXAMINER	DATE CONSIDERED
/Jason Kurr/	05/18/2009

*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP Section 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Customer No. 27614
Confirmation No. 9001

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Examiner: Kurr, Jason R.

Art Unit: 2614

Re: Our file: 99879-00026
Applicant: Ira Marlowe
Serial No.: 11/475,847
Filed: 06/27/2006
For: Multimedia Device Integration System

Sir:

Enclosed for filing in the United States Patent and Trademark Office is the following:

1. Request for Refund (with attachment) (2 pages)
2. Transmittal Sheet (1 page)

CONDITIONAL PETITION

If any extension of time is required for the submission of the above-identified items, Applicant requests that this be considered a petition therefor. Please charge any additional charges or any other charges relating to this matter, or credit any overpayment, to the Deposit Account of the writer, **Account No. 503571.**

7/15/09

Respectfully submitted,

Michael R. Friscia
Registration No. 33,884
McCarter & English, LLP
Four Gateway Center
100 Mulberry Street
Newark, NJ 07102
Tel: (973) 639-8493
Fax: (973) 297-6627

CERTIFICATE OF ELECTRONIC FILING

I hereby certify that this correspondence is being electronically filed with the United States Patent and Trademark Office (via EFS-Web) on July 16, 2009.

Anne J. Erbetta

ME1 8776763v.1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Ira Marlowe	:	Customer No. 27614 Conf. No. 9001
Serial No.:	11/475,847	:	
Filed:	06/27/2006	:	Examiner: Kurr, Jason R. Art Unit: 2614
Title:	Multimedia Device Integration System	:	

_____ X

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

REQUEST FOR REFUND

Sir:

We have received and reviewed our March 2009 Statement of Deposit Account for Account No. 503571, and are requesting a refund in the amount of $1,175.00 with regard to the above-referenced application. A copy of the Deposit Account Statement is attached hereto. According to the fee code (2255) noted on the Statement, we were charged twice for the five-month Extension Petition fee submitted with our response to the Restriction Requirement which was electronically filed on March 9, 2009 .

Accordingly, it is hereby requested that Deposit Account No. **503571** be credited $1,175.00 for the duplicate charge.

Respectfully submitted,

Date: 7/15/09

Michael R. Friscia
Registration No. 33,884
McCarter & English, LLP
Four Gateway Center
100 Mulberry Street
Newark, NJ 07102
Tel: (973) 639-8493
Fax: (973) 297-6627

United States Patent and Trademark Office

Return To: USPTO Home Page

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Deposit Account Statement

Requested Statement Month:	March 2009
Deposit Account Number:	503571
Name:	MCCARTER & ENGLISH, LLP
Attention:	MARY MCDONALD
Street Address 1:	FOUR GATEWAY CENTER
Street Address 2:	100 MULBERRY STREET
City:	NEWARK
State:	NJ
Zip:	07102
Country:	UNITED STATES

DATE	SEQ	POSTING REF TXT	ATTORNEY DOCKET NBR	FEE CODE	AMT	BAL
03/02	8580	12395393	117272-00001	4011	$82.00	$36,535.00
03/02	8581	12395393	117272-00001	2111	$270.00	$36,265.00
03/02	8583	12395393	117272-00001	2311	$110.00	$36,155.00
03/02	8584	12395393	117272-00001	2202	$52.00	$36,103.00
03/02	8585	12395393	117272-00001	2201	$110.00	$35,993.00
03/03	10117	10526347	97086-00057	1252	$490.00	$35,503.00
03/03	14348	11541396	99885-00042	2801	$405.00	$35,098.00
03/03	15792	10915862	116236-00002	1811	$100.00	$34,998.00
03/04	10372	6951464	99868-00002	2551	$490.00	$34,508.00
03/05	4116	11633142	116236-00004	1806	$180.00	$34,328.00
03/05	10906	5671769	96964-00289 AXE	1553	$4,110.00	$30,218.00
03/06	14558	6286350	96979-00032 AXE	2552	$1,240.00	$28,978.00
~~03/06~~	~~14696~~	~~10978284~~	~~J&J-2041-CIP2~~	~~1801~~	~~$810.00~~	~~$28,168.00~~
✓03/10	2474	11267039	99843-00011	2253	$555.00	$27,613.00
✓03/10	2475	11267039	99843-00011	2801	$405.00	$27,208.00
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✓03/10	5270	11475847	99879-00026	2255	$1,175.00	$24,858.00
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✓03/11	11030	12191743	114905-00002	1051	$130.00	$23,383.00
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✓03/16	4993	PCT/US09/37147	116490-00001PCT	1602	3530	$2,080.00	$17,001.00
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✓03/17	2201	12404733	116993-00003	4011		$82.00	$14,819.00
✓03/17	2202	12404733	116993-00003	2111	462	$270.00	$14,549.00
✓03/17	2203	12404733	116993-00003	2311		$110.00	$14,439.00

START BALANCE	SUM OF CHARGES	SUM OF REPLENISH	END BALANCE
$36,617.00	$22,178.00	$.00	$14,439.00

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Electronic Acknowledgement Receipt

EFS ID:	5714689
Application Number:	11475847
International Application Number:	
Confirmation Number:	9001
Title of Invention:	Multimedia device integration system
First Named Inventor/Applicant Name:	Ira Marlowe
Customer Number:	27614
Filer:	Michael R. Friscia/Anne Erbetta
Filer Authorized By:	Michael R. Friscia
Attorney Docket Number:	99879-00026
Receipt Date:	16-JUL-2009
Filing Date:	27-JUN-2006
Time Stamp:	14:11:53
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Miscellaneous Incoming Letter	TransmittalLtrReqforRefund.pdf	33233 079da2f4cb8668d13adcca1e1eeed0f635be1765	no	1
Warnings:					
Information:					

2	Refund Request	RequestforRefund.pdf	137489 a573e1c48985152779 1f625f097099ceae4c2241	no	3

Warnings:	
Information:	
Total Files Size (in bytes):	170722

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

FACSIMILE TRANSMISSION

McCARTER &ENGLISH
ATTORNEYS AT LAW

SEND FAX TO:	COMPANY:	FAX NO:	PHONE NO:
Refund Section	Office of Finance USPTO	1-571-273-6500	

FROM:	EMAIL:	FAX NO:	PHONE NO:
Anne J. Erbetta	aerbetta@mccarter.com	973-624-7070	973-848-5327

October 14, 2009

Total number of pages including cover: 5 Client/Matter: **99879-00026**

Call, If Problems:

McCarter & English, LLP
Four Gateway Center
100 Mulberry Street
Newark, NJ 07102
T. 973.622.4444
F. 973.624.7070
www.mccarter.com

Gentlemen:

Attached please find a Request for Refund and enclosures which was sent on July 15, 2009, for which we have not yet received the requested refund.

Regards,

Anne J. Erbetta
Patent Docket Clerk
McCarter & English
100 Mulberry Street
Gateway Four
Newark, NJ 07102
Telephone: (973) 848-5327
Facsimile: (973) 624-7070

ME1 9202881v.1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Customer No. 27614
Confirmation No. 9001

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Examiner: Kurr, Jason R.

Art Unit: 2614

Re: Our file: 99879-00026
Applicant: Ira Marlowe
Serial No.: 11/475,847
Filed: 06/27/2006
For: Multimedia Device Integration System

Sir:

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2. Transmittal Sheet (1 page)

CONDITIONAL PETITION

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Respectfully submitted,

7/15/09

Michael R. Fiscia
Registration No. 33,884
McCarter & English, LLP
Four Gateway Center
100 Mulberry Street
Newark, NJ 07102
Tel: (973) 639-8493
Fax: (973) 297-6627

CERTIFICATE OF ELECTRONIC FILING

I hereby certify that this correspondence is being electronically filed with the United States Patent and Trademark Office (via EFS-Web) on July 14, 2009.

Anne J. Erbetta

MEI 877763v.1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Ira Marlowe	:	Customer No. 27614 Conf. No. 9001
Serial No.:	11/475,847	:	
Filed:	06/27/2006	:	Examiner: Kurr, Jason R. Art Unit: 2614
Title:	Multimedia Device Integration System	:	

x

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

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Respectfully submitted,

Date: 7/15/09

Michael R. Friscia
Registration No. 33,884
McCarter & English, LLP
Four Gateway Center
100 Mulberry Street
Newark, NJ 07102
Tel: (973) 639-8493
Fax: (973) 297-6627

ME1 8776502v.1

2255

United States Patent and Trademark Office

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Deposit Account Statement

Requested Statement Month:	March 2009
Deposit Account Number:	603571
Name:	MCCARTER & ENGLISH, LLP
Attention:	MARY MCDONALD
Street Address 1:	FOUR GATEWAY CENTER
Street Address 2:	100 MULBERRY STREET
City:	NEWARK
State:	NJ
Zip:	07102
Country:	UNITED STATES

DATE	SEQ	POSTING REF TXT	ATTORNEY DOCKET NBR	FEE CODE	AMT	BAL
03/02	8580	12395393	117272-00001	4011	$82.00	$36,535.00
03/02	8581	12395393	117272-00001	2111	$270.00	$36,265.00
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~~03/06~~	~~14696~~	~~10976264~~	~~J&J-2041-DIP2~~	~~1801~~	~~$810.00~~	~~$28,168.00~~
✓03/10	2474	11267039	99843-00011	2253	$555.00	$27,613.00
✓03/10	2475	11267039	99843-00011	2801	$405.00	$27,208.00
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✓03/10	11804	12191743	114905-00002	8021	$40.00	$24,818.00
✓03/10	15490	11077680	ETH-1646 (CONT)	1251	$130.00	$24,688.00
✓03/11	1330	11805799	99879-00027	2255	$1,175.00	$23,513.00
✓03/11	11030	12191743	114905-00002	1051	$130.00	$23,383.00
✓03/11	11031	12191743	114905-00002	1255	$2,350.00	$21,033.00
✓03/11	11413	29324616	[illegible]	8007	$40.00	$20,993.00
✓03/12	2399	10592569	97086-00075	1253	$1,110.00	$19,883.00
✓03/13	506	10316981	[illegible]	1811	$100.00	$19,783.00
✓03/13	14046	12403653	116490-00001	4011	$82.00	$19,701.00

Deposit Account Statement

✓03/13	14047	12403853	116490-00001	2111	$270.00	$19,431.00
✓03/13	14048	12403853	116490-00001	2311	$110.00	$19,321.00
✓03/16	4992	PCT/US09/37147	116490-00001PCT	1601	$240.00	$19,081.00
✓03/16	4993	PCT/US09/37147	116490-00001PCT	1602	$2,080.00	$17,001.00
✓03/16	4994	PCT/US09/37147	116490-00001PCT	1702	$1,210.00	$15,791.00
✓03/16	10932	29302023	96964-01115	1502	$860.00	$14,931.00
✓03/16	10933	29302023	96964-01115	8001	$30.00	$14,901.00
✓03/17	2201	12404733	116993-00003	4011	$82.00	$14,819.00
✓03/17	2202	12404733	116993-00003	2111	$270.00	$14,549.00
✓03/17	2203	12404733	116993-00003	2311	$110.00	$14,439.00

START BALANCE	SUM OF CHARGES	SUM OF REPLENISH	END BALANCE
$36,617.00	$22,178.00	$.00	$14,439.00

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Electronic Patent Application Fee Transmittal

Application Number:	11475847
Filing Date:	27-Jun-2006
Adjustment date: 10/22/2009 SDIRETA1 03710/2009 INTEFSW 00002784 503571 11475847 01 FC:2255 1175.00 CR **Title of Invention:**	Multimedia device integration system
First Named Inventor/Applicant Name:	Ira Marlowe
Filer:	Mark E. Nikolsky
Attorney Docket Number:	99879-00026

Filed as Small Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Extension - 5 months with $0 paid	2255	1	1175	1175

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Ira Marlowe

Serial No.: 11/475,847

Filed: 06/27/2006

Title: Multimedia Device Integration System

Examiner: Kurr, Jason R.

Art Unit: 2614

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE

Sir:

This is a response to the outstanding Office Action mailed May 28, 2009. The time period for response is extendible to and including November 30, 2009 (November 28, 2009 being a Saturday).

Amendments to the Claims begin on page 2 of this response.

Remarks begin on page 31 of this response.

AMENDMENTS TO THE CLAIMS

1-91. (Cancelled)

92. (New) A multimedia device integration system, comprising:

an integration subsystem in communication with a portable device, the portable device external to a car audio/video system; and

a first wireless interface in communication with said integration subsystem, said first wireless interface establishing a wireless communication link with a second wireless interface in communication with the car audio/video system,

wherein said integration subsystem obtains information about an audio file stored on the portable device, transmits the information over said wireless communication link to the car audio/video system for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the audio or video file in response to a user selecting the audio file using controls of the car audio/video system, and transmits audio generated by the portable device over said wireless communication link to the car audio/video system for playing on the car audio/video system.

93. (New) The system of claim 92, wherein said integration subsystem is positioned within the portable device.

94. (New) The system of claim 93, wherein said first wireless interface is positioned within the portable device.

95. (New) The system of claim 94, wherein said second wireless interface is positioned within the car audio/video system.

96. (New) The system of claim 91, wherein said integration subsystem receives, over said wireless communication link, a control command issued at the car audio/video system in a format incompatible with the portable device, processes the control command into a formatted command compatible with the portable device, and dispatches the processed control command to the portable device for execution thereby.

97. (New) The system of claim 92, wherein said integration subsystem receives data generated by the portable device in a format incompatible with the car audio/video system, processes the data into formatted data compatible with the car audio/video system, and transmits the processed data to the car audio/video system over the wireless communication link for subsequent display of the processed data on a display of the car audio/video system.

98. (New) The system of claim 92, wherein said integration subsystem further comprises a voice recognition subsystem for receiving and processing spoken control commands issued by a user.

99. (New) The system of claim 98, wherein said integration subsystem instructs said portable device to play a desired file in response to a spoken command processed by the voice recognition subsystem.

100. (New) The system of claim 92, wherein said integration subsystem further comprises a speech synthesizer for generating synthesized speech corresponding to data generated by the portable device.

101. (New) The system of claim 100, wherein said integration subsystem transmits the synthesized speech to the car audio/video system over said wireless communication link for subsequent playing of the synthesized speech by the car audio/video system.

102. (New) The system of claim 92, wherein said integration subsystem generates a device presence signal and transmits the device presence signal to the car audio/video system over said wireless communications link to maintain the car audio/video system in a state responsive to the portable device.

103. (New) The system of claim 92, wherein the portable device comprises a portable receiver.

104. (New) The system of claim 103, wherein the portable receiver comprises a digital audio broadcast (DAB) receiver, a high-definition (HD) radio receiver, or a satellite receiver.

105. (New) The system of claim 92, wherein the portable device comprises a portable digital media player.

106. (New) The system of claim 105, wherein the portable digital media player comprises a video device, a portable media center, a portable media player, an MP3 player, an MP4 player, a WMV player, an Apple iPod, or an Apple video iPod.

107. (New) The system of claim 92, wherein the portable device comprises a cellular telephone.

108. (New) The system of claim 92, further comprising a non-wireless connection established between the car audio/video system and the portable device.

109. (New) The system of claim 92, wherein said integration subsystem transmits, over said wireless communication link, information about a video file stored on the portable device to the car audio/video system for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the video file in response to a user selecting the video file using controls of the car audio/video system, and transmits video generated by the portable device over said wireless communication link to the car audio/video system for playing on the car audio/video system.

110. (New) The system of claim 109, wherein the video file comprises a movie stored on the portable device.

111. (New) The system of Claim 109, wherein the video file comprises a picture stored on the portable device.

112. (New) The system of claim 109, wherein the video file comprises a video clip stored on the portable device.

113. (New) The system of claim 109, wherein said integration subsystem receives video generated by the portable device in a first format incompatible with the car audio/video system, processes the video into processed video in a second format compatible with the car audio/video system, and transmits the processed video over the wireless communication link to the car audio/video system for subsequent display of the processed video on a display of the car audio/video system.

114. (New) The system of claim 92, wherein the audio file comprises a song stored on the portable device.

115. (New) The system of claim 92, wherein the portable device is connected to the Internet, and said integration device processes information generated by the portable device and transmits processed information to the car audio/video system so that the display of the car audio/video system operates as an Internet browser.

116. (New) A multimedia device integration system, comprising:

an integration subsystem in communication with a portable device, the portable device external to a car audio/video system; and

a first wireless interface in communication with said integration subsystem, said first wireless interface establishing a wireless communication link with a second wireless interface in communication with the car audio/video system,

wherein said integration subsystem obtains information about an audio file received by the portable device, transmits the information over said wireless communication link to the car audio/video system for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the audio or video file in response to a user selecting the audio file using controls of the car audio/video system, and transmits audio generated by the portable device over said wireless communication link to the car audio/video system for playing on the car audio/video system.

117. (New) The system of claim 116, wherein said integration subsystem is positioned within the portable device.

118. (New) The system of claim 117, wherein said first wireless interface is positioned within the portable device.

119. (New) The system of claim 118, wherein said second wireless interface is positioned within the car audio/video system.

120. (New) The system of claim 116, wherein said integration subsystem receives a control command issued at the car audio/video system in a format incompatible with the portable device, processes the control command into a formatted command compatible with the portable device, and dispatches the processed control command to the portable device for execution thereby.

121. (New) The system of claim 116, wherein said integration subsystem receives data generated by the portable device in a format incompatible with the car audio/video system, processes the data into formatted data compatible with the car audio/video system, and transmits the processed data to the car audio/video system over the wireless communication link for subsequent display of the processed data on a display of the car audio/video system.

122. (New) The system of claim 116, wherein said integration subsystem further comprises a voice recognition subsystem for receiving and processing spoken control commands issued by a user.

123. (New) The system of claim 122, wherein said integration subsystem instructs said portable device to play a desired file in response to a spoken command processed by the voice recognition subsystem.

124. (New) The system of claim 116, wherein said integration subsystem further comprises a speech synthesizer for generating synthesized speech corresponding to data generated by the portable device.

125. (New) The system of claim 124, wherein said integration subsystem transmits the synthesized speech to the car audio/video system over said wireless communication link for subsequent playing of the synthesized speech by the car audio/video system.

126. (New) The system of claim 116, wherein said integration subsystem generates a device presence signal and transmits the device presence signal to the car audio/video system over said wireless communications link to maintain the car audio/video system in a state responsive to the portable device.

127. (New) The system of claim 116, wherein the portable device comprises a portable receiver.

128. (New) The system of claim 127, wherein the portable receiver comprises a digital audio broadcast (DAB) receiver, a high-definition (HD) radio receiver, or a satellite receiver.

129. (New) The system of claim 116, wherein the portable device comprises a portable digital media player.

130. (New) The system of claim 129, wherein the portable digital media player comprises a video device, a portable media center, a portable media player, an MP3 player, an MP4 player, a WMV player, an Apple iPod, or an Apple video iPod.

131. (New) The system of claim 116, wherein the portable device comprises a cellular telephone.

132. (New) The system of claim 116, further comprising a non-wireless connection established between the car audio/video system and the portable device.

133. (New) The system of claim 116, wherein said integration subsystem transmits, over said wireless communication link, information about a video file received by the portable device to the car audio/video system for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the video file in response to a user selecting the video file using controls of the car audio/video system, and transmits video generated by the portable device over said wireless communication link to the car audio/video system for playing on the car audio/video system.

134. (New) The system of claim 133, wherein the video file comprises a streaming movie received by the portable device.

135. (New) The system of Claim 133, wherein the video file comprises a picture received by the portable device.

136. (New) The system of claim 133, wherein the video file comprises a streaming video clip received by the portable device.

137. (New) The system of claim 116, wherein said integration subsystem receives video generated by the portable device in a first format incompatible with the car audio/video system, processes the video into processed video in a second format compatible with the car audio/video system, and transmits the processed video over the wireless communication link to the car audio/video system for subsequent display of the processed video on a display of the car audio/video system.

138. (New) The system of claim 116, wherein the audio file comprises a song received by the portable device.

139. (New) The system of claim 116, wherein the portable device is connected to the Internet, and said integration device processes information generated by the portable device and transmits processed information to the car audio/video system so that the display of the car audio/video system operates as an Internet browser.

140. (New) A multimedia device integration system, comprising:

an integration subsystem in communication with a car audio/video system; and

a first wireless interface in communication with said integration subsystem, said first wireless interface establishing a wireless communication link with a second wireless interface in communication with a portable device external to the car audio/video system,

wherein said integration subsystem obtains, using said wireless communication link, information about an audio file stored on the portable device, transmits the information to the car audio/video system for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the audio or video file in response to a user selecting the audio file using controls of the car audio/video system, and receives audio generated by the portable device over said wireless communication link for playing on the car audio/video system.

141. (New) The system of claim 140, wherein said integration subsystem is positioned within the car audio/video system.

142. (New) The system of claim 141, wherein said first wireless interface is positioned within the car audio/video system.

143. (New) The system of claim 142, wherein said second wireless interface is positioned within the portable device.

144. (New) The system of claim 140, wherein said integration subsystem receives a control command issued at the car audio/video system in a format incompatible with the portable device, processes the control command into a formatted command compatible with the portable device, and dispatches the processed control command to the portable device for execution thereby.

145. (New) The system of claim 140, wherein said integration subsystem receives data generated by the portable device in a format incompatible with the car audio/video system, processes the data into formatted data compatible with the car audio/video system, and transmits the processed data to the car audio/video system for subsequent display of the processed data on a display of the car audio/video system.

146. (New) The system of claim 140, wherein said integration subsystem further comprises a voice recognition subsystem for receiving and processing spoken control commands issued by a user.

147. (New) The system of claim 150, wherein said integration subsystem instructs said portable device to play a desired file in response to a spoken command processed by the voice recognition subsystem.

148. (New) The system of claim 140, wherein said integration subsystem further comprises a speech synthesizer for generating synthesized speech corresponding to data generated by the portable device.

149. (New) The system of claim 148, wherein said integration subsystem transmits the synthesized speech to the car audio/video system for subsequent playing of the synthesized speech by the car audio/video system.

150. (New) The system of claim 140, wherein said integration subsystem generates a device presence signal and transmits the device presence signal to the car audio/video system to maintain the car audio/video system in a state responsive to the portable device.

151. (New) The system of claim 140, wherein the portable device comprises a portable receiver.

152. (New) The system of claim 151, wherein the portable receiver comprises a digital audio broadcast (DAB) receiver, a high-definition (HD) radio receiver, or a satellite receiver.

153. (New) The system of claim 140, wherein the portable device comprises a portable digital media player.

154. (New) The system of claim 153, wherein the portable digital media player comprises a video device, a portable media center, a portable media player, an MP3 player, an MP4 player, a WMV player, an Apple iPod, or an Apple video iPod.

155. (New) The system of claim 140, wherein the portable device comprises a cellular telephone.

156. (New) The system of claim 140, further comprising a non-wireless connection established between the car audio/video system and the portable device.

157. (New) The system of claim 140, wherein said integration subsystem obtains, using said wireless communication link, information about a video file stored on the portable device for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the video file in response to a user selecting the video file using controls of the car audio/video system, and receives video generated by the portable device over said wireless communication link for playing on the car audio/video system.

158. (New) The system of claim 157, wherein the video file comprises a movie stored on the portable device.

159. (New) The system of Claim 157, wherein the video file comprises a picture stored on the portable device.

160. (New) The system of claim 157, wherein the video file comprises a video clip stored on the portable device.

161. (New) The system of claim 157, wherein said integration subsystem receives video generated by the portable device in a first format incompatible with the car audio/video system, processes the video into processed video in a second format compatible with the car audio/video system, and transmits the processed video to the car audio/video system for subsequent display of the processed video on a display of the car audio/video system.

162. (New) The system of claim 140, wherein the audio file comprises a song stored on the portable device.

163. (New) The system of claim 140, wherein the portable device is connected to the Internet, and said integration device processes information generated by the portable device and transmits processed information to the car audio/video system so that the display of the car audio/video system operates as an Internet browser.

164. (New) A multimedia device integration system, comprising:

an integration subsystem in communication with a car audio/video system; and

a first wireless interface in communication with said integration subsystem, said first wireless interface establishing a wireless communication link with a second wireless interface in communication with a portable device external to the car audio/video system,

wherein said integration subsystem obtains, using said wireless communication link, information about an audio file received by the portable device, transmits the information to the car audio/video system for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the audio or video file in response to a user selecting the audio file using controls of the car audio/video system, and receives audio generated by the portable device over said wireless communication link for playing on the car audio/video system.

165. (New) The system of claim 164, wherein said integration subsystem is positioned within the car audio/video system.

166. (New) The system of claim 165, wherein said first wireless interface is positioned within the car audio/video system.

167. (New) The system of claim 166, wherein said second wireless interface is positioned within the portable device.

168. (New) The system of claim 164, wherein said integration subsystem receives a control command issued at the car audio/video system in a format incompatible with the portable device, processes the control command into a formatted command compatible with the portable device, and dispatches the processed control command to the portable device for execution thereby.

169. (New) The system of claim 164, wherein said integration subsystem receives data generated by the portable device in a format incompatible with the car audio/video system, processes the data into formatted data compatible with the car audio/video system, and transmits the processed data to the car audio/video system for subsequent display of the processed data on a display of the car audio/video system.

170. (New) The system of claim 164, wherein said integration subsystem further comprises a voice recognition subsystem for receiving and processing spoken control commands issued by a user.

171. (New) The system of claim 170, wherein said integration subsystem instructs said portable device to play a desired file in response to a spoken command processed by the voice recognition subsystem.

172. (New) The system of claim 164, wherein said integration subsystem further comprises a speech synthesizer for generating synthesized speech corresponding to data generated by the portable device.

173. (New) The system of claim 172, wherein said integration subsystem transmits the synthesized speech to the car audio/video system for subsequent playing of the synthesized speech by the car audio/video system.

174. (New) The system of claim 164, wherein said integration subsystem generates a device presence signal and transmits the device presence signal to the car audio/video system to maintain the car audio/video system in a state responsive to the portable device.

175. (New) The system of claim 164, wherein the portable device comprises a portable receiver.

176. (New) The system of claim 175, wherein the portable receiver comprises a digital audio broadcast (DAB) receiver, a high-definition (HD) radio receiver, or a satellite receiver.

177. (New) The system of claim 164, wherein the portable device comprises a portable digital media player.

178. (New) The system of claim 177, wherein the portable digital media player comprises a video device, a portable media center, a portable media player, an MP3 player, an MP4 player, a WMV player, an Apple iPod, or an Apple video iPod.

179. (New) The system of claim 164, wherein the portable device comprises a cellular telephone.

180. (New) The system of claim 164, further comprising a non-wireless connection established between the car audio/video system and the portable device.

181. (New) The system of claim 164, wherein said integration subsystem obtains, over said wireless communication link, information about a video file received by the portable device for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the video file in response to a user selecting the video file using controls of the car audio/video system, and receives video generated by the portable device over said wireless communication link for playing on the car audio/video system.

182. (New) The system of claim 180, wherein the video file comprises a streaming movie received by the portable device.

183. (New) The system of Claim 180, wherein the video file comprises a picture received by the portable device.

184. (New) The system of claim 180, wherein the video file comprises a streaming video clip received by the portable device.

185. (New) The system of claim 180, wherein said integration subsystem receives video generated by the portable device in a first format incompatible with the car audio/video system, processes the video into processed video in a second format compatible with the car audio/video system, and transmits the processed video to the car audio/video system for subsequent display of the processed video on a display of the car audio/video system.

186. (New) The system of claim 164, wherein the audio file comprises a song stored on the portable device.

187. (New) The system of claim 164, wherein the portable device is connected to the Internet, and said integration device processes information generated by the portable device and transmits processed information to the car audio/video system so that the display of the car audio/video system operates as an Internet browser.

188. (New) A multimedia device integration system, comprising:

first and second wireless interfaces establishing a wireless communication link between a car audio/video system and a portable device external to the car audio/video system; and

an integration subsystem in communication with said wireless communication link,

wherein said integration subsystem channels audio generated by the portable device to the car audio/video system using the wireless communication link for subsequent playing of the audio on the car audio/video system, the audio corresponding to an audio file played by the portable device.

189. (New) The system of claim 188, wherein said integration subsystem is positioned within the portable device.

190. (New) The system of claim 188, wherein said integration subsystem is positioned within the car audio/video system.

191. (New) The system of claim 188, where the audio file is stored on the portable device.

192. (New) The system of claim 188, wherein the audio file is received by the portable device.

193. (New) The system of claim 188, wherein said integration subsystem receives a control command issued at the car audio/video system in a format incompatible with the portable device, processes the control command into a formatted command compatible with the portable device, and dispatches the processed control command to the portable device for execution thereby.

194. (New) The system of claim 188, wherein said integration subsystem receives data generated by the portable device in a format incompatible with the car audio/video system, processes the data into formatted data compatible with the car audio/video system, and transmits the processed data to the car audio/video system for subsequent display of the processed data on a display of the car audio/video system.

195. (New) The system of claim 188, wherein said integration subsystem further comprises a voice recognition subsystem for receiving and processing spoken control commands issued by a user.

196. (New) The system of claim 195, wherein said integration subsystem instructs said portable device to play a desired file in response to a spoken command processed by the voice recognition subsystem.

197. (New) The system of claim 188, wherein said integration subsystem further comprises a speech synthesizer for generating synthesized speech corresponding to data generated by the portable device.

198. (New) The system of claim 197, wherein said integration subsystem transmits the synthesized speech to the car audio/video system for subsequent playing of the synthesized speech by the car audio/video system.

199. (New) The system of claim 188, wherein said integration subsystem generates a device presence signal and transmits the device presence signal to the car audio/video system to maintain the car audio/video system in a state responsive to the portable device.

200. (New) The system of claim 188, wherein the portable device comprises a portable receiver.

201. (New) The system of claim 200, wherein the portable receiver comprises a digital audio broadcast (DAB) receiver, a high-definition (HD) radio receiver, or a satellite receiver.

202. (New) The system of claim 188, wherein the portable device comprises a portable digital media player.

203. (New) The system of claim 202, wherein the portable digital media player comprises a video device, a portable media center, a portable media player, an MP3 player, an MP4 player, a WMV player, an Apple iPod, or an Apple video iPod.

204. (New) The system of claim 188, wherein the portable device comprises a cellular telephone.

205. (New) The system of claim 188, further comprising a non-wireless connection established between the car audio/video system and the portable device.

206. (New) The system of claim 188, wherein said integration subsystem channels video generated by the portable device to the car audio/video system over the wireless communication link for subsequent playing of the audio on the car audio/video system, the video corresponding to a video file played by the portable device.

207. (New) The system of claim 206, wherein the video file comprises a movie stored on the portable device.

208. (New) The system of Claim 206, wherein the video file comprises a picture stored on the portable device.

209. (New) The system of claim 206, wherein the video file comprises a video clip stored on the portable device.

210. (New) The system of claim 206, wherein the video file comprises streaming video received by the portable device.

211. (New) The system of claim 206, wherein the video file comprises a navigation map generated by the portable device.

212. (New) The system of claim 206, wherein said integration subsystem receives video generated by the portable device in a first format incompatible with the car audio/video system, processes the video into processed video in a second format compatible with the car audio/video system, and transmits the processed video to the car audio/video system for subsequent display of the processed video on a display of the car audio/video system.

REMARKS

Attorney for Applicant has carefully reviewed the outstanding Office Action on the above-identified application. Applicant has amended the application, as set forth herein, and respectfully submits that the application, as amended, is in condition for allowance.

Applicant has cancelled claims 1-91 and added new claims 92-212 to overcome the rejections raised in the Office Action and to further define the present invention. New claims 92-212 are directed to a multimedia device integration system which allows for wireless integration of a portable device with a car audio/video system. For the reasons set forth below, Applicant respectfully submits that new claims 92-212 are patentable over U.S. Patent No. 6,539,358 to Coon et al. and U.S. Patent Application Publication No. 2002/0009978 to Dukach, et al., taken alone or in combination.

Applicant's claimed invention relates to a multimedia device integration system for wirelessly integrating a portable device with a car audio/video system. First and second wireless interfaces are provided, which establish a wireless communication link between the portable device and the car audio/video system. The wireless interfaces could be positioned within the portable device and the car audio/video system, respectively, or external thereto. An integration subsystem is also provided. In one embodiment, the integration subsystem is positioned within the car audio/video system, and is in communication with the one of the wireless interfaces. In another embodiment, the wireless integration subsystem is positioned within the portable device, and is in communication with the other wireless interface. The integration subsystem obtains information about an audio and/or a video file stored on the portable device, or received by the

portable device, and transmits the information to the car audio/video system for display on a display of the car audio/video system. For example, the information could relate to a song name, an artist name, a track identifier, etc. The integration subsystem instructs the portable device to play the audio and/or video file in response to a user selecting the audio and/or video file using the controls of the car audio/video system, and transmits audio and/or video from the portable device to the car audio/video system for playing thereon, using the wireless communication link.

New independent claims 92 and 116 recite a multimedia device integration system which includes an integration subsystem in communication with a portable device, the portable device external to a car audio/video system; and a first wireless interface in communication with said integration subsystem, said first wireless interface establishing a wireless communication link with a second wireless interface in communication with the car audio/video system, **wherein said integration subsystem obtains information about an audio file stored on, or received by, the portable device, transmits the information over said wireless communication link to the car audio/video system for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the audio or video file in response to a user selecting the audio file using controls of the car audio/video system, and transmits audio generated by the portable device over said wireless communication link to the car audio/video system for playing on the car audio/video system.** Neither U.S. Patent No. 6,539,358 to Coon, et al. nor U.S. Patent Application Publication No. 2002/0009978 to Dukach, et al., taken alone or in combination, teach or suggest such features.

Additionally, new independent claims 140 and 164 recite a multimedia device integration system which includes an integration subsystem in communication with a car audio/video system; and a first wireless interface in communication with said integration subsystem, said first wireless interface establishing a wireless communication link with a second wireless interface in communication with a portable device external to the car audio/video system, **wherein said integration subsystem obtains, using said wireless communication link, information about an audio file stored on, or received by, the portable device, transmits the information to the car audio/video system for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the audio or video file in response to a user selecting the audio file using controls of the car audio/video system, and receives audio generated by the portable device over said wireless communication link for playing on the car audio/video system.** Neither Coon, et al. nor Dukach, et al., taken alone or in combination, teach or suggest such limitations.

Coon, et al., the primary reference, discloses a voice-interactive docking station for a portable computing device. As shown in FIG. 2, the docking station includes an interface application 38 which communicates with a portable computing device, a speech recognizer 36 for recognizing spoken commands (e.g., from a microphone), and a text-to-speech synthesizer 42 which generates synthesized speech in response to data obtained by the interface application 38 from the portable computing device. The synthesized speech can be transmitted to an audio system 44, such as a car audio system, using an RF (wireless) link.

Importantly, Coon, et al. fails entirely to disclose an integration subsystem which obtains information about an audio and/or a video file stored on, or received by, a portable device external to a car audio/video system, nor does Coon, et al. disclose transmitting the information to a car audio/video system for subsequent display of the information on a display of the car audio/video system, as required by all of the independent claims. Further, Coon, et al. disclose an integration subsystem which instructs the portable device to play the audio and/or video file in response to a user selecting the audio and/or video file using the controls of a car audio/video system, as required by all of the pending claims. At best, Coon, et al. discloses transmitting audio to a car stereo system from the docking station disclosed therein using an RF (wireless) link. However, the system of Coon, et al. does not obtain information about an audio or video file stored on either the portable computing device or the telephone, nor does it instruct the portable computing device or telephone to play an audio or video file in response to a user selecting the audio or video file using controls of a car audio/video system.

Dukach, et al. fails to cure the foregoing deficiencies of Coon, et al. While Dukach, et al. discloses units for displaying information on vehicles which includes one or more wireless communication networks for transmitting information to be displayed to the units, Dukach, et al. fails entirely to disclose an integration subsystem which obtains information about an audio and/or a video file stored on, or received by, a portable device external to a car audio/video system, transmits the information to a car audio/video system for subsequent display of the information on a display of the car audio/video system, and instructs the portable device to play the audio and/or video file in response to a user selecting the audio and/or video file using the controls of a car audio/video system, as required by all of the pending claims. At best, the

system of Dukach, et al. wirlessly receives video or audio information (from a central station) to displayed on the car rooftop display. However, it has no ability to obtain information about an audio or video file stored on, or received by, a portable device external to a car audio/video system, such as artist name, track number, song title, etc., much less display such information on a display of a car audio/video system. Further, the system of Dukach, et al. has no ability to instruct the portable device to play the audio or video file stored on, or received by, the portable device, in response to a user selecting the audio or video file using the controls of the car audio/video system.

In view of the foregoing, neither Coon, et al. nor Dukach, et al., taken alone or in combination, teach or suggest each element of new independent claims 92, 116, 140, and 164. Dependent claims 93-115, 117-139, 141-163, and 165-187, which depend from claims 92, 116, 140, and 164 and contain the same limitations, are also patentable for the same reasons.

Applicant also respectfully submits that neither Coon, et al. nor Dukach, et al., taken alone or in combination, teach or suggest each element of new independent claim 188 and claims 189-212 depending therefrom. These claims recite a multimedia device integration system which includes first and second wireless interfaces establishing a wireless communication link between a car audio/video system and a portable device external to the car audio/video system; and an integration subsystem in communication with said wireless communication link, wherein said integration subsystem channels audio generated by the portable device to the car audio/video system using the wireless communication link for subsequent playing of the audio

on the car audio/video system, **the audio corresponding to an audio file played by the portable device.** Neither Coon, et al. nor Dukach, et al., taken alone or in combination, disclose an integration subsystem which wirelessly transmits audio from a portable device to a car stereo, the audio corresponding to an audio file played by the portable device. As such, claims 188-212 are patentable over these references.

All issues raised in the Office Action appear to have been addressed. Claims 1-91 were cancelled, and new claims 92-212 were added. No new matter has been added. Claims 92-212 are pending and are in condition for allowance. Examination is requested and favorable action solicited.

Respectfully submitted,

Date: 11/30/2009

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TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT (Under 37 CFR 1.97(b) or 1.97(c))	Docket No. 99879-00026

In Re Application Of: **Ira Marlowe**

Application No.	Filing Date	Examiner	Customer No.	Group Art Unit	Confirmation No.
11/475,847	06/27/2006	Kurr, Jason R.	27614	2614	9001

Title: **Multimedia Device Integration System**

Address to:
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

37 CFR 1.97(b)

1. ☐ The Information Disclosure Statement submitted herewith is being filed within three months of the filing of a national application other than a continued prosecution application under 37 CFR 1.53(d); within three months of the date of entry of the national stage as set forth in 37 CFR 1.491 in an international application; before the mailing of a first Office Action on the merits, or before the mailing of a first Office Action after the filing of a request for continued examination under 37 CFR 1.114.

37 CFR 1.97(c)

2. ☒ The Information Disclosure Statement submitted herewith is being filed after the period specified in 37 CFR 1.97(b), provided that the Information Disclosure Statement is filed before the mailing date of a Final Action under 37 CFR 1.113, a Notice of Allowance under 37 CFR 1.311, or an Action that otherwise closes prosecution in the application, and is accompanied by one of:

   ☐ the statement specified in 37 CFR 1.97(e);

   OR

   ☒ the fee set forth in 37 CFR 1.17(p).

P10A/REV06

TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT (Under 37 CFR 1.97(b) or 1.97(c))	Docket No. 99879-00026

In Re Application of: **Ira Marlowe**

Application No.	Filing Date	Examiner	Customer No.	Group Art Unit	Confirmation No.
11/475,847	06/27/2006	Kurr, Jason R.	27614	2614	9001

Title: **Multimedia Device Integration System**

Payment of Fee

(Only complete if Applicant elects to pay the fee set forth in 37 CFR 1.17(p))

☐ A check in the amount of is attached.

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- ☒ Credit any overpayment.
- ☒ Charge any additional fee required.

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(Date)

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(Date)

Signature of Person Mailing Correspondence

Typed or Printed Name of Person Mailing Certificate

***This certificate may only be used if paying by deposit account.**

Mark Nikolsky
Signature

Dated: 11/30/2009

Mark E. Nikolsky
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Newark, NJ 07102
Tel: (973) 639-6987
Fax: (973) 297-6624

cc:

P10A/REV06

PTO/SB/08A (10-07)
Approved for use through 10/31/2007. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 2

Complete if Known	
Application Number	11/475,847
Filing Date	06/27/2006
First Named Inventor	Ira Marlowe
Art Unit	2614
Examiner Name	Kurr, Jason R.
Attorney Docket Number	99879-00026

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	US- 2005/0021190	01/27/2005	Worrell, et al.	
	2	US- 2007/0149115	06/28/2007	White, et al.	
	3	US- 2009/0017866	01/15/2009	White, et al.	
	4	US- 2009/0018682	01/15/2009	Fadell, et al.	
	5	US- 7,062,255	06/13/2006	Nakanaga	
	6	US- 7,187,947	03/06/2007	White, et al.	
	7	US- 7,324,833	01/29/2008	White, et al.	
	8	US- 7,440,772	10/21/2008	White, et al.	
	9	US- 7,486,926	02/03/2009	White, et al.	
	10	US- 6,163,711	12/19/2000	Juntunen, et al	
	11	US- 6,255,961	07/03/2001	Van Ryzin, et al.	
	12	US- 6,282,464	08/28/2001	Obradovich	
		US-			
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		US-			
		US-			
		US-			

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]-Number[4]-Kind Code[5] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T[6]

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

PTO/SB/08B (10-07)
Approved for use through 10/31/2007. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 2 of 2

Complete if Known	
Application Number	11/475,847
Filing Date	06/27/2006
First Named Inventor	Ira Marlowe
Art Unit	2614
Examiner Name	Kurr, Jason R.
Attorney Docket Number	99879-00026

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
	13	Copy of Office Action dated November 25, 2009, from co-pending Application No. 10/732,909 (16 pages)	
	14	Copy of Office Action dated June 23, 2009, from co-pending Application No. 11/071,667 (9 pages)	
	15	Copy of Office Action dated March 18, 2009, from co-pending Application No. 11/805,799 (10 pages)	
	16	Copy of Substantive Examination Adverse Report mailed by the Malaysian Patent Office on March 13, 2009 in connection with Malaysian Patent Application No. PI 20060884 (5 pages)	
	17	Copy of Office Action with English translation, dated May 8, 2009, issued by the Chinese Patent Office in connnection with Chinese Patent Application No. 200610059421.7 (12 pages)	
	18	Copy of Examiner's First Report dated March 30, 2009, issued by the Australian Patent Office in connection with Australian Patent Application No. 2003297898 (3 pages)	
	19	Copy of Supplementary European Search Report dated June 30, 2009, issued by the European Patent Office in connection with European Patent Application No. EP03796968 (5 pages)	
	20	Copy of Office Action mailed by the Japanese Patent Office on August 15, 2008 in connection with Japanese Patent Application No. JP2006-056718 (3 pages)	
	21	Copy of Office Action mailed by the Japanese Patent Office on March 27, 2009 in connection with Japanese Patent Application No. JP2006-056718 (2 pages)	

Examiner Signature		Date Considered	

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1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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Electronic Patent Application Fee Transmittal

Application Number:	11475847
Filing Date:	27-Jun-2006
Title of Invention:	Multimedia device integration system
First Named Inventor/Applicant Name:	Ira Marlowe
Filer:	Mark E. Nikolsky/Janelle Fava
Attorney Docket Number:	99879-00026

Filed as Small Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Claims in excess of 20	2202	30	26	780
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension - 3 months with $0 paid	2253	1	555	555
Miscellaneous:				
Submission- Information Disclosure Stmt	1806	1	180	180
		Total in USD ($)		**1515**

Electronic Acknowledgement Receipt

EFS ID:	6537776
Application Number:	11475847
International Application Number:	
Confirmation Number:	9001
Title of Invention:	Multimedia device integration system
First Named Inventor/Applicant Name:	Ira Marlowe
Customer Number:	27614
Filer:	Mark E. Nikolsky/Janelle Fava
Filer Authorized By:	Mark E. Nikolsky
Attorney Docket Number:	99879-00026
Receipt Date:	30-NOV-2009
Filing Date:	27-JUN-2006
Time Stamp:	14:59:05
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$1515
RAM confirmation Number	5665
Deposit Account	503571
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees) Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	Transmittal.pdf	43353 1f9619603d82c54b932d586cecaec0c687eef1e0	no	1
Warnings:					
Information:					
2	Extension of Time	Extension.pdf	93978 8f9ce0b838fa314b84f41d5e83476b73babf6493	no	2
Warnings:					
Information:					
3	Amendment/Req. Reconsideration-After Non-Final Reject	Response.pdf	1223383 f3d0a58d4a97de707e51c7a7b3d819ab2762ee56	no	36
Warnings:					
Information:					
4	Transmittal Letter	IDSLetter.pdf	96050 33682cb1812ab380b721a5e4f5b02672e1288144	no	2
Warnings:					
Information:					
5	Information Disclosure Statement (IDS) Filed (SB/08)	IDS.pdf	169854 bfd98c4683be8f71fb05212eca5d87e0e331570a	no	2
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
6	NPL Documents	Ref13.pdf	575892 aed5d0285e1ccf60b7bb263b6adffc66a3ad0af7	no	16
Warnings:					
Information:					
7	NPL Documents	Ref14.pdf	319278 65e7c49fc01a5c1eac232a5dbc7b00b9353dae11	no	9
Warnings:					
Information:					

8	NPL Documents	Ref15.pdf	346470 d30244cf5697832887a6d7ece2bf156099c76e8e	no	10
Warnings:					
Information:					
9	NPL Documents	Ref16.pdf	252859 898f78d62b47e8c0af5a2bfe298088a65f67fda6	no	5
Warnings:					
Information:					
10	NPL Documents	Ref17.pdf	884189 958465f40b93b0412662db17926b575263010344	no	12
Warnings:					
Information:					
11	NPL Documents	Ref18.pdf	173541 7f9488613f98c41fceb66d1abb548db0cd304ddf	no	3
Warnings:					
Information:					
12	NPL Documents	Ref19.pdf	230287 ae70f6aff5ad71e266f932e0a2ffc12d8152ce82	no	5
Warnings:					
Information:					
13	NPL Documents	Ref20.pdf	150841 1acff26d86ee205ef322129599ab8aa44685de0b	no	3
Warnings:					
Information:					
14	NPL Documents	Ref21.pdf	92966 5abcbeb4fbfe9981f5692f87b2d08183e4036882	no	2
Warnings:					
Information:					
15	Fee Worksheet (PTO-875)	fee-info.pdf	33234 7907282ee8c001b5af120af0a6a033abde63075a	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	4686175		

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Customer No. 27614
Confirmation No. 9001

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Examiner: Kurr, Jason R.
Art Unit: 2614

Re: Our file: 99879-00026
Applicant: Ira Marlowe
Serial No.: 11/475,847
Filed: 06/27/2006
For: Multimedia Device Integration System

Sir:

Enclosed for filing in the United States Patent and Trademark Office is the following:

1. Response to Office Action (36 pages)
2. Combined Amendment and Petition for Extension of Time Under 37 CFR 1.136(a) (2 pages)
3. Transmittal of Information Disclosure Statement (2 pages)
4. Form PTO/SB/08A (1 page)
5. Form PTO/SB/08B (1 page)
6. Copies of References 13-21 from Form PTO/SB/08B
7. Transmittal Sheet (1 page)

CONDITIONAL PETITION

If any extension of time is required for the submission of the above-identified items, Applicant requests that this be considered a petition therefor. Please charge any additional charges or any other charges relating to this matter, or credit any overpayment, to the Deposit Account of the writer, **Account No. 503571.**

11/30/2009
Date

Respectfully submitted,

Mark E. Nikolsky
Registration No. 48,319
McCarter & English, LLP
Four Gateway Center
100 Mulberry Street
Newark, NJ 07102
Tel: (973) 639-6987
Fax: (973) 297-6624

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I hereby certify that this correspondence is being electronically filed with the United States Patent and Trademark Office (via EFS-Web) on 11/30/09.

Janelle Fava

ME1 5864513v.1

COMBINED AMENDMENT & PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a) (Small Entity)	Docket No. 99879-00026

In Re Application Of: **Ira Marlowe**

Application No.	Filing Date	Examiner	Customer No.	Group Art Unit	Confirmation No.
11/475,847	06/27/2006	Kurr, Jason Richard	27614	2614	9001

Invention: **Multimedia Device Integration System**

COMMISSIONER FOR PATENTS:

This is a combined amendment and petition under the provisions of 37 CFR 1.136(a) to extend the period for filing a response to the Office Action of 05/28/2009 (*Date*) in the above-identified application.

The requested extension is as follows (check time period desired):

☐ One month ☐ Two months ☒ Three months ☐ Four months ☐ Five months

from: 08/28/2009 (*Date*) until: 11/30/2009 (*Date*)

Applicant claims small entity status. See 37 CFR 1.27.

The fee for the amendment and extension of time has been calculated as shown below:

CLAIMS AS AMENDED

	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST # PREV. PAID FOR		NUMBER EXTRA CLAIMS PRESENT	RATE	ADDITIONAL FEE
TOTAL CLAIMS	121	-	91	=	30	x $26.00	$780.00
INDEP. CLAIMS	5	-	7	=	0	x $110.00	$0.00
						FEE FOR AMENDMENT	$780.00
						FEE FOR EXTENSION OF TIME	$555.00
						TOTAL FEE FOR AMENDMENT AND EXTENSION OF TIME	**$1,335.00**

P28SMALL/REV06

COMBINED AMENDMENT & PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a) (Small Entity)	Docket No. 99879-00026

The fee for the amendment and extension of time is to be paid as follows:

☐ A check in the amount of for the amendment and extension of time is enclosed.

☒ Please charge Deposit Account No. **503571** in the amount of **$1,335.00**

☒ The Director is hereby authorized to charge payment of the following fees associated with this communication or credit any overpayment to Deposit Account No. **503571**

- ☒ Any additional filing fees required under 37 C.F.R. 1.16.
- ☒ Any patent application processing fees under 37 CFR 1.17.

☒ If an additional extension of time is required, please consider this a petition therefor and charge any additional fees which may be required to Deposit Account No. **503571**

☐ Payment by credit card. Form PTO-2038 is attached.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

Mark Nikolsky

Signature

Dated: 11/30/2009

Mark E. Nikolsky
Registration No. 48,319
McCarter & English, LLP
Four Gateway Center
100 Mulberry Street
Newark, NJ 07102
Tel: (973) 639-6987
Fax: (973) 297-6624

cc:

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(Date)

Signature of Person Mailing Correspondence

Typed or Printed Name of Person Mailing Correspondence

P28SMALL/REV06

PTO/SB/06 (07-06)
Approved for use through 1/31/2007. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 11/475,847	Filing Date 06/27/2006	☐ To be Mailed

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)	SMALL ENTITY ☒		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

		(Column 1)		(Column 2)	(Column 3)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
	11/30/2009	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
AMENDMENT	Total (37 CFR 1.16(i))	* 121	Minus	** 91	= 30	X $26 =	780	OR	X $ =	
	Independent (37 CFR 1.16(h))	* 5	Minus	***7	= 0	X $110 =	0	OR	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE	**780**	OR	TOTAL ADD'L FEE	

		(Column 1)		(Column 2)	(Column 3)					
		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
AMENDMENT	Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =		OR	X $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =		OR	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/TARA J. WITCHER/

PTO/SB/08A (10-07)
Approved for use through 10/31/2007. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 2

Complete if Known	
Application Number	11/475,847
Filing Date	06/27/2006
First Named Inventor	Ira Marlowe
Art Unit	2614
Examiner Name	Kurr, Jason R.
Attorney Docket Number	99879-00026

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	US- 6,889,064	05/03/2005	Baratono, et al.	
	2	US- 6,134,456	10/17/2000	Chen	
	3	US- 5,978,689	11/02/1999	Tuoriniemi, et al.	
	4	US- 2005/0282600	12/22/2005	Paradice, III	
	5	US- 2007/0230099	10/04/2007	Turner, et al.	
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FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]-Number[4]-Kind Code[5] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T[6]

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

PTO/SB/08B (10-07)
Approved for use through 10/31/2007. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 2 of 2

Complete if Known	
Application Number	11/475,847
Filing Date	06/27/2006
First Named Inventor	Ira Marlowe
Art Unit	2614
Examiner Name	Kurr, Jason R.
Attorney Docket Number	99879-00026

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
	6	Copy of Office Action dated December 11, 2009, from co-pending Application No. 11/805,799 (14 pages)	
	7	Copy of Russian Official Action with translation, received on September 1, 2009, issued by the Patent Office of the Russian Federation, in connection with Russian App. No. 2006101060 (11 pages)	

Examiner Signature		Date Considered	

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If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Electronic Patent Application Fee Transmittal

Application Number:	11475847
Filing Date:	27-Jun-2006
Title of Invention:	Multimedia device integration system
First Named Inventor/Applicant Name:	Ira Marlowe
Filer:	Mark E. Nikolsky/Janelle Fava
Attorney Docket Number:	99879-00026

Filed as Small Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Submission- Information Disclosure Stmt	1806	1	180	180
		Total in USD ($)		**180**

Electronic Acknowledgement Receipt

EFS ID:	6711802
Application Number:	11475847
International Application Number:	
Confirmation Number:	9001
Title of Invention:	Multimedia device integration system
First Named Inventor/Applicant Name:	Ira Marlowe
Customer Number:	27614
Filer:	Mark E. Nikolsky/Janelle Fava
Filer Authorized By:	Mark E. Nikolsky
Attorney Docket Number:	99879-00026
Receipt Date:	28-DEC-2009
Filing Date:	27-JUN-2006
Time Stamp:	13:53:45
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$180
RAM confirmation Number	98
Deposit Account	503571
Authorized User	
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	Transmittal.pdf	38145 7c190afec0b7a8b9ff09095b2672284dda4f4e0f	no	1
Warnings:					
Information:					
2	Transmittal Letter	IDSLetter.pdf	94518 8f121f8c0c57bd2ab0d4263723b6414cd4c95c1b	no	2
Warnings:					
Information:					
3	Information Disclosure Statement (IDS) Filed (SB/08)	IDS.pdf	144162 2eaa0bffb34d26972dece9ddb9170b2bec7dc579	no	2
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
4	NPL Documents	Ref6.pdf	579415 cf968d04b596c237ebdc04bf7a284c50ae8f32ad	no	14
Warnings:					
Information:					
5	NPL Documents	Ref7.pdf	961114 62053fd10ee2f3b5bbc6d7f5a6779774cb08968c	no	11
Warnings:					
Information:					
6	Fee Worksheet (PTO-875)	fee-info.pdf	29704 0bf548a0cf381037e1b7d4267e9f6731982ccc26	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	1847058		

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Customer No. 27614
Confirmation No. 9001

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Examiner: Kurr, Jason R.
Art Unit: 2614

Re:
Our file:	99879-00026
Applicant:	Ira Marlowe
Serial No.:	11/475,847
Filed:	06/27/2006
For:	Multimedia Device Integration System

Sir:

Enclosed for filing in the United States Patent and Trademark Office is the following:

1. Transmittal of Information Disclosure Statement (2 pages)
2. Form PTO/SB/08A (1 page)
3. Form PTO/SB/08B (1 page)
4. Copies of References 6-7 from Form PTO/SB/08B
5. Transmittal Sheet (1 page)

CONDITIONAL PETITION

If any extension of time is required for the submission of the above-identified items, Applicant requests that this be considered a petition therefor. Please charge any additional charges or any other charges relating to this matter, or credit any overpayment, to the Deposit Account of the writer, **Account No. 503571.**

Respectfully submitted,

12/28/2009
Date

Mark E. Nikolsky
Registration No. 48,319
McCarter & English, LLP
Four Gateway Center
100 Mulberry Street
Newark, NJ 07102
Tel: (973) 639-6987
Fax: (973) 297-6624

CERTIFICATE OF ELECTRONIC FILING

I hereby certify that this correspondence is being electronically filed with the United States Patent and Trademark Office (via EFS-Web) on 12/28/09.

Janelle Fava

ME1 5864513v.1

TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT (Under 37 CFR 1.97(b) or 1.97(c))	Docket No. 99879-00026

In Re Application Of: **Ira Marlowe**

Application No.	Filing Date	Examiner	Customer No.	Group Art Unit	Confirmation No.
11/475,847	06/27/2006	Kurr, Jason R.	27614	2614	9001

Title: **Multimedia Device Integration System**

Address to:
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

37 CFR 1.97(b)

1. ☐ The Information Disclosure Statement submitted herewith is being filed within three months of the filing of a national application other than a continued prosecution application under 37 CFR 1.53(d); within three months of the date of entry of the national stage as set forth in 37 CFR 1.491 in an international application; before the mailing of a first Office Action on the merits, or before the mailing of a first Office Action after the filing of a request for continued examination under 37 CFR 1.114.

37 CFR 1.97(c)

2. ☒ The Information Disclosure Statement submitted herewith is being filed after the period specified in 37 CFR 1.97(b), provided that the Information Disclosure Statement is filed before the mailing date of a Final Action under 37 CFR 1.113, a Notice of Allowance under 37 CFR 1.311, or an Action that otherwise closes prosecution in the application, and is accompanied by one of:

   ☐ the statement specified in 37 CFR 1.97(e);

   OR

   ☒ the fee set forth in 37 CFR 1.17(p).

P10A/REV06

TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT (Under 37 CFR 1.97(b) or 1.97(c))	Docket No. 99879-00026

In Re Application of: **Ira Marlowe**

Application No.	Filing Date	Examiner	Customer No.	Group Art Unit	Confirmation No.
11/475,847	06/27/2006	Kurr, Jason R.	27614	2614	9001

Title: **Multimedia Device Integration System**

Payment of Fee

(Only complete if Applicant elects to pay the fee set forth in 37 CFR 1.17(p))

☐ A check in the amount of is attached.

☒ The Director is hereby authorized to charge and credit Deposit Account No. 503571 as described below.

- ☒ Charge the amount of **$180.00**
- ☒ Credit any overpayment.
- ☒ Charge any additional fee required.

☐ Payment by credit card. Form PTO-2038 is attached.

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(Date)

Signature

Typed or Printed Name of Person Signing Certificate

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_____.
(Date)

Signature of Person Mailing Correspondence

Typed or Printed Name of Person Mailing Certificate

***This certificate may only be used if paying by deposit account.**

Mark E. Nikolsky
Signature

Dated: 12/28/2009

Mark E. Nikolsky
Registration No. 48,319
McCarter & English, LLP
Four Gateway Center
100 Mulberry Street
Newark, NJ 07102
Tel: (973) 639-6987
Fax: (973) 297-6624

cc:

P10A/REV06

PTO/SB/08B (10-07)
Approved for use through 10/31/2007. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 1

Complete if Known	
Application Number	11/475,847
Filing Date	06/27/2006
First Named Inventor	Ira Marlowe
Art Unit	2614
Examiner Name	Kurr, Jason R.
Attorney Docket Number	99879-00026

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
	1	Copy of Official Action dated December 14, 2009, issued by the Canadian Patent Office in connection with Canadian Patent Application No. 2,538,053 (2 pages)	

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

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If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Electronic Acknowledgement Receipt

EFS ID:	6809582
Application Number:	11475847
International Application Number:	
Confirmation Number:	9001
Title of Invention:	Multimedia device integration system
First Named Inventor/Applicant Name:	Ira Marlowe
Customer Number:	27614
Filer:	Mark E. Nikolsky/Janelle Fava
Filer Authorized By:	Mark E. Nikolsky
Attorney Docket Number:	99879-00026
Receipt Date:	14-JAN-2010
Filing Date:	27-JUN-2006
Time Stamp:	12:51:05
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	Transmittal.pdf	37253 cd7f567584e47e5b2f00091b6b812df2a3ec5eae	no	1

Warnings:	
Information:	

2	Transmittal Letter	IDSLtr.pdf	99942 0fcab8f1e44ec824994a4e5eb2363bd8e6c3aa50	no	2
Warnings:					
Information:					
3	Information Disclosure Statement (IDS) Filed (SB/08)	IDS.pdf	63805 e85ba8d2c0fa4666b107cc4ea2bf68fe2e59b86d	no	1
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
4	NPL Documents	Ref1.pdf	113526 87db49173d1afd8b3cec751f54904d6255f1a451	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	314526		

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<u>New Applications Under 35 U.S.C. 111</u>
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<u>National Stage of an International Application under 35 U.S.C. 371</u>
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

<u>New International Application Filed with the USPTO as a Receiving Office</u>
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Customer No. 27614
Confirmation No. 9001

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Examiner: Kurr, Jason R.
Art Unit: 2614

Re:

Our file:	99879-00026
Applicant:	Ira Marlowe
Serial No.:	11/475,847
Filed:	06/27/2006
For:	Multimedia Device Integration System

Sir:

Enclosed for filing in the United States Patent and Trademark Office is the following:

1. Transmittal of Information Disclosure Statement (2 pages)
2. Form PTO/SB/08B (1 page)
3. Copy of Reference 1 from Form PTO/SB/08B
4. Transmittal Sheet (1 page)

CONDITIONAL PETITION

If any extension of time is required for the submission of the above-identified items, Applicant requests that this be considered a petition therefor. Please charge any additional charges or any other charges relating to this matter, or credit any overpayment, to the Deposit Account of the writer, **Account No. 503571.**

Respectfully submitted,

Mark Nikolsky

1/14/10
Date

Mark E. Nikolsky
Registration No. 48,319
McCarter & English, LLP
Four Gateway Center
100 Mulberry Street
Newark, NJ 07102
Tel: (973) 639-6987
Fax: (973) 297-6624

CERTIFICATE OF ELECTRONIC FILING

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Janelle Faya

MEI 5864513v.1

TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT (Under 37 CFR 1.97(b) or 1.97(c))	Docket No. 99879-00026

In Re Application Of: **Ira Marlowe**

Application No.	Filing Date	Examiner	Customer No.	Group Art Unit	Confirmation No.
11/475,847	06/27/2006	Kurr, Jason R.	27614	2614	9001

Title: **Multimedia Device Integration System**

Address to:
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

37 CFR 1.97(b)

1. ☐ The Information Disclosure Statement submitted herewith is being filed within three months of the filing of a national application other than a continued prosecution application under 37 CFR 1.53(d); within three months of the date of entry of the national stage as set forth in 37 CFR 1.491 in an international application; before the mailing of a first Office Action on the merits, or before the mailing of a first Office Action after the filing of a request for continued examination under 37 CFR 1.114.

37 CFR 1.97(c)

2. ☒ The Information Disclosure Statement submitted herewith is being filed after the period specified in 37 CFR 1.97(b), provided that the Information Disclosure Statement is filed before the mailing date of a Final Action under 37 CFR 1.113, a Notice of Allowance under 37 CFR 1.311, or an Action that otherwise closes prosecution in the application, and is accompanied by one of:

   ☒ the statement specified in 37 CFR 1.97(e);

   OR

   ☐ the fee set forth in 37 CFR 1.17(p).

P10A/REV06

TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT (Under 37 CFR 1.97(b) or 1.97(c))	Docket No. 99879-00026

In Re Application of: **Ira Marlowe**

Application No.	Filing Date	Examiner	Customer No.	Group Art Unit	Confirmation No.
11/475,847	06/27/2006	Kurr, Jason R.	27614	2614	9001

Title: **Multimedia Device Integration System**

Payment of Fee

(Only complete if Applicant elects to pay the fee set forth in 37 CFR 1.17(p))

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(Date)

Signature of Person Mailing Correspondence

Typed or Printed Name of Person Mailing Certificate

***This certificate may only be used if paying by deposit account.**

Mark Enikolsky
Signature

Dated: 1/14/10

Mark E. Nikolsky
Registration No. 48,319
McCarter & English, LLP
Four Gateway Center
100 Mulberry Street
Newark, NJ 07102
Tel: (973) 639-6987
Fax: (973) 297-6624

cc:

P10A/REV06

PTO/SB/08B (10-07)
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Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 1

	Complete if Known
Application Number	11/475,847
Filing Date	06/27/2006
First Named Inventor	Ira Marlowe
Art Unit	2614
Examiner Name	Kurr, Jason R.
Attorney Docket Number	99879-00026

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
	1	Copy of Official Action dated December 25, 2009, issued by the Chinese Patent Office in connection with Chinese Patent Application No. 200610059421.7, with English translation (14 pages)	

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Electronic Acknowledgement Receipt

EFS ID:	6892822
Application Number:	11475847
International Application Number:	
Confirmation Number:	9001
Title of Invention:	Multimedia device integration system
First Named Inventor/Applicant Name:	Ira Marlowe
Customer Number:	27614
Filer:	Mark E. Nikolsky/Janelle Fava
Filer Authorized By:	Mark E. Nikolsky
Attorney Docket Number:	99879-00026
Receipt Date:	27-JAN-2010
Filing Date:	27-JUN-2006
Time Stamp:	16:07:18
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	Transmittal.pdf	38873 7746be881c7dad92135c4aa251f0da1db7ddc67b	no	1

Warnings:	
Information:	

2	Transmittal Letter	IDSLtr.pdf	99458 345746ac35ee804d231f85aeff57e51131e10bf2	no	2
Warnings:					
Information:					
3	NPL Documents	Ref1.pdf	818699 9ffc7352ef5492b96293d5a408a0923cabaf8921	no	14
Warnings:					
Information:					
4	Information Disclosure Statement (IDS) Filed (SB/08)	IDS.pdf	275165 31d8623f4d7d77b1ad66468213a346cc483b7ba5	no	1
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
		Total Files Size (in bytes):	1232195		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Customer No. 27614
Confirmation No. 9001

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Examiner: Kurr, Jason R.
Art Unit: 2614

Re: Our file: 99879-00026
Applicant: Ira Marlowe
Serial No.: 11/475,847
Filed: 06/27/2006
For: Multimedia Device Integration System

Sir:

Enclosed for filing in the United States Patent and Trademark Office is the following:

1. Transmittal of Information Disclosure Statement (2 pages)
2. Form PTO/SB/08B (1 page)
3. Copy of Reference 1 from Form PTO/SB/08B
4. Transmittal Sheet (1 page)

CONDITIONAL PETITION

If any extension of time is required for the submission of the above-identified items, Applicant requests that this be considered a petition therefor. Please charge any additional charges or any other charges relating to this matter, or credit any overpayment, to the Deposit Account of the writer, **Account No. 503571.**

Respectfully submitted,

1/27/2010
Date

Mark E. Nikolsky
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Four Gateway Center
100 Mulberry Street
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CERTIFICATE OF ELECTRONIC FILING

I hereby certify that this correspondence is being electronically filed with the United States Patent and Trademark Office (via EFS-Web) on 1/27/2010.

Janelle Fava

ME1 5864513v.1

TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT (Under 37 CFR 1.97(b) or 1.97(c))	Docket No. 99879-00026

In Re Application Of: **Ira Marlowe**

Application No.	Filing Date	Examiner	Customer No.	Group Art Unit	Confirmation No.
11/475,847	06/27/2006	Kurr, Jason R.	27614	2614	9001

Title: **Multimedia Device Integration System**

Address to:
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

37 CFR 1.97(b)

1. ☐ The Information Disclosure Statement submitted herewith is being filed within three months of the filing of a national application other than a continued prosecution application under 37 CFR 1.53(d); within three months of the date of entry of the national stage as set forth in 37 CFR 1.491 in an international application; before the mailing of a first Office Action on the merits, or before the mailing of a first Office Action after the filing of a request for continued examination under 37 CFR 1.114.

37 CFR 1.97(c)

2. ☒ The Information Disclosure Statement submitted herewith is being filed after the period specified in 37 CFR 1.97(b), provided that the Information Disclosure Statement is filed before the mailing date of a Final Action under 37 CFR 1.113, a Notice of Allowance under 37 CFR 1.311, or an Action that otherwise closes prosecution in the application, and is accompanied by one of:

   ☒ the statement specified in 37 CFR 1.97(e);

   OR

   ☐ the fee set forth in 37 CFR 1.17(p).

P10A/REV06

TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT (Under 37 CFR 1.97(b) or 1.97(c))	Docket No. 99879-00026

In Re Application of: **Ira Marlowe**

Application No.	Filing Date	Examiner	Customer No.	Group Art Unit	Confirmation No.
11/475,847	06/27/2006	Kurr, Jason R.	27614	2614	9001

Title: **Multimedia Device Integration System**

Payment of Fee

(Only complete if Applicant elects to pay the fee set forth in 37 CFR 1.17(p))

☐ A check in the amount of is attached.

☒ The Director is hereby authorized to charge and credit Deposit Account No. **503571** as described below.

- ☐ Charge the amount of
- ☒ Credit any overpayment.
- ☒ Charge any additional fee required.

☐ Payment by credit card. Form PTO-2038 is attached.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

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I certify that this document and authorization to charge deposit account is being facsimile transmitted to the United States Patent and Trademark Office (Fa

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Certificate of Mailing by First Class Mail

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(Date)

Signature of Person Mailing Correspondence

Typed or Printed Name of Person Mailing Certificate

***This certificate may only be used if paying by deposit account.**

Mark Enikolsky
Signature

Dated: 1/27/2010

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P10A/REV06

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/475,847	06/27/2006	Ira Marlowe	99879-00026	9001

27614 7590 03/05/2010

MCCARTER & ENGLISH, LLP NEWARK
FOUR GATEWAY CENTER
100 MULBERRY STREET
NEWARK, NJ 07102

EXAMINER	
KURR, JASON RICHARD	
ART UNIT	PAPER NUMBER
2614	
MAIL DATE	DELIVERY MODE
03/05/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	11/475,847	MARLOWE, IRA	
	Examiner	Art Unit	
	JASON R. KURR	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 November 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *92-212* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *92-212* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *11/30/09 12/28/09 1/14/10 1/27/10*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claims 1-91 have been cancelled and will not be further considered by the Examiner.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 92-97, 102-121, 126-145,150-169, 174-194 and 199-212 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-99 of U.S. Patent No. 7489786. Although the conflicting claims are not identical, they are not patentably distinct from each other because it is well known in the art that direct electrical communication lines may be replaced by wireless interfaces that achieve the same functions of communicating data. Such data may be of an audio or video nature so as to be transmitted between the portable device and the car stereo for

concurrent reproduction and control. With respect to the positioning of the integration subsystem, the Examiner contends that the location of the subsystem is merely a design choice and thus the invention would operate in the same manner no matter the location of the subsystem, therefor it would have been obvious to mount the integration subsystem in either the portable device or the car AV system.

Claims 98-101, 122-125, 146-149, 170-173 and 195-198 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over U.S. 7489786 in view of Mella et al (US 7031477 B1).

With respect to the above claims, the present claims of U.S. 7489786 do not disclose expressly wherein the system further comprises a voice recognition subsystem for receiving and processing spoken control commands issued by a user.

Mella discloses a voice-controlled system for providing audio content in an automobile (see Abstract). At the time of the invention it would have been obvious to a person of ordinary skill in the art to use voice recognition system of Mella in the invention of US 7489786. The motivation for doing so would have been to provide a hands-free approach to selecting audio files for reproduction. This would allow an operator of a vehicle to concentrate on driving rather than manually selecting audio files for reproduction.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 188-192 and 199-212 are rejected under 35 U.S.C. 102(e) as being anticipated by Thielen (US 2004/0117442 A1).

With respect to claim 188, Thielen discloses a multimedia device integration system, comprising: first and second wireless interfaces (fig.10 #30,40,100) establishing a wireless communication link between a car audio/video system (fig.10 #100) and a portable device (fig.3 #20) external to the car audio/video system; and an integration subsystem (fig.10 #52) in communication with said wireless communication link, wherein said integration subsystem channels audio generated by the portable device to the car audio/video system using the wireless communication link for subsequent playing of the audio on the car audio/video system, the audio corresponding to an audio file played by the portable device (pg.5 [0071]).

With respect to claim 189, Thielen discloses the system of claim 188, wherein said integration subsystem is positioned within the portable device (fig.10 #52).

With respect to claim 190, Thielen discloses the system of claim 188, wherein said integration subsystem is positioned within the car audio/video system (fig.10 #100).

With respect to claim 191, Thielen discloses the system of claim 188, where the audio file is stored on the portable device (pg.8 [0119]).

With respect to claim 192, Thielen discloses the system of claim 188, wherein the audio file is received by the portable device (pg.6 [0101]).

With respect to claim 199, Thielen discloses the system of claim 188, wherein said integration subsystem generates a device presence signal and transmits the device presence signal to the car audio/video system to maintain the car audio/video system in a state responsive to the portable device (pg.6 [0092]).

With respect to claim 200, Thielen discloses the system of claim 188, wherein the portable device comprises a portable receiver (fig.10 #40).

With respect to claim 201, Thielen discloses the system of claim 200, wherein the portable receiver comprises a digital audio broadcast (DAB) receiver, a high-definition (HD) radio receiver, or a satellite receiver (pg.8 [0119]).

With respect to claim 202, Thielen discloses the system of claim 188, wherein the portable device comprises a portable digital media player (pg.5 [0071]).

With respect to claim 203, Thielen discloses the system of claim 202, wherein the portable digital media player comprises a video device, a portable media center, a portable media player, an MP3 player, an MP4 player, a WMV player, an Apple iPod, or an Apple video iPod (pg.5 [0071]).

With respect to claim 204, Thielen discloses the system of claim 188, wherein the portable device comprises a cellular telephone (pg.5 [0071]).

With respect to claim 205, Thielen discloses the system of claim 188, further comprising a non-wireless connection established between the car audio/video system and the portable device (fig.7).

With respect to claim 206, Thielen discloses the system of claim 188, wherein said integration subsystem channels video generated by the portable device to the car audio/video system over the wireless communication link for subsequent playing of the audio on the car audio/video system, the video corresponding to a video file played by the portable device (pg.11 [0149-0150).

With respect to claim 207, Thielen discloses the system of claim 206, wherein the video file comprises a movie stored on the portable device (pg.11 [0150]).

With respect to claim 208, Thielen discloses the system of Claim 206, wherein the video file comprises a picture stored on the portable device (pg.11 [0150]).

With respect to claim 209, Thielen discloses the system of claim 206, wherein the video file comprises a video clip stored on the portable device (pg.11 [0150]).

With respect to claim 210, Thielen discloses the system of claim 206, wherein the video file comprises streaming video received by the portable device (pg.11 [0150]).

With respect to claim 211, Thielen discloses the system of claim 206, wherein the video file comprises a navigation map generated by the portable device (pg.11 [0150]).

With respect to claim 212, Thielen discloses the system of claim 206, wherein said integration subsystem receives video generated by the portable device in a first

format incompatible with the car audio/video system, processes the video into processed video in a second format compatible with the car audio/video system, and transmits the processed video to the car audio/video system for subsequent display of the processed video on a display of the car audio/video system (pg.11 [0150]).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 195-198 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thielen (US 2004/0117442 A1) in view of Mella et al (US 7031477 B1).

With respect to claim 195, Thielen discloses the system of claim 188, however does not disclose expressly wherein said integration subsystem further comprises a voice recognition subsystem for receiving and processing spoken control commands issued by a user.

Mella discloses a voice-controlled system for providing audio content in an automobile (see Abstract). At the time of the invention it would have been obvious to a person of ordinary skill in the art to use voice recognition system of Mella in the invention of Thielen. The motivation for doing so would have been to provide a hands-free approach to selecting audio files for reproduction. This would allow an operator of

a vehicle to concentrate on driving rather than manually selecting audio files for reproduction.

With respect to claim 196, Thielen discloses the system of claim 195, wherein said integration subsystem instructs said portable device to play a desired file in response to a spoken command processed by the voice recognition subsystem (Mella: col.2 ln.15-38).

With respect to claim 197, Thielen discloses the system of claim 188, wherein said integration subsystem further comprises a speech synthesizer for generating synthesized speech corresponding to data generated by the portable device (Mella: col.2 ln.15-38).

With respect to claim 198, Thielen discloses the system of claim 197, wherein said integration subsystem transmits the synthesized speech to the car audio/video system for subsequent playing of the synthesized speech by the car audio/video system (Mella: col.2 ln.15-38).

Allowable Subject Matter

Claims 92-187 would be allowed upon the submission of a valid Terminal Disclaimer.

Claims 193 and 194 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, and in view of the filing of a valid Terminal Disclaimer.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JASON R. KURR whose telephone number is (571)272-0552. The examiner can normally be reached on M-F 10:00am to 6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on (571) 273-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jason R Kurr/
Examiner, Art Unit 2614

/Vivian Chin/
Supervisory Patent Examiner, Art Unit 2614

Notice of References Cited	Application/Control No. 11/475,847	Applicant(s)/Patent Under Reexamination MARLOWE, IRA	
	Examiner JASON R. KURR	Art Unit 2614	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2004/0117442	06-2004	Thielen, Kurt R.	709/203
*	B	US-7,031,477	04-2006	Mella et al.	381/86
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Search Notes	Application/Control No.	Applicant(s)/Patent under Reexamination	
	11/475,847	MARLOWE, IRA	
	Examiner	Art Unit	
	JASON R. KURR	2614	

SEARCHED			
Class	Subclass	Date	Examiner
381	86	5/18/2009	JK
340	825.24	5/18/2009	JK
700	94	5/18/2009	JK
710	303	5/18/2009	JK
455	99	5/18/2009	JK

INTERFERENCE SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES (INCLUDING SEARCH STRATEGY)		
	DATE	EXMR
Inventor Search USC 101 Reviewed	5/18/2009	JK
Searched related apps 10/316961 11/805799 reviewed tagged docs	5/18/2009	JK
Searched: Portable devices interfacing with audio systems	2/9/2010	JK
Searched: Voice recognition in file selection	2/25/2010	JK

Index of Claims

Application/Control No.	Applicant(s)/Patent under Reexamination
11/475,847	MARLOWE, IRA
Examiner	**Art Unit**
JASON R. KURR	2614

√	Rejected	–	(Through numeral) Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

Claim		Date								
Final	Original	8/4/08	5/18/09	2/27/10						
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Claim		Date								
Final	Original	8/4/08	5/18/09	2/27/10						
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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S15	44	("20020009978" | "20030026440" | "20050021190" | "20070149115" | "20090017866" | "20090018682" | "3940743" | "4047162" | "4068104" | "4091455" | "4234919" | "4562533" | "4772079" | "4817130" | "4943978" | "5339362" | "5410675" | "5794164" | "6005488" | "6052603" | "6058319" | "6157725" | "6163079" | "6163711" | "6255961" | "6278697" | "6282464" | "6295033" | "6330337" | "6346917" | "6374177" | "6389332" | "6396164" | "6539358" | "6591085" | "6629164" | "6648661" | "6653948" | "6993615" | "7062255" | "7187947" | "7324833" | "7440772" | "7486926").PN.	US-PGPUB; USPAT	OR	OFF	2010/01/28 12:55
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S17	18700	(car vehicle truck van) with audio	US-PGPUB; USPAT	OR	OFF	2010/02/09 13:16
S18	7341	S17 and wireless	US-PGPUB; USPAT	OR	OFF	2010/02/09 13:16
S19	4074	S18 and (portable)	US-PGPUB; USPAT	OR	OFF	2010/02/09 13:16
S20	3764	S19 and communicat$3	US-PGPUB; USPAT	OR	OFF	2010/02/09 13:17
S21	2820	S20 and ((@ad @rlad) <="20060627")	US-PGPUB; USPAT	OR	OFF	2010/02/09 13:17
S22	2418	S21 and display	US-PGPUB; USPAT	OR	OFF	2010/02/09 13:18
S23	2077	S22 and interfac$3	US-PGPUB; USPAT	OR	OFF	2010/02/09 13:18
S24	1654	S23 and video	US-PGPUB; USPAT	OR	OFF	2010/02/09 13:19
S25	1537	S20 and ((@ad @rlad) <="20021211")	US-PGPUB; USPAT	OR	OFF	2010/02/09 13:21
S26	915	S24 and ((@ad @rlad) <="20021211")	US-PGPUB; USPAT	OR	OFF	2010/02/09 13:21
S27	192	S26 and (portable with (player source))	US-PGPUB; USPAT	OR	OFF	2010/02/09 13:21
S28	68	S27 and ((car near (stereo radio))(head near unit))	US-PGPUB; USPAT	OR	OFF	2010/02/09 13:35
S29	20263	portable with player	US-PGPUB; USPAT	OR	OFF	2010/02/09 14:54
S30	12	S29 and (transmit$3 communicat$3) with (video) with (car near (stereo radio))	US-PGPUB; USPAT	OR	OFF	2010/02/09 14:56
S31	9	S30 and ((@ad @rlad) <="20021211")	US-PGPUB; USPAT	OR	OFF	2010/02/09 14:56
S32	11	S29 and (transmit$3 communicat$3) with (title) with (car near (stereo radio))	US-PGPUB; USPAT	OR	OFF	2010/02/09 15:05
S33	0	(car near (stereo radio)) with (receiv$3 display$3) with movie	US-PGPUB; USPAT	OR	OFF	2010/02/09 15:55
S34	11	(car near (stereo radio)) with movie	US-PGPUB; USPAT	OR	OFF	2010/02/09 15:55
S35	8	S34 and ((@ad @rlad) <="20021211")	US-PGPUB; USPAT	OR	OFF	2010/02/09 15:56

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S39	693	S38 and ((@ad @rlad) <="20021211")	US-PGPUB; USPAT	OR	OFF	2010/02/25 15:11
S40	252	S39 and (car vehicle)	US-PGPUB; USPAT	OR	OFF	2010/02/25 15:11
S41	154	S40 and wireless$3	US-PGPUB; USPAT	OR	OFF	2010/02/25 15:12
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S43	425	marlowe.in.	US-PGPUB; USPAT	OR	OFF	2010/02/25 15:14

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S53	46	S51 and voice	US-PGPUB; USPAT	OR	OFF	2010/02/25 16:31
S54	2	(voice with controlled with audio with (system device)).ti.	US-PGPUB; USPAT	OR	OFF	2010/02/25 16:40

2/27/2010 2:53:45 PM
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 1 of 2

Complete if Known	
Application Number	11/475,847
Filing Date	06/27/2006
First Named Inventor	Ira Marlowe
Art Unit	2614
Examiner Name	Kurr, Jason R.
Attorney Docket Number	99879-00026

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
/JK/	1	US- 2005/0021190	01/27/2005	Worrell, et al.	
/JK/	2	US- 2007/0149115	06/28/2007	White, et al.	
/JK/	3	US- 2009/0017866	01/15/2009	White, et al.	
/JK/	4	US- 2009/0018682	01/15/2009	Fadell, et al.	
/JK/	5	US- 7,062,255	06/13/2006	Nakanaga	
/JK/	6	US- 7,187,947	03/06/2007	White, et al.	
/JK/	7	US- 7,324,833	01/29/2008	White, et al.	
/JK/	8	US- 7,440,772	10/21/2008	White, et al.	
/JK/	9	US- 7,486,926	02/03/2009	White, et al.	
/JK/	10	US- 6,163,711	12/19/2000	Juntunen, et al	
/JK/	11	US- 6,255,961	07/03/2001	Van Ryzin, et al.	
/JK/	12	US- 6,282,464	08/28/2001	Obradovich	
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FOREIGN PATENT DOCUMENTS

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Examiner Signature	/Jason Kurr/	Date Considered	02/27/2010

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 2 of 2

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Application Number	11/475,847
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First Named Inventor	Ira Marlowe
Art Unit	2614
Examiner Name	Kurr, Jason R.
Attorney Docket Number	99879-00026

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
/JK/	13	Copy of Office Action dated November 25, 2009, from co-pending Application No. 10/732,909 (16 pages)	
/JK/	14	Copy of Office Action dated June 23, 2009, from co-pending Application No. 11/071,667 (9 pages)	
/JK/	15	Copy of Office Action dated March 18, 2009, from co-pending Application No. 11/805,799 (10 pages)	
/JK/	16	Copy of Substantive Examination Adverse Report mailed by the Malaysian Patent Office on March 13, 2009 in connection with Malaysian Patent Application No. PI 20060884 (5 pages)	
/JK/	17	Copy of Office Action with English translation, dated May 8, 2009, issued by the Chinese Patent Office in connnection with Chinese Patent Application No. 200610059421.7 (12 pages)	
/JK/	18	Copy of Examiner's First Report dated March 30, 2009, issued by the Australian Patent Office in connection with Australian Patent Application No. 2003297898 (3 pages)	
/JK/	19	Copy of Supplementary European Search Report dated June 30, 2009, issued by the European Patent Office in connection with European Patent Application No. EP03796968 (5 pages)	
/JK/	20	Copy of Office Action mailed by the Japanese Patent Office on August 15, 2008 in connection with Japanese Patent Application No. JP2006-056718 (3 pages)	
/JK/	21	Copy of Office Action mailed by the Japanese Patent Office on March 27, 2009 in connection with Japanese Patent Application No. JP2006-056718 (2 pages)	

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/JK/	1	US- 6,889,064	05/03/2005	Baratono, et al.	
/JK/	2	US- 6,134,456	10/17/2000	Chen	
/JK/	3	US- 5,978,689	11/02/1999	Tuoriniemi, et al.	
/JK/	4	US- 2005/0282600	12/22/2005	Paradice, III	
/JK/	5	US- 2007/0230099	10/04/2007	Turner, et al.	
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This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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/JK/	7	Copy of Russian Official Action with translation, received on September 1, 2009, issued by the Patent Office of the Russian Federation, in connection with Russian App. No. 2006101060 (11 pages)	

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/JK/	1	Copy of Official Action dated December 14, 2009, issued by the Canadian Patent Office in connection with Canadian Patent Application No. 2,538,053 (2 pages)	

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/JK/	1	Copy of Official Action dated December 25, 2009, issued by the Chinese Patent Office in connection with Chinese Patent Application No. 200610059421.7, with English translation (14 pages)	

Examiner Signature	/Jason Kurr/	Date Considered	02/27/2010

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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Index of Claims (continued)

Application/Control No.	Applicant(s)/Patent under Reexamination
11/475,847	MARLOWE, IRA
Examiner	**Art Unit**
JASON R. KURR	2614

√	Rejected	–	(Through numeral) Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

Claim		Date
Final	Original	2/27/10
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Claim		Date
Final	Original	2/27/10
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PTO/SB/30 (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Request for Continued Examination (RCE) Transmittal

Address to:
Mail Stop RCE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Application Number	11/475,847
Filing Date	06/27/2006
First Named Inventor	Ira Marlowe
Art Unit	2614
Examiner Name	Kurr, Jason R.
Attorney Docket Number	99879-00026

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. See Instruction Sheet for RCEs (not to be submitted to the USPTO) on page 2.

1. Submission required under 37 CFR 1.114 Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

   a. ☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

      i. ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____

      ii. ☐ Other _____

   b. ☑ Enclosed

      i. ☑ Amendment/Reply

      ii. ☐ Affidavit(s)/ Declaration(s)

      iii. ☐ Information Disclosure Statement (IDS)

      iv. ☑ Other Terminal Disclaimer

2. Miscellaneous

   a. ☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of _____ months. (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

   b. ☐ Other _____

3. Fees The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.

   a. ☑ The Director is hereby authorized to charge the following fees, any underpayment of fees, or credit any overpayments, to Deposit Account No. 503571.

      i. ☑ RCE fee required under 37 CFR 1.17(e)

      ii. ☐ Extension of time fee (37 CFR 1.136 and 1.17)

      iii. ☑ Other Terminal Disclaimer

   b. ☐ Check in the amount of $ _____ enclosed

   c. ☐ Payment by credit card (Form PTO-2038 enclosed)

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

Signature	/Mark E. Nikolsky/	Date	April 30, 2010
Name (Print/Type)	Mark E. Nikolsky	Registration No.	48,319

CERTIFICATE OF MAILING OR TRANSMISSION

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop RCE, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450 or facsimile transmitted to the U.S. Patent and Trademark Office on the date shown below.

Signature			
Name (Print/Type)		Date	

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Ira Marlowe

Serial No.: 11/475,847

Filed: 06/27/2006

Title: Multimedia Device Integration System

Examiner: Kurr, Jason R.

Art Unit: 2614

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE

Sir:

This is a response to the outstanding final Office Action mailed March 5, 2010. The time period for response extends to and includes June 5, 2010.

Amendments to the Claims begin on page 2 of this response.

Remarks begin on page 30 of this response.

AMENDMENTS TO THE CLAIMS

1-91. (Cancelled)

92. (Previously Presented) A multimedia device integration system, comprising:

an integration subsystem in communication with a portable device, the portable device external to a car audio/video system; and

a first wireless interface in communication with said integration subsystem, said first wireless interface establishing a wireless communication link with a second wireless interface in communication with the car audio/video system,

wherein said integration subsystem obtains information about an audio file stored on the portable device, transmits the information over said wireless communication link to the car audio/video system for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the audio or video file in response to a user selecting the audio file using controls of the car audio/video system, and transmits audio generated by the portable device over said wireless communication link to the car audio/video system for playing on the car audio/video system.

93. (Previously Presented) The system of claim 92, wherein said integration subsystem is positioned within the portable device.

94. (Previously Presented) The system of claim 93, wherein said first wireless interface is positioned within the portable device.

95. (Previously Presented) The system of claim 94, wherein said second wireless interface is positioned within the car audio/video system.

96. (Previously Presented) The system of claim 91, wherein said integration subsystem receives, over said wireless communication link, a control command issued at the car audio/video system in a format incompatible with the portable device, processes the control command into a formatted command compatible with the portable device, and dispatches the processed control command to the portable device for execution thereby.

97. (Previously Presented) The system of claim 92, wherein said integration subsystem receives data generated by the portable device in a format incompatible with the car audio/video system, processes the data into formatted data compatible with the car audio/video system, and transmits the processed data to the car audio/video system over the wireless communication link for subsequent display of the processed data on a display of the car audio/video system.

98. (Previously Presented) The system of claim 92, wherein said integration subsystem further comprises a voice recognition subsystem for receiving and processing spoken control commands issued by a user.

99. (Previously Presented) The system of claim 98, wherein said integration subsystem instructs said portable device to play a desired file in response to a spoken command processed by the voice recognition subsystem.

100. (Previously Presented) The system of claim 92, wherein said integration subsystem further comprises a speech synthesizer for generating synthesized speech corresponding to data generated by the portable device.

101. (Previously Presented) The system of claim 100, wherein said integration subsystem transmits the synthesized speech to the car audio/video system over said wireless communication link for subsequent playing of the synthesized speech by the car audio/video system.

102. (Previously Presented) The system of claim 92, wherein said integration subsystem generates a device presence signal and transmits the device presence signal to the car audio/video

system over said wireless communications link to maintain the car audio/video system in a state responsive to the portable device.

103. (Previously Presented) The system of claim 92, wherein the portable device comprises a portable receiver.

104. (Previously Presented) The system of claim 103, wherein the portable receiver comprises a digital audio broadcast (DAB) receiver, a high-definition (HD) radio receiver, or a satellite receiver.

105. (Previously Presented) The system of claim 92, wherein the portable device comprises a portable digital media player.

106. (Previously Presented) The system of claim 105, wherein the portable digital media player comprises a video device, a portable media center, a portable media player, an MP3 player, an MP4 player, a WMV player, an Apple iPod, or an Apple video iPod.

107. (Previously Presented) The system of claim 92, wherein the portable device comprises a cellular telephone.

108. (Previously Presented) The system of claim 92, further comprising a non-wireless connection established between the car audio/video system and the portable device.

109. (Previously Presented) The system of claim 92, wherein said integration subsystem transmits, over said wireless communication link, information about a video file stored on the portable device to the car audio/video system for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the video file in response to a user selecting the video file using controls of the car audio/video system, and transmits video generated by the portable device over said wireless communication link to the car audio/video system for playing on the car audio/video system.

110. (Previously Presented) The system of claim 109, wherein the video file comprises a movie stored on the portable device.

111. (Previously Presented) The system of Claim 109, wherein the video file comprises a picture stored on the portable device.

112. (Previously Presented) The system of claim 109, wherein the video file comprises a video clip stored on the portable device.

113. (Previously Presented) The system of claim 109, wherein said integration subsystem receives video generated by the portable device in a first format incompatible with the car audio/video system, processes the video into processed video in a second format compatible with the car audio/video system, and transmits the processed video over the wireless communication link to the car audio/video system for subsequent display of the processed video on a display of the car audio/video system.

114. (Previously Presented) The system of claim 92, wherein the audio file comprises a song stored on the portable device.

115. (Previously Presented) The system of claim 92, wherein the portable device is connected to the Internet, and said integration device processes information generated by the portable device and transmits processed information to the car audio/video system so that the display of the car audio/video system operates as an Internet browser.

116. (Previously Presented) A multimedia device integration system, comprising:

an integration subsystem in communication with a portable device, the portable device external to a car audio/video system; and

a first wireless interface in communication with said integration subsystem, said first wireless interface establishing a wireless communication link with a second wireless interface in communication with the car audio/video system,

wherein said integration subsystem obtains information about an audio file received by the portable device, transmits the information over said wireless communication link to the car audio/video system for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the audio or video file in response to a user selecting the audio file using controls of the car audio/video system, and transmits audio generated by the portable device over said wireless communication link to the car audio/video system for playing on the car audio/video system.

117. (Previously Presented) The system of claim 116, wherein said integration subsystem is positioned within the portable device.

118. (Previously Presented) The system of claim 117, wherein said first wireless interface is positioned within the portable device.

119. (Previously Presented) The system of claim 118, wherein said second wireless interface is positioned within the car audio/video system.

120. (Previously Presented) The system of claim 116, wherein said integration subsystem receives a control command issued at the car audio/video system in a format incompatible with the portable device, processes the control command into a formatted command compatible with the portable device, and dispatches the processed control command to the portable device for execution thereby.

121. (Previously Presented) The system of claim 116, wherein said integration subsystem receives data generated by the portable device in a format incompatible with the car audio/video system, processes the data into formatted data compatible with the car audio/video system, and transmits the processed data to the car audio/video system over the wireless communication link for subsequent display of the processed data on a display of the car audio/video system.

122. (Previously Presented) The system of claim 116, wherein said integration subsystem further comprises a voice recognition subsystem for receiving and processing spoken control commands issued by a user.

123. (Previously Presented) The system of claim 122, wherein said integration subsystem instructs said portable device to play a desired file in response to a spoken command processed by the voice recognition subsystem.

124. (Previously Presented) The system of claim 116, wherein said integration subsystem further comprises a speech synthesizer for generating synthesized speech corresponding to data generated by the portable device.

125. (Previously Presented) The system of claim 124, wherein said integration subsystem transmits the synthesized speech to the car audio/video system over said wireless communication link for subsequent playing of the synthesized speech by the car audio/video system.

126. (Previously Presented) The system of claim 116, wherein said integration subsystem generates a device presence signal and transmits the device presence signal to the car audio/video system over said wireless communications link to maintain the car audio/video system in a state responsive to the portable device.

127. (Previously Presented) The system of claim 116, wherein the portable device comprises a portable receiver.

128. (Previously Presented) The system of claim 127, wherein the portable receiver comprises a digital audio broadcast (DAB) receiver, a high-definition (HD) radio receiver, or a satellite receiver.

129. (Previously Presented) The system of claim 116, wherein the portable device comprises a portable digital media player.

130. (Previously Presented) The system of claim 129, wherein the portable digital media player comprises a video device, a portable media center, a portable media player, an MP3 player, an MP4 player, a WMV player, an Apple iPod, or an Apple video iPod.

131. (Previously Presented) The system of claim 116, wherein the portable device comprises a cellular telephone.

132. (Previously Presented) The system of claim 116, further comprising a non-wireless connection established between the car audio/video system and the portable device.

133. (Previously Presented) The system of claim 116, wherein said integration subsystem transmits, over said wireless communication link, information about a video file received by the portable device to the car audio/video system for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the video file in response to a user selecting the video file using controls of the car audio/video system, and transmits video generated by the portable device over said wireless communication link to the car audio/video system for playing on the car audio/video system.

134. (Previously Presented) The system of claim 133, wherein the video file comprises a streaming movie received by the portable device.

135. (Previously Presented) The system of Claim 133, wherein the video file comprises a picture received by the portable device.

136. (Previously Presented) The system of claim 133, wherein the video file comprises a streaming video clip received by the portable device.

137. (Previously Presented) The system of claim 116, wherein said integration subsystem receives video generated by the portable device in a first format incompatible with the car audio/video system, processes the video into processed video in a second format compatible with the car audio/video system, and transmits the processed video over the wireless communication link to the car audio/video system for subsequent display of the processed video on a display of the car audio/video system.

138. (Previously Presented) The system of claim 116, wherein the audio file comprises a song received by the portable device.

139. (Previously Presented) The system of claim 116, wherein the portable device is connected to the Internet, and said integration device processes information generated by the portable device and transmits processed information to the car audio/video system so that the display of the car audio/video system operates as an Internet browser.

140. (Previously Presented) A multimedia device integration system, comprising:

an integration subsystem in communication with a car audio/video system; and

a first wireless interface in communication with said integration subsystem, said first wireless interface establishing a wireless communication link with a second wireless interface in communication with a portable device external to the car audio/video system,

wherein said integration subsystem obtains, using said wireless communication link, information about an audio file stored on the portable device, transmits the information to the car audio/video system for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the audio or video file in response to a user selecting the audio file using controls of the car audio/video system, and receives audio generated by the portable device over said wireless communication link for playing on the car audio/video system.

141. (Previously Presented) The system of claim 140, wherein said integration subsystem is positioned within the car audio/video system.

142. (Previously Presented) The system of claim 141, wherein said first wireless interface is positioned within the car audio/video system.

143. (Previously Presented) The system of claim 142, wherein said second wireless interface is positioned within the portable device.

144. (Previously Presented) The system of claim 140, wherein said integration subsystem receives a control command issued at the car audio/video system in a format incompatible with the portable device, processes the control command into a formatted command compatible with the portable device, and dispatches the processed control command to the portable device for execution thereby.

145. (Previously Presented) The system of claim 140, wherein said integration subsystem receives data generated by the portable device in a format incompatible with the car audio/video system, processes the data into formatted data compatible with the car audio/video system, and transmits the processed data to the car audio/video system for subsequent display of the processed data on a display of the car audio/video system.

146. (Previously Presented) The system of claim 140, wherein said integration subsystem further comprises a voice recognition subsystem for receiving and processing spoken control commands issued by a user.

147. (Previously Presented) The system of claim 150, wherein said integration subsystem instructs said portable device to play a desired file in response to a spoken command processed by the voice recognition subsystem.

148. (Previously Presented) The system of claim 140, wherein said integration subsystem further comprises a speech synthesizer for generating synthesized speech corresponding to data generated by the portable device.

149. (Previously Presented) The system of claim 148, wherein said integration subsystem transmits the synthesized speech to the car audio/video system for subsequent playing of the synthesized speech by the car audio/video system.

150. (Previously Presented) The system of claim 140, wherein said integration subsystem generates a device presence signal and transmits the device presence signal to the car audio/video system to maintain the car audio/video system in a state responsive to the portable device.

151. (Previously Presented) The system of claim 140, wherein the portable device comprises a portable receiver.

152. (Previously Presented) The system of claim 151, wherein the portable receiver comprises a digital audio broadcast (DAB) receiver, a high-definition (HD) radio receiver, or a satellite receiver.

153. (Previously Presented) The system of claim 140, wherein the portable device comprises a portable digital media player.

154. (Previously Presented) The system of claim 153, wherein the portable digital media player comprises a video device, a portable media center, a portable media player, an MP3 player, an MP4 player, a WMV player, an Apple iPod, or an Apple video iPod.

155. (Previously Presented) The system of claim 140, wherein the portable device comprises a cellular telephone.

156. (Previously Presented) The system of claim 140, further comprising a non-wireless connection established between the car audio/video system and the portable device.

157. (Previously Presented) The system of claim 140, wherein said integration subsystem obtains, using said wireless communication link, information about a video file stored on the portable device for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the video file in response to a user selecting the video file using controls of the car audio/video system, and receives video generated by the portable device over said wireless communication link for playing on the car audio/video system.

158. (Previously Presented) The system of claim 157, wherein the video file comprises a movie stored on the portable device.

159. (Previously Presented) The system of Claim 157, wherein the video file comprises a picture stored on the portable device.

160. (Previously Presented) The system of claim 157, wherein the video file comprises a video clip stored on the portable device.

161. (Previously Presented) The system of claim 157, wherein said integration subsystem receives video generated by the portable device in a first format incompatible with the car audio/video system, processes the video into processed video in a second format compatible

with the car audio/video system, and transmits the processed video to the car audio/video system for subsequent display of the processed video on a display of the car audio/video system.

162. (Previously Presented) The system of claim 140, wherein the audio file comprises a song stored on the portable device.

163. (Previously Presented) The system of claim 140, wherein the portable device is connected to the Internet, and said integration device processes information generated by the portable device and transmits processed information to the car audio/video system so that the display of the car audio/video system operates as an Internet browser.

164. (Previously Presented) A multimedia device integration system, comprising:

an integration subsystem in communication with a car audio/video system; and

a first wireless interface in communication with said integration subsystem, said first wireless interface establishing a wireless communication link with a second wireless interface in communication with a portable device external to the car audio/video system,

wherein said integration subsystem obtains, using said wireless communication link, information about an audio file received by the portable device, transmits the information to the car audio/video system for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the audio or video file in response to a user selecting the audio file using controls of the car audio/video system, and receives audio generated by the portable device over said wireless communication link for playing on the car audio/video system.

165. (Previously Presented) The system of claim 164, wherein said integration subsystem is positioned within the car audio/video system.

166. (Previously Presented) The system of claim 165, wherein said first wireless interface is positioned within the car audio/video system.

167. (Previously Presented) The system of claim 166, wherein said second wireless interface is positioned within the portable device.

168. (Previously Presented) The system of claim 164, wherein said integration subsystem receives a control command issued at the car audio/video system in a format incompatible with the portable device, processes the control command into a formatted

command compatible with the portable device, and dispatches the processed control command to the portable device for execution thereby.

169. (Previously Presented) The system of claim 164, wherein said integration subsystem receives data generated by the portable device in a format incompatible with the car audio/video system, processes the data into formatted data compatible with the car audio/video system, and transmits the processed data to the car audio/video system for subsequent display of the processed data on a display of the car audio/video system.

170. (Previously Presented) The system of claim 164, wherein said integration subsystem further comprises a voice recognition subsystem for receiving and processing spoken control commands issued by a user.

171. (Previously Presented) The system of claim 170, wherein said integration subsystem instructs said portable device to play a desired file in response to a spoken command processed by the voice recognition subsystem.

172. (Previously Presented) The system of claim 164, wherein said integration subsystem further comprises a speech synthesizer for generating synthesized speech corresponding to data generated by the portable device.

173. (Previously Presented) The system of claim 172, wherein said integration subsystem transmits the synthesized speech to the car audio/video system for subsequent playing of the synthesized speech by the car audio/video system.

174. (Previously Presented) The system of claim 164, wherein said integration subsystem generates a device presence signal and transmits the device presence signal to the car audio/video system to maintain the car audio/video system in a state responsive to the portable device.

175. (Previously Presented) The system of claim 164, wherein the portable device comprises a portable receiver.

176. (Previously Presented) The system of claim 175, wherein the portable receiver comprises a digital audio broadcast (DAB) receiver, a high-definition (HD) radio receiver, or a satellite receiver.

177. (Previously Presented) The system of claim 164, wherein the portable device comprises a portable digital media player.

178. (Previously Presented) The system of claim 177, wherein the portable digital media player comprises a video device, a portable media center, a portable media player, an MP3 player, an MP4 player, a WMV player, an Apple iPod, or an Apple video iPod.

179. (Previously Presented) The system of claim 164, wherein the portable device comprises a cellular telephone.

180. (Previously Presented) The system of claim 164, further comprising a non-wireless connection established between the car audio/video system and the portable device.

181. (Previously Presented) The system of claim 164, wherein said integration subsystem obtains, over said wireless communication link, information about a video file received by the portable device for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the video file in response to a user selecting the video file using controls of the car audio/video system, and receives video generated by the portable device over said wireless communication link for playing on the car audio/video system.

182. (Previously Presented) The system of claim 180, wherein the video file comprises a streaming movie received by the portable device.

183. (Previously Presented) The system of Claim 180, wherein the video file comprises a picture received by the portable device.

184. (Previously Presented) The system of claim 180, wherein the video file comprises a streaming video clip received by the portable device.

185. (Previously Presented) The system of claim 180, wherein said integration subsystem receives video generated by the portable device in a first format incompatible with the car audio/video system, processes the video into processed video in a second format compatible with the car audio/video system, and transmits the processed video to the car audio/video system for subsequent display of the processed video on a display of the car audio/video system.

186. (Previously Presented) The system of claim 164, wherein the audio file comprises a song stored on the portable device.

187. (Previously Presented) The system of claim 164, wherein the portable device is connected to the Internet, and said integration device processes information generated by the portable device and transmits processed information to the car audio/video system so that the display of the car audio/video system operates as an Internet browser.

188. (Currently Amended) A multimedia device integration system, comprising:

first and second wireless interfaces establishing a wireless communication link between a car audio/video system and a portable device external to the car audio/video system; and

an integration subsystem in communication with said wireless communication link,

wherein said integration subsystem channels audio generated by the portable device to the car audio/video system using the wireless communication link for subsequent playing of the audio on the car audio/video system, the audio corresponding to an audio file played by the portable ~~device.~~ device, and

wherein said integration subsystem receives a control command issued at the car audio/video system in a format incompatible with the portable device, processes the control command into a formatted command compatible with the portable device, and dispatches the processed control command to the portable device for execution thereby.

189. (Previously Presented) The system of claim 188, wherein said integration subsystem is positioned within the portable device.

190. (Previously Presented) The system of claim 188, wherein said integration subsystem is positioned within the car audio/video system.

191. (Previously Presented) The system of claim 188, where the audio file is stored on the portable device.

192. (Previously Presented) The system of claim 188, wherein the audio file is received by the portable device.

193. (Cancelled)

194. (Cancelled)

195. (Previously Presented) The system of claim 188, wherein said integration subsystem further comprises a voice recognition subsystem for receiving and processing spoken control commands issued by a user.

196. (Previously Presented) The system of claim 195, wherein said integration subsystem instructs said portable device to play a desired file in response to a spoken command processed by the voice recognition subsystem.

197. (Previously Presented) The system of claim 188, wherein said integration subsystem further comprises a speech synthesizer for generating synthesized speech corresponding to data generated by the portable device.

198. (Previously Presented) The system of claim 197, wherein said integration subsystem transmits the synthesized speech to the car audio/video system for subsequent playing of the synthesized speech by the car audio/video system.

199. (Previously Presented) The system of claim 188, wherein said integration subsystem generates a device presence signal and transmits the device presence signal to the car audio/video system to maintain the car audio/video system in a state responsive to the portable device.

200. (Previously Presented) The system of claim 188, wherein the portable device comprises a portable receiver.

201. (Previously Presented) The system of claim 200, wherein the portable receiver comprises a digital audio broadcast (DAB) receiver, a high-definition (HD) radio receiver, or a satellite receiver.

202. (Previously Presented) The system of claim 188, wherein the portable device comprises a portable digital media player.

203. (Previously Presented) The system of claim 202, wherein the portable digital media player comprises a video device, a portable media center, a portable media player, an MP3 player, an MP4 player, a WMV player, an Apple iPod, or an Apple video iPod.

204. (Previously Presented) The system of claim 188, wherein the portable device comprises a cellular telephone.

205. (Previously Presented) The system of claim 188, further comprising a non-wireless connection established between the car audio/video system and the portable device.

206. (Previously Presented) The system of claim 188, wherein said integration subsystem channels video generated by the portable device to the car audio/video system over the wireless communication link for subsequent playing of the audio on the car audio/video system, the video corresponding to a video file played by the portable device.

207. (Previously Presented) The system of claim 206, wherein the video file comprises a movie stored on the portable device.

208. (Previously Presented) The system of Claim 206, wherein the video file comprises a picture stored on the portable device.

209. (Previously Presented) The system of claim 206, wherein the video file comprises a video clip stored on the portable device.

210. (Previously Presented) The system of claim 206, wherein the video file comprises streaming video received by the portable device.

211. (Previously Presented) The system of claim 206, wherein the video file comprises a navigation map generated by the portable device.

212. (Previously Presented) The system of claim 206, wherein said integration subsystem receives video generated by the portable device in a first format incompatible with the car audio/video system, processes the video into processed video in a second format compatible with the car audio/video system, and transmits the processed video to the car audio/video system for subsequent display of the processed video on a display of the car audio/video system.

213. (New) A multimedia device integration system, comprising:

first and second wireless interfaces establishing a wireless communication link between a car audio/video system and a portable device external to the car audio/video system; and

an integration subsystem in communication with said wireless communication link,

wherein said integration subsystem channels audio generated by the portable device to the car audio/video system using the wireless communication link for subsequent playing of the audio on the car audio/video system, the audio corresponding to an audio file played by the portable device, and

wherein said integration subsystem receives data generated by the portable device in a format incompatible with the car audio/video system, processes the data into formatted data compatible with the car audio/video system, and transmits the processed data to the car audio/video system for subsequent display of the processed data on a display of the car audio/video system.

REMARKS

Attorney for Applicant has carefully reviewed the outstanding final Office Action on the above-identified application. Applicant has amended the application, as set forth herein, and respectfully submits that the application, as amended, is in condition for allowance. A Request for Continued Examination (RCE) is being filed on even date herewith.

The Office Action indicates that claims 92-187 would be allowed upon the submission of a Terminal Disclaimer. To expedite issuance of a patent, an executed Terminal Disclaimer over Applicant's issued U.S. Patent No. 7,489,786 is being filed herewith.

The Office Action also indicates that claims 193-194 (which depend from claim 188) would be allowable if rewritten in independent form. To expedite issuance of a patent, Applicant has amended independent claim 188 to include the limitations of allowable claim 193, and has cancelled claim 193. Applicant has also added new claim 213, which includes the combined limitations of claim 188 and allowable claim 194. By the foregoing amendments, and by submission of the aforementioned Terminal Disclaimer, Applicant respectfully submits that all of the pending claims are in condition for allowance.

Applicant makes the foregoing amendments to expedite issuance of a patent. Applicant makes no representation as to the merits of the rejections raised in the Office Action, and expressly disagrees with same. Applicant preserves the right to file on or more continuing applications claiming the priority of this application, in order to present claims directed to the subject matter of the rejected claims, and/or broader claims.

All issues raised in the Office Action appear to have been addressed. Claim 188 was amended, claims 193-194 were canceled, and claim 213 was added. Claims 92-192 and 195-213 are pending and are in condition for allowance. Examination is requested and favorable action solicited.

Respectfully submitted,

Date: 4/30/2010

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PTO/SB/26 (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

TERMINAL DISCLAIMER TO OBVIATE A DOUBLE PATENTING REJECTION OVER A "PRIOR" PATENT	Docket Number (Optional) 99879-00026

In re Application of: Ira Marlowe

Application No.: 11/475,847

Filed: 06/27/2006

For: Multimedia Device Integration System

The owner*, Ira Marlowe, of 100 percent interest in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term prior patent No. 7,489,786 as the term of said prior patent is defined in 35 U.S.C. 154 and 173, and as the term of said prior patent is presently shortened by any terminal disclaimer. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and the prior patent are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.

In making the above disclaimer, the owner does not disclaim the terminal part of the term of any patent granted on the instant application that would extend to the expiration date of the full statutory term as defined in 35 U.S.C. 154 and 173 of the prior patent, "as the term of said prior patent is presently shortened by any terminal disclaimer," in the event that said prior patent later:

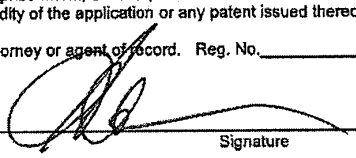
expires for failure to pay a maintenance fee;
is held unenforceable;
is found invalid by a court of competent jurisdiction;
is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321;
has all claims canceled by a reexamination certificate;
is reissued; or
is in any manner terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer.

Check either box 1 or 2 below, if appropriate.

1. ☑ For submissions on behalf of a business/organization (e.g., corporation, partnership, university, government agency, etc.), the undersigned is empowered to act on behalf of the business/organization.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

2. ☐ The undersigned is an attorney or agent of record. Reg. No. _____



Signature — April 30, 2010 (Date)

Ira Marlowe
Typed or printed name

201-569-5000
Telephone Number

☑ Terminal disclaimer fee under 37 CFR 1.20(d) included.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

*Statement under 37 CFR 3.73(b) is required if terminal disclaimer is signed by the assignee (owner).
Form PTO/SB/96 may be used for making this certification. See MPEP § 324.

COMBINED AMENDMENT & PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a) (Small Entity)	Docket No. 99879-00026

In Re Application Of: **Ira Marlowe**

Application No.	Filing Date	Examiner	Customer No.	Group Art Unit	Confirmation No.
11/475,847	06/27/2006	Kurr, Jason R.	27614	2614	9001

Invention: **Multimedia Device Integration System**

COMMISSIONER FOR PATENTS:

This is a combined amendment and petition under the provisions of 37 CFR 1.136(a) to extend the period for filing a response to the Office Action of _____ in the above-identified application.
Date

The requested extension is as follows (check time period desired):

☐ One month ☐ Two months ☐ Three months ☐ Four months ☐ Five months

from: _____ until: _____
Date *Date*

Applicant claims small entity status. See 37 CFR 1.27.

The fee for the amendment and extension of time has been calculated as shown below:

CLAIMS AS AMENDED							
	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST # PREV. PAID FOR		NUMBER EXTRA CLAIMS PRESENT	RATE	ADDITIONAL FEE
TOTAL CLAIMS	121	-	122	=	0	x $26.00	$0.00
INDEP. CLAIMS	6	-	5	=	1	x $110.00	$110.00
						FEE FOR AMENDMENT	$110.00
						FEE FOR EXTENSION OF TIME	$0.00
						TOTAL FEE FOR AMENDMENT AND EXTENSION OF TIME	**$110.00**

P28SMALL/REV06

COMBINED AMENDMENT & PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a) (Small Entity)	Docket No. 99879-00026

The fee for the amendment and extension of time is to be paid as follows:

☐ A check in the amount of for the amendment and extension of time is enclosed.

☒ Please charge Deposit Account No. **503571** in the amount of **$110.00**

☒ The Director is hereby authorized to charge payment of the following fees associated with this communication or credit any overpayment to Deposit Account No. **503571**

- ☒ Any additional filing fees required under 37 C.F.R. 1.16.
- ☒ Any patent application processing fees under 37 CFR 1.17.

☒ If an additional extension of time is required, please consider this a petition therefor and charge any additional fees which may be required to Deposit Account No. **503571**

☐ Payment by credit card. Form PTO-2038 is attached.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

Mark Enl
Signature

Dated: **April 30, 2010**

Mark E. Nikolsky
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100 Mulberry Street
Newark, NJ 07102
Tel: (973) 639-6987
Fax: (973) 297-6624

cc:

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to the "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)] on

_____.
(Date)

Signature of Person Mailing Correspondence

Typed or Printed Name of Person Mailing Correspondence

P28SMALL/REV06

Electronic Patent Application Fee Transmittal

Application Number:	11475847
Filing Date:	27-Jun-2006
Title of Invention:	Multimedia device integration system
First Named Inventor/Applicant Name:	Ira Marlowe
Filer:	Mark E. Nikolsky/Diane Bodzioch
Attorney Docket Number:	99879-00026

Filed as Small Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Independent claims in excess of 3	2201	1	110	110
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Request for continued examination	2801	1	405	405
Statutory disclaimer	2814	1	70	70
		Total in USD ($)		**585**

Electronic Acknowledgement Receipt	
EFS ID:	7528208
Application Number:	11475847
International Application Number:	
Confirmation Number:	9001
Title of Invention:	Multimedia device integration system
First Named Inventor/Applicant Name:	Ira Marlowe
Customer Number:	27614
Filer:	Mark E. Nikolsky/Diane Bodzioch
Filer Authorized By:	Mark E. Nikolsky
Attorney Docket Number:	99879-00026
Receipt Date:	30-APR-2010
Filing Date:	27-JUN-2006
Time Stamp:	16:21:45
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$585
RAM confirmation Number	3152
Deposit Account	503571
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees) Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Miscellaneous Incoming Letter	transmittal_001.pdf	37621 c206e07a4ce60e717963801040090c10f89eff8b	no	1
Warnings:					
Information:					
2	Request for Continued Examination (RCE)	RCE_001.pdf	77745 4ac06f03218a3e618becdeeab05278d6452106e4	no	1
Warnings:					
This is not a USPTO supplied RCE SB30 form.					
Information:					
3	Applicant Arguments/Remarks Made in an Amendment	Response_001.pdf	873852 9a02e9f495eca710a8bf1ab9ef2e9cfa63afdd05	no	31
Warnings:					
Information:					
4	Terminal Disclaimer Filed	terminaldisclaimer_001.pdf	90325 710ed386a2f71fb319b2227107d0b9d681938e7c	no	1
Warnings:					
Information:					
5	New or Additional Drawings	combinedamendment_001.pdf	75890 d26f0f308fd89febb8459bfdf96034b41adcea24	no	2
Warnings:					
Information:					
6	Fee Worksheet (PTO-875)	fee-info.pdf	33290 25d10189e5b81c9bb59de4c0f5145390e228e1c2	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	1188723		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Customer No. 27614
Confirmation No. 9001

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Examiner: Kurr, Jason R.
Art Unit: 2614

Re:

Our file:	99879-00026
Applicant:	Ira Marlowe
Serial No.:	11/475,847
Filed:	06/27/2006
For:	Multimedia Device Integration System

Sir:

Enclosed for filing in the United States Patent and Trademark Office is the following:

1. Response to Office Action (31 pages)
2. Request for Continued Examination Transmittal (1 page)
3. Terminal Disclaimer to Obviate a Double Patenting Rejection Over a "Prior" Patent (1 page)
4. Combined Amendment & Petition for Extension of Time Under 37 CFR 1.136(a) (2 pages)
5. Transmittal Sheet (1 page)

CONDITIONAL PETITION

If any extension of time is required for the submission of the above-identified items, Applicant requests that this be considered a petition therefor. Please charge any additional charges or any other charges relating to this matter, or credit any overpayment, to the Deposit Account of the writer, **Account No. 503571.**

Respectfully submitted,

4/30/2010
Date

Mark E. Nikolsky
Registration No. 48,319
McCarter & English, LLP
Four Gateway Center
100 Mulberry Street
Newark, NJ 07102
Tel: (973) 639-6987
Fax: (973) 297-6624

CERTIFICATE OF ELECTRONIC FILING

I hereby certify that this correspondence is being electronically filed with the United States Patent and Trademark Office (via EFS-Web) on April 30, 2010.

Diane M. Bodzioch

ME1 9896309v.1

PTO/SB/06 (07-06)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 11/475,847	Filing Date 06/27/2006	☐ To be Mailed

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)	SMALL ENTITY ☒		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

		(Column 1)		(Column 2)	(Column 3)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
	04/30/2010	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
AMENDMENT	Total (37 CFR 1.16(i))	* 91	Minus	** 121	= 0	X $26 =	0	OR	X $ =	
	Independent (37 CFR 1.16(h))	* 7	Minus	***5	= 2	X $110 =	220	OR	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE	**220**	OR	TOTAL ADD'L FEE	

		(Column 1)		(Column 2)	(Column 3)					
		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
AMENDMENT	Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =		OR	X $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =		OR	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/TARA J. WITCHER/

PTO/SB/06 (07-06)
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 11/475,847	Filing Date 06/27/2006	☐ To be Mailed

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)	SMALL ENTITY ☒		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

		(Column 1)		(Column 2)	(Column 3)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
	04/30/2010	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
AMENDMENT	Total (37 CFR 1.16(i))	* 91	Minus	** 121	= 0	X $26 =	0	OR	X $ =	
	Independent (37 CFR 1.16(h))	* 7	Minus	***5	= 2	X $110 =	220	OR	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE	**220**	OR	TOTAL ADD'L FEE	

		(Column 1)		(Column 2)	(Column 3)					
		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
AMENDMENT	Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =		OR	X $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =		OR	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/TARA J. WITCHER/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PTO/SB/08a (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 2

Complete if Known	
Application Number	11/475,847
Filing Date	06/27/2006
First Named Inventor	Ira Marlowe
Art Unit	2614
Examiner Name	Kurr, Jason R.
Attorney Docket Number	99879-00026

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	US- 6,411,823	06/25/2002	Chen	
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
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		US-			
		US-			
		US-			
		US-			

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]-Number[4]-Kind Code[5] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T[6]
	2	CN1474252 (A) w/English Abstract	02-11-2004	Lenovo Beijing Co. Ltd.		

Examiner Signature		Date Considered	

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Sheet 2 of 2

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NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
	3	Copy of Official Action dated July 16, 2009, issued by the Mexican Institute of Industrial Property in connection with Mexican Patent Application No. PA/a/2006/002421, with an English translation (5 pages)	
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Device and method for connecting computer signal and power

Publication number: CN1474252 (A)
Publication date: 2004-02-11
Inventor(s): WANG ZHENZHONG [CN] +
Applicant(s): LENOVO BEIJING CO LTD [CN] +
Classification:
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Abstract of **CN 1474252 (A)**

The present invention relates to the device and method for connecting computer signal and power to flexible standard internal or external computer equipment. The device includes a complex interface unit inside computer coupled with computer power supply and the data interface unit of mainboard for data exchange; and an interface converting unit coupled to the complex interface unit for obtaining power supply and data exchange with computer. The interface converting unit includes converter, separated power supply interface and signal interface, and the converter transmits the power supply and computer data from the complex interface unit to the power supply interface and the signal interface separately; and the power supply interface and the signal interface is suitable for connecting to the standard computer equipment interface.; The present invention makes the internal or external computer equipment portable or movable.

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[51] Int. Cl[7]
G06F 3/00

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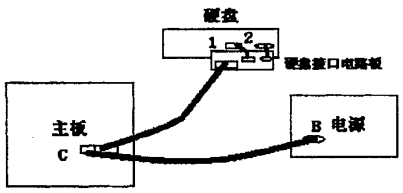
权利要求书 3 页 说明书 9 页 附图 3 页

[54] 发明名称 连接计算机信号与电源的装置和方法

[57] 摘要

本发明提供了一种连接计算机信号与电源到一个有一定灵活性的标准的计算机内部或外部设备的装置，该装置包括：位于计算机中的复合接口装置，该复合接口装置耦合到计算机电源，该复合接口装置还耦合到主板的数据接口装置，以与计算机主板交换数据；接口转换装置，耦合到该复合接口装置，以获取电源和与计算机进行数据交换；其中，该接口转换装置还包括转换装置和分立的电源接口与信号接口，该转换装置将该复合接口装置中的电源和计算机数据分别转发到电源接口和信号接口；该电源接口和信号接口适于与该标准的计算机设备的标准接口连接。 本发明保证了标准的计算机内部或外部设备在使用时可以进行便携或移动性的需求，方便了用户。



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1、 一种连接计算机信号与电源的装置，所述装置连接计算机电源与信号到一个有一定灵活性的标准的计算机内部或外部设备，所述装置包括:

位于计算机中的复合接口装置，所述复合接口装置耦合到计算机电源，所述复合接口装置还耦合到主板的数据接口装置，以与计算机主板交换数据;

接口转换装置，耦合到所述复合接口装置，以获取电源和与计算机进行数据交换;

其中，所述接口转换装置还包括转换装置和分立的电源接口与信号接口，所述转换装置将所述复合接口装置中的电源和计算机数据分别转发到电源接口和信号接口；所述电源接口和信号接口适于与所述标准的计算机设备的标准接口连接。

2、如权利要求1所述的装置，其中，所述复合接口装置位于计算机主板上，通过计算机主板上的信号交换装置与计算机进行数据交换。

3、如权利要求2所述的装置，其中，所述信号交换装置包括:

南桥芯片;

Serial ATA的控制芯片，耦合到所述南桥芯片，以便所述计算机通过南桥芯片将相关指令输出到所述控制芯片;

滤波装置，用于滤波Serial ATA的控制芯片解码的所述相关指令，然后通过所述信号交换装置与所述标准的计算机内部或外部设备交换。

4、如权利要求1或2所述的装置，其中，所述复合接口装置和接口转换装置还包括防止接口装置中的插头反插的装置。

5、如权利要求4所述的装置，其中，所述防止接口装置中的插头反插的装置为插头定位装置。

6、如权利要求5所述的装置，其中，所述插头定位装置包括插头上的凸起或凹槽或插脚形状的不同或插头外形的不同。

7、如权利要求4所述的装置，其中，所述防止接口装置中的插头反插的装置包括根据预定各针的排列设定不同信号和电源对应的具体插脚，所述排列满足反插时，不会损害所述计算机或所述标准的计算机内部或外部设备。

8、如权利要求7所述的装置，其中，所述插头为12针双排插头，所述插头的各插脚的定义为：从针脚1到12每脚的定义分别为直流正12V（+12V）、地（GND）、地（GND）、直流正5V（+5V）、地（GND）、地（GND）、微分传输正信号（TxP+）、微分传输负信号（TxN-）、微分接收正信号（RxP+）、微分接收负信号（RxN-）、地（GND）、空（CUT）；所述接口转换装置中的电源接口与信号接口分别为4针双排插头与8针双排插头，4针双排插头各插脚的定义为：从针脚1到4每脚的定义分别为直流正12V（+12V）、地（GND）、地（GND）、直流正5V（+5V）；8针双排插头各插脚的定义为：从针脚1到8每脚的定义分别为地（GND）、微分传输正信号（TxP+）、微分接收正信号（RxP+）、地（GND）、微分传输负信号（TxN-）、微分接收负信号（RxN-）、空（CUT）。

9、如权利要求1所述的装置，其中，所述复合接口装置包括，型号为Si13112芯片，与由晶体及RC网络构成的滤波网络，用于实现所述计算机与所述标准的计算机内部或外部设备数据的滤波与交换。

10、 一种连接计算机信号与电源的方法，所述方法实现连接计算机电源与信号到一个有一定灵活性的标准的计算机内部或外部设备，所述方法包括：

连接所述计算机电源和计算机主板的预定数据和/或程序到位于计算机中的包括电源接口和数据信号接口的复合接口装置；

连接所述复合接口装置到所述计算机内部或外部设备，以向所述设备提供电源和进行数据交换；

其中，所述连接所述复合接口装置到所述计算机内部或外部设备的步骤包括：连接所述复合接口装置到位于或邻近于所述设备的接口转换装置，转换所述复合接口装置为到所述设备电源接口的电源信号与到所述信号接口的数据与程序信号。

11、如权利要求10所述的方法，其中，所述复合接口装置位于所述计算机主板上；所述连接所述复合接口装置到所述计算机内部或外部设备的步骤还包括：建立插头定位装置，以防止接口装置中的插头反插的装置。

连接计算机信号与电源的装置和方法

技术领域

本发明涉及计算机应用领域，具体涉及一种连接计算机信号与电源的装置和方法，它支持移动式Serial ATA（串行ATA）即插即用设备。

发明背景

随着信息产业的飞速发展，计算机作为基础工具也得到了更多的扩展，特别是在计算机使用的主板中出现较以往不同的接口方式及数据传输方式。特别的是，新型主板中对于串行数据通信技术已经越来越广泛的被使用，特别是在硬盘传输界面，以往的并行ATA由于其传输率不高，成为计算机数据传输的瓶径，影响计算机的发展。新兴的技术已经被开发完成，即将成为业界的标准，在硬盘接口方面Serial ATA（串行ATA）技术将取代并行ATA传输方式，数据传输率将从100Mbytes提升到150Mbytes，性能可提升50%，大大提高了系统的效率，从而其将被广泛应用。特别的是Serial ATA 的接口电路特性具有热插拔（即插即用）功能，这样对用户在使用时是非常方便的。

但是，目前的Serial ATA硬件接口或其表现形式并没有将其技术优势淋漓尽致的表现出来，虽然其接口特性可以支持热插拔（即插即用）功能，但是在目前的应用来将，仅仅是将带有这种接口硬盘作为固定的并且是内置于电脑机箱中的固定设备来使用，用户在使用的时候并没有使用到其即插即用的功能，没有充分发挥出技术带来的方便。究其原因，应该是目前Serial ATA接口形式造成的这种局限。

图1描绘了现有技术中的Serial ATA硬盘10通过两个接口分别与主板20与电源30连接的示意图。其中，Serial ATA硬盘10有两个接口分别与主板20与电源30连接，其中1为数据线接口，2为电源线接口，分别连接到主板数据输入端口A和电源输出B。

主板A与硬盘接口1连接主要是通过传输线对数据进行传输，进行相关读写操作；另外，电源输出B提供的电源线连接到硬盘电源接口2上，主要是为硬盘正常工作提供稳定的电压，但是由于这条线主要是由电脑中的主机电源提供，这样致使硬盘10只能固定在机箱上，不能进行位置或外部插拔更改，致使其移动特性受到限制。

另外，现行的主板 Serial ATA 接口在使用时还可能造成接口插反，造成硬盘损坏，并导致严重的后果。而且，现行的接口电路形式还存在固定不良，在运输或托运过程中，数据传输线容易脱落，造成电脑启动不能找到硬盘，无法对电脑进行操作等问题。

发明内容

目前的接口电路的形式影响到其方便、易用性的使用，不能突出表现其技术先进性，本发明的目的是提供一种经济的并可使Serial ATA即插即用的特点充分发挥的设备。

为了实现本发明的目的，本发明提供一种连接计算机信号与电源的装置，所述装置连接计算机电源与信号到一个有一定灵活性的标准的计算机内部或外部设备，所述装置包括:

位于计算机中的复合接口装置，所述复合接口装置耦合到计算机电源，所述复合接口装置还耦合到主板的数据接口装置，以与计算机主板交换数据;

接口转换装置，耦合到所述复合接口装置，以获取电源和与计算机进行数据交换;

其中，所述接口转换装置还包括转换装置和分立的电源接口与信号接口，所述转换装置将所述复合接口装置中的电源和计算机数据分别转发到电源接口和信号接口；所述电源接口和信号接口适于与所述标准的计算机设备的标准接口连接。

可选地，所述复合接口装置位于计算机主板上，通过计算机主板上的信号交换装置与计算机进行数据交换。

优选地，所述信号交换装置包括:

南桥芯片;

Serial ATA的控制芯片，耦合到所述南桥芯片，以便所述计算机通过南桥芯片将相关指令输出到所述控制芯片;

滤波装置，用于滤波Serial ATA的控制芯片解码的所述相关指令，然后通过所述信号交换装置与所述标准的计算机内部或外部设备交换。

可选地，所述复合接口装置和接口转换装置还包括防止接口装置中的插头反插的装置。

优选地，所述防止接口装置中的插头反插的装置为插头定位装置。

可选地，所述插头定位装置包括插头上的凸起或凹槽或插脚形状的不同或插头外形的不同。

优选地，所述防止接口装置中的插头反插的装置包括根据预定各针的排列设定不同信号和电源对应的具体插脚，所述排列满足反插时，不会损害所述计算机或所述标准的计算机内部或外部设备。

可选地，所述插头为12针双排插头，所述插头的各插脚的定义为：从针脚1到12每脚的定义分别为直流正12V（+12V）、地（GND）、地（GND）、直流正5V（+5V）、地（GND）、地（GND）、微分传输正信号（TxP+）、微分传输负信号（TxN-）、微分接收正信号（RxP+）、微分接收负信号（RxN-）、地（GND）、空（CUT）；所述接口转换装置中的电源

接口与信号接口分别为4针双排插头与8针双排插头，4针双排插头各插脚的定义为：从针脚1到4每脚的定义分别为直流正12V（+12V）、地（GND）、地（GND）、直流正5V（+5V）；8针双排插头各插脚的定义为：从针脚1到8每脚的定义分别为地（GND）、微分传输正信号（TxP+）、微分接收正信号（RxP+）、地（GND）、微分传输负信号（TxN-）、微分接收负信号（RxN-）、空（CUT）。

优选地，所述复合接口装置包括，型号为Si13112芯片，与由晶体及RC网络构成的滤波网络，用于实现所述计算机与所述标准的计算机内部或外部设备数据的滤波与交换。

本发明还提供一种连接计算机信号与电源的方法，所述方法实现连接计算机电源与信号到一个有一定灵活性的标准的计算机内部或外部设备，所述方法包括：

连接所述计算机电源和计算机主板的预定数据和/或程序到位于计算机中的包括电源接口和数据信号接口的复合接口装置；

连接所述复合接口装置到所述计算机内部或外部设备，以向所述设备提供电源和进行数据交换；

其中，所述连接所述复合接口装置到所述计算机内部或外部设备的步骤包括：连接所述复合接口装置到位于或邻近于所述设备的接口转换装置，转换所述复合接口装置为到所述设备电源接口的电源信号与到所述信号接口的数据与程序信号。

可选地，所述复合接口装置位于所述计算机主板上；所述连接所述复合接口装置到所述计算机内部或外部设备的步骤还包括：建立插头定位装置，以防止接口装置中的插头反插的装置。

利用本发明，对主板、电源与计算机其它设备（如硬盘）之间的关系合理调配，通过增加主板相关接口电路，减少了电源与硬盘之间的连接关系，保证硬盘在使用时可以进行便携或移动性的需求，方便了用户。

附图的简要描述

图1描绘了现有技术中的Serial ATA硬盘通过两个接口分别与主板与电源连接的示意图；

图2描述了本发明的实施例的支持移动式Serial ATA（串行ATA）即插即用装置的示意图；

图3描述了本发明的实施例的支持移动式Serial ATA（串行ATA）即插即用装置的原理框图；

图4为本发明的实施例的硬盘接口电路板40的示意图；

图5示出了本发明的实施例主板接口C的电路原理图；

图6示出了本发明的实施例的硬盘接口卡40的电路原理图；

图7a和图7b分别示出了本发明的实施例中内置和外置接口的具体管脚信号定义；

图8a和8b分别描绘了本发明的实施例中的数据接口3及电源接口4的管脚信号定义。

具体实施例

为了使本领域技术人员了解和实施本发明，现结合实施例参照附图描绘本发明。

在本发明的实施例中，在计算机主板上增加了 SerialATA 供电电路及接口，保证硬盘可从主板上得到电源供给。由于计算机电源是固定在计算机机箱上的，而现有技术中的硬盘通过电源上连接到硬盘的电源线供电，

因此这样就影响到硬盘可移动性。为了使硬盘的移动性表现出来，本发明在主板上增加了 Serial ATA 硬盘的电源供电电路，将 Serial ATA 硬盘所需的电源通过主板连接到硬盘。一方面保证了硬盘供电电路的品质，另一方面可以使传输线电路与电源电路合二为一，这样就使硬盘传输线的接口统一，变换形式后，可以使硬盘工作所需要的多种条件都可从主板上实现，这样接口形式就变成比较简单了，硬盘可以通过主板这个界面进行操作，实现了及插拔的灵活性。

图 2 描述了本发明的实施例的装置的示意图。 在计算机主板 20 中修改接口 C 或增加一个接口 C，利用接口 C 将对硬盘 10 的电源接口与数据传输接口合二为一，在本发明的另一实施例中，上述两接口分别独立存在。接口 C 中包含了电源输入接口，将现有技术中的电源线从电源接口 B 直接连接到硬盘的接口 2 改为从电源接口 B 先连接到主板 20 上的接口 C，将电源先输入到主板 20 上，再由主板 20 将此电源转换，通过接口 C 或其它接口输出到硬盘接口电路板 40，然后，经过硬盘接口电路板 40 转接到硬盘电源接口 2 中。经过桥接，保证了原先供电电源的稳定性，从而可实现硬盘与电源之间原先的连接关系变换，使硬盘仅与主板产生一对一的连接，这样就使硬盘所受的连接制约降低，并使硬盘可以独立的与主板进行数据上的通信，从而提高其独立性，并可以实现其移动性的扩展。

本发明将主板中 Serial ATA（SATA）接口电路的形式进行改变，与供电电路可作为一路输出。现有技术中的 Serial ATA 接口电路形式是使用单列直插式方式进行的，本发明的接口电路将硬盘数据接口 1 与电源接口 2 两个连接线合二为一，做到一路输出，直接输出到主板的 C 接口。在本发明的实施例中，接口 C 采用主板内置的形式，实际应用中，也可采用主板后 I/O 外置的形式，以便根据不同的功能需求进行扩展，使用起来更加方便。

图3描述了本发明的实施例的支持移动式Serial ATA（串行ATA）即插即用装置的原理框图。图中，对计算机主板20，仅描绘了与本发明有关的部分。在计算机进行读写操作时，计算机通过主板20的南桥芯片22将相关指令输出到Serial ATA的控制芯片24，经过解码，控制芯片24通过滤波电容26将指令传送到接口电路28，在实施例中，接口电路28包括启动SerialATA设备30的电源，此时，SerialATA设备10已经被置于正常工作状态，这时，接口电路28将指令传送到SerialATA设备10中，该设备10根据指令进行相关的读写相关操作；在进行读写操作过程中，SerialATA设备10还通过接口电路28、滤波电容26将数据及信号反馈到控制芯片24中，芯片24经过编译，将信息传送到南桥芯片22，通过南桥芯片22发送到不同BUS中，完成指令发送到数据接收的全过程。

图4为本发明的实施例的硬盘接口电路板40的示意图。实施例的硬盘接口电路板40提供与主板20的对应接口，并对硬盘接口进行桥接。在本实施例中，硬盘接口电路板40保证了数据及接口的统一性。其中，硬盘接口板40中的SerialATA数据传输接口3连接到硬盘10的SATA接口1，电源接口4连接到硬盘10的电源接口2；硬盘接口板40中与主板20连接的接口D与主板20的接口C连接。即，主板接口C与硬盘接口板的接口D通过相应接口线进行连接，数据及电源通过主板C接口传输到硬盘接口板接口D，接口D通过硬盘接口板40上的转换电路将数据与电源分离，分别输出到不同的端口3，4，再通过这些接口3、4将信号及电源分别输出或输入到硬盘的数据及电源的接口1、2，保证了主板与硬盘间的通信的一致性。

图5示出了本发明的实施例主板接口C的电路原理图。其中，接插件510为11针接口，也可为座。其中，芯片520的型号为：Silicon Image（硅图）公司生产的Si13112控制芯片，其主要功能是PCI与Serial ATA间的信号交换作用，其管脚TxP+通过电容C1耦合到接口处的引脚TxP+、其管脚TxN-通过

电容C2与接口引脚TxN-连接、其管脚RxP+通过电容C3与接口引脚RxP+连接、其管脚RxN-通过电容C3与接口引脚RxN-连接；另外，此芯片通过外部25MHz晶振提供所用时钟，其中晶振分别通过18pF的滤波电容保证其稳定性。

图 6 示出了本发明的实施例的硬盘接口卡 40 的电路原理图。其中，接口卡接口 D 中的信号被分成两部分，电源部分连接到电源接口 4，以通过接口 4 连接到硬盘 10 的电源接口 2。其它信号被连接到信号接口 3，以连接到硬盘 10 的接口 1。其中，接口 D 中的+12V 连接到接口 4 的+12V，接口 D 中的+5V 连接到接口 4 的+5V；接口 D 中的 TxP+与接口 3 的 TxP+连接、接口 D 中的 TxN-与接口 3 的 TxN-连接、接口 D 中的 RxP+与接口 3 的 RxP+连接、接口 D 中的 RxN-与接口 3 的 RxN-连接；GND 可任意连接。

图 7a 和图 7b 分别示出了本发明的实施例中内置和外置接口 C 或 D 的具体信号定义。根据本发明，主板 20 及硬盘 10 的接口 C、D 的表现形式可分为内置与外置两种，内置所表示是此接口可以在主板或硬盘采用插针的形式体现。外置即指可将上述两种接口分别引到电脑机箱或外置硬盘的外部。从针脚 1 到 12 的定义为直流正 12V +12V、地 GND、地 GND、直流正 5V +5V、地 GND、地 GND、微分传输正信号 TxP+、微分传输负信号 TxN-、微分接收正信号 RxP+、微分接收负信号 RxN-、地 GND、空 CUT。

图 8a 和 b 分别描绘了本发明的实施例中的数据接口 3 及电源接口 4，通过这些接口可连接数据和电源到硬盘中。

为了保障硬盘数据的稳定性，不使用户在使用上将接口线插反，保护硬盘上的数据，本发明的实施例具有防反插功能。其中，图 7a 的第 12 引脚和图 8a 的第 8 引脚设计为空，结合相应布线规则，起到防反插功能。图 7b 在接口底部的凹槽 710 和图 8b 接口的顶端的凸起 810 增加防反插的功能，避免电源线接口插反而烧毁硬盘，这样就能更好的扩展应用，并保护硬盘

数据。应该知道，只要具有定位功能的机制就能防反插，如可以针的形状不同，可以有定位槽或凸起等。

在实施例中描绘了硬盘与主板及电源的连接，本领域技术人员知道，实际上，本发明可用于任何原需要从电源连线的设备，如光驱、软驱等。

虽然通过实施例描述了本发明，本领域一般技术人员知道，不脱离本发明的精神，可以有许多改进和变形，这些改进和变形及等效变换均在本发明的保护范围内。

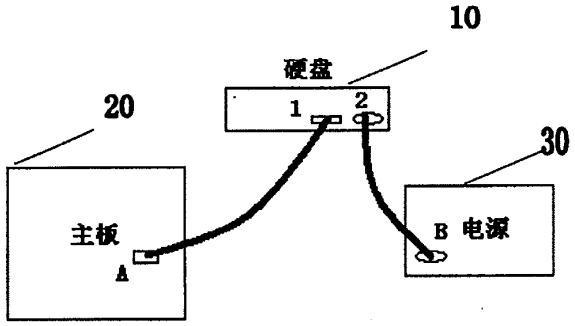

图1

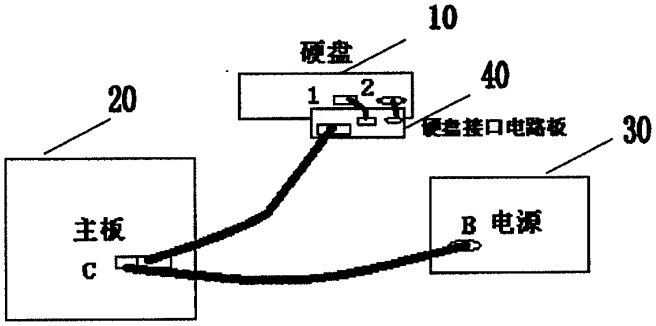

图2

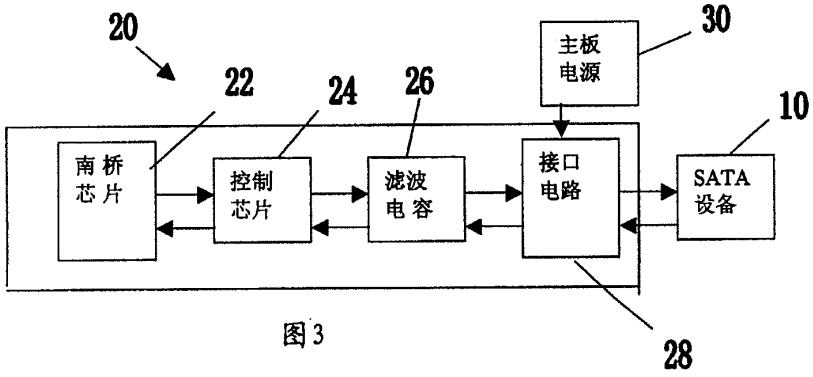

图3

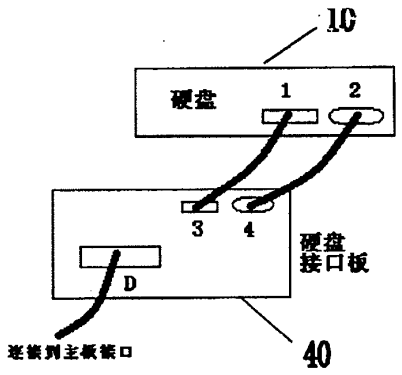

图4

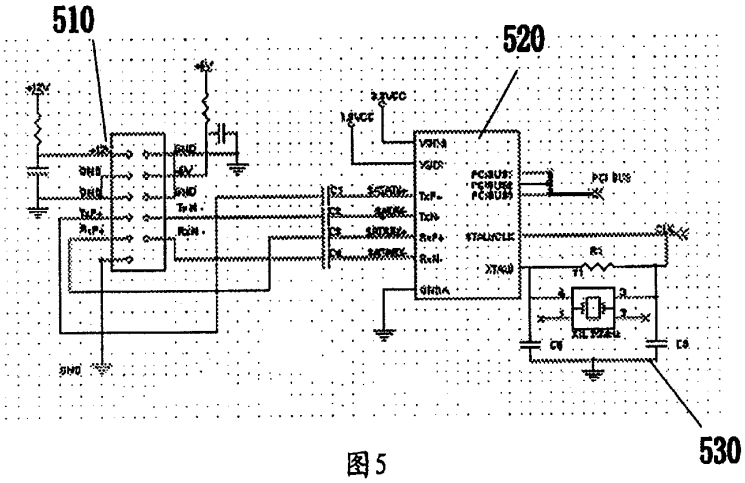

图5

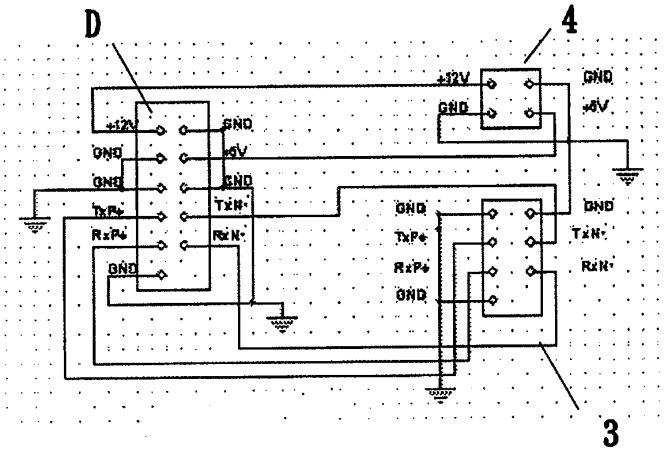

图6

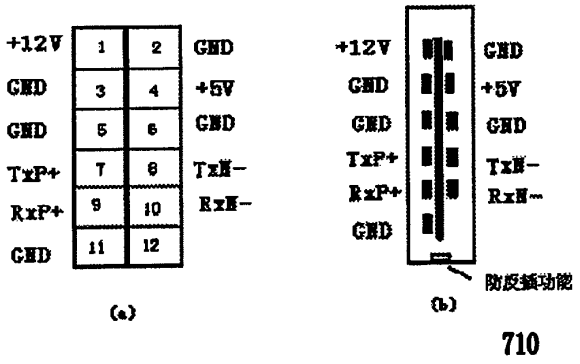

图7

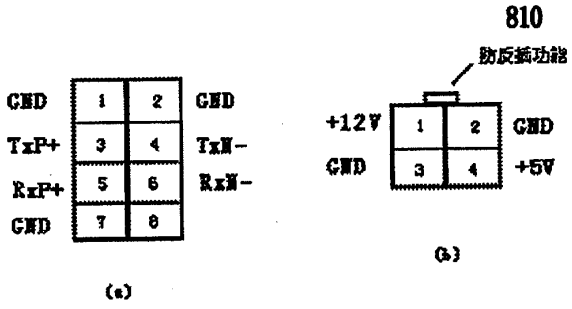

图8

Electronic Acknowledgement Receipt

EFS ID:	7564512
Application Number:	11475847
International Application Number:	
Confirmation Number:	9001
Title of Invention:	Multimedia device integration system
First Named Inventor/Applicant Name:	Ira Marlowe
Customer Number:	27614
Filer:	Mark E. Nikolsky/Janelle Fava
Filer Authorized By:	Mark E. Nikolsky
Attorney Docket Number:	99879-00026
Receipt Date:	06-MAY-2010
Filing Date:	27-JUN-2006
Time Stamp:	15:19:58
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	Transmittal.pdf	39637 7808e3bc4ad1fa4b91b306147ca6160708bde80b	no	1

Warnings:	
Information:	

2	Transmittal Letter	IDSTransmittal.pdf	96074 1e23776fcb549f17ad66e70f4adfea4bb2031f0e	no	2
Warnings:					
Information:					
3	Information Disclosure Statement (IDS) Filed (SB/08)	IDS.pdf	142670 9fb2737b19c45cb4ec635ea2073330c27d4b1193	no	2
Warnings:					
Information:					
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4	Foreign Reference	Ref2.pdf	707076 167cfcfb361e0216e089241bd68abbed539f0340	no	17
Warnings:					
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5	NPL Documents	Ref3.pdf	331875 7d36354412638ac2dfaf17dadcac565ee53d2ac6	no	5
Warnings:					
Information:					
6	NPL Documents	Ref4.pdf	322789 1e7fbdd28c78a9f06f22984c2130cd7ca2b71aee	no	4
Warnings:					
Information:					
7	NPL Documents	Ref5.pdf	545648 0e840bbb5c7a3e9a7dad6b6aee136fce025d795f	no	13
Warnings:					
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			Total Files Size (in bytes):	2185769	

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New Applications Under 35 U.S.C. 111

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National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Customer No. 27614
Confirmation No. 9001

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Examiner: Kurr, Jason R.
Art Unit: 2614

Re: Our file: 99879-00026
Applicant: Ira Marlowe
Serial No.: 11/475,847
Filed: 06/27/2006
For: Multimedia Device Integration System

Sir:

Enclosed for filing in the United States Patent and Trademark Office is the following:

1. Transmittal of Information Disclosure Statement (2 pages)
2. Form PTO/SB/08A (1 page)
3. Form PTO/SB/08B (1 page)
4. Copy of Reference 2 from Form PTO/SB/08A
5. Copies of References 3-5 from Form PTO/SB/08B
6. Transmittal Sheet (1 page)

CONDITIONAL PETITION

If any extension of time is required for the submission of the above-identified items, Applicant requests that this be considered a petition therefor. Please charge any additional charges or any other charges relating to this matter, or credit any overpayment, to the Deposit Account of the writer, **Account No. 503571.**

Respectfully submitted,

5/16/2012
Date

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Fax: (973) 297-6624

CERTIFICATE OF ELECTRONIC FILING

I hereby certify that this correspondence is being electronically filed with the United States Patent and Trademark Office (via EFS-Web) on 5/16/2012.

Janelle Fava

ME1 9906608v.1

TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT (Under 37 CFR 1.97(b) or 1.97(c))	Docket No. 99879-00026

In Re Application Of: **Ira Marlowe**

Application No.	Filing Date	Examiner	Customer No.	Group Art Unit	Confirmation No.
11/475,847	06/27/2006	Kurr, Jason R.	27614	2614	9001

Title: **Multimedia Device Integration System**

Address to:
Commissioner for Patents
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Alexandria, VA 22313-1450

37 CFR 1.97(b)

1. ☒ The Information Disclosure Statement submitted herewith is being filed within three months of the filing of a national application other than a continued prosecution application under 37 CFR 1.53(d); within three months of the date of entry of the national stage as set forth in 37 CFR 1.491 in an international application; before the mailing of a first Office Action on the merits, or before the mailing of a first Office Action after the filing of a request for continued examination under 37 CFR 1.114.

37 CFR 1.97(c)

2. ☐ The Information Disclosure Statement submitted herewith is being filed after the period specified in 37 CFR 1.97(b), provided that the Information Disclosure Statement is filed before the mailing date of a Final Action under 37 CFR 1.113, a Notice of Allowance under 37 CFR 1.311, or an Action that otherwise closes prosecution in the application, and is accompanied by one of:

   ☐ the statement specified in 37 CFR 1.97(e);

   OR

   ☐ the fee set forth in 37 CFR 1.17(p).

P10A/REV06

TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT (Under 37 CFR 1.97(b) or 1.97(c))	Docket No. 99879-00026

In Re Application of: **Ira Marlowe**

Application No.	Filing Date	Examiner	Customer No.	Group Art Unit	Confirmation No.
11/475,847	06/27/2006	Kurr, Jason R.	27614	2614	9001

Title: **Multimedia Device Integration System**

Payment of Fee

(Only complete if Applicant elects to pay the fee set forth in 37 CFR 1.17(p))

☐ A check in the amount of is attached.

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Mark Nikolsky

Signature

Dated: 5/6/2010

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Tel: (973) 639-6987
Fax: (973) 297-6624

cc:

P10A/REV06

Application Number	Application/Control No.	Applicant(s)/Patent under Reexamination	
	11/475,847	MARLOWE, IRA	

Document Code - DISQ	Internal Document – DO NOT MAIL

TERMINAL DISCLAIMER	☒ APPROVED	☐ DISAPPROVED
Date Filed : 4/30/10	This patent is subject to a Terminal Disclaimer	

Approved/Disapproved by:
Felicia D. Roberts 7,489,786

U.S. Patent and Trademark Office

PTO/SB/08A (10-07)
Approved for use through 10/31/2007. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 2

Complete if Known	
Application Number	11/475,847
Filing Date	06/27/2006
First Named Inventor	Ira Marlowe
Art Unit	2614
Examiner Name	Kurr, Jason R.
Attorney Docket Number	99879-00026

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	US- 6,990,208	01/24/2006	Lau, et al.	
	2	US- 6,721,489	04/13/2004	Benyamin, et al.	
	3	US- 6,772,212	08/03/2004	Lau, et al.	
	4	US- 6,192,340	02/20/2001	Abecassis	
		US-			
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FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]-Number[4]-Kind Code[5] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T[6]

Examiner Signature		Date Considered	

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Sheet 2 of 2

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Application Number	11/475,847
Filing Date	06/27/2006
First Named Inventor	Ira Marlowe
Art Unit	2614
Examiner Name	Kurr, Jason R.
Attorney Docket Number	99879-00026

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
	5	Copy of Examiner's First Report dated April 29, 2010, issued by the Australian Patent Office in connection with Australian Patent Application No. 2006200895 (2 pages)	

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Electronic Acknowledgement Receipt

EFS ID:	7708434
Application Number:	11475847
International Application Number:	
Confirmation Number:	9001
Title of Invention:	Multimedia device integration system
First Named Inventor/Applicant Name:	Ira Marlowe
Customer Number:	27614
Filer:	Mark E. Nikolsky/Janelle Fava
Filer Authorized By:	Mark E. Nikolsky
Attorney Docket Number:	99879-00026
Receipt Date:	28-MAY-2010
Filing Date:	27-JUN-2006
Time Stamp:	13:08:08
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	Transmittal.pdf	41469 52995910737ebbe5396274cc8228774372ca5dd8	no	1

Warnings:	
Information:	

2	Transmittal Letter	IDSLtr.pdf	95094 38cf7efcae8dee56d6ecb1beef723cdd6798f604	no	2
Warnings:					
Information:					
3	Information Disclosure Statement (IDS) Filed (SB/08)	IDS.pdf	137474 a53620ab83b9cec2b1cb58f2ffac151d5b8cb73b	no	2
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
4	NPL Documents	AustraliaExamReport.pdf	107096 204ab3cd39a42e485e0bf0a0a9962ec81ef3e24a	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	381133		

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New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Customer No. 27614
Confirmation No. 9001

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Examiner: Kurr, Jason R.
Art Unit: 2614

Re: Our file: 99879-00026
Applicant: Ira Marlowe
Serial No.: 11/475,847
Filed: 06/27/2006
For: Multimedia Device Integration System

Sir:

Enclosed for filing in the United States Patent and Trademark Office is the following:

1. Transmittal of Information Disclosure Statement (2 pages)
2. Form PTO/SB/08A (1 page)
3. Form PTO/SB/08B (1 page)
4. Copy of Reference 5 from Form PTO/SB/08B
5. Transmittal Sheet (1 page)

CONDITIONAL PETITION

If any extension of time is required for the submission of the above-identified items, Applicant requests that this be considered a petition therefor. Please charge any additional charges or any other charges relating to this matter, or credit any overpayment, to the Deposit Account of the writer, **Account No. 503571.**

Respectfully submitted,

5/28/2010
Date

Mark E. Nikolsky
Registration No. 48,319
McCarter & English, LLP
Four Gateway Center
100 Mulberry Street
Newark, NJ 07102
Tel: (973) 639-6987
Fax: (973) 297-6624

CERTIFICATE OF ELECTRONIC FILING

I hereby certify that this correspondence is being electronically filed with the United States Patent and Trademark Office (via EFS-Web) on 5/28/2010.

Janelle Fava

MEI 9906608v.1

TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT (Under 37 CFR 1.97(b) or 1.97(c))	Docket No. 99879-00026

In Re Application Of: **Ira Marlowe**

Application No.	Filing Date	Examiner	Customer No.	Group Art Unit	Confirmation No.
11/475,847	06/27/2006	Kurr, Jason R.	27614	2614	9001

Title: **Multimedia Device Integration System**

Address to:
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

37 CFR 1.97(b)

1. ☒ The Information Disclosure Statement submitted herewith is being filed within three months of the filing of a national application other than a continued prosecution application under 37 CFR 1.53(d); within three months of the date of entry of the national stage as set forth in 37 CFR 1.491 in an international application; before the mailing of a first Office Action on the merits, or before the mailing of a first Office Action after the filing of a request for continued examination under 37 CFR 1.114.

37 CFR 1.97(c)

2. ☐ The Information Disclosure Statement submitted herewith is being filed after the period specified in 37 CFR 1.97(b), provided that the Information Disclosure Statement is filed before the mailing date of a Final Action under 37 CFR 1.113, a Notice of Allowance under 37 CFR 1.311, or an Action that otherwise closes prosecution in the application, and is accompanied by one of:

   ☐ the statement specified in 37 CFR 1.97(e);

   OR

   ☐ the fee set forth in 37 CFR 1.17(p).

P10A/REV06

TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT (Under 37 CFR 1.97(b) or 1.97(c))	Docket No. 99879-00026

In Re Application of: **Ira Marlowe**

Application No.	Filing Date	Examiner	Customer No.	Group Art Unit	Confirmation No.
11/475,847	06/27/2006	Kurr, Jason R.	27614	2614	9001

Title: **Multimedia Device Integration System**

Payment of Fee

(Only complete if Applicant elects to pay the fee set forth in 37 CFR 1.17(p))

☐ A check in the amount of is attached.

☒ The Director is hereby authorized to charge and credit Deposit Account No. 503571 as described below.

- ☐ Charge the amount of
- ☒ Credit any overpayment.
- ☒ Charge any additional fee required.

☐ Payment by credit card. Form PTO-2038 is attached.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

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(Date)

Signature

Typed or Printed Name of Person Signing Certificate

Certificate of Mailing by First Class Mail

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_____.
(Date)

Signature of Person Mailing Correspondence

Typed or Printed Name of Person Mailing Certificate

***This certificate may only be used if paying by deposit account.**

Mark Eng
Signature

Dated: 5/28/2010

Mark E. Nikolsky
Registration No. 48,319
McCarter & English, LLP
Four Gateway Center
100 Mulberry Street
Newark, NJ 07102
Tel: (973) 639-6987
Fax: (973) 297-6624

cc:

P10A/REV06

PTO/SB/08A (10-07)
Approved for use through 10/31/2007. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 2

Complete if Known	
Application Number	11/475,847
Filing Date	06/27/2006
First Named Inventor	Ira Marlowe
Art Unit	2614
Examiner Name	Kurr, Jason R.
Attorney Docket Number	99879-00026

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	US- 7,151,950	12/19/2006	Oyang, et al.	
	2	US- 6,816,577	11/09/2004	Logan	
	3	US- 5,537,673	07/16/1996	Nagashima, et al.	
	4	US- 5,263,199	11/16/1993	Barnes, et al.	
	5	US- 2007/0294710	12/20/2007	Meesseman	
	6	US- 2003/0069000	04/10/2003	Kindo, et al.	
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FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]-Number[4]-Kind Code[5] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T[6]

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

PTO/SB/08B (10-07)
Approved for use through 10/31/2007. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 2 of 2

Complete if Known	
Application Number	11/475,847
Filing Date	06/27/2006
First Named Inventor	Ira Marlowe
Art Unit	2614
Examiner Name	Kurr, Jason R.
Attorney Docket Number	99879-00026

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
	7	Copy of Office Action dated August 30, 2010, from co-pending Application No. 11/805,799 (13 pages)	
	8	Copy of Office Action dated July 20, 2010, from co-pending Application No. 10/732,909 (17 pages)	

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

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Electronic Acknowledgement Receipt

EFS ID:	8454133
Application Number:	11475847
International Application Number:	
Confirmation Number:	9001
Title of Invention:	Multimedia device integration system
First Named Inventor/Applicant Name:	Ira Marlowe
Customer Number:	27614
Filer:	Mark E. Nikolsky/Janelle Fava
Filer Authorized By:	Mark E. Nikolsky
Attorney Docket Number:	99879-00026
Receipt Date:	20-SEP-2010
Filing Date:	27-JUN-2006
Time Stamp:	15:46:42
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	Transmittal.pdf	35430 5ef8ab58d5137f45cebf66b998c3a70a8ddf7004	no	1
Warnings:					
Information:					

2	Transmittal Letter	IDSLtr.pdf	85438 b098ae9acf0c151bdba6cd3669b52594275b7fb1	no	2
Warnings:					
Information:					
3	Information Disclosure Statement (IDS) Filed (SB/08)	IDS.pdf	126798 2d0f8783c237ecffd6f8e408ada51b7ae9e36de3	no	2
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
4	NPL Documents	Ref7.pdf	466455 7f01ac528c3fef7e6950a9efeb8136dffdad1c41	no	13
Warnings:					
Information:					
5	NPL Documents	Ref8.pdf	621332 649ce5e99b38c7f4fdc34d6119c5d1c2573ffe8d	no	17
Warnings:					
Information:					
		Total Files Size (in bytes):	1335453		

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Customer No. 27614
Confirmation No. 9001

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Examiner: Kurr, Jason R.
Art Unit: 2614

Re: Our file: 99879-00026
Applicant: Ira Marlowe
Serial No.: 11/475,847
Filed: 06/27/2006
For: Multimedia Device Integration System

Sir:

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1. Transmittal of Information Disclosure Statement (2 pages)
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3. Form PTO/SB/08B (1 page)
4. Copies of References 7-8 from Form PTO/SB/08B
5. Transmittal Sheet (1 page)

CONDITIONAL PETITION

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Respectfully submitted,

9/20/2010
Date

Mark E. Nikolsky
Registration No. 48,319
McCarter & English, LLP
Four Gateway Center
100 Mulberry Street
Newark, NJ 07102
Tel: (973) 639-6987
Fax: (973) 297-6624

CERTIFICATE OF ELECTRONIC FILING

I hereby certify that this correspondence is being electronically filed with the United States Patent and Trademark Office (via EFS-Web) on 9/20/2010.

Janelle Fava

ME1 9906608v.1

TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT (Under 37 CFR 1.97(b) or 1.97(c))	Docket No. 99879-00026

In Re Application Of: **Ira Marlowe**

Application No.	Filing Date	Examiner	Customer No.	Group Art Unit	Confirmation No.
11/475,847	06/27/2006	Kurr, Jason R.	27614	2614	9001

Title: **Multimedia Device Integration System**

Address to:
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

37 CFR 1.97(b)

1. ☒ The Information Disclosure Statement submitted herewith is being filed within three months of the filing of a national application other than a continued prosecution application under 37 CFR 1.53(d); within three months of the date of entry of the national stage as set forth in 37 CFR 1.491 in an international application; before the mailing of a first Office Action on the merits, or before the mailing of a first Office Action after the filing of a request for continued examination under 37 CFR 1.114.

37 CFR 1.97(c)

2. ☐ The Information Disclosure Statement submitted herewith is being filed after the period specified in 37 CFR 1.97(b), provided that the Information Disclosure Statement is filed before the mailing date of a Final Action under 37 CFR 1.113, a Notice of Allowance under 37 CFR 1.311, or an Action that otherwise closes prosecution in the application, and is accompanied by one of:

   ☐ the statement specified in 37 CFR 1.97(e);

   OR

   ☐ the fee set forth in 37 CFR 1.17(p).

P10A/REV06

TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT (Under 37 CFR 1.97(b) or 1.97(c))	Docket No. 99879-00026

In Re Application of: **Ira Marlowe**

Application No.	Filing Date	Examiner	Customer No.	Group Art Unit	Confirmation No.
11/475,847	06/27/2006	Kurr, Jason R.	27614	2614	9001

Title: **Multimedia Device Integration System**

Payment of Fee

(Only complete if Applicant elects to pay the fee set forth in 37 CFR 1.17(p))

☐ A check in the amount of is attached.

☒ The Director is hereby authorized to charge and credit Deposit Account No. 503571 as described below.

- ☐ Charge the amount of
- ☒ Credit any overpayment.
- ☒ Charge any additional fee required.

☐ Payment by credit card. Form PTO-2038 is attached.

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(Date)

Signature

Typed or Printed Name of Person Signing Certificate

Certificate of Mailing by First Class Mail

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_____.

(Date)

Signature of Person Mailing Correspondence

Typed or Printed Name of Person Mailing Certificate

***This certificate may only be used if paying by deposit account.**

Mark Enikolsky

Signature

Dated: 9/20/2010

Mark E. Nikolsky
Registration No. 48,319
McCarter & English, LLP
Four Gateway Center
100 Mulberry Street
Newark, NJ 07102
Tel: (973) 639-6987
Fax: (973) 297-6624

cc:

P10A/REV06

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/475,847	06/27/2006	Ira Marlowe	99879-00026	9001

27614 7590 02/15/2011

MCCARTER & ENGLISH, LLP NEWARK
FOUR GATEWAY CENTER
100 MULBERRY STREET
NEWARK, NJ 07102

EXAMINER	
KURR, JASON RICHARD	
ART UNIT	**PAPER NUMBER**
2614	

MAIL DATE	DELIVERY MODE
02/15/2011	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	11/475,847	MARLOWE, IRA	
	Examiner	Art Unit	
	JASON R. KURR	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 April 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *92-192 and 195-213* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *92-192 and 195-213* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *5/6/10 5/28/10 9/20/10*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 30, 2010 has been entered.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 92-107, 109-131, 133-155, 157-179, 181-192, 195-204 and 206-213 are rejected under 35 U.S.C. 102(e) as being anticipated by Tranchina (US 7493645).

With respect to claim 92, Tranchina discloses a multimedia device integration system, comprising: an integration subsystem (fig.1 #110) in communication with a portable device (fig.1 #106,108), the portable device external to a car audio/video

system (fig.1 #104,170); and a first wireless interface (fig.1 #150) in communication with said integration subsystem, said first wireless interface establishing a wireless communication link with a second wireless interface (fig.1 #102,118,165) in communication with the car audio/video system (col.5 ln.48-64), wherein said integration subsystem obtains information about an audio file stored on the portable device, transmits the information over said wireless communication link to the car audio/video system for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the audio or video file in response to a user selecting the audio file using controls of the car audio/video system, and transmits audio ,generated by the portable device over said wireless communication link to the car audio/video system for playing on the car audio/video system (col.6 ln.17-28, 53-67).

With respect to claim 93, Tranchina discloses the system of claim 92, wherein said integration subsystem is positioned within the portable device (col.6 ln.40-52).

With respect to claim 94, Tranchina discloses the system of claim 93, wherein said first wireless interface (fig.1 #150) is positioned within the portable device.

With respect to claim 95, Tranchina discloses the system of claim 94, wherein said second wireless interface (fig.1 #102,118,165) is positioned within the car audio/video system.

With respect to claim 96, Tranchina discloses the system of claim 91, wherein said integration subsystem receives, over said wireless communication link, a control command issued at the car audio/video system in a format incompatible with the

portable device, processes the control command into a formatted command compatible with the portable device, and dispatches the processed control command to the portable device for execution thereby (col.7 ln.5-30).

With respect to claim 97, Tranchina discloses the system of claim 92, wherein said integration subsystem receives data generated by the portable device in a format incompatible with the car audio/video system, processes the data into formatted data compatible with the car audio/video system, and transmits the processed data to the car audio/video system over the wireless communication link for subsequent display of the processed data on a display of the car audio/video system (col.7 ln.5-30).

With respect to claim 98, Tranchina discloses the system of claim 92, wherein said integration subsystem further comprises a voice recognition subsystem (fig.1 #120) for receiving and processing spoken control commands issued by a user (col.8 ln.50-60).

With respect to claim 99, Tranchina discloses the system of claim 98, wherein said integration subsystem instructs said portable device to play a desired file in response to a spoken command processed by the voice recognition subsystem (col.8 ln.50-60).

With respect to claim 100, Tranchina discloses the system of claim 92, wherein said integration subsystem further comprises a speech synthesizer (fig.1 #130) for generating synthesized speech corresponding to data generated by the portable device (col.8 ln.61-67, col.9 ln.1-3).

With respect to claim 101, Tranchina discloses the system of claim 100, wherein said integration subsystem transmits the synthesized speech to the car audio/video system over said wireless communication link for subsequent playing of the synthesized speech by the car audio/video system (col.8 ln.61-67, col.9 ln.1-3).

With respect to claim 102, Tranchina discloses the system of claim 92, wherein said integration subsystem generates a device presence signal and transmits the device presence signal to the car audio/video system over said wireless communications link to maintain the car audio/video system in a state responsive to the portable device (col.7 ln.13-16).

With respect to claim 103, Tranchina discloses the system of claim 92, wherein the portable device comprises a portable receiver (fig.1 #150, col.7 ln.21-26).

With respect to claim 104, Tranchina discloses the system of claim 103, wherein the portable receiver comprises a digital audio broadcast (DAB) receiver, a high-definition (HD) radio receiver, or a satellite receiver (col.5 ln.33-38).

With respect to claim 105, Tranchina discloses the system of claim 92, wherein the portable device comprises a portable digital media player (col.5 ln.27-32).

With respect to claim 106, Tranchina discloses the system of claim 105, wherein the portable digital media player comprises a video device (col.5 ln.27-32), a portable media center, a portable media player, an MP3 player, an MP4 player, a WMV player, an Apple iPod, or an Apple video iPod.

With respect to claim 107, Tranchina discloses the system of claim 92, wherein the portable device comprises a cellular telephone (col.5 ln.34-38).

With respect to claim 109, Tranchina discloses the system of claim 92, wherein said integration subsystem transmits, over said wireless communication link, information about a video file stored on the portable device to the car audio/video system for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the video file in response to a user selecting the video file using controls of the car audio/video system, and transmits video generated by the portable device over said wireless communication link to the car audio/video system for playing on the car audio/video system (col.6 ln.53-67, col.7 ln.21-26).

With respect to claim 110, Tranchina discloses the system of claim 109, wherein the video file comprises a movie stored on the portable device (col.5 ln.27-32).

With respect to claim 111, Tranchina discloses the system of Claim 109, wherein the video file comprises a picture stored on the portable device (col.9 ln.4-7).

With respect to claim 112, Tranchina discloses the system of claim 109, wherein the video file comprises a video clip stored on the portable device (col.5 ln.27-32).

With respect to claim 113, Tranchina discloses the system of claim 109, wherein said integration subsystem receives video generated by the portable device in a first format incompatible with the car audio/video system, processes the video into processed video in a second format compatible with the car audio/video system, and transmits the processed video over the wireless communication link to the car audio/video system for subsequent display of the processed video on a display of the car audio/video system (col.7 ln.5-30).

With respect to claim 114, Tranchina discloses the system of claim 92, wherein the audio file comprises a song stored on the portable device (col.5 ln.27-32).

With respect to claim 115, Tranchina discloses the system of claim 92, wherein the portable device is connected to the Internet, and said integration device processes information generated by the portable device and transmits processed information to the car audio/video system so that the display of the car audio/video system operates as an Internet browser (col.5 ln.33-47).

With respect to claim 116, Tranchina discloses a multimedia device integration system, comprising: an integration subsystem (fig.1 #110) in communication with a portable device (fig.1 #106,108), the portable device external to a car audio/video system (fig.1 #104,170); and a first wireless interface (fig.1 #150) in communication with said integration subsystem, said first wireless interface establishing a wireless communication link with a second wireless interface (fig.1 #102,118,165) in communication with the car audio/video system (col.5 ln.48-64), wherein said integration subsystem obtains information about an audio file received by the portable device, transmits the information over said wireless communication link to the car audio/video system for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the audio or video file in response to a user selecting the audio file using controls of the car audio/video system, and transmits audio generated by the portable device over said wireless communication link to the car audio/video system for playing on the car audio/video system (col.6 ln.17-28, 53-67).

With respect to claim 117, Tranchina discloses the system of claim 116, wherein said integration subsystem is positioned within the portable device (col.6 ln.40-52).

With respect to claim 118, Tranchina discloses the system of claim 117, wherein said first wireless interface (fig.1 #150) is positioned within the portable device.

With respect to claim 119, Tranchina discloses the system of claim 118, wherein said second wireless interface (fig.1 #102,118,165) is positioned within the car audio/video system.

With respect to claim 120, Tranchina discloses the system of claim 116, wherein said integration subsystem receives a control command issued at the car audio/video system in a format incompatible with the portable device, processes the control command into a formatted command compatible with the portable device, and dispatches the processed control command to the portable device for execution thereby (col.7 ln.5-30).

With respect to claim 121, Tranchina discloses the system of claim 116, wherein said integration subsystem receives data generated by the portable device in a format incompatible with the car audio/video system, processes the data into formatted data compatible with the car audio/video system, and transmits the processed data to the car audio/video system over the wireless communication link for subsequent display of the processed data on a display of the car audio/video system (col.7 ln.5-30).

With respect to claim 122, Tranchina discloses the system of claim 116, wherein said integration subsystem further comprises a voice recognition subsystem (fig.1 #120)

for receiving and processing spoken control commands issued by a user (col.8 ln.50-60).

With respect to claim 123, Tranchina discloses the system of claim 122, wherein said integration subsystem instructs said portable device to play a desired file in response to a spoken command processed by the voice recognition subsystem (col.8 ln.50-60).

With respect to claim 124, Tranchina discloses the system of claim 116, wherein said integration subsystem further comprises a speech synthesizer (fig.1 #130) for generating synthesized speech corresponding to data generated by the portable device (col.8 ln.61-67, col.9 ln.1-3).

With respect to claim 125, Tranchina discloses the system of claim 124, wherein said integration subsystem transmits the synthesized speech to the car audio/video system over said wireless communication link for subsequent playing of the synthesized speech by the car audio/video system (col.8 ln.61-67, col.9 ln.1-3).

With respect to claim 126, Tranchina discloses the system of claim 116, wherein said integration subsystem generates a device presence signal and transmits the device presence signal to the car audio/video system over said wireless communications link to maintain the car audio/video system in a state responsive to the portable device (col.7 ln.13-16).

With respect to claim 127, Tranchina discloses the system of claim 116, wherein the portable device comprises a portable receiver (fig.1 #150, col.7 ln.21-26).

With respect to claim 128, Tranchina discloses the system of claim 127, wherein the portable receiver comprises a digital audio broadcast (DAB) receiver, a high-definition (HD) radio receiver, or a satellite receiver (col.5 ln.33-38).

With respect to claim 129, Tranchina discloses the system of claim 116, wherein the portable device comprises a portable digital media player (col.5 ln.27-32).

With respect to claim 130, Tranchina discloses the system of claim 129, wherein the portable digital media player comprises a video device (col.5 ln.27-32), a portable media center, a portable media player, an MP3 player, an MP4 player, a WMV player, an Apple iPod, or an Apple video iPod.

With respect to claim 131, Tranchina discloses the system of claim 116, wherein the portable device comprises a cellular telephone (col.5 ln.34-38).

With respect to claim 133, Tranchina discloses the system of claim 116, wherein said integration subsystem transmits, over said wireless communication link, information about a video file received by the portable device to the car audio/video system for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the video file in response to a user selecting the video file using controls of the car audio/video system, and transmits video generated by the portable device over said wireless communication link to the car audio/video system for playing on the car audio/video system (col.6 ln.53-67, col.7 ln.21-26).

With respect to claim 134, Tranchina discloses the system of claim 133, wherein the video file comprises a streaming movie received by the portable device (col.5 ln.33-47).

With respect to claim 135, Tranchina discloses the system of Claim 133, wherein the video file comprises a picture received by the portable device (col.9 ln.4-7).

With respect to claim 136, Tranchina discloses the system of claim 133, wherein the video file comprises a streaming video clip received by the portable device (col.5 ln.33-47).

With respect to claim 137, Tranchina discloses the system of claim 116, wherein said integration subsystem receives video generated by the portable device in a first format incompatible with the car audio/video system, processes the video into processed video in a second format compatible with the car audio/video system, and transmits the processed video over the wireless communication link to the car audio/video system for subsequent display of the processed video on a display of the car audio/video system (col.7 ln.5-30).

With respect to claim 138, Tranchina discloses the system of claim 116, wherein the audio file comprises a song received by the portable device (col.5 ln.27-32).

With respect to claim 139, Tranchina discloses the system of claim 116, wherein the portable device is connected to the Internet, and said integration device processes information generated by the portable device and transmits processed information to the car audio/video system so that the display of the car audio/video system operates as an Internet browser (col.5 ln.33-47).

With respect to claim 140, Tranchina discloses a multimedia device integration system, comprising: an integration subsystem (fig.1 #110) in communication with a car audio/video system (fig.1 #104,170); and a first wireless interface (fig.1 #102,118,165)

in communication with said integration subsystem, said first wireless interface establishing a wireless communication link with a second wireless interface (fig.1 #150) in communication with a portable device (fig.1 #106,108) external to the car audio/video system (col.5 ln.48-64), wherein said integration subsystem obtains, using said wireless communication link, information about an audio file stored on the portable device, transmits the information to the car audio/video system for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the audio or video file in response to a user selecting the audio file using controls of the car audio/video system, and receives audio generated by the portable device over said wireless communication link for playing on the car audio/video system (col.6 ln.17-28, 53-67).

With respect to claim 141, Tranchina discloses the system of claim 140, wherein said integration subsystem (fig.1 #110) is positioned within the car audio/video system.

With respect to claim 142, Tranchina discloses the system of claim 141, wherein said first wireless interface (fig.1 #102,118,165) is positioned within the car audio/video system.

With respect to claim 143, Tranchina discloses the system of claim 142, wherein said second wireless interface (fig.1 #150) is positioned within the portable device.

With respect to claim 144, Tranchina discloses the system of claim 140, wherein said integration subsystem receives a control command issued at the car audio/video system in a format incompatible with the portable device, processes the control command into a formatted command compatible with the portable device, and

dispatches the processed control command to the portable device for execution thereby (col.7 ln.5-30).

With respect to claim 145, Tranchina discloses the system of claim 140, wherein said integration subsystem receives data generated by the portable device in a format incompatible with the car audio/video system, processes the data into formatted data compatible with the car audio/video system, and transmits the processed data to the car audio/video system for subsequent display of the processed data on a display of the car audio/video system (col.7 ln.5-30).

With respect to claim 146, Tranchina discloses the system of claim 140, wherein said integration subsystem further comprises a voice recognition subsystem (fig.1 #120) for receiving and processing spoken control commands issued by a user (col.8 ln.50-60).

With respect to claim 147, Tranchina discloses the system of claim 150, wherein said integration subsystem instructs said portable device to play a desired file in response to a spoken command processed by the voice recognition subsystem (col.8 ln.50-60).

With respect to claim 148, Tranchina discloses the system of claim 140, wherein said integration subsystem further comprises a speech synthesizer (fig.1 #130) for generating synthesized speech corresponding to data generated by the portable device (col.8 ln.61-67, col.9 ln.1-3).

With respect to claim 149, Tranchina discloses the system of claim 148, wherein .said integration subsystem transmits the synthesized speech to the car audio/video

system for subsequent playing of the synthesized speech by the car audio/video system (col.8 ln.61-67, col.9 ln.1-3).

With respect to claim 150, Tranchina discloses the system of claim 140, wherein said integration subsystem generates a device presence signal and transmits the device presence signal to the car audio/video system to maintain the car audio/video system in a state responsive to the portable device (col.7 ln.13-16).

With respect to claim 151, Tranchina discloses the system of claim 140, wherein the portable device comprises a portable receiver (fig.1 #150, col.7 ln.21-26).

With respect to claim 152, Tranchina discloses the system of claim 151, wherein the portable receiver comprises a digital audio broadcast (DAB) receiver, a high-definition (HD) radio receiver, or a satellite receiver (col.5 ln.33-38).

With respect to claim 153, Tranchina discloses the system of claim 140, wherein the portable device comprises a portable digital media player (col.5 ln.27-32).

With respect to claim 154, Tranchina discloses the system of claim 153, wherein the portable digital media player comprises a video device (col.5 ln.27-32), a portable media center, a portable media player, an MP3 player, an MP4 player, a WMV player, an Apple iPod, or an Apple video iPod.

With respect to claim 155, Tranchina discloses the system of claim 140, wherein the portable device comprises a cellular telephone (col.5 ln.34-38).

With respect to claim 157, Tranchina discloses the system of claim 140, wherein said integration subsystem obtains, using said wireless communication link, information about a video file stored on the portable device for subsequent display of the

information on a display of the car audio/video system, instructs the portable device to play the video file in response to a user selecting the video file using controls of the car audio/video system, and receives video generated by the portable device over said wireless communication link for playing on the car audio/video system (col.6 ln.53-67, col.7 ln.21-26).

With respect to claim 158, Tranchina discloses the system of claim 157, wherein the video file comprises a movie stored on the portable device (col.5 ln.27-32).

With respect to claim 159, Tranchina discloses the system of Claim 157, wherein the video file comprises a picture stored on the portable device (col.9 ln.4-7).

With respect to claim 160, Tranchina discloses the system of claim 157, wherein the video file comprises a video clip stored on the portable device (col.5 ln.27-32).

With respect to claim 161, Tranchina discloses the system of claim 157, wherein said integration subsystem receives video generated by the portable device in a first format incompatible with the car audio/video system, processes the video into processed video in a second format compatible with the car audio/video system, and transmits the processed video to the car audio/video system for subsequent display of the processed video on a display of the car audio/video system (col.7 ln.5-30).

With respect to claim 162, Tranchina discloses the system of claim 140, wherein the audio file comprises a song stored on the portable device (col.5 ln.27-32).

With respect to claim 163, Tranchina discloses the system of claim 140, wherein the portable device is connected to the Internet, and said integration device processes information generated by the portable device and transmits processed information to the

car audio/video system so that the display of the car audio/video system operates as an Internet browser (col.5 ln.33-47).

With respect to claim 164, Tranchina discloses a multimedia device integration system, comprising: an integration subsystem (fig.1 #110) in communication with a car audio/video system (fig.1 #104,170); and a first wireless interface (fig.1 #102,118,165) in communication with said integration subsystem, said first wireless interface establishing a wireless communication link with a second wireless interface (fig.1 #150) in communication with a portable device (fig.1 #106,108) external to the car audio/video system (col.5 ln.48-64), wherein said integration subsystem obtains, using said wireless communication link, information about an audio file received by the portable device, transmits the information to the car audio/video system for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the audio or video file in response to a user selecting the audio file using controls of the car audio/video system, and receives audio generated by the portable device over said wireless communication link for playing on the car audio/video system (col.6 ln.17-28, 53-67).

With respect to claim 165, Tranchina discloses the system of claim 164, wherein said integration subsystem (fig.1 #110) is positioned within the car audio/video system.

With respect to claim 166, Tranchina discloses the system of claim 165, wherein said first wireless interface (fig.1 #102,118,165) is positioned within the car audio/video system.

With respect to claim 167, Tranchina discloses the system of claim 166, wherein said second wireless interface (fig.1 #150) is positioned within the portable device.

With respect to claim 168, Tranchina discloses the system of claim 164, wherein said integration subsystem receives a control command issued at the car audio/video system in a format incompatible with the portable device, processes the control command into a formatted command compatible with the portable device, and dispatches the processed control command to the portable device for execution thereby (col.7 ln.5-30).

With respect to claim 169, Tranchina discloses the system of claim 164, wherein said integration subsystem receives data generated by the portable device in a format incompatible with the car audio/video system, processes the data into formatted data compatible with the car audio/video system, and transmits the processed data to the car audio/video system for subsequent display of the processed data on a display of the car audio/video system (col.7 ln.5-30).

With respect to claim 170, Tranchina discloses the system of claim 164, wherein said integration subsystem further comprises a voice recognition subsystem (fig.1 #120) for receiving and processing spoken control commands issued by a user (col.8 ln.50-60).

With respect to claim 171, Tranchina discloses the system of claim 170, wherein said integration subsystem instructs said portable device to play a desired file in response to a spoken command processed by the voice recognition subsystem (col.8 ln.50-60).

With respect to claim 172, Tranchina discloses the system of claim 164, wherein said integration subsystem further comprises a speech synthesizer (fig.1 #130) for generating synthesized speech corresponding to data generated by the portable device (col.8 ln.61-67, col.9 ln.1-3).

With respect to claim 173, Tranchina discloses the system of claim 172, wherein said integration subsystem transmits the synthesized speech to the car audio/video system for subsequent playing of the synthesized speech by the car audio/video system (col.8 ln.61-67, col.9 ln.1-3).

With respect to claim 174, Tranchina discloses the system of claim 164, wherein said integration subsystem generates a device presence signal and transmits the device presence signal to the car audio/video system to maintain the car audio/video system in a state responsive to the portable device (col.7 ln.13-16).

With respect to claim 175, Tranchina discloses the system of claim 164, wherein the portable device comprises a portable receiver (fig.1 #150, col.7 ln.21-26).

With respect to claim 176, Tranchina discloses the system of claim 175, wherein the portable receiver comprises a digital audio broadcast (DAB) receiver, a high-definition (HD) radio receiver, or a satellite receiver (col.5 ln.33-38).

With respect to claim 177, Tranchina discloses the system of claim 164, wherein the portable device comprises a portable digital media player (col.5 ln.27-32).

With respect to claim 178, Tranchina discloses the system of claim 177, wherein the portable digital media player comprises a video device (col.5 ln.27-32), a portable

media center, a portable media player, an MP3 player, an MP4 player, a WMV player, an Apple iPod, or an Apple video iPod.

With respect to claim 179, Tranchina discloses the system of claim 164, wherein the portable device comprises a cellular telephone (col.5 ln.34-38).

With respect to claim 181, Tranchina discloses the system of claim 164, wherein said integration subsystem obtains, over said wireless communication link, information about a video file received by the portable device for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the video file in response to a user selecting the video file using controls of the car audio/video system, and receives video generated by the portable device over said wireless communication link for playing on the car audio/video system (col.6 ln.53-67, col.7 ln.21-26).

With respect to claim 182, Tranchina discloses the system of claim 180, wherein the video file comprises a streaming movie received by the portable device (col.5 ln.33-47).

With respect to claim 183, Tranchina discloses the system of Claim 180, wherein the video file comprises a picture received by the portable device (col.9 ln.4-7).

With respect to claim 184, Tranchina discloses the system of claim 180, wherein the video file comprises a streaming video clip received by the portable device (col.5 ln.33-47).

With respect to claim 185, Tranchina discloses the system of claim 180, wherein said integration subsystem receives video generated by the portable device in a first

format incompatible with the car audio/video system, processes the video into processed video in a second format compatible with the car audio/video system, and transmits the processed video to the car audio/video system for subsequent display of the processed video on a display of the car audio/video system (col.7 ln.5-30).

With respect to claim 186, Tranchina discloses the system of claim 164, wherein the audio file comprises a song stored on the portable device (col.5 ln.27-32).

With respect to claim 187, Tranchina discloses the system of claim 164, wherein the portable device is connected to the Internet, and said integration device processes information generated by the portable device and transmits processed information to the car audio/video system so that the display of the car audio/video system operates as an Internet browser (col.5 ln.33-47).

With respect to claim 188, Tranchina discloses a multimedia device integration system, comprising: first (fig.1 #150) and second wireless (fig.1 #102,118,165) interfaces establishing a wireless communication link between a car audio/video system (fig.1 #104,170) and a portable device (fig.1 #106, 108) external to the car audio/video system; and an integration subsystem (fig.1 #110) in communication with said wireless communication link (col.5 ln.48-64), wherein said integration subsystem channels audio generated by the portable device to the car audio/video system using the wireless communication link for subsequent playing of the audio on the car audio/video system, the audio corresponding to an audio file played by the portable device (col.6 ln.17-28, 53-67), and wherein said integration subsystem receives a control command issued at the car audio/video system in a format incompatible with the portable device, processes

the control command into a formatted command compatible with the portable device, and dispatches the processed control command to the portable device for execution thereby (col.7 ln.5-30).

With respect to claim 189, Tranchina discloses the system of claim 188, wherein said integration subsystem is positioned within the portable device (col.6 ln.40-52).

With respect to claim 190, Tranchina discloses the system of claim 188, wherein said integration subsystem (fig.1 #110) is positioned within the car audio/video system.

With respect to claim 191, Tranchina discloses the system of claim 188, where the audio file is stored on the portable device (col.5 ln.27-32).

With respect to claim 192, Tranchina discloses the system of claim 188, wherein the audio file is received

by the portable device (col.5 ln.33-45).

With respect to claim 195, Tranchina discloses the system of claim 188, wherein said integration subsystem further comprises a voice recognition subsystem (fig.1 #120) for receiving and processing spoken control commands issued by a user (col.8 ln.50-60).

With respect to claim 196, Tranchina discloses the system of claim 195, wherein said integration subsystem instructs said portable device to play a desired file in response to a spoken command processed by the voice recognition subsystem (col.8 ln.50-60).

With respect to claim 197, Tranchina discloses the system of claim 188, wherein said integration subsystem further comprises a speech synthesizer (fig.1 #130) for

generating synthesized speech corresponding to data generated by the portable device (col.8 ln.61-67, col.9 ln.1-3).

With respect to claim 198, Tranchina discloses the system of claim 197, wherein said integration subsystem transmits the synthesized speech to the car audio/video system for subsequent playing of the synthesized speech by the car audio/video system (col.8 ln.61-67, col.9 ln.1-3).

With respect to claim 199, Tranchina discloses the system of claim 188, wherein said integration subsystem generates a device presence signal and transmits the device presence signal to the car audio/video system to maintain the car audio/video system in a state responsive to the portable device (col.7 ln.13-16).

With respect to claim 200, Tranchina discloses the system of claim 188, wherein the portable device comprises a portable receiver (fig.1 #150, col.7 ln.21-26).

With respect to claim 201, Tranchina discloses the system of claim 200, wherein the portable receiver comprises a digital audio broadcast (DAB) receiver, a high-definition (HD) radio receiver, or a satellite receiver (col.5 ln.33-38).

With respect to claim 202, Tranchina discloses the system of claim 188, wherein the portable device comprises a portable digital media player (col.5 ln.27-32).

With respect to claim 203, Tranchina discloses the system of claim 202, wherein the portable digital media player comprises a video device (col.5 ln.27-32), a portable media center, a portable media player, an MP3 player, an MP4 player, a WMV player, an Apple iPod, or an Apple video iPod.

With respect to claim 204, Tranchina discloses the system of claim 188, wherein the portable device comprises a cellular telephone (col.5 ln.34-38).

With respect to claim 206, Tranchina discloses the system of claim 188, wherein said integration subsystem channels video generated by the portable device to the car audio/video system over the wireless communication link for subsequent playing of the audio on the car audio/video system, the video corresponding to a video file played by the portable device (col.6 ln.53-67).

With respect to claim 207, Tranchina discloses the system of claim 206, wherein the video file comprises a movie stored on the portable device (col.5 ln.27-32).

With respect to claim 208, Tranchina discloses the system of Claim 206, wherein the video file comprises a picture stored on the portable device (col.9 ln.4-7).

With respect to claim 209, Tranchina discloses the system of claim 206, wherein the video file comprises a video clip stored on the portable device (col.5 ln.27-32).

With respect to claim 210, Tranchina discloses the system of claim 206, wherein the video file comprises
streaming video received by the portable device (col.5 ln.33-47).

With respect to claim 211, Tranchina discloses the system of claim 206, wherein the video file comprises a navigation map generated by the portable device (col.5 ln.33-47).

With respect to claim 212, Tranchina discloses the system of claim 206, wherein said integration subsystem receives video generated by the portable device in a first format incompatible with the car audio/video system, processes the video into

processed video in a second format compatible with the car audio/video system, and transmits the processed video to the car audio/video system for subsequent display of the processed video on a display of the car audio/video system (col.7 ln.5-30).

With respect to claim 213, Tranchina discloses a multimedia device integration system, comprising: first (fig.1 #150) and second wireless interfaces (fig.1 #102,118,165) establishing a wireless communication link between a car audio/video system (fig.1 #104,170) and a portable device (fig.1 #106,108) external to the car audio/video system; and an integration subsystem (fig.1 #110) in communication with said wireless communication link (col.5 ln.48-64), wherein said integration subsystem channels audio generated by the portable device to the car audio/video system using the wireless communication link for subsequent playing of the audio on the car audio/video system, the audio corresponding to an audio file played by the portable device (col.6 ln.17-28, 53-67), and wherein said integration subsystem receives data generated by the portable device in a format incompatible with the car audio/video system, processes the data into formatted data compatible with the car audio/video system, and transmits the processed data to the car audio/video system for subsequent display of the processed data on a display of the car audio/video system (col.7 ln.5-30).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 108, 132, 156, 180 and 205 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tranchina (US 7493645) in view of Chen (US 6134456).

With respect to claims 108, 132, 156, 180 and 205, Tranchina does not disclose expressly wherein the system further comprises a non-wireless connection established between the car audio/video system and the portable device.

Chen discloses a multimedia device integration system comprising an integration subsystem (fig.2 #5), wherein the system further comprises a non-wireless connection established between the car audio/video system (fig.2 #30) and the portable device (fig.2 #2). At the time of the invention it would have been obvious to a person of ordinary skill in the art to replace the wireless interfaces of Tranchina with the wired connection of Chen. The motivation for doing so would have been to eliminate the need for wireless transmitters and receivers. This would reduce production costs and eliminate wireless noise interference.

Response to Arguments

Applicant's arguments, see "Remarks", filed April 30, 2010, with respect to the rejection(s) of claim(s) 92, 116, 140, 164, 188 and 213 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Tranchina (US 7493645) and Chen (US 6134456).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Moteki et al (US 6243645) discloses an audio-video output device and car navigation system.

Lavelle et al (US 6678892) discloses a multimedia entertainment unit for use in a vehicle.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JASON R. KURR whose telephone number is (571)272-0552. The examiner can normally be reached on M-F 10:00am to 6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on (571) 272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jason R Kurr/
Examiner, Art Unit 2614

/VIVIAN CHIN/
Supervisory Patent Examiner, Art Unit 2614

Notice of References Cited	Application/Control No. 11/475,847	Applicant(s)/Patent Under Reexamination MARLOWE, IRA	
	Examiner JASON R. KURR	Art Unit 2614	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-7,493,645	02-2009	Tranchina, James R.	725/75
*	B	US-6,134,456	10-2000	Chen, Stephen	455/569.2
*	C	US-6,243,645	06-2001	Moteki et al.	701/211
*	D	US-6,678,892	01-2004	Lavelle et al.	725/75
	E	US-			
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FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
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NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Search Notes	Application/Control No.	Applicant(s)/Patent under Reexamination
	11/475,847	MARLOWE, IRA
	Examiner	Art Unit
	JASON R. KURR	2614

SEARCHED			
Class	Subclass	Date	Examiner
381	86	5/18/2009	JK
340	825.24	5/18/2009	JK
700	94	5/18/2009	JK
710	303	5/18/2009	JK
455	99	5/18/2009	JK
Update	Above	2/11/2011	JK
348	837,838	2/11/2011	JK
725	75	2/11/2011	JK
455	3.06	2/11/2011	JK

INTERFERENCE SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES (INCLUDING SEARCH STRATEGY)		
	DATE	EXMR
Inventor Search USC 101 Reviewed	5/18/2009	JK
Searched related apps 10/316961 11/805799 reviewed tagged docs	5/18/2009	JK
Searched: Portable devices interfacing with audio systems	2/9/2010	JK
Searched: Voice recognition in file selection	2/25/2010	JK
updated class Search Searched: TV and Video Distribution classes for tv in vehicles	2/11/2011	JK

PTO/SB/08a (07-09)
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 2

Complete if Known	
Application Number	11/475,847
Filing Date	06/27/2006
First Named Inventor	Ira Marlowe
Art Unit	2614
Examiner Name	Kurr, Jason R.
Attorney Docket Number	99879-00026

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
/JK/	1	US- 6,411,823	06/25/2002	Chen	
		US-			
		US-			
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FOREIGN PATENT DOCUMENTS

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/JK/	2	CN1474252 (A) w/English Abstract	02-11-2004	Lenovo Beijing Co. Ltd.		

Examiner Signature	/Jason Kurr/	Date Considered	11/17/2010

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Attorney Docket Number	99879-00026

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
/JK/	3	Copy of Official Action dated July 16, 2009, issued by the Mexican Institute of Industrial Property in connection with Mexican Patent Application No. PA/a/2006/002421, with an English translation (5 pages)	
/JK/	4	Copy of Official Action dated March 19, 2010, issued by the Mexican Institute of Industrial Property in connection with Mexican Patent Application No. PA/a/2006/002421, with an English translation (4 pages)	
/JK/	5	Copy of Office Action dated March 18, 2010, from co-pending Application No. 11/071,667 (13 pages)	

Examiner Signature	/Jason Kurr/	Date Considered	11/17/2010

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/JK/	1	US- 7,151,950	12/19/2006	Oyang, et al.	
/JK/	2	US- 6,816,577	11/09/2004	Logan	
/JK/	3	US- 5,537,673	07/16/1996	Nagashima, et al.	
/JK/	4	US- 5,263,199	11/16/1993	Barnes, et al.	
/JK/	5	US- 2007/0294710	12/20/2007	Meesseman	
/JK/	6	US- 2003/0069000	04/10/2003	Kindo, et al.	
		US-			
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Examiner Signature	/Jason Kurr/	Date Considered	11/17/2010

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/JK/	7	Copy of Office Action dated August 30, 2010, from co-pending Application No. 11/805,799 (13 pages)	
/JK/	8	Copy of Office Action dated July 20, 2010, from co-pending Application No. 10/732,909 (17 pages)	

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/JK/	1	US- 6,990,208	01/24/2006	Lau, et al.	
/JK/	2	US- 6,721,489	04/13/2004	Benyamin, et al.	
/JK/	3	US- 6,772,212	08/03/2004	Lau, et al.	
/JK/	4	US- 6,192,340	02/20/2001	Abecassis	
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/JK/	5	Copy of Examiner's First Report dated April 29, 2010, issued by the Australian Patent Office in connection with Australian Patent Application No. 2006200895 (2 pages)	

Examiner Signature	/Jason Kurr/	Date Considered	11/17/2010

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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L5	3	12/405164	US-PGPUB; USPAT	OR	OFF	2011/02/11 10:57
S55	1	"6411823".pn.	US-PGPUB; USPAT	OR	OFF	2010/11/17 11:25
S56	1	"6990208".pn.	US-PGPUB; USPAT	OR	OFF	2010/11/17 11:35
S57	1	"6721489".pn.	US-PGPUB; USPAT	OR	OFF	2010/11/17 11:36
S58	1	"6772212".pn.	US-PGPUB; USPAT	OR	OFF	2010/11/17 11:36
S59	1	"6192340".pn.	US-PGPUB; USPAT	OR	OFF	2010/11/17 11:37
S60	1	"7151950".pn.	US-PGPUB; USPAT	OR	OFF	2010/11/17 11:38
S61	1	"6816577".pn.	US-PGPUB; USPAT	OR	OFF	2010/11/17 11:39
S62	1	"5537673".pn.	US-PGPUB; USPAT	OR	OFF	2010/11/17 11:39
S63	1	"5263199".pn.	US-PGPUB; USPAT	OR	OFF	2010/11/17 11:40
S64	1	"20070294710".pn.	US-PGPUB; USPAT	OR	OFF	2010/11/17 11:40
S65	1	"20030069000".pn.	US-PGPUB; USPAT	OR	OFF	2010/11/17 11:41
S66	934	381/86.ccls.	US-PGPUB; USPAT	OR	OFF	2010/11/17 11:45
S67	16	S66 and (integrat$3 with portable)	US-PGPUB; USPAT	OR	OFF	2010/11/17 11:46
S68	32	S66 and (display$3 with portable)	US-PGPUB; USPAT	OR	OFF	2010/11/17 11:46
S69	126	S66 and (cellular)	US-PGPUB; USPAT	OR	OFF	2010/11/17 11:46
S70	54	S69 and (hands near free)	US-PGPUB; USPAT	OR	OFF	2010/11/17 11:47
S71	38	S70 and display$3	US-PGPUB; USPAT	OR	OFF	2010/11/17 11:47
S72	225	381/334.ccls.	US-PGPUB; USPAT	OR	OFF	2010/11/17 11:47

S73	6	S72 and (integrat$3 with (vehicle stereo))	US-PGPUB; USPAT	OR	OFF	2010/11/17 11:47
S74	24	S72 and (vehicle)	US-PGPUB; USPAT	OR	OFF	2010/11/17 11:47
S75	37	S72 and (vehicle car automobile)	US-PGPUB; USPAT	OR	OFF	2010/11/17 11:48
S76	26	S72 and cellular	US-PGPUB; USPAT	OR	OFF	2010/11/17 11:48
S77	2734	700/94.ccls.	US-PGPUB; USPAT	OR	OFF	2010/11/17 12:44
S78	163	S77 and (interfac$3 with (car stereo vehicle))	US-PGPUB; USPAT	OR	OFF	2010/11/17 12:45
S79	134	S78 and (display$3)	US-PGPUB; USPAT	OR	OFF	2010/11/17 12:45
S80	78	S79 and command	US-PGPUB; USPAT	OR	ON	2010/11/17 12:45
S81	444	marlow.in.	US-PGPUB; USPAT	OR	ON	2010/11/17 12:45
S82	55	S81 and integrat$3	US-PGPUB; USPAT	OR	ON	2010/11/17 12:46
S83	449	marlowe.in.	US-PGPUB; USPAT	OR	ON	2010/11/17 12:46
S84	55	S83 and integrat$3	US-PGPUB; USPAT	OR	ON	2010/11/17 12:47
S85	553	340/825.24,825.25.ccls.	US-PGPUB; USPAT	OR	ON	2010/11/17 12:53
S86	117	S85 and (car vehicle automobile)	US-PGPUB; USPAT	OR	ON	2010/11/17 12:53
S87	3	S86 and (integrat$3 with portable)	US-PGPUB; USPAT	OR	ON	2010/11/17 12:53
S88	1	S86 and (integrat$3 with cellular)	US-PGPUB; USPAT	OR	ON	2010/11/17 12:54
S89	795	710/303,304.ccls.	US-PGPUB; USPAT	OR	ON	2010/11/17 12:54
S90	99	S89 and (car vehicle automobile)	US-PGPUB; USPAT	OR	ON	2010/11/17 12:54
S91	22	S90 and (integrat$3 with portable)	US-PGPUB; USPAT	OR	ON	2010/11/17 12:54
S92	364	455/99.ccls.	US-PGPUB; USPAT	OR	ON	2010/11/17 13:34
S93	269	S92 and (car automobile vehicle)	US-PGPUB; USPAT	OR	ON	2010/11/17 13:35
S94	96	S93 and integrat$4	US-PGPUB; USPAT	OR	ON	2010/11/17 13:35
S95	34740	"381".clas.	US-PGPUB; USPAT	OR	OFF	2011/01/12 14:02

S96	5168	S95 and (directional$3)	US-PGPUB; USPAT	OR	OFF	2011/01/12 14:02
S97	127	S96 and (circular with array)	US-PGPUB; USPAT	OR	OFF	2011/01/12 14:02
S98	11	10/316961	US-PGPUB; USPAT	OR	OFF	2011/02/08 10:01
S99	500	play$3 with movie with (car vehicle automobile)	US-PGPUB; USPAT	OR	ON	2011/02/08 10:07
S100	243	S99 and wireless$2	US-PGPUB; USPAT	OR	ON	2011/02/08 10:07
S101	87	S100 and ((@ad @rlad) <="20021211")	US-PGPUB; USPAT	OR	OFF	2011/02/08 10:09
S102	56	S101 and portable	US-PGPUB; USPAT	OR	OFF	2011/02/08 10:10
S103	7	("5555466" | "5771441" | "6058288" | "6243645" | "6266815" | "6300880" | "6317039").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2011/02/08 11:02
S104	42	("20010033736" | "20020045891" | "20020076049" | "20020077897" | "20020159270" | "20020178443" | "20020197955" | "20030093810" | "20030188320" | "20040110466" | "20040111755" | "20040123327" | "20050267994" | "20060294551" | "5345430" | "5634209" | "5775762" | "5794164" | "5822023" | "5850215" | "5946055" | "6154658" | "6202008" | "6256317" | "6304173" | "6335753" | "6339455" | "6356812" | "6374177" | "6414664" | "6420975" | "6424369" | "6522368" | "6526335" | "6553567" | "6577928" | "6663155" | "6779196" | "6782245" | "6871356" | "7159232" | "D413856").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2011/02/08 13:47
S105	386	348/837,838.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2011/02/08 13:52
S106	169	S105 and ((@ad @rlad) <="20021211")	US-PGPUB; USPAT	OR	OFF	2011/02/08 13:53

S107	204	725/75.ccls.	US-PGPUB; USPAT	OR	OFF	2011/02/08 13:53
S108	57	S107 and ((@ad @rlad) <="20021211")	US-PGPUB; USPAT	OR	OFF	2011/02/08 13:53
S109	1052	455/3.06.ccls.	US-PGPUB; USPAT	OR	OFF	2011/02/08 13:53
S110	403	S109 and ((@ad @rlad) <="20021211")	US-PGPUB; USPAT	OR	OFF	2011/02/08 13:53
S111	173	S110 and (vehicle automobile car)	US-PGPUB; USPAT	OR	ON	2011/02/08 13:54
S112	393	S111 S108 S106	US-PGPUB; USPAT	OR	ON	2011/02/08 13:54

2/11/2011 2:39:13 PM
C:\Documents and Settings\jkurr\My Documents\EAST\Workspaces\11475847.wsp

Index of Claims

Application/Control No.	Applicant(s)/Patent under Reexamination
11/475,847	MARLOWE, IRA
Examiner	**Art Unit**
JASON R. KURR	2614

√	Rejected	–	(Through numeral) Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

Claim		Date								
Final	Original	8/4/08	5/18/09	2/27/10	2/11/11					
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Index of Claims (continued)

Application/Control No.	Applicant(s)/Patent under Reexamination
11/475,847	MARLOWE, IRA
Examiner	**Art Unit**
JASON R. KURR	2614

√	Rejected	–	(Through numeral) Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

Claim		Date								
Final	Original	2/27/10	2/11/11							
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Doc Code: PET.POA.WDRW
Document Description: Petition to withdraw attorney or agent (SB83)

PTO/SB/83 (11-08)
Approved for use through 11/30/2011. OMB 0651-0035
U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

REQUEST FOR WITHDRAWAL AS ATTORNEY OR AGENT AND CHANGE OF CORRESPONDENCE ADDRESS

Application Number	11/475,847
Filing Date	06/27/2006
First Named Inventor	Ira M. Marlowe
Art Unit	2614
Examiner Name	Kurr, Jason R.
Attorney Docket Number	99879-00026

To: Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Please withdraw me as attorney or agent for the above identified patent application, and

☐ all the practitioners of record;

☐ the practitioners (with registration numbers) of record listed on the attached paper(s); or

☑ the practitioners of record associated with Customer Number: 27614

NOTE: The immediately preceding box should only be marked when the practitioners were appointed using the listed Customer Number.

The reason(s) for this request are those described in 37 CFR :

☐ 10.40(b)(1)	☐ 10.40(b)(2)	☐ 10.40(b)(3)	☐ 10.40(b)(4)
☐ 10.40(c)(1)(i)	☐ 10.40(c)(1)(ii)	☐ 10.40(c)(1)(iii)	☐ 10.40(c)(1)(iv)
☐ 10.40(c)(1)(v)	☑ 10.40(c)(1)(vi)	☐ 10.40(c)(2)	☐ 10.40(c)(3)
☐ 10.40(c)(4)	☐ 10.40(c)(5)	☐ 10.40(c)(6) Please explain below:	

Certifications

Check each box below that is factually correct. WARNING: If a box is left unchecked, the request will likely not be approved.

1. ☑ I/We have given reasonable notice to the client, prior to the expiration of the response period, that the practitioner(s) intend to withdraw from employment.

2. ☑ I/We have delivered to the client or a duly authorized representative of the client all papers and property (including funds) to which the client is entitled.

3. ☑ I/We have notified the client of any responses that may be due and the time frame within which the client must respond.

Please provide an explanation, if necessary:

PTO/SB/83 (11-08)
Approved for use through 11/30/2011. OMB 0651-0035
U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

REQUEST FOR WITHDRAWAL AS ATTORNEY OR AGENT AND CHANGE OF CORRESPONDENCE ADDRESS

Complete the following section only when the correspondence address will change. *Changes of address will only be accepted to an inventor or an assignee that has properly made itself of record pursuant to 37 CFR 3.71.*

Change the correspondence address and direct all future correspondence to:

A. ☐ The address of the inventor or assignee associated with Customer Number: _____

OR

B. ☑ Inventor or Assignee name	Ira M. Marlowe

Address	BlitzSafe of America, Inc., 33 Honeck Street		
City Englewood	State NJ	Zip 07631	Country US
Telephone (201) 569-5000		Email i.marlowe@blitzsafe.com	

I am authorized to sign on behalf of myself and all withdrawing practitioners.

Signature			
Name	Michael R. Friscia	Registration No. 33,884	
Address	McCarter & English, LLP, 100 Mulberry Street, Four Gateway Center		
City Newark	State NJ	Zip 07102	Country US
Date	5/6/11	Telephone No. (973) 639-8493	

NOTE: ***Withdrawal is effective when approved rather than when received.***

Electronic Acknowledgement Receipt

EFS ID:	10037701
Application Number:	11475847
International Application Number:	
Confirmation Number:	9001
Title of Invention:	Multimedia device integration system
First Named Inventor/Applicant Name:	Ira Marlowe
Customer Number:	27614
Filer:	Michael R. Friscia/Janelle Fava
Filer Authorized By:	Michael R. Friscia
Attorney Docket Number:	99879-00026
Receipt Date:	06-MAY-2011
Filing Date:	27-JUN-2006
Time Stamp:	14:36:56
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	Transmittal.pdf	33414 f31ea196b6ce8677eae8c1af844992256204ef95	no	1
Warnings:					
Information:					

2	Petition to withdraw attorney or agent (SB83)	Withdrawal.pdf	111414 2f91c93abe3e0e1503543d09d1f53da8c6dbf87c	no	2
Warnings:					
Information:					
			Total Files Size (in bytes):	144828	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Customer No. 27614
Confirmation No. 9001

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Examiner: Kurr, Jason R.
Art Unit: 2614

Re: Our file: 99879-00026
Applicant: Ira Marlowe
Serial No.: 11/475,847
Filed: 06/27/2006
For: Multimedia Device Integration System

Sir:

Enclosed for filing in the United States Patent and Trademark Office is the following:

1. Request for Withdrawal as Attorney or Agent and Change of Correspondence Address
2. Transmittal Sheet

CONDITIONAL PETITION

If any extension of time is required for the submission of the above-identified items, Applicant requests that this be considered a petition therefor. Please charge any additional charges or any other charges relating to this matter, or credit any overpayment, to the Deposit Account of the writer, **Account No. 503571.**

5/6/11
Date

Respectfully submitted,

Michael R. Friscia
Registration No. 33,884
McCarter & English, LLP
Four Gateway Center
100 Mulberry Street
Newark, NJ 07102
Tel: (973) 639-8493
Fax: (973) 297-6627

CERTIFICATE OF ELECTRONIC FILING

I hereby certify that this correspondence is being electronically filed with the United States Patent and Trademark Office (via EFS-Web) on 5/6/2011.

Janelle Fava

ME1 8627379v.1

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
11/475,847	06/27/2006	Ira Marlowe	99879-00026

CONFIRMATION NO. 9001

27614
MCCARTER & ENGLISH, LLP NEWARK
FOUR GATEWAY CENTER
100 MULBERRY STREET
NEWARK, NJ 07102

POWER OF ATTORNEY NOTICE

OC000000048295847

Date Mailed: 06/20/2011

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 05/06/2011.

- The withdrawal as attorney in this application has been accepted. Future correspondence will be mailed to the new address of record. 37 CFR 1.33.

/dcgoodwyn/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

MAILED

JUN 23 2011

OFFICE OF PETITIONS

MCCARTER & ENGLISH, LLP NEWARK
FOUR GATEWAY CENTER
100 MULBERRY STREET
NEWARK NJ 07102

In re Application of	:	
MARLOWE	:	
Application No. 11/475,847	:	DECISION ON PETITION
Filed: June 27, 2006	:	TO WITHDRAW
Attorney Docket No. 99879-00026	:	FROM RECORD
	:	

This is a decision on the Request to Withdraw as attorney or agent of record under 37 C.F.R. § 1.36(b), filed May 6, 2011.

The request is **APPROVED**.

A grantable request to withdraw as attorney/agent of record must be signed by every attorney/agent seeking to withdraw or contain a clear indication that one attorney is signing on behalf of another/others. The Office requires the practitioner(s) requesting withdrawal to certify that he, she, or they have: (1) given reasonable notice to the client, prior to the expiration of the response period, that the practitioner(s) intends to withdraw from employment; (2) delivered to the client or a duly authorized representative of the client all papers and property (including funds) to which the client is entitled; and (3) notified the client of any responses that may be due and the time frame within which the client must respond, pursuant 37 CFR 10.40(c).

The request was signed by Michael R. Friscia on behalf of the attorneys of record associated with Customer No. 27614.

The attorneys of record associated with Customer No. 27614 have been withdrawn.

Applicant is reminded that there is no attorney of record at this time.

The correspondence address of record has been changed and the new correspondence address is the address copied below until otherwise properly notified.

Telephone inquiries concerning this decision should be directed to the undersigned at (571) 272-6735.

/Diane C. Goodwyn/
Diane Goodwyn
Petitions Examiner
Office of Petitions

cc: IRA M. MARLOWE
BLITZSAFE OF AMERICA, INC.,
33 HONECK STREET
ENGLEWOOD NJ 07631

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
11/475,847	06/27/2006	Ira Marlowe	99879-00026

CONFIRMATION NO. 9001

27614
MCCARTER & ENGLISH, LLP NEWARK
FOUR GATEWAY CENTER
100 MULBERRY STREET
NEWARK, NJ 07102

POWER OF ATTORNEY NOTICE

OC000000048295847

Date Mailed: 06/20/2011

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- The withdrawal as attorney in this application has been accepted. Future correspondence will be mailed to the new address of record. 37 CFR 1.33.

/dcgoodwyn/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

Bib Data Sheet

CONFIRMATION NO. 9001

SERIAL NUMBER	FILING OR 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
11/475,847	06/27/2006 RULE	381	2614	

APPLICANTS

Ira Marlowe, Fort Lee, NJ;

**** CONTINUING DATA **************************

This application is a CIP of 11/071,667 03/03/2005
which is a CIP of 10/732,909 12/10/2003
which is a CIP of 10/316,961 12/11/2002 PAT 7,489,786

**** FOREIGN APPLICATIONS ********************

IF REQUIRED, FOREIGN FILING LICENSE GRANTED ** SMALL ENTITY **
** 07/24/2006

		STATE OR COUNTRY	SHEETS DRAWING	TOTAL CLAIMS	INDEPENDENT CLAIMS
Foreign Priority claimed	☐ yes ☐ no	NJ	36	91	7
35 USC 119 (a-d) conditions met	☐ yes ☐ no ☐ Met after Allowance				
Verified and Acknowledged	Examiner's Signature Initials				

ADDRESS

IRA M. MARLOWE
BLITZSAFE OF AMERICA, INC.
33 HONECK STREET
ENGLEWOOD, NJ07631

TITLE

Multimedia device integration system

FILING FEE RECEIVED		
3755	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:	☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: **Ira Marlowe**	Group Art Unit: **2614**
	Examiner: **Xu Mei**
Serial No.: **11/475,847**	Attorney File No.: **IM002**
Filed: **June 27, 2006**	Office Action Mailed On: **2/15/2011**
For: **MULTIMEDIA DEVICE INTEGRATION SYSTEM**	Confirmation No.: **9001**

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

REPLY TO OFFICE ACTION

Sir:

In this Reply, Applicant responds to the outstanding Office action mailed on the date shown above (the "Office Action" hereinafter). The Office Action set a shortened statutory period of three months for reply. Applicant petitions for an extension of time of three months and submits the applicable small entity time extension fee herewith. If additional or other fees are necessary for filing of this paper and the papers filed with it, authorization is granted to charge such fees as they apply to a small entity to Deposit Account Number 50-3196.

Amendments to the claims are reflected in the listing of claims that begins on page 3 of this paper.

Remarks begin on page 29 of this paper.

REMARKS

Claim Status

Claims 92-192, and 195-214 will be pending in the instant application after entry of the above amendments. This paper does not cancel any claims; amends claims 92, 116, 140, 164, 188, 195, and 213; and adds new claim 214. The amendments are made without acquiescence to the rejections, without prejudice, without disclaimer, and without intent to dedicate to the public. Claims 92, 116, 140, 164, 188, 213, and 214 will be the independent claims of the application.

Office Action Summary

In the Office Action, the Examiner rejected claims 92-107, 109-131, 133-155, 157-179, 181-192, 195-204, and 206-213 under 35 U.S.C. § 102(e) as being anticipated by Tranchina, U.S. Patent Number 7,493,645 ("Tranchina" in this paper); and rejected claims 108, 132, 156, 180, and 205 under 35 U.S.C. § 103(a) as being unpatentable over Tranchina and Chen, U.S. Patent Number 6,134,456 ("Chen" in this paper).

Applicant respectfully responds to the Office Action.

Art Rejections

Independent claim 92 is set forth below:

92. (Previously Presented) A multimedia device integration system, comprising:

an integration subsystem in communication with a portable device, the portable device external to a car audio/video system; and

a first wireless interface in communication with said integration subsystem, said first wireless interface establishing a wireless communication link with a second wireless interface in communication with the car audio/video system,

> wherein said integration subsystem obtains information about an audio file stored on the portable device, transmits the information over said wireless communication link to the car audio/video system for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the audio ~~or video~~ file in response to a user selecting the audio file using controls of the car audio/video system, and transmits audio generated by the portable device over said wireless communication link to the car audio/video system for playing on the car audio/video system.

In rejecting this claim, the Office Action asserted (page 3) that Tranchina discloses the limitation of the *wherein* clause in column 6, lines 17-29 and 53-67. We have perused the cited text of Tranchina, and do not see how the text can be construed to disclose (or even suggest), for example, an integration subsystem instructing the portable device to play an audio file in response to a user selecting the audio file using the controls of the car audio/video system (paraphrased). We believe it does not. If the rejection is repeated, we respectfully request to be advised how the text can be understood to disclose or suggest a user instructing the portable device to play the file on the portable device through the controls of the car audio/video system.

Elsewhere, the Office Action cites Tranchina's column 7, lines 5-30. In that cited text, Tranchina discloses, among other features, bi-directional transmissions by the console of Tranchina's invention. In particular, Tranchina discloses that

> the wireless receiver 102 may communicate with the input device(s) (106 and/or 108) for control purposes. In such a case, the input device(s) (106 and/or 108) may employ a wireless transceiver instead of simply a wireless transmitter, and the wireless receiver 102 and the wireless transmitter 118 of the console 100 may be replaced by a wireless transceiver.

Tranchina, col. 7, lines 23-28. This text, however, does not specify what is meant by "control purposes"; it does not say that the "control purposes" may include allowing a user to instruct, through the car audio/video system, the portable device to play a file.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union*

Oil Co. of California, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the . . . claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989). (Both *Verdegaal* and *Richardson* cases are quoted with approval in MPEP § 2131.) Here, the reference does not disclose the integration subsystem that instructs the portable device to play the audio or video file in response to a user selecting the audio file using controls of the car audio/video system. Therefore, Tranchina fails to anticipate claim 92.

Each of the independent claims 116, 140, 164, and 213 (as amended) recites limitations identical or analogous to the limitations of claim 92 discussed above. Applicant respectfully submits that Tranchina fails to anticipate each of these claims at least for the reasons state above in relation to claim 92.

Independent claim 188, as amended includes the following *wherein* clause: "wherein said integration subsystem receives a control command issued by a user through one or more controls of the car audio/video system in a format incompatible with the portable device, processes the control command into a formatted command compatible with the portable device, and dispatches the formatted command to the portable device for execution thereby." The claim therefore requires (paraphrasing) the subsystem to receive a user command issued through the controls of the car audio/video system, and convert the command into a format acceptable to the portable device. These limitations are similar to the limitations of claim 92 discussed above, but they do not limit the user-issued commands to play a file. Tranchina apparently contains no such disclosure (or even suggestion); in particular, Tranchina contains no such disclosure in the portions cited in the Office Action, which are the same ones we discussed above in relation to claim 92.

At least for these reasons, Applicant respectfully submits that Tranchina fails to anticipate claim 188.

Dependent claims 108, 132, 156, 180, and 205 were rejected as being unpatentable over Tranchina and Chen. Applicant respectfully submits that Chen fails to remedy the deficiencies of Tranchina discussed above. Each of these claims is therefore patentable over the reference, at least for this reason.

Dependent claims not addressed above should be patentable together with their respective base claims and intervening claim, if any.

New Claims

New independent claims 214 is a method claim analogous to the independent apparatus claim 92, and should be patentable at least for the same reasons as claim 92.

CONCLUSION

Having made an effort to bring the instant application in condition for allowance, a notice to this effect is earnestly solicited. To discuss any matter pertaining to the application, the Examiner is invited to call the undersigned attorney at (858) 720-9431.

Respectfully submitted,

Dated: August 15, 2011

/Anatoly S. Weiser/
Anatoly S. Weiser, Reg. No. 43,229
Acuity Law Group
3525 Del Mar Heights Road, #295
San Diego, CA 92130
(858) 720-9431

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	11475847
Filing Date	2006-06-27
First Named Inventor	Marlowe, Ira
Art Unit	2614
Examiner Name	MEI, XU
Attorney Docket Number	IM002

U.S.PATENTS Remove

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	Filing Date	2006-06-27
	First Named Inventor	Marlowe, Ira
	Art Unit	2614
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	Attorney Docket Number	IM002

	1	Office Action of 2 February 2011 in U.S. Patent Application Ser. No. 10/071,667, 18 pages	☐
	2	Office Action of 18 April 2011 in U.S. Patent Application Ser. No. 10/732,909, 18 pages	☐

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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

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	Application Number	11475847
	Filing Date	2006-06-27
	First Named Inventor	Marlowe, Ira
	Art Unit	2614
	Examiner Name	MEI, XU
	Attorney Docket Number	IM002

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☒ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☐ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Anatoly S. Weiser/	Date (YYYY-MM-DD)	2011-08-15
Name/Print	Anatoly S. Weiser	Registration Number	43229

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: **Ira Marlowe**	Group Art Unit: **2614**
	Examiner: **Xu Mei**
Serial No.: **11/475,847**	Attorney File No.: **IM002**
Filed: **June 27, 2006**	Office Action Mailed On: **2/15/2011**
For: **MULTIMEDIA DEVICE INTEGRATION SYSTEM**	Confirmation No.: **9001**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Sir:

Attached hereto are four pages of Form PTO-1449 (or substitute therefor) listing documents believed relevant to the above-referenced Application. Applicant respectfully requests that these documents be considered by the Examiner and an initialed copy of each page be returned to the undersigned.

This disclosure statement should not be construed as a representation that a search has been made or that no other material information as defined in 37 C.F.R. § 1.56(a) exists.

Applicant and his attorney believe that this disclosure complies with the requirements of 37 C.F.R. §§ 1.56, 1.97, and 1.98, and the Manual of Patent Examining Procedure § 609. If the Examiner considers otherwise, we respectfully request that the Examiner call the undersigned attorney so that any deficiencies can be remedied.

A copy of each document, other than U.S. patents and published applications, is enclosed. Some documents may have markings thereon. We do not intend any significance to attach to the markings.

These documents are not necessarily analogous art.

The disclosure information is being filed before the mailing of a final Office action, a notice of allowance, or other action closing prosecution of the application, after the filing of a request for continued examination under § 1.114. The fee under 37 C.F.R. 1.17(p) is filed herewith. Any deficiency in the fee or other fee necessary for consideration of the IDS and applicable to a small entity is authorized to be charged to Deposit Account Number 50-3196. The information should therefore be considered. MPEP § 609; 37 C.F.R. § 1.97(c)(2).

To discuss any matter pertaining to the above-referenced Application, the Examiner is invited to call the undersigned attorney at (858) 720-9431.

Respectfully submitted,

Dated: 8/15/2011

/Anatoly S. Weiser/

Anatoly S. Weiser
Acuity Law Group
3525 Del Mar Heights Road, #295
San Diego, CA 92130
(858) 720-9431
Reg. No. 43,229

Electronic Patent Application Fee Transmittal

Application Number:	11475847
Filing Date:	27-Jun-2006
Title of Invention:	Multimedia device integration system
First Named Inventor/Applicant Name:	Ira Marlowe
Filer:	Anatoly Weiser.
Attorney Docket Number:	

Filed as Small Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Extension - 3 months with $0 paid	2253	1	555	555

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Submission- Information Disclosure Stmt	1806	1	180	180
		Total in USD ($)		**735**

Electronic Patent Application Fee Transmittal

Application Number:	11475847
Filing Date:	27-Jun-2006
Title of Invention:	Multimedia device integration system
First Named Inventor/Applicant Name:	Ira Marlowe
Filer:	Anatoly Weiser.
Attorney Docket Number:	

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Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
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Miscellaneous:				
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Electronic Acknowledgement Receipt	
EFS ID:	10740730
Application Number:	11475847
International Application Number:	
Confirmation Number:	9001
Title of Invention:	Multimedia device integration system
First Named Inventor/Applicant Name:	Ira Marlowe
Correspondence Address:	IRA M. MARLOWE - BLITZSAFE OF AMERICA, INC. 33 HONECK STREET ENGLEWOOD NJ 07631 US - -
Filer:	Anatoly Weiser.
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	15-AUG-2011
Filing Date:	27-JUN-2006
Time Stamp:	18:13:28
Application Type:	Utility under 35 USC 111(a)

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Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Amendment/Req. Reconsideration-After Non-Final Reject	Amendment1-Image.pdf	4459081 2f8c08501ba90f504c06b6e86af7f04bdd3e9c8d	no	34
Warnings:					
Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	IDS1-SB08.pdf	612322 64672b540710f5bec4e140cd8f973bae6a18d52d	no	4
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Information:					
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3	Transmittal Letter	IDS1-Transmittal-Image.pdf	268893 cafeb55739baf1aad38eb51e086fb6fe673882ef	no	2
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Warnings:					
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5	Non Patent Literature	SerNo11071667OA2011February02.pdf	693012 eded0b4012e2c76941908f8286e3739d456b5329	no	18
Warnings:					
Information:					
6	Fee Worksheet (SB06)	fee-info.pdf	31381 18d5f3c9ed184453a37de1f3a66818a55525eb01	no	2
Warnings:					
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		Total Files Size (in bytes):	6736006		

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If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

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If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	11475847
Filing Date	2006-06-27
First Named Inventor	Marlowe, Ira
Art Unit	2614
Examiner Name	MEI, XU
Attorney Docket Number	IM002

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Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
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Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20030215102		2003-11-20	Marlowe	all
	2	20040145457		2004-07-29	Schofiled et al.	all

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
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	Art Unit	2614
	Examiner Name	MEI, XU
	Attorney Docket Number	IM002

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1	Official Action of 29 March 2011 in Chinese Patent Application 200610059421.7	☐

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Examiner Signature		Date Considered	

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[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

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CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

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OR

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☐ See attached certification statement.

☒ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☐ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Anatoly S. Weiser/	Date (YYYY-MM-DD)	2011-08-15
Name/Print	Anatoly S. Weiser	Registration Number	43229

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt	
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Application Number:	11475847
International Application Number:	
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Title of Invention:	Multimedia device integration system
First Named Inventor/Applicant Name:	Ira Marlowe
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Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	IDS2-Transmittal-Image.pdf	269863 53808dce9ff42ad7eb80b9fa55f1e6a9397a958c	no	2
Warnings:					
Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	IDS2-SB08.pdf	612295 86355af97c8f3982f9c841475d5863b751c0ad18	no	4
Warnings:					
Information:					
3	Non Patent Literature	CN-OfficialAction2011March29.pdf	379704 1dec2886e9c569d55459a25a6d5bcdcb75b345af	no	9
Warnings:					
Information:					
		Total Files Size (in bytes):	1261862		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

<u>New Applications Under 35 U.S.C. 111</u>
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

<u>National Stage of an International Application under 35 U.S.C. 371</u>
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

<u>New International Application Filed with the USPTO as a Receiving Office</u>
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: **Ira Marlowe**	Group Art Unit: **2614**
	Examiner: **Xu Mei**
Serial No.: **11/475,847**	Attorney File No.: **IM002**
Filed: **June 27, 2006**	Office Action Mailed On: **2/15/2011**
For: **MULTIMEDIA DEVICE INTEGRATION SYSTEM**	Confirmation No.: **9001**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Sir:

Attached hereto are four pages of Form PTO-1449 (or substitute therefor) listing documents believed relevant to the above-referenced Application. Applicant respectfully requests that these documents be considered by the Examiner and an initialed copy of each page be returned to the undersigned.

This disclosure statement should not be construed as a representation that a search has been made or that no other material information as defined in 37 C.F.R. § 1.56(a) exists.

Applicant and his attorney believe that this disclosure complies with the requirements of 37 C.F.R. §§ 1.56, 1.97, and 1.98, and the Manual of Patent Examining Procedure § 609. If the Examiner considers otherwise, we respectfully request that the Examiner call the undersigned attorney so that any deficiencies can be remedied.

A copy of each document, other than U.S. patents and published applications, is enclosed. Some documents may have markings thereon. We do not intend any significance to attach to the markings.

These documents are not necessarily analogous art.

The disclosure information is being filed before the mailing of a final Office action, a notice of allowance, or other action closing prosecution of the application, after the filing of a request for continued examination under § 1.114. The fee under 37 C.F.R. 1.17(p) has already been submitted. Any deficiency in the fee or other fee necessary for consideration of the IDS and applicable to a small entity is authorized to be charged to Deposit Account Number 50-3196. The information should therefore be considered. MPEP § 609; 37 C.F.R. § 1.97(c)(2).

To discuss any matter pertaining to the above-referenced Application, the Examiner is invited to call the undersigned attorney at (858) 720-9431.

Respectfully submitted,

Dated: 8/15/2011

/Anatoly S. Weiser/

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CLAIM AMENDMENT

Please amend the claims in accordance with the following listing, which will replace all previous listings and versions of claims in this application.

Listing of Claims

1-91. (Cancelled)

92. (Currently Amended) A multimedia device integration system, comprising:

an integration subsystem in communication with a portable device, the portable device external to a car audio/video system; and

a first wireless interface in communication with said integration subsystem, said first wireless interface establishing a wireless communication link with a second wireless interface in communication with the car audio/video system,

wherein said integration subsystem obtains information about an audio file stored on the portable device, transmits the information over said wireless communication link to the car audio/video system for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the audio ~~or video~~ file in response to a user selecting the audio file using controls of the car audio/video system, and transmits audio generated by the portable device over said wireless communication link to the car audio/video system for playing on the car audio/video system.

93. (Previously Presented) The system of claim 92, wherein said integration subsystem is positioned within the portable device.

94. (Previously Presented) The system of claim 93, wherein said first wireless interface is positioned within the portable device.

95. (Previously Presented) The system of claim 94, wherein said second wireless interface is positioned within the car audio/video system.

96. (Previously Presented) The system of claim 91, wherein said integration subsystem receives, over said wireless communication link, a control command issued at the car audio/video system in a format incompatible with the portable device, processes the control command into a formatted command compatible with the portable device, and dispatches the processed control command to the portable device for execution thereby.

97. (Previously Presented) The system of claim 92, wherein said integration subsystem receives data generated by the portable device in a format incompatible with the car audio/video system, processes the data into formatted data compatible with the car audio/video system, and transmits the processed data to the car audio/video system over the wireless communication link for subsequent display of the processed data on a display of the car audio/video system.

98. (Previously Presented) The system of claim 92, wherein said integration subsystem further comprises a voice recognition subsystem for receiving and processing spoken control commands issued by a user.

99. (Previously Presented) The system of claim 98, wherein said integration subsystem instructs said portable device to play a desired file in response to a spoken command processed by the voice recognition subsystem.

100. (Previously Presented) The system of claim 92, wherein said integration subsystem further comprises a speech synthesizer for generating synthesized speech corresponding to data generated by the portable device.

101. (Previously Presented) The system of claim 100, wherein said integration subsystem transmits the synthesized speech to the car audio/video system over said wireless communication link for subsequent playing of the synthesized speech by the car audio/video system.

102. (Previously Presented) The system of claim 92, wherein said integration subsystem generates a device presence signal and transmits the device presence signal to the car audio/video system over said wireless communications link to maintain the car audio/video system in a state responsive to the portable device.

103. (Previously Presented) The system of claim 92, wherein the portable device comprises a portable receiver.

104. (Previously Presented) The system of claim 103, wherein the portable receiver comprises a digital audio broadcast (DAB) receiver, a high-definition (HD) radio receiver, or a satellite receiver.

105. (Previously Presented) The system of claim 92, wherein the portable device comprises a portable digital media player.

106. (Previously Presented) The system of claim 105, wherein the portable digital media player comprises a video device, a portable media center, a portable media player, an MP3 player, an MP4 player, a WMV player, an Apple iPod, or an Apple video iPod.

107. (Previously Presented) The system of claim 92, wherein the portable device comprises a cellular telephone.

108. (Previously Presented) The system of claim 92, further comprising a non-wireless connection established between the car audio/video system and the portable device.

109. (Previously Presented) The system of claim 92, wherein said integration subsystem transmits, over said wireless communication link, information about a video file stored on the portable device to the car audio/video system for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the video file in response to a user selecting the video file using controls of the car audio/video system, and transmits video generated by the portable device over said wireless communication link to the car audio/video system for playing on the car audio/video system.

110. (Previously Presented) The system of claim 109, wherein the video file comprises a movie stored on the portable device.

111. (Previously Presented) The system of Claim 109, wherein the video file comprises a picture stored on the portable device.

112. (Previously Presented) The system of claim 109, wherein the video file comprises a video clip stored on the portable device.

113. (Previously Presented) The system of claim 109, wherein said integration subsystem receives video generated by the portable device in a first format incompatible with the car audio/video system, processes the video into processed video in a second format compatible with the car audio/video system, and transmits the processed video over the wireless communication link to the

car audio/video system for subsequent display of the processed video on a display of the car audio/video system.

114. (Previously Presented) The system of claim 92, wherein the audio file comprises a song stored on the portable device.

115. (Previously Presented) The system of claim 92, wherein the portable device is connected to the Internet, and said integration device processes information generated by the portable device and transmits processed information to the car audio/video system so that the display of the car audio/video system operates as an Internet browser.

116. (Currently Amended) A multimedia device integration system, comprising:

an integration subsystem in communication with a portable device, the portable device external to a car audio/video system; and

a first wireless interface in communication with said integration subsystem, said first wireless interface establishing a wireless communication link with a second wireless interface in communication with the car audio/video system,

wherein said integration subsystem obtains information about an audio file received by the portable device, transmits the information over said wireless communication link to the car audio/video system for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the audio ~~or video~~ file in response to a user selecting the audio file using controls of the car audio/video system, and transmits audio generated by the portable

device over said wireless communication link to the car audio/video system for playing on the car audio/video system.

117. (Previously Presented) The system of claim 116, wherein said integration subsystem is positioned within the portable device.

118. (Previously Presented) The system of claim 117, wherein said first wireless interface is positioned within the portable device.

119. (Previously Presented) The system of claim 118, wherein said second wireless interface is positioned within the car audio/video system.

120. (Previously Presented) The system of claim 116, wherein said integration subsystem receives a control command issued at the car audio/video system in a format incompatible with the portable device, processes the control command into a formatted command compatible with the portable device, and dispatches the processed control command to the portable device for execution thereby.

121. (Previously Presented) The system of claim 116, wherein said integration subsystem receives data generated by the portable device in a format incompatible with the car audio/video system, processes the data into formatted data compatible with the car audio/video system, and transmits the

processed data to the car audio/video system over the wireless communication link for subsequent display of the processed data on a display of the car audio/video system.

122. (Previously Presented) The system of claim 116, wherein said integration subsystem further comprises a voice recognition subsystem for receiving and processing spoken control commands issued by a user.

123. (Previously Presented) The system of claim 122, wherein said integration subsystem instructs said portable device to play a desired file in response to a spoken command processed by the voice recognition subsystem.

124. (Previously Presented) The system of claim 116, wherein said integration subsystem further comprises a speech synthesizer for generating synthesized speech corresponding to data generated by the portable device.

125. (Previously Presented) The system of claim 124, wherein said integration subsystem transmits the synthesized speech to the car audio/video system over said wireless communication link for subsequent playing of the synthesized speech by the car audio/video system.

126. (Previously Presented) The system of claim 116, wherein said integration subsystem generates a device presence signal and transmits the device presence signal to the car audio/video system over

said wireless communications link to maintain the car audio/video system in a state responsive to the portable device.

127. (Previously Presented) The system of claim 116, wherein the portable device comprises a portable receiver.

128. (Previously Presented) The system of claim 127, wherein the portable receiver comprises a digital audio broadcast (DAB) receiver, a high-definition (HD) radio receiver, or a satellite receiver.

129. (Previously Presented) The system of claim 116, wherein the portable device comprises a portable digital media player.

130. (Previously Presented) The system of claim 129, wherein the portable digital media player comprises a video device, a portable media center, a portable media player, an MP3 player, an MP4 player, a WMV player, an Apple iPod, or an Apple video iPod.

131. (Previously Presented) The system of claim 116, wherein the portable device comprises a cellular telephone.

132. (Previously Presented) The system of claim 116, further comprising a non-wireless connection established between the car audio/video system and the portable device.

133. (Previously Presented) The system of claim 116, wherein said integration subsystem transmits, over said wireless communication link, information about a video file received by the portable device to the car audio/video system for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the video file in response to a user selecting the video file using controls of the car audio/video system, and transmits video generated by the portable device over said wireless communication link to the car audio/video system for playing on the car audio/video system.

134. (Previously Presented) The system of claim 133, wherein the video file comprises a streaming movie received by the portable device.

135. (Previously Presented) The system of Claim 133, wherein the video file comprises a picture received by the portable device.

136. (Previously Presented) The system of claim 133, wherein the video file comprises a streaming video clip received by the portable device.

137. (Previously Presented) The system of claim 116, wherein said integration subsystem receives video generated by the portable device in a first format incompatible with the car audio/video system, processes the video into processed video in a second format compatible with the car audio/video system, and transmits the processed video over the wircless communication link to the

car audio/video system for subsequent display of the processed video on a display of the car audio/video system.

138. (Previously Presented) The system of claim 116, wherein the audio file comprises a song received by the portable device.

139. (Previously Presented) The system of claim 116, wherein the portable device is connected to the Internet, and said integration device processes information generated by the portable device and transmits processed information to the car audio/video system so that the display of the car audio/video system operates as an Internet browser.

140. (Currently Amended) A multimedia device integration system, comprising:

an integration subsystem in communication with a car audio/video system; and

a first wireless interface in communication with said integration subsystem, said first wireless interface establishing a wireless communication link with a second wireless interface in communication with a portable device external to the car audio/video system,

wherein said integration subsystem obtains, using said wireless communication link, information about an audio file stored on the portable device, transmits the information to the car audio/video system for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the audio ~~or video~~ file in response to a user selecting the audio file using controls of the car audio/video system, and receives audio generated by the portable device over said wireless communication link for playing on the car audio/video system.

141. (Previously Presented) The system of claim 140, wherein said integration subsystem is positioned within the car audio/video system.

142. (Previously Presented) The system of claim 141, wherein said first wireless interface is positioned within the car audio/video system.

143. (Previously Presented) The system of claim 142, wherein said second wireless interface is positioned within the portable device.

144. (Previously Presented) The system of claim 140, wherein said integration subsystem receives a control command issued at the car audio/video system in a format incompatible with the portable device, processes the control command into a formatted command compatible with the portable device, and dispatches the processed control command to the portable device for execution thereby.

145. (Previously Presented) The system of claim 140, wherein said integration subsystem receives data generated by the portable device in a format incompatible with the car audio/video system, processes the data into formatted data compatible with the car audio/video system, and transmits the processed data to the car audio/video system for subsequent display of the processed data on a display of the car audio/video system.

146. (Previously Presented) The system of claim 140, wherein said integration subsystem further comprises a voice recognition subsystem for receiving and processing spoken control commands issued by a user.

147. (Previously Presented) The system of claim 150, wherein said integration subsystem instructs said portable device to play a desired file in response to a spoken command processed by the voice recognition subsystem.

148. (Previously Presented) The system of claim 140, wherein said integration subsystem further comprises a speech synthesizer for generating synthesized speech corresponding to data generated by the portable device.

149. (Previously Presented) The system of claim 148, wherein said integration subsystem transmits the synthesized speech to the car audio/video system for subsequent playing of the synthesized speech by the car audio/video system.

150. (Previously Presented) The system of claim 140, wherein said integration subsystem generates a device presence signal and transmits the device presence signal to the car audio/video system to maintain the car audio/video system in a state responsive to the portable device.

151. (Previously Presented) The system of claim 140, wherein the portable device comprises a portable receiver.

152. (Previously Presented) The system of claim 151, wherein the portable receiver comprises a digital audio broadcast (DAB) receiver, a high-definition (HD) radio receiver, or a satellite receiver.

153. (Previously Presented) The system of claim 140, wherein the portable device comprises a portable digital media player.

154. (Previously Presented) The system of claim 153, wherein the portable digital media player comprises a video device, a portable media center, a portable media player, an MP3 player, an MP4 player, a WMV player, an Apple iPod, or an Apple video iPod.

155. (Previously Presented) The system of claim 140, wherein the portable device comprises a cellular telephone.

156. (Previously Presented) The system of claim 140, further comprising a non-wireless connection established between the car audio/video system and the portable device.

157. (Previously Presented) The system of claim 140, wherein said integration subsystem obtains, using said wireless communication link, information about a video file stored on the portable device

for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the video file in response to a user selecting the video file using controls of the car audio/video system, and receives video generated by the portable device over said wireless communication link for playing on the car audio/video system.

158. (Previously Presented) The system of claim 157, wherein the video file comprises a movie stored on the portable device.

159. (Previously Presented) The system of Claim 157, wherein the video file comprises a picture stored on the portable device.

160. (Previously Presented) The system of claim 157, wherein the video file comprises a video clip stored on the portable device.

161. (Previously Presented) The system of claim 157, wherein said integration subsystem receives video generated by the portable device in a first format incompatible with the car audio/video system, processes the video into processed video in a second format compatible with the car audio/video system, and transmits the processed video to the car audio/video system for subsequent display of the processed video on a display of the car audio/video system.

162. (Previously Presented) The system of claim 140, wherein the audio file comprises a song stored on the portable device.

163. (Previously Presented) The system of claim 140, wherein the portable device is connected to the Internet, and said integration device processes information generated by the portable device and transmits processed information to the car audio/video system so that the display of the car audio/video system operates as an Internet browser.

164. (Currently Amended) A multimedia device integration system, comprising:

an integration subsystem in communication with a car audio/video system; and

a first wireless interface in communication with said integration subsystem, said first wireless interface establishing a wireless communication link with a second wireless interface in communication with a portable device external to the car audio/video system,

wherein said integration subsystem obtains, using said wireless communication link, information about an audio file received by the portable device, transmits the information to the car audio/video system for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the audio ~~or video~~ file in response to a user selecting the audio file using controls of the car audio/video system, and receives audio generated by the portable device over said wireless communication link for playing on the car audio/video system.

165. (Previously Presented) The system of claim 164, wherein said integration subsystem is positioned within the car audio/video system.

166. (Previously Presented) The system of claim 165, wherein said first wireless interface is positioned within the car audio/video system.

167. (Previously Presented) The system of claim 166, wherein said second wireless interface is positioned within the portable device.

168. (Previously Presented) The system of claim 164, wherein said integration subsystem receives a control command issued at the car audio/video system in a format incompatible with the portable device, processes the control command into a formatted command compatible with the portable device, and dispatches the processed control command to the portable device for execution thereby.

169. (Previously Presented) The system of claim 164, wherein said integration subsystem receives data generated by the portable device in a format incompatible with the car audio/video system, processes the data into formatted data compatible with the car audio/video system, and transmits the processed data to the car audio/video system for subsequent display of the processed data on a display of the car audio/video system.

170. (Previously Presented) The system of claim 164, wherein said integration subsystem further comprises a voice recognition subsystem for receiving and processing spoken control commands issued by a user.

171. (Previously Presented) The system of claim 170, wherein said integration subsystem instructs said portable device to play a desired file in response to a spoken command processed by the voice recognition subsystem.

172. (Previously Presented) The system of claim 164, wherein said integration subsystem further comprises a speech synthesizer for generating synthesized speech corresponding to data generated by the portable device.

173. (Previously Presented) The system of claim 172, wherein said integration subsystem transmits the synthesized speech to the car audio/video system for subsequent playing of the synthesized speech by the car audio/video system.

174. (Previously Presented) The system of claim 164, wherein said integration subsystem generates a device presence signal and transmits the device presence signal to the car audio/video system to maintain the car audio/video system in a state responsive to the portable device.

175. (Previously Presented) The system of claim 164, wherein the portable device comprises a portable receiver.

176. (Previously Presented) The system of claim 175, wherein the portable receiver comprises a digital audio broadcast (DAB) receiver, a high-definition (HD) radio receiver, or a satellite receiver.

177. (Previously Presented) The system of claim 164, wherein the portable device comprises a portable digital media player.

178. (Previously Presented) The system of claim 177, wherein the portable digital media player comprises a video device, a portable media center, a portable media player, an MP3 player, an MP4 player, a WMV player, an Apple iPod, or an Apple video iPod.

179. (Previously Presented) The system of claim 164, wherein the portable device comprises a cellular telephone.

180. (Previously Presented) The system of claim 164, further comprising a non-wireless connection established between the car audio/video system and the portable device.

181. (Previously Presented) The system of claim 164, wherein said integration subsystem obtains, over said wireless communication link, information about a video file received by the portable device for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the video file in response to a user selecting the video file using controls

of the car audio/video system, and receives video generated by the portable device over said wireless communication link for playing on the car audio/video system.

182. (Previously Presented) The system of claim 180, wherein the video file comprises a streaming movie received by the portable device.

183. (Previously Presented) The system of Claim 180, wherein the video file comprises a picture received by the portable device.

184. (Previously Presented) The system of claim 180, wherein the video file comprises a streaming video clip received by the portable device.

185. (Previously Presented) The system of claim 180, wherein said integration subsystem receives video generated by the portable device in a first format incompatible with the car audio/video system, processes the video into processed video in a second format compatible with the car audio/video system, and transmits the processed video to the car audio/video system for subsequent display of the processed video on a display of the car audio/video system.

186. (Previously Presented) The system of claim 164, wherein the audio file comprises a song stored on the portable device.

187. (Previously Presented) The system of claim 164, wherein the portable device is connected to the Internet, and said integration device processes information generated by the portable device and transmits processed information to the car audio/video system so that the display of the car audio/video system operates as an Internet browser.

188. (Currently Amended) A multimedia device integration system, comprising:

first and second wireless interfaces establishing a wireless communication link between a car audio/video system and a portable device external to the car audio/video system; and

an integration subsystem in communication with said wireless communication link,

wherein said integration subsystem channels audio generated by the portable device to the car audio/video system using the wireless communication link for subsequent playing of the audio on the car audio/video system, the audio corresponding to an audio file played by the portable device, and

wherein said integration subsystem receives a control command issued by a user through one or more controls of ~~at~~ the car audio/video system in a format incompatible with the portable device, processes the control command into a formatted command compatible with the portable device, and dispatches the ~~processed control~~ formatted command to the portable device for execution thereby.

189. (Previously Presented) The system of claim 188, wherein said integration subsystem is positioned within the portable device.

190. (Previously Presented) The system of claim 188, wherein said integration subsystem is positioned within the car audio/video system.

191. (Previously Presented) The system of claim 188, where the audio file is stored on the portable device.

192. (Previously Presented) The system of claim 188, wherein the audio file is received by the portable device.

193. (Cancelled)

194. (Cancelled)

195. (Currently Amended) The system of claim 188, wherein said integration subsystem further comprises a voice recognition subsystem for receiving and processing spoken control commands issued by ~~a~~ the user.

196. (Previously Presented) The system of claim 195, wherein said integration subsystem instructs said portable device to play a desired file in response to a spoken command processed by the voice recognition subsystem.

197. (Previously Presented) The system of claim 188, wherein said integration subsystem further comprises a speech synthesizer for generating synthesized speech corresponding to data generated by the portable device.

198. (Previously Presented) The system of claim 197, wherein said integration subsystem transmits the synthesized speech to the car audio/video system for subsequent playing of the synthesized speech by the car audio/video system.

199. (Previously Presented) The system of claim 188, wherein said integration subsystem generates a device presence signal and transmits the device presence signal to the car audio/video system to maintain the car audio/video system in a state responsive to the portable device.

200. (Previously Presented) The system of claim 188, wherein the portable device comprises a portable receiver.

201. (Previously Presented) The system of claim 200, wherein the portable receiver comprises a digital audio broadcast (DAB) receiver, a high-definition (HD) radio receiver, or a satellite receiver.

202. (Previously Presented) The system of claim 188, wherein the portable device comprises a portable digital media player.

203. (Previously Presented) The system of claim 202, wherein the portable digital media player comprises a video device, a portable media center, a portable media player, an MP3 player, an MP4 player, a WMV player, an Apple iPod, or an Apple video iPod.

204. (Previously Presented) The system of claim 188, wherein the portable device comprises a cellular telephone.

205. (Previously Presented) The system of claim 188, further comprising a non-wireless connection established between the car audio/video system and the portable device.

206. (Previously Presented) The system of claim 188, wherein said integration subsystem channels video generated by the portable device to the car audio/video system over the wireless communication link for subsequent playing of the audio on the car audio/video system, the video corresponding to a video file played by the portable device.

207. (Previously Presented) The system of claim 206, wherein the video file comprises a movie stored on the portable device.

208. (Previously Presented) The system of Claim 206, wherein the video file comprises a picture stored on the portable device.

209. (Previously Presented) The system of claim 206, wherein the video file comprises a video clip stored on the portable device.

210. (Previously Presented) The system of claim 206, wherein the video file comprises streaming video received by the portable device.

211. (Previously Presented) The system of claim 206, wherein the video file comprises a navigation map generated by the portable device.

212. (Previously Presented) The system of claim 206, wherein said integration subsystem receives video generated by the portable device in a first format incompatible with the car audio/video system, processes the video into processed video in a second format compatible with the car audio/video system, and transmits the processed video to the car audio/video system for subsequent display of the processed video on a display of the car audio/video system.

213. (Currently Amended) A multimedia device integration system, comprising:

first and second wireless interfaces establishing a wireless communication link between a car audio/video system and a portable device external to the car audio/video system; and

an integration subsystem in communication with said wireless communication link,

wherein said integration subsystem instructs the portable device to play an audio file in response to a user selecting the audio file using controls of the car audio/video system,

wherein said integration subsystem channels audio generated by the portable device to the car

audio/video system using the wireless communication link for subsequent playing of the audio on the car audio/video system, the audio corresponding to ~~an~~ the audio file played by the portable device, and

wherein said integration subsystem receives data generated by the portable device in a format incompatible with the car audio/video system, processes the data into formatted data compatible with the car audio/video system, and transmits the processed data to the car audio/video system for subsequent display of the processed data on a display of the car audio/video system.

214. (New) A method of playing a media file on an entertainment system installed in a vehicle, the method comprising:

establishing a first communication link between an integration subsystem and a portable device, the portable device being configured to store the media file or to receive the media file, the portable device being external to the entertainment system installed in the vehicle;

establishing a second wireless link between the integration subsystem and the entertainment system installed in the vehicle;

receiving, at the integration subsystem, a command to play the media file from a user of the entertainment system, the command being entered by the user through one or more controls of the entertainment system;

in response to the command, sending a signal from the integration subsystem to the portable device, the signal causing the portable device to play the media file;

receiving, at the integration subsystem, a first signal containing audio generated by the portable device from the media file;

sending, from the integration subsystem, a second signal containing the audio to the entertainment system, thereby causing the entertainment system to play the audio.

PTO/SB/06 (07-06)
Approved for use through 1/31/2007. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
11/475,847	06/27/2006	

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)	SMALL ENTITY ☒		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

		(Column 1)		(Column 2)	(Column 3)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
AMENDMENT	08/15/2011	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 121	Minus	** 121	= 0	X $26 =	0	OR	X $ =	
	Independent (37 CFR 1.16(h))	* 7	Minus	***7	= 0	X $110 =	0	OR	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE	0	OR	TOTAL ADD'L FEE	

		(Column 1)		(Column 2)	(Column 3)					
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =		OR	X $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =		OR	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/SHANDA ROSS/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/475,847	06/27/2006	Ira Marlowe		9001

7590 11/29/2011

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EXAMINER	
MEI, XU	

ART UNIT	PAPER NUMBER
2614	

MAIL DATE	DELIVERY MODE
11/29/2011	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	11/475,847	MARLOWE, IRA	
	Examiner	Art Unit	
	XU MEI	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 August 2011*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *92-192 and 195-214* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *92-192 and 195-214* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *08/15/11*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This communication is responsive to the applicant's amendment dated 08/15/2011. Claims 92-192, and 195-214 are currently pending.

Claim Objections

Claims 96 and 147 are objected to because of the following informalities: claim 96 is depending on cancelled claim 91, it appears claim 96 should be depending on claim 92; claim 147 is depending on claim 150, it appears claim 147 should be depending on claim 140. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 92-107, 109-131, 133-155, 157-179, 181-192, 195-204 and 206-214 are rejected under 35 U.S.C. 102(e) as being anticipated by Tranchina (US 7,493,645).

With respect to claim 92, Tranchina discloses a multimedia device integration system, comprising: an integration subsystem (fig.1 #110) in communication with a portable device (fig.1 #106,108), the portable device external to a car audio/video system (fig.1 #104,170); and a first wireless interface (fig.1 #150) in communication with said integration subsystem, said first wireless interface establishing a wireless communication link with a second wireless interface (fig.1 #102,118,165) in communication with the car audio/video system (col.5 ln.48-64), wherein said integration subsystem obtains information about an audio file stored on the portable device, transmits the information over said wireless communication link to the car audio/video system for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the audio file in response to a user selecting the audio file using controls of the car audio/video system (col. 8, ln.24-49, with wireless transmitter is operative coupled to the controls of the accessories commonly found in the dashboard of the vehicle/car, such as controls for the radio and/or stereo, which allow user using controls of the car audio/video system to control audio file reproduction), and transmits audio ,generated by the portable device over said wireless communication link to the car audio/video system for playing on the car audio/video system (col.6 ln.17-28, ln. 53-col. 7, ln.4).

Method claim 214 are rejected for the same reasoning as set forth for the rejection of apparatus claim 92 since the apparatus claims perform the same functions as the method claims, and the method claim 214 is analogous to apparatus claim 92.

With respect to claim 93, Tranchina discloses the system of claim 92, wherein said integration subsystem is positioned within the portable device (col.6 ln.40-52).

With respect to claim 94, Tranchina discloses the system of claim 93, wherein said first wireless interface (fig.1 #150) is positioned within the portable device.

With respect to claim 95, Tranchina discloses the system of claim 94, wherein said second wireless interface (fig.1 #102,118,165) is positioned within the car audio/video system.

With respect to claim 96, Tranchina discloses the system of claim ***92***, wherein said integration subsystem receives, over said wireless communication link, a control command issued at the car audio/video system in a format incompatible with the portable device, processes the control command into a formatted command compatible with the portable device, and dispatches the processed control command to the portable device for execution thereby (col.7 ln.5-30).

With respect to claim 97, Tranchina discloses the system of claim 92, wherein said integration subsystem receives data generated by the portable device in a format incompatible with the car audio/video system, processes the data into formatted data compatible with the car audio/video system, and transmits the processed data to the car audio/video system over the wireless communication link for subsequent display of the processed data on a display of the car audio/video system (col.7 ln.5-30).

With respect to claim 98, Tranchina discloses the system of claim 92, wherein said integration subsystem further comprises a voice recognition subsystem (fig.1 #120) for receiving and processing spoken control commands issued by a user (col.8 ln.50-60).

With respect to claim 99, Tranchina discloses the system of claim 98, wherein said integration subsystem instructs said portable device to play a desired file in response to a spoken command processed by the voice recognition subsystem (col.8 ln.50-60).

With respect to claim 100, Tranchina discloses the system of claim 92, wherein said integration subsystem further comprises a speech synthesizer (fig.1 #130) for generating synthesized speech corresponding to data generated by the portable device (col.8 ln.61-67, col.9 ln.1-3).

With respect to claim 101, Tranchina discloses the system of claim 100, wherein said integration subsystem transmits the synthesized speech to the car audio/video system over said wireless communication link for subsequent playing of the synthesized speech by the car audio/video system (col.8 ln.61-67, col.9 ln.1-3).

With respect to claim 102, Tranchina discloses the system of claim 92, wherein said integration subsystem generates a device presence signal and transmits the device presence signal to the car audio/video system over said wireless communications link to maintain the car audio/video system in a state responsive to the portable device (col.7 ln.13-16).

With respect to claim 103, Tranchina discloses the system of claim 92, wherein the portable device comprises a portable receiver (fig.1 #150, col.7 ln.21-26).

With respect to claim 104, Tranchina discloses the system of claim 103, wherein the portable receiver comprises a digital audio broadcast (DAB) receiver, a high-definition (HD) radio receiver, or a satellite receiver (col.5 ln.33-38).

With respect to claim 105, Tranchina discloses the system of claim 92, wherein the portable device comprises a portable digital media player (col.5 ln.27-32).

With respect to claim 106, Tranchina discloses the system of claim 105, wherein the portable digital media player comprises a video device (col.5 ln.27-32), a portable media center, a portable media player, an MP3 player, an MP4 player, a WMV player, an Apple iPod, or an Apple video iPod.

With respect to claim 107, Tranchina discloses the system of claim 92, wherein the portable device comprises a cellular telephone (col.5 ln.34-38).

With respect to claim 109, Tranchina discloses the system of claim 92, wherein said integration subsystem transmits, over said wireless communication link, information about a video file stored on the portable device to the car audio/video system for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the video file in response to a user selecting the video file using controls of the car audio/video system, and transmits video generated by the portable device over said wireless communication link to the car audio/video system for playing on the car audio/video system (col.6 ln.53-67, col.7 ln.21-26).

With respect to claim 110, Tranchina discloses the system of claim 109, wherein the video file comprises a movie stored on the portable device (col.5 ln.27-32).

With respect to claim 111, Tranchina discloses the system of Claim 109, wherein the video file comprises a picture stored on the portable device (col.9 ln.4-7).

With respect to claim 112, Tranchina discloses the system of claim 109, wherein the video file comprises a video clip stored on the portable device (col.5 ln.27-32).

With respect to claim 113, Tranchina discloses the system of claim 109, wherein said integration subsystem receives video generated by the portable device in a first format incompatible with the car audio/video system, processes the video into processed video in a second format compatible with the car audio/video system, and transmits the processed video over the wireless communication link to the car audio/video system for subsequent display of the processed video on a display of the car audio/video system (col.7 ln.5-30).

With respect to claim 114, Tranchina discloses the system of claim 92, wherein the audio file comprises a song stored on the portable device (col.5 ln.27-32).

With respect to claim 115, Tranchina discloses the system of claim 92, wherein the portable device is connected to the Internet, and said integration device processes information generated by the portable device and transmits processed information to the car audio/video system so that the display of the car audio/video system operates as an Internet browser (col.5 ln.33-47).

With respect to claim 116, Tranchina discloses a multimedia device integration system, comprising: an integration subsystem (fig.1 #110) in communication with a portable device (fig.1 #106,108), the portable device external to a car audio/video system (fig.1 #104,170); and a first wireless interface (fig.1 #150) in communication with said integration subsystem, said first wireless interface establishing a wireless communication link with a second wireless interface (fig.1 #102,118,165) in communication with the car audio/video system (col.5 ln.48-64), wherein said

integration subsystem obtains information about an audio file received by the portable device, transmits the information over said wireless communication link to the car audio/video system for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the audio file using controls of the car audio/video system (col. 8, ln.24-49, with wireless transmitter is operative coupled to the controls of the accessories commonly found in the dashboard of the vehicle/car, such as controls for the radio and/or stereo, which allow user using controls of the car audio/video system to control audio file reproduction), and transmits audio generated by the portable device over said wireless communication link to the car audio/video system for playing on the car audio/video system (col.6 ln.17-28, ln.53-col.7, ln.4).

With respect to claim 117, Tranchina discloses the system of claim 116, wherein said integration subsystem is positioned within the portable device (col.6 ln.40-52).

With respect to claim 118, Tranchina discloses the system of claim 117, wherein said first wireless interface (fig.1 #150) is positioned within the portable device.

With respect to claim 119, Tranchina discloses the system of claim 118, wherein said second wireless interface (fig.1 #102,118,165) is positioned within the car audio/video system.

With respect to claim 120, Tranchina discloses the system of claim 116, wherein said integration subsystem receives a control command issued at the car audio/video system in a format incompatible with the portable device, processes the control command into a formatted command compatible with the portable device, and

dispatches the processed control command to the portable device for execution thereby (col.7 ln.5-30).

With respect to claim 121, Tranchina discloses the system of claim 116, wherein said integration subsystem receives data generated by the portable device in a format incompatible with the car audio/video system, processes the data into formatted data compatible with the car audio/video system, and transmits the processed data to the car audio/video system over the wireless communication link for subsequent display of the processed data on a display of the car audio/video system (col.7 ln.5-30).

With respect to claim 122, Tranchina discloses the system of claim 116, wherein said integration subsystem further comprises a voice recognition subsystem (fig.1 #120) for receiving and processing spoken control commands issued by a user (col.8 ln.50-60).

With respect to claim 123, Tranchina discloses the system of claim 122, wherein said integration subsystem instructs said portable device to play a desired file in response to a spoken command processed by the voice recognition subsystem (col.8 ln.50-60).

With respect to claim 124, Tranchina discloses the system of claim 116, wherein said integration subsystem further comprises a speech synthesizer (fig.1 #130) for generating synthesized speech corresponding to data generated by the portable device (col.8 ln.61-67, col.9 ln.1-3).

With respect to claim 125, Tranchina discloses the system of claim 124, wherein said integration subsystem transmits the synthesized speech to the car audio/video

system over said wireless communication link for subsequent playing of the synthesized speech by the car audio/video system (col.8 ln.61-67, col.9 ln.1-3).

With respect to claim 126, Tranchina discloses the system of claim 116, wherein said integration subsystem generates a device presence signal and transmits the device presence signal to the car audio/video system over said wireless communications link to maintain the car audio/video system in a state responsive to the portable device (col.7 ln.13-16).

With respect to claim 127, Tranchina discloses the system of claim 116, wherein the portable device comprises a portable receiver (fig.1 #150, col.7 ln.21-26).

With respect to claim 128, Tranchina discloses the system of claim 127, wherein the portable receiver comprises a digital audio broadcast (DAB) receiver, a high-definition (HD) radio receiver, or a satellite receiver (col.5 ln.33-38).

With respect to claim 129, Tranchina discloses the system of claim 116, wherein the portable device comprises a portable digital media player (col.5 ln.27-32).

With respect to claim 130, Tranchina discloses the system of claim 129, wherein the portable digital media player comprises a video device (col.5 ln.27-32), a portable media center, a portable media player, an MP3 player, an MP4 player, a WMV player, an Apple iPod, or an Apple video iPod.

With respect to claim 131, Tranchina discloses the system of claim 116, wherein the portable device comprises a cellular telephone (col.5 ln.34-38).

With respect to claim 133, Tranchina discloses the system of claim 116, wherein said integration subsystem transmits, over said wireless communication link, information

about a video file received by the portable device to the car audio/video system for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the video file in response to a user selecting the video file using controls of the car audio/video system, and transmits video generated by the portable device over said wireless communication link to the car audio/video system for playing on the car audio/video system (col.6 ln.53-67, col.7 ln.21-26).

With respect to claim 134, Tranchina discloses the system of claim 133, wherein the video file comprises a streaming movie received by the portable device (col.5 ln.33-47).

With respect to claim 135, Tranchina discloses the system of Claim 133, wherein the video file comprises a picture received by the portable device (col.9 ln.4-7).

With respect to claim 136, Tranchina discloses the system of claim 133, wherein the video file comprises a streaming video clip received by the portable device (col.5 ln.33-47).

With respect to claim 137, Tranchina discloses the system of claim 116, wherein said integration subsystem receives video generated by the portable device in a first format incompatible with the car audio/video system, processes the video into processed video in a second format compatible with the car audio/video system, and transmits the processed video over the wireless communication link to the car audio/video system for subsequent display of the processed video on a display of the car audio/video system (col.7 ln.5-30).

With respect to claim 138, Tranchina discloses the system of claim 116, wherein the audio file comprises a song received by the portable device (col.5 ln.27-32).

With respect to claim 139, Tranchina discloses the system of claim 116, wherein the portable device is connected to the Internet, and said integration device processes information generated by the portable device and transmits processed information to the car audio/video system so that the display of the car audio/video system operates as an Internet browser (col.5 ln.33-47).

With respect to claim 140, Tranchina discloses a multimedia device integration system, comprising: an integration subsystem (fig.1 #110) in communication with a car audio/video system (fig.1 #104,170); and a first wireless interface (fig.1 #102,118,165) in communication with said integration subsystem, said first wireless interface establishing a wireless communication link with a second wireless interface (fig.1 #150) in communication with a portable device (fig.1 #106,108) external to the car audio/video system (col.5 ln.48-64), wherein said integration subsystem obtains, using said wireless communication link, information about an audio file stored on the portable device, transmits the information to the car audio/video system for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the audio file using controls of the car audio/video system (col. 8, ln.24-49, with wireless transmitter is operative coupled to the controls of the accessories commonly found in the dashboard of the vehicle/car, such as controls for the radio and/or stereo, which allow user using controls of the car audio/video system to control audio file reproduction), and receives audio generated by the portable device over said wireless

communication link for playing on the car audio/video system (col.6 ln.17-28, ln.53-col. 7, ln.4).

With respect to claim 141, Tranchina discloses the system of claim 140, wherein said integration subsystem (fig.1 #110) is positioned within the car audio/video system.

With respect to claim 142, Tranchina discloses the system of claim 141, wherein said first wireless interface (fig.1 #102,118,165) is positioned within the car audio/video system.

With respect to claim 143, Tranchina discloses the system of claim 142, wherein said second wireless interface (fig.1 #150) is positioned within the portable device.

With respect to claim 144, Tranchina discloses the system of claim 140, wherein said integration subsystem receives a control command issued at the car audio/video system in a format incompatible with the portable device, processes the control command into a formatted command compatible with the portable device, and dispatches the processed control command to the portable device for execution thereby (col.7 ln.5-30).

With respect to claim 145, Tranchina discloses the system of claim 140, wherein said integration subsystem receives data generated by the portable device in a format incompatible with the car audio/video system, processes the data into formatted data compatible with the car audio/video system, and transmits the processed data to the car audio/video system for subsequent display of the processed data on a display of the car audio/video system (col.7 ln.5-30).

With respect to claim 146, Tranchina discloses the system of claim 140, wherein said integration subsystem further comprises a voice recognition subsystem (fig.1 #120) for receiving and processing spoken control commands issued by a user (col.8 ln.50-60).

With respect to claim 147, Tranchina discloses the system of claim ***140***, wherein said integration subsystem instructs said portable device to play a desired file in response to a spoken command processed by the voice recognition subsystem (col.8 ln.50-60).

With respect to claim 148, Tranchina discloses the system of claim 140, wherein said integration subsystem further comprises a speech synthesizer (fig.1 #130) for generating synthesized speech corresponding to data generated by the portable device (col.8 ln.61-67, col.9 ln.1-3).

With respect to claim 149, Tranchina discloses the system of claim 148, wherein .said integration subsystem transmits the synthesized speech to the car audio/video system for subsequent playing of the synthesized speech by the car audio/video system (col.8 ln.61-67, col.9 ln.1-3).

With respect to claim 150, Tranchina discloses the system of claim 140, wherein said integration subsystem generates a device presence signal and transmits the device presence signal to the car audio/video system to maintain the car audio/video system in a state responsive to the portable device (col.7 ln.13-16).

With respect to claim 151, Tranchina discloses the system of claim 140, wherein the portable device comprises a portable receiver (fig.1 #150, col.7 ln.21-26).

With respect to claim 152, Tranchina discloses the system of claim 151, wherein the portable receiver comprises a digital audio broadcast (DAB) receiver, a high-definition (HD) radio receiver, or a satellite receiver (col.5 ln.33-38).

With respect to claim 153, Tranchina discloses the system of claim 140, wherein the portable device comprises a portable digital media player (col.5 ln.27-32).

With respect to claim 154, Tranchina discloses the system of claim 153, wherein the portable digital media player comprises a video device (col.5 ln.27-32), a portable media center, a portable media player, an MP3 player, an MP4 player, a WMV player, an Apple iPod, or an Apple video iPod.

With respect to claim 155, Tranchina discloses the system of claim 140, wherein the portable device comprises a cellular telephone (col.5 ln.34-38).

With respect to claim 157, Tranchina discloses the system of claim 140, wherein said integration subsystem obtains, using said wireless communication link, information about a video file stored on the portable device for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the video file in response to a user selecting the video file using controls of the car audio/video system, and receives video generated by the portable device over said wireless communication link for playing on the car audio/video system (col.6 ln.53-67, col.7 ln.21-26).

With respect to claim 158, Tranchina discloses the system of claim 157, wherein the video file comprises a movie stored on the portable device (col.5 ln.27-32).

With respect to claim 159, Tranchina discloses the system of Claim 157, wherein the video file comprises a picture stored on the portable device (col.9 ln.4-7).

With respect to claim 160, Tranchina discloses the system of claim 157, wherein the video file comprises a video clip stored on the portable device (col.5 ln.27-32).

With respect to claim 161, Tranchina discloses the system of claim 157, wherein said integration subsystem receives video generated by the portable device in a first format incompatible with the car audio/video system, processes the video into processed video in a second format compatible with the car audio/video system, and transmits the processed video to the car audio/video system for subsequent display of the processed video on a display of the car audio/video system (col.7 ln.5-30).

With respect to claim 162, Tranchina discloses the system of claim 140, wherein the audio file comprises a song stored on the portable device (col.5 ln.27-32).

With respect to claim 163, Tranchina discloses the system of claim 140, wherein the portable device is connected to the Internet, and said integration device processes information generated by the portable device and transmits processed information to the car audio/video system so that the display of the car audio/video system operates as an Internet browser (col.5 ln.33-47).

With respect to claim 164, Tranchina discloses a multimedia device integration system, comprising: an integration subsystem (fig.1 #110) in communication with a car audio/video system (fig.1 #104,170); and a first wireless interface (fig.1 #102,118,165) in communication with said integration subsystem, said first wireless interface establishing a wireless communication link with a second wireless interface (fig.1 #150)

in communication with a portable device (fig.1 #106,108) external to the car audio/video system (col.5 ln.48-64), wherein said integration subsystem obtains, using said wireless communication link, information about an audio file received by the portable device, transmits the information to the car audio/video system for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the audio file using controls of the car audio/video system (col. 8, ln.24-49, with wireless transmitter is operative coupled to the controls of the accessories commonly found in the dashboard of the vehicle/car, such as controls for the radio and/or stereo, which allow user using controls of the car audio/video system to control audio file reproduction), and receives audio generated by the portable device over said wireless communication link for playing on the car audio/video system (col.6 ln.17-28, 53-67).

With respect to claim 165, Tranchina discloses the system of claim 164, wherein said integration subsystem (fig.1 #110) is positioned within the car audio/video system.

With respect to claim 166, Tranchina discloses the system of claim 165, wherein said first wireless interface (fig.1 #102,118,165) is positioned within the car audio/video system.

With respect to claim 167, Tranchina discloses the system of claim 166, wherein said second wireless interface (fig.1 #150) is positioned within the portable device.

With respect to claim 168, Tranchina discloses the system of claim 164, wherein said integration subsystem receives a control command issued at the car audio/video system in a format incompatible with the portable device, processes the control command into a formatted command compatible with the portable device, and

dispatches the processed control command to the portable device for execution thereby (col.7 ln.5-30).

With respect to claim 169, Tranchina discloses the system of claim 164, wherein said integration subsystem receives data generated by the portable device in a format incompatible with the car audio/video system, processes the data into formatted data compatible with the car audio/video system, and transmits the processed data to the car audio/video system for subsequent display of the processed data on a display of the car audio/video system (col.7 ln.5-30).

With respect to claim 170, Tranchina discloses the system of claim 164, wherein said integration subsystem further comprises a voice recognition subsystem (fig.1 #120) for receiving and processing spoken control commands issued by a user (col.8 ln.50-60).

With respect to claim 171, Tranchina discloses the system of claim 170, wherein said integration subsystem instructs said portable device to play a desired file in response to a spoken command processed by the voice recognition subsystem (col.8 ln.50-60).

With respect to claim 172, Tranchina discloses the system of claim 164, wherein said integration subsystem further comprises a speech synthesizer (fig.1 #130) for generating synthesized speech corresponding to data generated by the portable device (col.8 ln.61-67, col.9 ln.1-3).

With respect to claim 173, Tranchina discloses the system of claim 172, wherein said integration subsystem transmits the synthesized speech to the car audio/video

system for subsequent playing of the synthesized speech by the car audio/video system (col.8 ln.61-67, col.9 ln.1-3).

With respect to claim 174, Tranchina discloses the system of claim 164, wherein said integration subsystem generates a device presence signal and transmits the device presence signal to the car audio/video system to maintain the car audio/video system in a state responsive to the portable device (col.7 ln.13-16).

With respect to claim 175, Tranchina discloses the system of claim 164, wherein the portable device comprises a portable receiver (fig.1 #150, col.7 ln.21-26).

With respect to claim 176, Tranchina discloses the system of claim 175, wherein the portable receiver comprises a digital audio broadcast (DAB) receiver, a high-definition (HD) radio receiver, or a satellite receiver (col.5 ln.33-38).

With respect to claim 177, Tranchina discloses the system of claim 164, wherein the portable device comprises a portable digital media player (col.5 ln.27-32).

With respect to claim 178, Tranchina discloses the system of claim 177, wherein the portable digital media player comprises a video device (col.5 ln.27-32), a portable media center, a portable media player, an MP3 player, an MP4 player, a WMV player, an Apple iPod, or an Apple video iPod.

With respect to claim 179, Tranchina discloses the system of claim 164, wherein the portable device comprises a cellular telephone (col.5 ln.34-38).

With respect to claim 181, Tranchina discloses the system of claim 164, wherein said integration subsystem obtains, over said wireless communication link, information about a video file received by the portable device for subsequent display of the

information on a display of the car audio/video system, instructs the portable device to play the video file in response to a user selecting the video file using controls of the car audio/video system, and receives video generated by the portable device over said wireless communication link for playing on the car audio/video system (col.6 ln.53-67, col.7 ln.21-26).

With respect to claim 182, Tranchina discloses the system of claim 180, wherein the video file comprises a streaming movie received by the portable device (col.5 ln.33-47).

With respect to claim 183, Tranchina discloses the system of Claim 180, wherein the video file comprises a picture received by the portable device (col.9 ln.4-7).

With respect to claim 184, Tranchina discloses the system of claim 180, wherein the video file comprises a streaming video clip received by the portable device (col.5 ln.33-47).

With respect to claim 185, Tranchina discloses the system of claim 180, wherein said integration subsystem receives video generated by the portable device in a first format incompatible with the car audio/video system, processes the video into processed video in a second format compatible with the car audio/video system, and transmits the processed video to the car audio/video system for subsequent display of the processed video on a display of the car audio/video system (col.7 ln.5-30).

With respect to claim 186, Tranchina discloses the system of claim 164, wherein the audio file comprises a song stored on the portable device (col.5 ln.27-32).

With respect to claim 187, Tranchina discloses the system of claim 164, wherein the portable device is connected to the Internet, and said integration device processes information generated by the portable device and transmits processed information to the car audio/video system so that the display of the car audio/video system operates as an Internet browser (col.5 ln.33-47).

With respect to claim 188, Tranchina discloses a multimedia device integration system, comprising: first (fig.1 #150) and second wireless (fig.1 #102,118,165) interfaces establishing a wireless communication link between a car audio/video system (fig.1 #104,170) and a portable device (fig.1 #106, 108) external to the car audio/video system; and an integration subsystem (fig.1 #110) in communication with said wireless communication link (col.5 ln.48-64), wherein said integration subsystem channels audio generated by the portable device to the car audio/video system using the wireless communication link for subsequent playing of the audio on the car audio/video system, the audio corresponding to an audio file played by the portable device (col.6 ln.17-28, 53-67), and wherein said integration subsystem receives a control command issued by a user through one or more controls of the car audio/video system in a format incompatible with the portable device the audio file using controls of the car audio/video system (col. 8, ln.24-49, with wireless transmitter is operative coupled to the controls of the accessories commonly found in the dashboard of the vehicle/car, such as controls for the radio and/or stereo, which allow user to issued command by using controls of the car audio/video system to control audio file reproduction), processes the control command into a formatted command compatible with the portable device, and

dispatches the formatted command to the portable device for execution thereby (col.7 ln.5-30).

With respect to claim 189, Tranchina discloses the system of claim 188, wherein said integration subsystem is positioned within the portable device (col.6 ln.40-52).

With respect to claim 190, Tranchina discloses the system of claim 188, wherein said integration subsystem (fig.1 #110) is positioned within the car audio/video system.

With respect to claim 191, Tranchina discloses the system of claim 188, where the audio file is stored on the portable device (col.5 ln.27-32).

With respect to claim 192, Tranchina discloses the system of claim 188, wherein the audio file is received by the portable device (col.5 ln.33-45).

With respect to claim 195, Tranchina discloses the system of claim 188, wherein said integration subsystem further comprises a voice recognition subsystem (fig.1 #120) for receiving and processing spoken control commands issued by a user (col.8 ln.50-60).

With respect to claim 196, Tranchina discloses the system of claim 195, wherein said integration subsystem instructs said portable device to play a desired file in response to a spoken command processed by the voice recognition subsystem (col.8 ln.50-60).

With respect to claim 197, Tranchina discloses the system of claim 188, wherein said integration subsystem further comprises a speech synthesizer (fig.1 #130) for generating synthesized speech corresponding to data generated by the portable device (col.8 ln.61-67, col.9 ln.1-3).

With respect to claim 198, Tranchina discloses the system of claim 197, wherein said integration subsystem transmits the synthesized speech to the car audio/video system for subsequent playing of the synthesized speech by the car audio/video system (col.8 ln.61-67, col.9 ln.1-3).

With respect to claim 199, Tranchina discloses the system of claim 188, wherein said integration subsystem generates a device presence signal and transmits the device presence signal to the car audio/video system to maintain the car audio/video system in a state responsive to the portable device (col.7 ln.13-16).

With respect to claim 200, Tranchina discloses the system of claim 188, wherein the portable device comprises a portable receiver (fig.1 #150, col.7 ln.21-26).

With respect to claim 201, Tranchina discloses the system of claim 200, wherein the portable receiver comprises a digital audio broadcast (DAB) receiver, a high-definition (HD) radio receiver, or a satellite receiver (col.5 ln.33-38).

With respect to claim 202, Tranchina discloses the system of claim 188, wherein the portable device comprises a portable digital media player (col.5 ln.27-32).

With respect to claim 203, Tranchina discloses the system of claim 202, wherein the portable digital media player comprises a video device (col.5 ln.27-32), a portable media center, a portable media player, an MP3 player, an MP4 player, a WMV player, an Apple iPod, or an Apple video iPod.

With respect to claim 204, Tranchina discloses the system of claim 188, wherein the portable device comprises a cellular telephone (col.5 ln.34-38).

With respect to claim 206, Tranchina discloses the system of claim 188, wherein said integration subsystem channels video generated by the portable device to the car audio/video system over the wireless communication link for subsequent playing of the audio on the car audio/video system, the video corresponding to a video file played by the portable device (col.6 ln.53-67).

With respect to claim 207, Tranchina discloses the system of claim 206, wherein the video file comprises a movie stored on the portable device (col.5 ln.27-32).

With respect to claim 208, Tranchina discloses the system of Claim 206, wherein the video file comprises a picture stored on the portable device (col.9 ln.4-7).

With respect to claim 209, Tranchina discloses the system of claim 206, wherein the video file comprises a video clip stored on the portable device (col.5 ln.27-32).

With respect to claim 210, Tranchina discloses the system of claim 206, wherein the video file comprises streaming video received by the portable device (col.5 ln.33-47).

With respect to claim 211, Tranchina discloses the system of claim 206, wherein the video file comprises a navigation map generated by the portable device (col.5 ln.33-47).

With respect to claim 212, Tranchina discloses the system of claim 206, wherein said integration subsystem receives video generated by the portable device in a first format incompatible with the car audio/video system, processes the video into processed video in a second format compatible with the car audio/video system, and

transmits the processed video to the car audio/video system for subsequent display of the processed video on a display of the car audio/video system (col.7 ln.5-30).

With respect to claim 213, Tranchina discloses a multimedia device integration system, comprising: first (fig.1 #150) and second wireless interfaces (fig.1 #102,118,165) establishing a wireless communication link between a car audio/video system (fig.1 #104,170) and a portable device (fig.1 #106,108) external to the car audio/video system; and an integration subsystem (fig.1 #110) in communication with said wireless communication link (col.5 ln.48-64), wherein said integration system instructs the portable device to play the audio file in response to a user selecting the audio file using controls of the car audio/video system the audio file using controls of the car audio/video system (col. 8, ln.24-49, with wireless transmitter is operative coupled to the controls of the accessories commonly found in the dashboard of the vehicle/car, such as controls for the radio and/or stereo, which allow user using controls of the car audio/video system to control audio file reproduction), wherein said integration subsystem channels audio generated by the portable device to the car audio/video system using the wireless communication link for subsequent playing of the audio on the car audio/video system, the audio corresponding to an audio file played by the portable device (col.6 ln.17-28, 53-67), and wherein said integration subsystem receives data generated by the portable device in a format incompatible with the car audio/video system, processes the data into formatted data compatible with the car audio/video system, and transmits the processed data to the car audio/video system for subsequent display of the processed data on a display of the car audio/video system (col.7 ln.5-30).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained through the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 108, 132, 156, 180 and 205 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tranchina (US 7493645) in view of Chen (US 6134456).

With respect to claims 108, 132, 156, 180 and 205, Tranchina does not disclose expressly wherein the system further comprises a non-wireless connection established between the car audio/video system and the portable device.

Chen discloses a multimedia device integration system comprising an integration subsystem (fig.2 #5), wherein the system further comprises a non-wireless connection established between the car audio/video system (fig.2 #30) and the portable device (fig.2 #2). At the time of the invention it would have been obvious to a person of ordinary skill in the art to replace the wireless interfaces of Tranchina with the wired connection of Chen. The motivation for doing so would have been to eliminate the need for wireless transmitters and receivers. This would reduce production costs and eliminate wireless noise interference.

Response to Arguments

Applicant's arguments with respect to claims 92-192, 195-214 have been considered but are moot in view of the current rejection as presented above.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Xu Mei whose telephone number is 571-272-7523. The examiner can normally be reached on maxi flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Xu Mei/
Primary Examiner, Art Unit 2614
11/17/2011

Search Notes	Application/Control No.	Applicant(s)/Patent under Reexamination
	11/475,847	MARLOWE, IRA
	Examiner: XU MEI	Art Unit: 2614

SEARCHED			
Class	Subclass	Date	Examiner
381	86	5/18/2009	JK
340	825.24	5/18/2009	JK
700	94	5/18/2009	JK
710	303	5/18/2009	JK
455	99	5/18/2009	JK
Update	Above	2/11/2011	JK
348	837,838	2/11/2011	JK
725	75	2/11/2011	JK
455	3.06	2/11/2011	JK

INTERFERENCE SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES (INCLUDING SEARCH STRATEGY)		
	DATE	EXMR
Inventor Search USC 101 Reviewed	5/18/2009	JK
Searched related apps 10/316961 11/805799 reviewed tagged docs	5/18/2009	JK
Searched: Portable devices interfacing with audio systems	2/9/2010	JK
Searched: Voice recognition in file selection	2/25/2010	JK
updated class Search Searched: TV and Video Distribution classes for tv in vehicles	2/11/2011	JK
updated search	11/15/11	XM

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	11475847
Filing Date	2006-06-27
First Named Inventor	Marlowe, Ira
Art Unit	2614
Examiner Name	MEI, XU
Attorney Docket Number	IM002

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Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	11475847
	Filing Date	2006-06-27
	First Named Inventor	Marlowe, Ira
	Art Unit	2614
	Examiner Name	MEI, XU
	Attorney Docket Number	IM002

/X.M./	1	Office Action of 2 February 2011 in U.S. Patent Application Ser. No. 10/071,667, 18 pages	☐
/X.M./	2	Office Action of 18 April 2011 in U.S. Patent Application Ser. No. 10/732,909, 18 pages	☐

If you wish to add additional non-patent literature document citation information please click the Add button Add

EXAMINER SIGNATURE

Examiner Signature	/Xu Mei/	Date Considered	11/15/2011

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	11475847
	Filing Date	2006-06-27
	First Named Inventor	Marlowe, Ira
	Art Unit	2614
	Examiner Name	MEI, XU
	Attorney Docket Number	IM002

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☒ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☐ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Anatoly S. Weiser/	Date (YYYY-MM-DD)	2011-08-15
Name/Print	Anatoly S. Weiser	Registration Number	43229

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11475847	MARLOWE, IRA
	Examiner	Art Unit
	JASON R KURR	2614

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	11/17/2011								
	91	✓								
	92	✓								
	93	✓								
	94	✓								
	95	✓								
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	123	✓								
	124	✓								
	125	✓								
	126	✓								

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	JASON R KURR	2614

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	11/17/2011								
	127	✓								
	128	✓								
	129	✓								
	130	✓								
	131	✓								
	132	✓								
	133	✓								
	134	✓								
	135	✓								
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	156	✓								
	157	✓								
	158	✓								
	159	✓								
	160	✓								
	161	✓								
	162	✓								

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11475847	MARLOWE, IRA
	Examiner	Art Unit
	JASON R KURR	2614

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	11/17/2011								
	163	✓								
	164	✓								
	165	✓								
	166	✓								
	167	✓								
	168	✓								
	169	✓								
	170	✓								
	171	✓								
	172	✓								
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	190	✓								
	191	✓								
	192	✓								
	193	-								
	194	-								
	195	✓								
	196	✓								
	197	✓								
	198	✓								

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11475847	MARLOWE, IRA
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	JASON R KURR	2614

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	11/17/2011								
	199	✓								
	200	✓								
	201	✓								
	202	✓								
	203	✓								
	204	✓								
	205	✓								
	206	✓								
	207	✓								
	208	✓								
	209	✓								
	210	✓								
	211	✓								
	212	✓								
	213	✓								
	214	✓								

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	11475847
Filing Date	2006-06-27
First Named Inventor	Marlowe, Ira
Art Unit	2614
Examiner Name	MEI, XU
Attorney Docket Number	IM002

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Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
/X.M./	1	20030215102		2003-11-20	Marlowe	all
/X.M./	2	20040145457		2004-07-29	Schofiled et al.	all

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	1							☐

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	11475847
	Filing Date	2006-06-27
	First Named Inventor	Marlowe, Ira
	Art Unit	2614
	Examiner Name	MEI, XU
	Attorney Docket Number	IM002

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
/X.M./	1	Official Action of 29 March 2011 in Chinese Patent Application 200610059421.7	☐

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EXAMINER SIGNATURE

Examiner Signature	/Xu Mei/	Date Considered	11/15/2011

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	11475847
	Filing Date	2006-06-27
	First Named Inventor	Marlowe, Ira
	Art Unit	2614
	Examiner Name	MEI, XU
	Attorney Docket Number	IM002

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☒ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☐ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Anatoly S. Weiser/	Date (YYYY-MM-DD)	2011-08-15
Name/Print	Anatoly S. Weiser	Registration Number	43229

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/475,847	06/27/2006	Ira Marlowe		9001

7590 12/13/2011

IRA M. MARLOWE
BLITZSAFE OF AMERICA, INC.
33 HONECK STREET
ENGLEWOOD, NJ 07631

EXAMINER	
MEI, XU	

ART UNIT	PAPER NUMBER
2614	

MAIL DATE	DELIVERY MODE
12/13/2011	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Applicant-Initiated Interview Summary	**Application No.**	**Applicant(s)**	
	11/475,847	MARLOWE, IRA	
	Examiner	**Art Unit**	
	XU MEI	2614	

All participants (applicant, applicant's representative, PTO personnel):

(1) *XU MEI*. (3)_____.

(2) *Mr. Anatoly Weiser*. (4)_____.

Date of Interview: *08 November 2011*.

Type: ☒ Telephonic ☐ Video Conference
☐ Personal [copy given to: ☐ applicant ☐ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☒ No.
If Yes, brief description: _____.

Issues Discussed ☐101 ☐112 ☒102 ☐103 ☐Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: *92*.

Identification of prior art discussed: *Tranchina*.

Substance of Interview
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

discussion of the claimed invention and independent claim 92 with regard to the cited Tranchina reference. No agreement was reach.

Applicant recordation instructions: The formal written reply to the last Office action must include the substance of the interview. (See MPEP section 713.04). If a reply to the last Office action has already been filed, applicant is given a non-extendable period of the longer of one month or thirty days from this interview date, or the mailing date of this interview summary form, whichever is later, to file a statement of the substance of the interview

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☐ Attachment

	/Xu Mei/ Primary Examiner, Art Unit 2614

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record
A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews
Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.
All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:
- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:
1) A brief description of the nature of any exhibit shown or any demonstration conducted,
2) an identification of the claims discussed,
3) an identification of the specific prior art discussed,
4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
5) a brief identification of the general thrust of the principal arguments presented to the examiner,
   (The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
6) a general indication of any other pertinent matters discussed, and
7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: **Ira Marlowe**	Group Art Unit: **2614**
	Examiner: **Xu Mei**
Serial No.: **11/475,847**	Attorney File No.: **IM002**
Filed: **June 27, 2006**	Office Action Mailed On: **11/29/2011**
For: **MULTIMEDIA DEVICE INTEGRATION SYSTEM**	Confirmation No.: **9001**

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

REPLY TO OFFICE ACTION

Sir:

In this Reply, Applicant responds to the outstanding final Office action mailed on the date shown above (the "Final Office Action" hereinafter). The Final Office Action set a shortened statutory period of three months for reply. This amendment is being filed within the set period and therefore is timely. If the undersigned is mistaken regarding timeliness of this Reply, Applicant conditionally petitions for an extension of time as needed, and authorization is granted to charge the applicable small entity time extension fee to Deposit Account Number 50-3196. If additional or

other fees are necessary for filing of this paper, authorization is granted to charge such fees as they apply to a small entity to the same Deposit Account.

Amendments to the claims are reflected in the listing of claims that begins on page 3 of this paper.

Remarks begin on page 30 of this paper.

REMARKS

Claim Status

Claims 92-192, and 195-214 are pending in the instant application. This paper does not cancel any claims; does not add new claims; and amends claims 96 and 147. The amendments are made without acquiescence to the rejections, without prejudice, without disclaimer, and without intent to dedicate to the public. Claims 92, 116, 140, 164, 188, 213, and 214 are the independent claims of the application.

Office Action Summary

In the Final Office Action, the Examiner (1) entered objections to claims 96 and 147; (2) rejected claims 92-107, 109-131, 133-155, 157-179, 181-192, 195-204, and 206-214 under 35 U.S.C. § 102(e) as being anticipated by Tranchina, U.S. Patent Number 7,493,645 ("Tranchina" in this paper); and (3) rejected claims 108, 132, 156, 180, and 205 under 35 U.S.C. § 103(a) as being unpatentable over Tranchina and Chen, U.S. Patent Number 6,134,456 ("Chen" in this paper).

Applicant respectfully responds to the Final Office Action.

Finality of the Action and Entry of Amendments

A second or subsequent Office action "on the merits shall be final, except where the examiner introduces a new ground of rejection that is neither necessitated by applicant's amendment of the claims nor based on information submitted in an information disclosure statement filed during the period set forth in 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p)." MPEP § 706.07(a). The general test for determining whether a rejection is "new" is whether an applicant has had a fair opportunity to react the "basic thrust" of the rejection. *In re Kronig*, 539 F.2d 1300, 1302-03, 190

U.S.P.Q. 425, 426-27 (Fed. Cir. 1976). If the basic thrusts of the two rejections differ, then the applicant would not already have had a fair opportunity to respond to the thrust of the rejection, and the new rejection warrants a further opportunity to respond. *Id.*

In rejecting independent claim 92, the previous Office Action in this case (filed on or about 8/15/2011) asserted that Tranchina discloses the limitation of the *wherein* clause of the claim in column 6, lines 17-29 and 53-67. Now, the current Final Office Action asserts (page 3) that the limitations in issue are found in Tranchina's column 8, lines 24-29. Indeed, the reliance on the newly-cited text of Tranchina is the only response to our previous argument. The "thrust" of the rejection is now different, despite the fact that the reference is the same and the statutory section of the rejection is the same as in the previous Office Action. Note that a new ground of rejection need not be based on a different statute or different art; a new ground of rejection results from a new fact finding or different reasoning. *In re Stepan Co.*, 660 F.3d 1341; 2011 U.S. App. LEXIS 20178; 100 U.S.P.Q.2D (BNA) 1489 (Fed. Cir. 2011) (citing *In re Kumar*, 418 F.3d 1361, 1367–68 (Fed. Cir. 2005)).

This is our first opportunity to respond to the new rationale presented for the first time in the Final Office Action. Therefore, finality of the current action is premature, amendments should be entered.

Moreover, the amendments of claims 96 and 147 comply with the Examiner's objections and requirements as to form expressly set forth in the previous Office Action. Therefore, the amendments should be entered. MPEP § 714.12 (". . . amendments filed after a final rejection, but before or on the date of filing an appeal, complying with objections or requirements as to form are to be permitted after final action in accordance with 37 CFR 1.116(b)."); MPEP § 714.13(II); *see* 37 C.F.R. § 1.116(b)(1).

Request for Administrative Notice

Applicant requests the Office to take Administrative Notice of the paper entitled AMENDMENT AND RESPONSE TO OFFICE ACTION filed on April 17, 2006, by applicants in the Tranchina reference (the "Tranchina Amendment" hereinafter). The Tranchina Amendment appears beginning on page 198 of the complete file history of Tranchina, and an electronic duplicate is also filed together with the present paper, for the Examiner's convenience.

Art Rejections

Independent Claim 92

For convenience of discussion, we set forth below independent claim 92:

92. (Previously Presented) A multimedia device integration system, comprising:

> an integration subsystem in communication with a portable device, the portable device external to a car audio/video system; and
>
> a first wireless interface in communication with said integration subsystem, said first wireless interface establishing a wireless communication link with a second wireless interface in communication with the car audio/video system,
>
> wherein said integration subsystem obtains information about an audio file stored on the portable device, transmits the information over said wireless communication link to the car audio/video system for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the audio file in response to a user selecting the audio file using controls of the car audio/video system, and transmits audio generated by the portable device over said wireless communication link to the car audio/video system for playing on the car audio/video system.

The system recited in our claim 92 contains an integration subsystem and a car audio/video system. The integration subsystem communicates with the car audio/video system through a wireless communication link established between the first and second wireless interfaces. Thus, the

integration subsystem and the car audio/video system are connected wirelessly. Note that the integration subsystem and the car audio/video system are different devices, because they communicate wirelessly with each other.

What is the integration system in Tranchina and what is the car audio/video system in Tranchina? To answer this question, let us look at Tranchina's local input device 106. The Final Office Action clearly analogizes Trannchina's local input device 106 to the "portable device" of claim 92. Indeed, we do not readily see what other element of Tranchina can be the portable device that provides the file for playing through the car audio/video system. If the local input device 106 is analogized to the portable device of claim 92, then the wireless connection between the local input device 106 and the console 100 cannot be analogized to the wireless communication link of claim 92, which connects the integration subsystem to the car audio/video system using the first and second wireless interfaces. The only other wireless connection in Tranchina appears to be the connection between the transmitter 199 and the transmitter/receiver 102/118 of the console 100. Clearly, the transmitter 199 is not the car audio/video system, because it does not provide the appropriate functions (such as receiving and playing audio files, as recited in our claim 92). This forces the conclusion (according to the rationale of the Final Office Action) that Tranchina's console 100 is analogous to the car audio/video system, and the transmitter 199 is analogous to the integration subsystem. But the transmitter 199 does not qualify as the integration subsystem of claim 92.

In the *wherein* clause, claim 92 requires the integration subsystem to be configured so that it "instructs the portable device to play the audio file in response to a user selecting the audio file using controls of the car audio/video system, and transmits audio generated by the portable device over

said wireless communication link to the car audio/video system for playing on the car audio/video system." The transmitter 199 does not perform either function.

The Final Office Action asserts (page 3) that Tranchina discloses the limitations of the *wherein* clause in column 8, lines 24-49. Here is Tranchina's cited paragraph:

> A wireless transmitter 199 may be employed by a vehicle passenger to wirelessly transmit signals for configuring controls or applications on the display. Such signals may be transmitted to the display device 104 for receipt by the wireless receiver 102. The wireless transmitter 199 may include a processor and associated memory for executing and storing programs, respectively. The programs may be used to control many different types of devices including some or all of the input devices 106 and other electronic devices such as, for example, a cellular telephone. In the latter case, the wireless transmitter 199 may be used by a user to control the cellular telephone, which may be built into the vehicle. In a preferred embodiment of the invention, the wireless transmitter 199 is operatively coupled to the controls of the accessories commonly found in the dashboard of an automobile such as, for example, climate control and the controls for the radio and/or stereo. The wireless transmitter 199 transmits control configuration signals to the wireless receiver 102 for display on the display device 104. The display device 104, in turn, displays a plurality of control modules or devices, e.g., the keypad of a cellular phone and controls for selecting radio channels for selection via touch screen controls displayed on the display device 104. Given the teachings of the invention provided herein, one of ordinary skill in the related art will contemplate these and various other applications for the wire- 50 less transmitter 199.

Tranchina, col. 8, lines 24-49. According to this paragraph, Tranchina's transmitter 199 apparently does not allow a user to select a file to play using controls of the car audio/video system. Instead, Tranchina's transmitter transmits wireless control signals which configure controls or applications on the display device so that the display device displays control modules. The controls displayed on the display 104 of Tranchina's are used to control a device such as a cellular telephone. This is what Tranchina in fact argued regarding the transmitter 199 in a paper filed with the U.S. PTO:

> The wireless transmitter recited in claim 27 transmits wireless control signals which configure controls or applications on the display device so that the display device displays control modules. For example, the wireless transmitter 199 transmits control configuration signals to the wireless receiver 102 for display on the display device 104. The display device 104, in turn, displays control modules (e.g., the keypad of a cellular telephone or controls for selecting radio channels), which are

> selected via, for example, touch screen controls displayed on the display device. See, e.g., page 24, line 18 to page 25, line 7.
>
> Unlike the embodiment recited in claim 27, the remote control in Treyz is sending commands for controlling functions, such as volume on a radio station. See, e.g., col. 23, line 66 to col. 24, line 6. In contrast, *the wireless transmitter recited in claim 27 configures the controls on the display device so that control of the functions is not being transmitted from the transmitter, but is instead performed by interacting with the display device* via an appropriate input mechanism, such as touch screen.

AMENDMENT AND RESPONSE TO OFFICE ACTION filed by Tranchina on April 17, 2006, page 14 (italics added, underlining in the original). According to Tranchina, the actual controls are displayed on the console/monitor; the controls are configured by the wireless transmitter 199, but the control of the functions is not transmitted from the transmitter 199. "[C] control of the functions is not being transmitted from the transmitter, but is instead performed by interacting with the display device . . . ." *Id.*

Second, the transmitter 199 does not transmit audio generated by the portable device over said wireless communication link to the car audio/video system for playing on the car audio/video system. There is no such disclosure in Tranchina. To the contrary, the audio is sent to the wireless receiver 102 of the console 100 from the local input device 106. See, for example, Tranchina's Figure 2 and its description in column 3, lines 53-56 and column 5, lines 52-64.

We respectfully submit that Tranchina does not disclose the identical invention in as complete detail as is contained in claim 92. Tranchina fails to anticipate claim 92.

Independent Claims 116, 140, 164, 213, and 214

Each of the independent claims 116, 140, 164, and 213 recites limitations identical or analogous to the limitations of claim 92 discussed above. We respectfully submit that Tranchina fails to anticipate each of these claims at least for the reasons state above in relation to claim 92.

Independent Claim 188

Independent claim 188, includes the following clause: "wherein said integration subsystem receives a control command issued by a user through one or more controls of the car audio/video system in a format incompatible with the portable device, processes the control command into a formatted command compatible with the portable device, and dispatches the formatted command to the portable device for execution thereby." The claim therefore requires (paraphrasing) the subsystem to receive a user command issued through the controls of the car audio/video system, and convert the command into a format acceptable to the portable device. These limitations are similar to the limitations of claim 92 discussed above, but they do not limit the user-issued commands to play a file. Tranchina apparently contains no such disclosure (or even suggestion); in particular, Tranchina contains no such disclosure in the portions cited in the Final Office Action.

Additionally, Tranchina does not disclose conversion of the commands from one format to another. We will have more to say regarding format conversion below, in relation to some of the dependent claims.

At least for these reasons, Applicant respectfully submits that Tranchina fails to anticipate claim 188.

Dependent Claim 96 and Format Conversion

Claim 96 depends from claim 92 (as amended above in accordance with the Examiner's express requirement) and adds the following limitations: *wherein said integration subsystem receives, over said wireless communication link, a control command issued at the car audio/video system in a format incompatible with the portable device, processes the control command into a*

formatted command compatible with the portable device, and dispatches the processed control command to the portable device for execution thereby. The Final Office Action rejected (page 4) this claim as anticipated by Tranchina, specifically relying on column 7, lines 5-30 of the reference. Tranchina's text in column 7, lines 5-30 describes processing/conversion of the signals received at the console 100. In particular, the cited text mentions "encoding/decoding, encrypting/decrypting, compressing/decompressing, analog-to-digital conversion (ADC), digital-to-analog conversion (DAC), and error correction." We respectfully submit that these functions are part and parcel of wireless communications, and they are performed on low-level data. In contradistinction, the format conversion of claim 96 is carried out on commands, not on low level data. Note that the application describes one of the problems as incompatibility of command formats. See, for example, Specification as filed, page 2, line 20, through page 3, line 2; and *id.* page 5, lines 12-15. Tranchina does not describe format conversion of commands, as opposed to low-level data manipulation (*e.g.*, encoding/decoding, encrypting/decrypting, compressing/decompressing, analog-to-digital conversion, and digital-to-analog conversion).

We respectfully submit that Tranchina fails to anticipate claim 96 for this additional reason.

Dependent Claim 97 and Format Conversion

Claim 97 depends from claim 92 and adds the following limitations: *wherein said integration subsystem receives data generated by the portable device in a format incompatible with the car audio/video system, processes the data into formatted data compatible with the car audio/video system, and transmits the processed data to the car audio/video system over the wireless communication link for subsequent display of the processed data on a display of the car audio/video system.* The Final Office Action rejected this claim (page 4) as anticipated by Tranchina,

specifically relying on column 7, lines 5-30 of the reference, the same rationale as was used to reject claim 96. Tranchina's text in column 7, lines 5-30 describes processing/conversion of the signals received at the console 100, including "encoding/decoding, encrypting/decrypting, compressing/decompressing, analog-to-digital conversion (ADC), digital-to-analog conversion (DAC), and error correction." Again, these functions are part and parcel of wireless communications, and they are performed on low-level data. The format conversion of claim 97 is carried out on high level data – *e.g.*, audio, video, station, track, time, and song information – not on low level data. *E.g.*, Specification, page 3, line 18, through page 4, line 5. Tranchina does not describe format conversion of high level data, as opposed to low-level data manipulation (*e.g.*, encoding/decoding, encrypting/decrypting, compressing/decompressing, analog-to-digital conversion, and digital-to-analog conversion).

We respectfully submit that Tranchina fails to anticipate claim 97 for this additional reason.

Dependent Claim 102 and Device Presence Signal

Claim 102 depends from claim 92 and adds the following limitations: *wherein said integration subsystem generates a device presence signal and transmits the device presence signal to the car audio/video system over said wireless communications link to maintain the car audio/video system in a state responsive to the portable device.* The Final Office Action asserted (page 5) that Tranchina discloses these limitations in column 7, lines 13-16. Here is the cited text: "Such error correction may include, but is not limited to, Cyclic Redundancy Checking (CRC), Error Correction Code or Error Checking and Correcting (ECC), checksum, and so forth." We do not see here any mention of a device presence signal transmitted to the car audio/video system to prevent the car system from becoming unresponsive. Note that the Applicant has defined a device presence signal

as a signal that "prevents the car stereo from shutting off, entering a sleep mode, or otherwise being unresponsive to signals and/or data from an external source." Specification, page 36, lines 6-9.

Dependent Claim 113 and Format Conversion

Claim 113 depends from base claim 92 and intervening claim 109, and adds the following limitations: *wherein said integration subsystem receives video generated by the portable device in a first format incompatible with the car audio/video system, processes the video into processed video in a second format compatible with the car audio/video system, and transmits the processed video over the wireless communication link to the car audio/video system for subsequent display of the processed video on a display of the car audio/video system.* The Final Office Action rejected this claim (page 7) as anticipated by Tranchina, again relying on column 7, lines 5-30 of the reference, the same rationale as was used to reject claims 96 and 97. Tranchina's text in column 7, lines 5-30 describes processing/conversion of the signals received at the console 100, including "encoding/decoding, encrypting/decrypting, compressing/decompressing, analog-to-digital conversion (ADC), digital-to-analog conversion (DAC), and error correction." These functions are part and parcel of wireless communications, and they are performed on low-level data. The format conversion of claim 113 is carried out on high level data – video – not on low level data. Tranchina does not describe format conversion of high level data, as opposed to low-level data manipulation (*e.g.*, encoding/decoding, encrypting/decrypting, compressing/decompressing, analog-to-digital conversion, and digital-to-analog conversion).

We respectfully submit that Tranchina fails to anticipate claim 113 for this additional reason.

Dependent Claims 108, 132, 156, 180, and 205

These claims were rejected as being unpatentable over Tranchina and Chen. Applicant respectfully submits that Chen fails to remedy the deficiencies of Tranchina discussed above. Each of these claims is therefore patentable over the reference, at least for the reasons applicable to its respective base claim and intervening claims, if any..

Remaining Dependent Claims

Dependent claims not addressed above should be patentable together with their respective base claims and intervening claim, if any.

CONCLUSION

Having made an effort to bring the instant application in condition for allowance, a notice to this effect is earnestly solicited. To discuss any matter pertaining to the application, the Examiner is invited to call the undersigned attorney at (858) 720-9431.

Respectfully submitted,

Dated: January 29, 2012

/Anatoly S. Weiser/

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Electronic Acknowledgement Receipt	
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Application Number:	11475847
International Application Number:	
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Title of Invention:	Multimedia device integration system
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Amendment After Final	Amendment2-AsFiled-Image.pdf	5961584 eb0bcbf7cd6dd93c82fd9e719583c3e4a82cc866	no	41
Warnings:					
Information:					
		Total Files Size (in bytes):	5961584		

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If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
11/475,847	06/27/2006	

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)	SMALL ENTITY ☒		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

		(Column 1)		(Column 2)	(Column 3)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
AMENDMENT	01/29/2012	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 121	Minus	** 121	= 0	X $30 =	0	OR	X $ =	
	Independent (37 CFR 1.16(h))	* 7	Minus	***7	= 0	X $125 =	0	OR	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE	0	OR	TOTAL ADD'L FEE	

		(Column 1)		(Column 2)	(Column 3)					
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =		OR	X $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =		OR	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/DEBRA SAVOY/

CLAIM AMENDMENT

Please amend the claims in accordance with the following listing, which will replace all previous listings and versions of claims in this application.

Listing of Claims

1-91. (Cancelled)

92. (Previously Presented) A multimedia device integration system, comprising:

an integration subsystem in communication with a portable device, the portable device external to a car audio/video system; and

a first wireless interface in communication with said integration subsystem, said first wireless interface establishing a wireless communication link with a second wireless interface in communication with the car audio/video system,

wherein said integration subsystem obtains information about an audio file stored on the portable device, transmits the information over said wireless communication link to the car audio/video system for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the audio file in response to a user selecting the audio file using controls of the car audio/video system, and transmits audio generated by the portable device over said wireless communication link to the car audio/video system for playing on the car audio/video system.

93. (Previously Presented) The system of claim 92, wherein said integration subsystem is positioned within the portable device.

94. (Previously Presented) The system of claim 93, wherein said first wireless interface is positioned within the portable device.

95. (Previously Presented) The system of claim 94, wherein said second wireless interface is positioned within the car audio/video system.

96. (Currently Amended) The system of claim ~~91,~~ 92, wherein said integration subsystem receives, over said wireless communication link, a control command issued at the car audio/video system in a format incompatible with the portable device, processes the control command into a formatted command compatible with the portable device, and dispatches the processed control command to the portable device for execution thereby.

97. (Previously Presented) The system of claim 92, wherein said integration subsystem receives data generated by the portable device in a format incompatible with the car audio/video system, processes the data into formatted data compatible with the car audio/video system, and transmits the processed data to the car audio/video system over the wireless communication link for subsequent display of the processed data on a display of the car audio/video system.

98. (Previously Presented) The system of claim 92, wherein said integration subsystem further comprises a voice recognition subsystem for receiving and processing spoken control commands issued by a user.

99. (Previously Presented) The system of claim 98, wherein said integration subsystem instructs said portable device to play a desired file in response to a spoken command processed by the voice recognition subsystem.

100. (Previously Presented) The system of claim 92, wherein said integration subsystem further comprises a speech synthesizer for generating synthesized speech corresponding to data generated by the portable device.

101. (Previously Presented) The system of claim 100, wherein said integration subsystem transmits the synthesized speech to the car audio/video system over said wireless communication link for subsequent playing of the synthesized speech by the car audio/video system.

102. (Previously Presented) The system of claim 92, wherein said integration subsystem generates a device presence signal and transmits the device presence signal to the car audio/video system over said wireless communications link to maintain the car audio/video system in a state responsive to the portable device.

103. (Previously Presented) The system of claim 92, wherein the portable device comprises a portable receiver.

104. (Previously Presented) The system of claim 103, wherein the portable receiver comprises a digital audio broadcast (DAB) receiver, a high-definition (HD) radio receiver, or a satellite receiver.

105. (Previously Presented) The system of claim 92, wherein the portable device comprises a portable digital media player.

106. (Previously Presented) The system of claim 105, wherein the portable digital media player comprises a video device, a portable media center, a portable media player, an MP3 player, an MP4 player, a WMV player, an Apple iPod, or an Apple video iPod.

107. (Previously Presented) The system of claim 92, wherein the portable device comprises a cellular telephone.

108. (Previously Presented) The system of claim 92, further comprising a non-wireless connection established between the car audio/video system and the portable device.

109. (Previously Presented) The system of claim 92, wherein said integration subsystem transmits, over said wireless communication link, information about a video file stored on the portable device to the car audio/video system for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the video file in response to a user selecting the video file using controls of the car audio/video system, and transmits video generated by the portable device over said wireless communication link to the car audio/video system for playing on the car audio/video system.

110. (Previously Presented) The system of claim 109, wherein the video file comprises a movie stored on the portable device.

111. (Previously Presented) The system of Claim 109, wherein the video file comprises a picture stored on the portable device.

112. (Previously Presented) The system of claim 109, wherein the video file comprises a video clip stored on the portable device.

113. (Previously Presented) The system of claim 109, wherein said integration subsystem receives video generated by the portable device in a first format incompatible with the car audio/video system, processes the video into processed video in a second format compatible with the car audio/video system, and transmits the processed video over the wireless communication link to the

car audio/video system for subsequent display of the processed video on a display of the car audio/video system.

114. (Previously Presented) The system of claim 92, wherein the audio file comprises a song stored on the portable device.

115. (Previously Presented) The system of claim 92, wherein the portable device is connected to the Internet, and said integration device processes information generated by the portable device and transmits processed information to the car audio/video system so that the display of the car audio/video system operates as an Internet browser.

116. (Previously Presented) A multimedia device integration system, comprising:

an integration subsystem in communication with a portable device, the portable device external to a car audio/video system; and

a first wireless interface in communication with said integration subsystem, said first wireless interface establishing a wireless communication link with a second wireless interface in communication with the car audio/video system,

wherein said integration subsystem obtains information about an audio file received by the portable device, transmits the information over said wireless communication link to the car audio/video system for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the audio file in response to a user selecting the audio file using controls of the car audio/video system, and transmits audio generated by the portable

device over said wireless communication link to the car audio/video system for playing on the car audio/video system.

117. (Previously Presented) The system of claim 116, wherein said integration subsystem is positioned within the portable device.

118. (Previously Presented) The system of claim 117, wherein said first wireless interface is positioned within the portable device.

119. (Previously Presented) The system of claim 118, wherein said second wireless interface is positioned within the car audio/video system.

120. (Previously Presented) The system of claim 116, wherein said integration subsystem receives a control command issued at the car audio/video system in a format incompatible with the portable device, processes the control command into a formatted command compatible with the portable device, and dispatches the processed control command to the portable device for execution thereby.

121. (Previously Presented) The system of claim 116, wherein said integration subsystem receives data generated by the portable device in a format incompatible with the car audio/video system, processes the data into formatted data compatible with the car audio/video system, and transmits the

processed data to the car audio/video system over the wireless communication link for subsequent display of the processed data on a display of the car audio/video system.

122. (Previously Presented) The system of claim 116, wherein said integration subsystem further comprises a voice recognition subsystem for receiving and processing spoken control commands issued by a user.

123. (Previously Presented) The system of claim 122, wherein said integration subsystem instructs said portable device to play a desired file in response to a spoken command processed by the voice recognition subsystem.

124. (Previously Presented) The system of claim 116, wherein said integration subsystem further comprises a speech synthesizer for generating synthesized speech corresponding to data generated by the portable device.

125. (Previously Presented) The system of claim 124, wherein said integration subsystem transmits the synthesized speech to the car audio/video system over said wireless communication link for subsequent playing of the synthesized speech by the car audio/video system.

126. (Previously Presented) The system of claim 116, wherein said integration subsystem generates a device presence signal and transmits the device presence signal to the car audio/video system over

said wireless communications link to maintain the car audio/video system in a state responsive to the portable device.

127. (Previously Presented) The system of claim 116, wherein the portable device comprises a portable receiver.

128. (Previously Presented) The system of claim 127, wherein the portable receiver comprises a digital audio broadcast (DAB) receiver, a high-definition (HD) radio receiver, or a satellite receiver.

129. (Previously Presented) The system of claim 116, wherein the portable device comprises a portable digital media player.

130. (Previously Presented) The system of claim 129, wherein the portable digital media player comprises a video device, a portable media center, a portable media player, an MP3 player, an MP4 player, a WMV player, an Apple iPod, or an Apple video iPod.

131. (Previously Presented) The system of claim 116, wherein the portable device comprises a cellular telephone.

132. (Previously Presented) The system of claim 116, further comprising a non-wireless connection established between the car audio/video system and the portable device.

133. (Previously Presented) The system of claim 116, wherein said integration subsystem transmits, over said wireless communication link, information about a video file received by the portable device to the car audio/video system for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the video file in response to a user selecting the video file using controls of the car audio/video system, and transmits video generated by the portable device over said wireless communication link to the car audio/video system for playing on the car audio/video system.

134. (Previously Presented) The system of claim 133, wherein the video file comprises a streaming movie received by the portable device.

135. (Previously Presented) The system of Claim 133, wherein the video file comprises a picture received by the portable device.

136. (Previously Presented) The system of claim 133, wherein the video file comprises a streaming video clip received by the portable device.

137. (Previously Presented) The system of claim 116, wherein said integration subsystem receives video generated by the portable device in a first format incompatible with the car audio/video system, processes the video into processed video in a second format compatible with the car audio/video system, and transmits the processed video over the wireless communication link to the

car audio/video system for subsequent display of the processed video on a display of the car audio/video system.

138. (Previously Presented) The system of claim 116, wherein the audio file comprises a song received by the portable device.

139. (Previously Presented) The system of claim 116, wherein the portable device is connected to the Internet, and said integration device processes information generated by the portable device and transmits processed information to the car audio/video system so that the display of the car audio/video system operates as an Internet browser.

140. (Previously Presented) A multimedia device integration system, comprising:

an integration subsystem in communication with a car audio/video system; and

a first wireless interface in communication with said integration subsystem, said first wireless interface establishing a wireless communication link with a second wireless interface in communication with a portable device external to the car audio/video system,

wherein said integration subsystem obtains, using said wireless communication link, information about an audio file stored on the portable device, transmits the information to the car audio/video system for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the audio file in response to a user selecting the audio file using controls of the car audio/video system, and receives audio generated by the portable device over said wireless communication link for playing on the car audio/video system.

141. (Previously Presented) The system of claim 140, wherein said integration subsystem is positioned within the car audio/video system.

142. (Previously Presented) The system of claim 141, wherein said first wireless interface is positioned within the car audio/video system.

143. (Previously Presented) The system of claim 142, wherein said second wireless interface is positioned within the portable device.

144. (Previously Presented) The system of claim 140, wherein said integration subsystem receives a control command issued at the car audio/video system in a format incompatible with the portable device, processes the control command into a formatted command compatible with the portable device, and dispatches the processed control command to the portable device for execution thereby.

145. (Previously Presented) The system of claim 140, wherein said integration subsystem receives data generated by the portable device in a format incompatible with the car audio/video system, processes the data into formatted data compatible with the car audio/video system, and transmits the processed data to the car audio/video system for subsequent display of the processed data on a display of the car audio/video system.

146. (Previously Presented) The system of claim 140, wherein said integration subsystem further comprises a voice recognition subsystem for receiving and processing spoken control commands issued by a user.

147. (Currently Amended) The system of claim ~~150,~~ 140, wherein said integration subsystem instructs said portable device to play a desired file in response to a spoken command processed by the voice recognition subsystem.

148. (Previously Presented) The system of claim 140, wherein said integration subsystem further comprises a speech synthesizer for generating synthesized speech corresponding to data generated by the portable device.

149. (Previously Presented) The system of claim 148, wherein said integration subsystem transmits the synthesized speech to the car audio/video system for subsequent playing of the synthesized speech by the car audio/video system.

150. (Previously Presented) The system of claim 140, wherein said integration subsystem generates a device presence signal and transmits the device presence signal to the car audio/video system to maintain the car audio/video system in a state responsive to the portable device.

151. (Previously Presented) The system of claim 140, wherein the portable device comprises a portable receiver.

152. (Previously Presented) The system of claim 151, wherein the portable receiver comprises a digital audio broadcast (DAB) receiver, a high-definition (HD) radio receiver, or a satellite receiver.

153. (Previously Presented) The system of claim 140, wherein the portable device comprises a portable digital media player.

154. (Previously Presented) The system of claim 153, wherein the portable digital media player comprises a video device, a portable media center, a portable media player, an MP3 player, an MP4 player, a WMV player, an Apple iPod, or an Apple video iPod.

155. (Previously Presented) The system of claim 140, wherein the portable device comprises a cellular telephone.

156. (Previously Presented) The system of claim 140, further comprising a non-wireless connection established between the car audio/video system and the portable device.

157. (Previously Presented) The system of claim 140, wherein said integration subsystem obtains, using said wireless communication link, information about a video file stored on the portable device

for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the video file in response to a user selecting the video file using controls of the car audio/video system, and receives video generated by the portable device over said wireless communication link for playing on the car audio/video system.

158. (Previously Presented) The system of claim 157, wherein the video file comprises a movie stored on the portable device.

159. (Previously Presented) The system of Claim 157, wherein the video file comprises a picture stored on the portable device.

160. (Previously Presented) The system of claim 157, wherein the video file comprises a video clip stored on the portable device.

161. (Previously Presented) The system of claim 157, wherein said integration subsystem receives video generated by the portable device in a first format incompatible with the car audio/video system, processes the video into processed video in a second format compatible with the car audio/video system, and transmits the processed video to the car audio/video system for subsequent display of the processed video on a display of the car audio/video system.

162. (Previously Presented) The system of claim 140, wherein the audio file comprises a song stored on the portable device.

163. (Previously Presented) The system of claim 140, wherein the portable device is connected to the Internet, and said integration device processes information generated by the portable device and transmits processed information to the car audio/video system so that the display of the car audio/video system operates as an Internet browser.

164. (Previously Presented) A multimedia device integration system, comprising:

an integration subsystem in communication with a car audio/video system; and

a first wireless interface in communication with said integration subsystem, said first wireless interface establishing a wireless communication link with a second wireless interface in communication with a portable device external to the car audio/video system,

wherein said integration subsystem obtains, using said wireless communication link, information about an audio file received by the portable device, transmits the information to the car audio/video system for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the audio file in response to a user selecting the audio file using controls of the car audio/video system, and receives audio generated by the portable device over said wireless communication link for playing on the car audio/video system.

165. (Previously Presented) The system of claim 164, wherein said integration subsystem is positioned within the car audio/video system.

166. (Previously Presented) The system of claim 165, wherein said first wireless interface is positioned within the car audio/video system.

167. (Previously Presented) The system of claim 166, wherein said second wireless interface is positioned within the portable device.

168. (Previously Presented) The system of claim 164, wherein said integration subsystem receives a control command issued at the car audio/video system in a format incompatible with the portable device, processes the control command into a formatted command compatible with the portable device, and dispatches the processed control command to the portable device for execution thereby.

169. (Previously Presented) The system of claim 164, wherein said integration subsystem receives data generated by the portable device in a format incompatible with the car audio/video system, processes the data into formatted data compatible with the car audio/video system, and transmits the processed data to the car audio/video system for subsequent display of the processed data on a display of the car audio/video system.

170. (Previously Presented) The system of claim 164, wherein said integration subsystem further comprises a voice recognition subsystem for receiving and processing spoken control commands issued by a user.

171. (Previously Presented) The system of claim 170, wherein said integration subsystem instructs said portable device to play a desired file in response to a spoken command processed by the voice recognition subsystem.

172. (Previously Presented) The system of claim 164, wherein said integration subsystem further comprises a speech synthesizer for generating synthesized speech corresponding to data generated by the portable device.

173. (Previously Presented) The system of claim 172, wherein said integration subsystem transmits the synthesized speech to the car audio/video system for subsequent playing of the synthesized speech by the car audio/video system.

174. (Previously Presented) The system of claim 164, wherein said integration subsystem generates a device presence signal and transmits the device presence signal to the car audio/video system to maintain the car audio/video system in a state responsive to the portable device.

175. (Previously Presented) The system of claim 164, wherein the portable device comprises a portable receiver.

176. (Previously Presented) The system of claim 175, wherein the portable receiver comprises a digital audio broadcast (DAB) receiver, a high-definition (HD) radio receiver, or a satellite receiver.

177. (Previously Presented) The system of claim 164, wherein the portable device comprises a portable digital media player.

178. (Previously Presented) The system of claim 177, wherein the portable digital media player comprises a video device, a portable media center, a portable media player, an MP3 player, an MP4 player, a WMV player, an Apple iPod, or an Apple video iPod.

179. (Previously Presented) The system of claim 164, wherein the portable device comprises a cellular telephone.

180. (Previously Presented) The system of claim 164, further comprising a non-wireless connection established between the car audio/video system and the portable device.

181. (Previously Presented) The system of claim 164, wherein said integration subsystem obtains, over said wireless communication link, information about a video file received by the portable device for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the video file in response to a user selecting the video file using controls

of the car audio/video system, and receives video generated by the portable device over said wireless communication link for playing on the car audio/video system.

182. (Previously Presented) The system of claim 180, wherein the video file comprises a streaming movie received by the portable device.

183. (Previously Presented) The system of Claim 180, wherein the video file comprises a picture received by the portable device.

184. (Previously Presented) The system of claim 180, wherein the video file comprises a streaming video clip received by the portable device.

185. (Previously Presented) The system of claim 180, wherein said integration subsystem receives video generated by the portable device in a first format incompatible with the car audio/video system, processes the video into processed video in a second format compatible with the car audio/video system, and transmits the processed video to the car audio/video system for subsequent display of the processed video on a display of the car audio/video system.

186. (Previously Presented) The system of claim 164, wherein the audio file comprises a song stored on the portable device.

187. (Previously Presented) The system of claim 164, wherein the portable device is connected to the Internet, and said integration device processes information generated by the portable device and transmits processed information to the car audio/video system so that the display of the car audio/video system operates as an Internet browser.

188. (Previously Presented) A multimedia device integration system, comprising:

first and second wireless interfaces establishing a wireless communication link between a car audio/video system and a portable device external to the car audio/video system; and

an integration subsystem in communication with said wireless communication link,

wherein said integration subsystem channels audio generated by the portable device to the car audio/video system using the wireless communication link for subsequent playing of the audio on the car audio/video system, the audio corresponding to an audio file played by the portable device, and

wherein said integration subsystem receives a control command issued by a user through one or more controls of the car audio/video system in a format incompatible with the portable device, processes the control command into a formatted command compatible with the portable device, and dispatches the formatted command to the portable device for execution thereby.

189. (Previously Presented) The system of claim 188, wherein said integration subsystem is positioned within the portable device.

190. (Previously Presented) The system of claim 188, wherein said integration subsystem is positioned within the car audio/video system.

191. (Previously Presented) The system of claim 188, where the audio file is stored on the portable device.

192. (Previously Presented) The system of claim 188, wherein the audio file is received by the portable device.

193. (Cancelled)

194. (Cancelled)

195. (Previously Presented) The system of claim 188, wherein said integration subsystem further comprises a voice recognition subsystem for receiving and processing spoken control commands issued by the user.

196. (Previously Presented) The system of claim 195, wherein said integration subsystem instructs said portable device to play a desired file in response to a spoken command processed by the voice recognition subsystem.

197. (Previously Presented) The system of claim 188, wherein said integration subsystem further comprises a speech synthesizer for generating synthesized speech corresponding to data generated by the portable device.

198. (Previously Presented) The system of claim 197, wherein said integration subsystem transmits the synthesized speech to the car audio/video system for subsequent playing of the synthesized speech by the car audio/video system.

199. (Previously Presented) The system of claim 188, wherein said integration subsystem generates a device presence signal and transmits the device presence signal to the car audio/video system to maintain the car audio/video system in a state responsive to the portable device.

200. (Previously Presented) The system of claim 188, wherein the portable device comprises a portable receiver.

201. (Previously Presented) The system of claim 200, wherein the portable receiver comprises a digital audio broadcast (DAB) receiver, a high-definition (HD) radio receiver, or a satellite receiver.

202. (Previously Presented) The system of claim 188, wherein the portable device comprises a portable digital media player.

203. (Previously Presented) The system of claim 202, wherein the portable digital media player comprises a video device, a portable media center, a portable media player, an MP3 player, an MP4 player, a WMV player, an Apple iPod, or an Apple video iPod.

204. (Previously Presented) The system of claim 188, wherein the portable device comprises a cellular telephone.

205. (Previously Presented) The system of claim 188, further comprising a non-wireless connection established between the car audio/video system and the portable device.

206. (Previously Presented) The system of claim 188, wherein said integration subsystem channels video generated by the portable device to the car audio/video system over the wireless communication link for subsequent playing of the audio on the car audio/video system, the video corresponding to a video file played by the portable device.

207. (Previously Presented) The system of claim 206, wherein the video file comprises a movie stored on the portable device.

208. (Previously Presented) The system of Claim 206, wherein the video file comprises a picture stored on the portable device.

209. (Previously Presented) The system of claim 206, wherein the video file comprises a video clip stored on the portable device.

210. (Previously Presented) The system of claim 206, wherein the video file comprises streaming video received by the portable device.

211. (Previously Presented) The system of claim 206, wherein the video file comprises a navigation map generated by the portable device.

212. (Previously Presented) The system of claim 206, wherein said integration subsystem receives video generated by the portable device in a first format incompatible with the car audio/video system, processes the video into processed video in a second format compatible with the car audio/video system, and transmits the processed video to the car audio/video system for subsequent display of the processed video on a display of the car audio/video system.

213. (Previously Presented) A multimedia device integration system, comprising:

first and second wireless interfaces establishing a wireless communication link between a car audio/video system and a portable device external to the car audio/video system; and

an integration subsystem in communication with said wireless communication link,

wherein said integration subsystem instructs the portable device to play an audio file in response to a user selecting the audio file using controls of the car audio/video system,

wherein said integration subsystem channels audio generated by the portable device to the car

audio/video system using the wireless communication link for subsequent playing of the audio on the car audio/video system, the audio corresponding to the audio file played by the portable device, and

wherein said integration subsystem receives data generated by the portable device in a format incompatible with the car audio/video system, processes the data into formatted data compatible with the car audio/video system, and transmits the processed data to the car audio/video system for subsequent display of the processed data on a display of the car audio/video system.

214. (Previously Presented) A method of playing a media file on an entertainment system installed in a vehicle, the method comprising:

establishing a first communication link between an integration subsystem and a portable device, the portable device being configured to store the media file or to receive the media file, the portable device being external to the entertainment system installed in the vehicle;

establishing a second wireless link between the integration subsystem and the entertainment system installed in the vehicle;

receiving, at the integration subsystem, a command to play the media file from a user of the entertainment system, the command being entered by the user through one or more controls of the entertainment system;

in response to the command, sending a signal from the integration subsystem to the portable device, the signal causing the portable device to play the media file;

receiving, at the integration subsystem, a first signal containing audio generated by the portable device from the media file;

sending, from the integration subsystem, a second signal containing the audio to the entertainment system, thereby causing the entertainment system to play the audio.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
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NOTICE OF ALLOWANCE AND FEE(S) DUE

7590 02/16/2012

IRA M. MARLOWE
BLITZSAFE OF AMERICA, INC.
33 HONECK STREET
ENGLEWOOD, NJ 07631

EXAMINER
MEI, XU

ART UNIT	PAPER NUMBER
2614	

DATE MAILED: 02/16/2012

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/475,847	06/27/2006	Ira Marlowe		9001

TITLE OF INVENTION: MULTIMEDIA DEVICE INTEGRATION SYSTEM

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	$870	$300	$0	$1170	05/16/2012

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

7590 02/16/2012

IRA M. MARLOWE
BLITZSAFE OF AMERICA, INC.
33 HONECK STREET
ENGLEWOOD, NJ 07631

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/475,847	06/27/2006	Ira Marlowe		9001

TITLE OF INVENTION: MULTIMEDIA DEVICE INTEGRATION SYSTEM

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	$870	$300	$0	$1170	05/16/2012

EXAMINER	ART UNIT	CLASS-SUBCLASS
MEI, XU	2614	381-086000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____

2 _____

3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. The following fee(s) are submitted:

❑ Issue Fee

❑ Publication Fee (No small entity discount permitted)

❑ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**

❑ A check is enclosed.

❑ Payment by credit card. Form PTO-2038 is attached.

❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)

❑ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.

❑ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/475,847	06/27/2006	Ira Marlowe		9001

7590 02/16/2012

IRA M. MARLOWE
BLITZSAFE OF AMERICA, INC.
33 HONECK STREET
ENGLEWOOD, NJ 07631

EXAMINER	
MEI, XU	

ART UNIT	PAPER NUMBER
2614	

DATE MAILED: 02/16/2012

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 214 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 214 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

PTOL-85 (Rev. 02/11)

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No.	Applicant(s)	
	11/475,847	MARLOWE, IRA	
	Examiner	Art Unit	
	XU MEI	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *arugments/remarks of amendment after final dated 01/29/2012*.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☒ The allowed claim(s) is/are *92-192 and 195-214*.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date 02/20/2007
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☐ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

/Xu Mei/
Primary Examiner, Art Unit 2614

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11475847	MARLOWE, IRA
	Examiner	Art Unit
	Xu Mei	2614

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	11/17/2011	02/12/2012							
	91	✓	=							
	92	✓	=							
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	95	✓	=							
	96	✓	=							
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	100	✓	=							
	101	✓	=							
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	104	✓	=							
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	123	✓	=							
	124	✓	=							
	125	✓	=							
	126	✓	=							

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11475847	MARLOWE, IRA
	Examiner	Art Unit
	Xu Mei	2614

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	11/17/2011	02/12/2012							
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	161	✓	=							
	162	✓	=							

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11475847	MARLOWE, IRA
	Examiner	Art Unit
	Xu Mei	2614

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	11/17/2011	02/12/2012							
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	198	✓	=							

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11475847	MARLOWE, IRA
	Examiner	**Art Unit**
	Xu Mei	2614

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	11/17/2011	02/12/2012							
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	211	✓	=							
	212	✓	=							
	213	✓	=							
	214	✓	=							

Search Notes	Application/Control No.	Applicant(s)/Patent under Reexamination
	11/475,847	MARLOWE, IRA
	Examiner: XU MEI	Art Unit: 2614

SEARCHED			
Class	Subclass	Date	Examiner
381	86	5/18/2009	JK
340	825.24	5/18/2009	JK
700	94	5/18/2009	JK
710	303	5/18/2009	JK
455	99	5/18/2009	JK
Update	Above	2/11/2011	JK
348	837,838	2/11/2011	JK
725	75	2/11/2011	JK
455	3.06	2/11/2011	JK
701	36	02/07/2012	XM

INTERFERENCE SEARCHED			
Class	Subclass	Date	Examiner
same class/subclass as listed		02/10/2012	xm

SEARCH NOTES (INCLUDING SEARCH STRATEGY)		
	DATE	EXMR
Inventor Search USC 101 Reviewed	5/18/2009	JK
Searched related apps 10/316961 11/805799 reviewed tagged docs	5/18/2009	JK
Searched: Portable devices interfacing with audio systems	2/9/2010	JK
Searched: Voice recognition in file selection	2/25/2010	JK
updated class Search Searched: TV and Video Distribution classes for tv in vehicles	2/11/2011	JK
updated search	11/15/11	XM
updated search on class/subclass as listed	**02/07/2012**	**xm**
updated search	02/10/2012	XM

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: **Ira Marlowe**	Group Art Unit: **2614**
	Examiner: **Xu Mei**
Serial No.: **11/475,847**	Attorney File No.: **IM002**
Filed: **June 27, 2006**	Office Action Mailed On: **11/29/2011**
For: **MULTIMEDIA DEVICE INTEGRATION SYSTEM**	Confirmation No.: **9001**

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

OK TO ENTER: /X.M./

REPLY TO OFFICE ACTION

Sir:

In this Reply, Applicant responds to the outstanding final Office action mailed on the date shown above (the "Final Office Action" hereinafter). The Final Office Action set a shortened statutory period of three months for reply. This amendment is being filed within the set period and therefore is timely. If the undersigned is mistaken regarding timeliness of this Reply, Applicant conditionally petitions for an extension of time as needed, and authorization is granted to charge the applicable small entity time extension fee to Deposit Account Number 50-3196. If additional or

other fees are necessary for filing of this paper, authorization is granted to charge such fees as they apply to a small entity to the same Deposit Account.

Amendments to the claims are reflected in the listing of claims that begins on page 3 of this paper.

Remarks begin on page 30 of this paper.

IFW

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Customer No. 27614

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Examiner: Not Yet Assigned
Art Unit: 2618

Re: Our file: 99879-00026
Applicant: Ira Marlowe
Serial No.: 11/475,847
Filed: 06/27/2006
For: Multimedia Device Integration System

Sir:

Enclosed for filing in the United States Patent and Trademark Office is the following:

1. Transmittal of Information Disclosure Statement
2. Form PTO-1449 (12 pages)
3. Copies of References 10, 11, 21, 22, 32, 33, 40, 41, 47, 48 and 54-120 from Form PTO-1449
4. Transmittal Sheet
5 Postcard Receipt

CONDITIONAL PETITION

If any extension of time is required for the submission of the above-identified items, Applicant requests that this be considered a petition therefor. Please charge any additional charges or any other charges relating to this matter, or credit any overpayment, to the Deposit Account of the writer, **Account No. 503571.** A duplicate copy of this letter is enclosed.

Respectfully submitted,

2/16/07
Date

Michael R. Friscia
Registration No. 33,884
McCarter & English, LLP
Four Gateway Center
100 Mulberry Street
Newark, NJ 07102
Tel: (973) 639-8493
Fax: (973) 297-6627

Check One and Complete:

☐ **CERTIFICATE OF MAILING BY EXPRESS MAIL**

I hereby certify that this correspondence is being deposited with the United States Postal Service, postage prepaid, as "Express Mail Post Office to Addressee," Mailing Label No. _____US to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on _____.

By:_____

☒ **CERTIFICATE OF MAILING BY FIRST CLASS MAIL**

I hereby certify that this correspondence is being deposited with the United States Postal Service, First Class Mail, postage prepaid, to Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on 2/16/07.

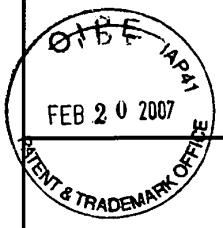
By: _____
Janelle Fava

TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT (Under 37 CFR 1.97(b) or 1.97(c))	Docket No. 99879-00026

In Re Application Of: **Ira Marlowe**

Application No.	Filing Date	Examiner	Customer No.	Group Art Unit	Confirmation No.
11/475,847	06/27/2006	Not Yet Assigned	27614	2618	9001

Title: **Multimedia Device Integration System**



Address to:
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

37 CFR 1.97(b)

1. ☒ The Information Disclosure Statement submitted herewith is being filed within three months of the filing of a national application other than a continued prosecution application under 37 CFR 1.53(d); within three months of the date of entry of the national stage as set forth in 37 CFR 1.491 in an international application; before the mailing of a first Office Action on the merits, or before the mailing of a first Office Action after the filing of a request for continued examination under 37 CFR 1.114.

37 CFR 1.97(c)

2. ☐ The Information Disclosure Statement submitted herewith is being filed after the period specified in 37 CFR 1.97(b), provided that the Information Disclosure Statement is filed before the mailing date of a Final Action under 37 CFR 1.113, a Notice of Allowance under 37 CFR 1.311, or an Action that otherwise closes prosecution in the application, and is accompanied by one of:

   ☐ the statement specified in 37 CFR 1.97(e);

   OR

   ☐ the fee set forth in 37 CFR 1.17(p).

P10A/REV06

TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT (Under 37 CFR 1.97(b) or 1.97(c))	Docket No. 99879-00026

In Re Application of: **Ira Marlowe**

Application No.	Filing Date	Examiner	Customer No.	Group Art Unit	Confirmation No.
11/475,847	06/27/2006	Not Yet Assigned	27614	2618	9001

Title: **Multimedia Device Integration System**

Payment of Fee

(Only complete if Applicant elects to pay the fee set forth in 37 CFR 1.17(p))

☐ A check in the amount of is attached.

☒ The Director is hereby authorized to charge and credit Deposit Account No. 503571 as described below.

- ☐ Charge the amount of
- ☒ Credit any overpayment.
- ☒ Charge any additional fee required.

☐ Payment by credit card. Form PTO-2038 is attached.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

Certificate of Transmission by Facsimile*

I certify that this document and authorization to charge deposit account is being facsimile transmitted to the United States Patent and Trademark Office (Fa:)

(Date)

Signature

Typed or Printed Name of Person Signing Certificate

Certificate of Mailing by First Class Mail

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)] on

2/16/07
(Date)

Signature of Person Mailing Correspondence

Janelle Fava

Typed or Printed Name of Person Mailing Certificate

***This certificate may only be used if paying by deposit account.**

Signature

Dated: 2/16/07

Michael R. Friscia
Registration No. 33,884
McCarter & English, LLP
Four Gateway Center
100 Mulberry Street
Newark, NJ 07102
Tel: (973) 639-8493
Fax: (973) 297-6627

cc:

P10A/REV06

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /X.M./

INFORMATION DISCLOSURE CITATION

(Use several sheets if necessary)

Docket Number (Optional)	Application Number
99879-00026	11/475,847
Applicant(s) Ira Marlowe	
Filing Date 06/27/2006	**Group Art Unit** 2618

U.S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	1	6,993,615	01/31/2006	Falcon	710	303	11/15/2002
	2	6,629,164	09/30/2003	Bhogal, et al.	711	111	11/03/2000
	3	6,653,948	11/25/2003	Kunimatsu, et al.	340	995.19	06/05/2000
	4	6,648,661	11/18/2003	Byrne, et al.	439	188	11/08/2002
	5	6,591,085	07/08/2003	Grady	455	42	07/17/2002

U.S. PATENT APPLICATION PUBLICATIONS

*EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	6	US 2005/0239434 A1	10/27/2002	Marlowe	455	345	03/03/2005
	7	US 2004/0151327 A1	08/05/2004	Marlowe	381	86	12/10/2003
	8	US 2004/0091123 A1	05/13/2004	Stark, et al.	381	86	11/08/2002
	9	US 2003/0215102 A1	11/20/2003	Marlowe	381	77	12/11/2002

FOREIGN PATENT DOCUMENTS

	REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation YES	Translation NO

OTHER DOCUMENTS *(Including Author, Title, Date, Pertinent Pages, Etc.)*

	10	VoiceBox Technologies, printout from website http://www.voiceboxtechnologies.com/auto.php (2 pages). 2001-2006.
	11	"Video: A Dashboard That is Really a PC," printout from website http://news.com.com/1606-2_3-6052333.html (3 pages). 2006.

EXAMINER	/Xu Mei/	DATE CONSIDERED	02/07/12

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP Section 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /X.M./

INFORMATION DISCLOSURE CITATION

(Use several sheets if necessary)

Docket Number (Optional)	Application Number
99879-00026	11/475,847
Applicant(s) Ira Marlowe	
Filing Date 06/27/2006	**Group Art Unit** 2618

U.S. PATENT DOCUMENTS

*EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	12	6,396,164	05/28/2002	Barnea, et al.	307	10.1	10/20/1999
	13	6,389,332	05/14/2002	Hess, et al.	701	1	05/01/2000
	14	6,374,177	04/16/2002	Lee, et al.	701	200	09/20/2000
	15	6,346,917	02/12/2002	Fuchs, et al.	343	713	11/09/2000
	16	6,330,337	12/11/2001	Nicholson, et al.	381	86	01/19/2000

U.S. PATENT APPLICATION PUBLICATIONS

*EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	17	US 2003/0086699 A1	05/08/2003	Benyamin, et al.	386	96	02/15/2002
	18	US 2003/0053638 A1	03/20/2003	Yasuhara	381	86	09/13/2002
	19	US 2003/0007649 A1	01/09/2003	Riggs	381	86	06/14/2002
	20	US 2002/0197954 A1	12/26/2002	Schmitt, et al.	455	41	12/31/2001

FOREIGN PATENT DOCUMENTS

	REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation YES	Translation NO

OTHER DOCUMENTS *(Including Author, Title, Date, Pertinent Pages, Etc.)*

	21	"Blitz Safe Offers XM Cables for Radios," printout from website http://www.twice.com/article/CA190041.html?text=blitz+safe (2 pages) 2002.
	22	"Integration Products May Impact Satellite Radio," printout from website http://www.twice.com/article/CA200541.html?text=blitz+safe (3 pages) 2002.

EXAMINER	DATE CONSIDERED
/Xu Mei/	02/07/12

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP Section 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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INFORMATION DISCLOSURE CITATION

(Use several sheets if necessary)

Docket Number (Optional)	Application Number
99879-00026	11/475,847
Applicant(s) Ira Marlowe	
Filing Date 06/27/2006	**Group Art Unit** 2618

U.S. PATENT DOCUMENTS

*EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	23	6,295,033	09/25/2001	Chatzipetros, et al.	343	713	05/25/1999
	24	6,278,697	08/21/2001	Brody, et al.	370	310	07/29/1997
	25	6,163,079	12/19/2000	Miyazaki, et al.	307	10.1	07/23/1998
	26	6,157,725	12/05/2000	Becker	381	86	12/10/1997
	27	6,058,319	05/02/2000	Sadler	455	569	03/05/1997

U.S. PATENT APPLICATION PUBLICATIONS

*EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	28	US 2002/0180767 A1	12/05/2002	Northway, et al.	345	698	06/04/2001
	29	US 2002/0133610 A1	09/19/2002	Hadland	709	230	05/03/2002
	30	US 2002/0091863 A1	07/11/2002	Schug	709	250	10/19/2001
	31	US 2002/0085730 A1	07/04/2002	Holland	381	334	11/19/2001

FOREIGN PATENT DOCUMENTS

	REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation YES	Translation NO

OTHER DOCUMENTS *(Including Author, Title, Date, Pertinent Pages, Etc.)*

	32	"OEM Integration Poised for Strong Growth," printout from website http://www.twice.com/article/CA200523.html?text=blitz+safe (3 pages) 2002.
	33	"Blitzsafe Overview," from Blitzsafe.com website-"The Worldwide Leader in Aftermarket Interfaces and OEM Engineering" (1 page). no date on ref.

EXAMINER	DATE CONSIDERED
/Xu Mei/	02/07/12

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP Section 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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INFORMATION DISCLOSURE CITATION

(Use several sheets if necessary)

Docket Number (Optional)	Application Number
99879-00026	11/475,847
Applicant(s) Ira Marlowe	
Filing Date 06/27/2006	**Group Art Unit** 2618

U.S. PATENT DOCUMENTS

*EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	34	6,052,603	04/18/2000	Kinzalow, et al.	455	557	09/18/1997
	35	6,005,488	12/21/1999	Symanov, et al.	340	825.56	12/03/1997
	36	5,794,164	08/11/1998	Beckert, et al.	701	1	11/29/1995
	37	5,410,675	04/25/1995	Shreve, et al.	395	500	09/17/1993
	38	5,339,362	08/16/1994	Harris	381	86	01/07/1992

U.S. PATENT APPLICATION PUBLICATIONS

*EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	39	US 2001/0044664 A1	11/22/2001	Mueller, et al.	700	94	03/23/2001

FOREIGN PATENT DOCUMENTS

	REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation YES	Translation NO

OTHER DOCUMENTS *(Including Author, Title, Date, Pertinent Pages, Etc.)*

	40	"Delphi XM SKYFI(TM) RADIO," product description from XM Satellite Radio website (2 pages). 2003.
	41	The New Delphi XM SKYFi Radio Add it to Any Car or Home Audio System, product description from www.xmradio.com (1 page). 2002.

EXAMINER	DATE CONSIDERED
/Xu Mei/	02/07/12

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP Section 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /X.M./

INFORMATION DISCLOSURE CITATION

(Use several sheets if necessary)

Docket Number (Optional)	Application Number
99879-00026	11/475,847
Applicant(s) Ira Marlowe	
Filing Date 06/27/2006	**Group Art Unit** 2618

U.S. PATENT DOCUMENTS

*EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	42	4,943,978	07/24/1990	Rice	375	1	01/17/1989
	43	4,817,130	03/28/1989	Frimmel, Jr.	379	88	12/05/1986
	44	Re. 34,536	02/08/1994	Frimmel, Jr.	379	88	06/28/1990
	45	4,772,079	09/20/1988	Douglas, et al.	312	257	09/26/1986
	46	4,562,533	12/31/1985	Hodel, et al.	364	200	08/20/1984

U.S. PATENT APPLICATION PUBLICATIONS

*EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE

FOREIGN PATENT DOCUMENTS

	REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation YES	Translation NO

OTHER DOCUMENTS *(Including Author, Title, Date, Pertinent Pages, Etc.)*

	47	Mobile Electronics: News, "Soundgate to Release New GM and BMW Interfaces," December 2, 2002, ME-Mag.com (1 page).
		"Welcome to Ventura Technology," from Venturatechnology.com (2 pages).
	48	no date on ref.

EXAMINER	DATE CONSIDERED
/Xu Mei/	02/07/12

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP Section 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /X.M./

INFORMATION DISCLOSURE CITATION

(Use several sheets if necessary)

Docket Number (Optional)	Application Number
99879-00026	11/475,847
Applicant(s) Ira Marlowe	
Filing Date 06/27/2006	**Group Art Unit** 2618

U.S. PATENT DOCUMENTS

*EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	49	4,234,919	11/18/1980	Bruce, et al.	364	200	10/31/1978
	50	4,091,455	05/23/1978	Woods, et al.	364	200	12/20/1976
	51	4,068,104	01/10/1978	Werth, et al.	179	175.3	05/14/1976
	52	4,047,162	09/06/1977	Dorey, et al.	364	200	04/28/1975
	53	3,940,743	02/24/1976	Fitzgerald	340	172.5	11/05/1973

U.S. PATENT APPLICATION PUBLICATIONS

*EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE

FOREIGN PATENT DOCUMENTS

	REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation YES	Translation NO

OTHER DOCUMENTS *(Including Author, Title, Date, Pertinent Pages, Etc.)*

		Ventura Technology product descriptions from www.venturatechnology.net (1 page).
	54	no date on ref.
	55	"Phatnoise Digital Media Players," product description from http:\www.phatnoise.com (2 pages). 1999-2003.

EXAMINER	DATE CONSIDERED
/Xu Mei/	02/07/12

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP Section 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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INFORMATION DISCLOSURE CITATION

(Use several sheets if necessary)

Docket Number (Optional)	Application Number
99879-00026	11/475,847
Applicant(s)	
Ira Marlowe	
Filing Date	**Group Art Unit**
06/27/2006	2618

*EXAMINER INITIAL		OTHER DOCUMENTS *(Including Author, Title, Date, Pertinent Pages, Etc.)*
	56	"Automedia," magazine pages from June/July 1996 issue (2 pages).
	57	"Automedia," magazine pages from January 1998 issue (2 pages).
	58	"Automedia," magazine pages from February 1998 issue (2 pages).
	59	"Automedia," magazine pages from July 1998 issue (2 pages).
	60	"Automedia," magazine pages from September 1998 issue (2 pages).
	61	"Automedia," magazine pages from November 1998 issue (12 pages).
	62	"Automedia," magazine pages from February 1999 issue (2 pages).
	63	"Automedia," magazine pages from February 1999 issue (2 pages).
	64	"Car Stereo Review," magazine pages from June 1998 issue (5 pages).
	65	"Car Stereo Review," magazine pages from January 1999 issue (2 pages).
	66	"Car Stereo Review," magazine pages from April 1999 issue (3 pages).
	67	"Car Audio and Electronics," magazine pages from December 1998 issue (2 pages).

EXAMINER	DATE CONSIDERED
/Xu Mei/	02/07/12

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INFORMATION DISCLOSURE CITATION *(Use several sheets if necessary)*	Docket Number (Optional) 99879-00026	Application Number 11/475,847
	Applicant(s) Ira Marlwe	
	Filing Date 06/27/2006	Group Art Unit 2618

*EXAMINER INITIAL		OTHER DOCUMENTS *(Including Author, Title, Date, Pertinent Pages, Etc.)*
	68	"Car Audio and Electronics," magazine pages from April 1999 issue (2 pages).
	69	"Car Audio and Electronics," magazine pages from June 1999 issue (2 pages).
	70	"Carsound," magazine pages from May/June 1999 issue (3 pages).
	71	"Mobile Electronics Retailer," magazine pages from August 1997 issue (4 pages).
	72	"Mobile Electronics," magazine pages from July 1999 issue (7 pages).
	73	"Mobile Electronics," magazine pages from August 2000 issue (2 pages).
	74	"Cesmobile," magazine pages from January 1999 issue (3 pages).
	75	"The 12 Volt News," magazine pages from March 2002 issue (2 pages).
	76	"P.I.E. Millennium Price Guide Make the Precision Decision," Precision Interface Electronics, Inc. (6 pages). 2000.
	77	"PIE 1999 Price Guide," Precision Interface Electronics, Inc. (4 pages).
	78	"Design & Engineering Showcase Award," award presented to Precision Interface Electronics, Inc. for DPX Technology Digital Protocol Converter FRDN/PC-KNW, 2000 International CES (1 page).
	79	"Design & Engineering Showcase Award," award presented to Precision Interface Electronics, Inc. for DPX Technology Digital Protocol Converter GM9/PC-KNW, 2000 International CES (1 page).

EXAMINER	/Xu Mei/	DATE CONSIDERED	02/07/12

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INFORMATION DISCLOSURE CITATION *(Use several sheets if necessary)*	Docket Number (Optional) 99879-00026	Application Number 11/475,847
	Applicant(s) Ira Marlowe	
	Filing Date 06/27/2006	Group Art Unit 2618

*EXAMINER INITIAL		OTHER DOCUMENTS *(Including Author, Title, Date, Pertinent Pages, Etc.)*
	80	Invoice dated January 28, 1998 from Precision Interface Electronics, Inc. for "Ford FCU-Sanyo Protocol," and "Ford RCU Sanyo Protocol" (1 page).
	81	Invoice dated January 29, 1999 from Precision Interface Electronics, Inc. for "Ford NCU-Sanyo Protocol" (1 page).
	82	Invoice dated April 26, 1999 from Precision Interface Electronics, Inc. for "9 Pin GM-Kenwood Protocol," and "10 Pin GM-Kenwood Protocol" (1 page).
	83	Invoice dated April 27, 1999 from Precision Interface Electronics, Inc. for "9 Pin GM-Kenwood Protocol" (1 page).
	84	Invoice dated May 27, 1999 from Precision Interface Electronics, Inc. for "10 Pin GM-Kenwood Protocol," and "9 Pin GM-Kenwood Protocol" (1 page).
	85	Invoice dated March 20, 2000 from Precision Interface Electronics, Inc. for "98-2000 Pre-Wired VW 6 DIS" (1 page).
	86	Invoice dated March 20, 2000 from Precision Interface Electronics, Inc. for "98-2000 Pre-Wired VW 8 DIS," and "1998-2000 Audi to Pan 8 PC" (1 page).
	87	Invoice dated December 17, 2001 from Precision Interface Electronics, Inc. for "98-02 Ford/Lincoln/Mercury" (1 page).
	88	Invoice dated December 17, 2001 from Precision Interface Electronics, Inc. for "98-02 Ford/Lincoln/Mercury" (1 page).
	89	Invoice dated May 29, 2002 from Precision Interface Electronics, Inc. for "95-01 GMC/Chev/Pontiac AUX," and "98-02 Ford/Lincoln/Merc AU" (1 page).
	90	Toyota/Avox Interface Rev. Eng., Peripheral Model TIAS, created February 15, 1998 (1 page).
	91	GM/Kenwood Translator diagram, created February 4, 1999 (2 pages).

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INFORMATION DISCLOSURE CITATION *(Use several sheets if necessary)*	Docket Number (Optional) 99879-00026	Application Number 11/475,847
	Applicant(s) Ira Marlowe	
	Filing Date 06/27/2006	Group Art Unit 2618

*EXAMINER INITIAL		OTHER DOCUMENTS *(Including Author, Title, Date, Pertinent Pages, Etc.)*
	92	Ford/Audiovox Translator diagram, created December 29, 1997 (2 pages).
	93	Component Side Silkscreen, created December 31, 1997 (2 pages).
	94	Component Xray, created February 4, 1992 (2 pages).
	95	"SoundGate, Ventura Announce Sophisticated OEM-Integration Interfaces," article from The 12 Volt News, December 2002 (1 page).
	96	"XMDirect Smart Digital Adapter," product description (3 pages). 2001-2004.
	97	"Breaking Protocol A Look at BlitzSafe's New DMX Protocol Converter Technology," November 1998 printout from http://www.blitzsafe.com/blitz_news/news101998/body_news101998.html (2 pages).
	98	"PIE Virtual Catalog," printout from http://web.archive.org/web/19981205005802/http:/www.pie.net/sec12sbl.htm (2 pages). 2005.
	99	"The UniLink Project," printout from website (2 pages). 1999.
	100	"CD Changer Interfaces, "printout from http://web.archive.org/web/19991012021952/soundgate.com/cd-inter.html (1 page). 1999.
	101	"Digital Obsessions A Spotlight on Audio Gadgetry, ZDNet Music: The PhatNoise Car Audio System," printout from http://web.archive.org/web/20000815203327/music.zdnet.com/features/phatnoise (3 pages). 2000.
	102	"Bypassing and Switching With the CD4053 CMOS Analog MUX," printout from website (4 pages). 2000.
	103	"Device Profile: PhatNoise PhatBox Car MP3 Player," November 1, 2000, printout from http://techupdate.zdnet.com/techupdate/stories/main/0,14179,2649276,00.htm (4 pages).

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INFORMATION DISCLOSURE CITATION *(Use several sheets if necessary)*	Docket Number (Optional) 99879-00026	Application Number 11/475,847
	Applicant(s) Ira Marlowe	
	Filing Date 06/27/2006	Group Art Unit 2618

*EXAMINER INITIAL		OTHER DOCUMENTS *(Including Author, Title, Date, Pertinent Pages, Etc.)*
	104	"The EZ Protoboard," printout from http://web.archive.org/web/20010613095105/http:/www.ajusd.org/~edward/ezproto (2 pages). 2001.
	105	"TDIClub Forums: Reverse Engineering CD Changer Progress,," April 3, 2001, printout from website (3 pages).
	106	"TDIClub Forums: Reverse Engineering CD Changer Progress Reports,," April 5, 2001, printout from website (8 pages).
	107	"Multi Technology Equipment - Home of the Neo MP3 Player," printout from http://web.archive.org/web/20010413222617/ssiamerica.com/products/neo35/ (1 page). 2005.
	108	"TDIClub Forums: Reverse Engineering CD Changer Protocol Update," April 18, 2001, printout from website (3 pages).
	109	"The Car CD Changer Interface Page," printout from website (10 pages). 2001-2002.
	110	"SourceForge.net: Project Info - GNUlink," printout from http://sourceforge.net/projects/gnunilink/ (3 pages). 2005.
	111	"EZ Protoboard News," printout from website (3 pages). 2001-2002.
	112	"GNUnilink - For All Your AUX-IN Needs...," "printout from http://gnunilink.sourceforge.net/ (4 pages). 2002.
	113	"VWCDPIC News, "printout from http://web.archive.org/web/20020701101541/http:/www.ajusd.org/~edward/vwcdpic/ (8 pages). 2001-2002.
	114	"VWCDPIC News, "printout from http://web.archive.org/web/20021009014959/http:/www.ajusd.org/~edward/vwcdpic/ (10 pages). 2001-2002.
		"Neo Car Jukebox MP3 Player," printout from website (3 pages).
	115	no date on ref.

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INFORMATION DISCLOSURE CITATION *(Use several sheets if necessary)*	Docket Number (Optional) 99879-00026	Application Number 11/475,847
	Applicant(s) Ira Marlowe	
	Filing Date 06/27/2006	Group Art Unit 2618

*EXAMINER INITIAL		OTHER DOCUMENTS *(Including Author, Title, Date, Pertinent Pages, Etc.)*
	116	"Mobile Electronic E-Newsletter" dated January 13, 2005 (4 pages)
	117	"Axxess Introduces Two iPod Integration Units" product description dated January 19, 2005 (1 page).
	118	"Even More iPod Adapters On the Way," printout from twice.com website (2 pages). 2005.
	119	"Alpine Showing First MOST-Ready Product," printout from twice.com website (2 pages). 2005.
	120	"Bluetooth Gradually Enters Car Audio," prinout from twice.com website (2 pages). 2005.

EXAMINER	DATE CONSIDERED
/Xu Mei/	02/07/12

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BIB DATA SHEET

CONFIRMATION NO. 9001

SERIAL NUMBER	FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
11/475,847	06/27/2006 RULE	381	2614	

APPLICANTS
Ira Marlowe, Fort Lee, NJ;

**** CONTINUING DATA ***************************
This application is a CIP of 11/071,667 03/03/2005
which is a CIP of 10/732,909 12/10/2003
which is a CIP of 10/316,961 12/11/2002 PAT 7,489,786

**** FOREIGN APPLICATIONS ***************************

**** IF REQUIRED, FOREIGN FILING LICENSE GRANTED **** ** SMALL ENTITY **
07/24/2006

Foreign Priority claimed ☐ Yes ☑ No 35 USC 119(a-d) conditions met ☐ Yes ☑ No Verified and Acknowledged /JASON RICHARD KURR/ Examiner's Signature	☐ Met after Allowance Initials	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
		NJ	36	91	7

ADDRESS

IRA M. MARLOWE
BLITZSAFE OF AMERICA, INC.
33 HONECK STREET
ENGLEWOOD, NJ 07631
UNITED STATES

TITLE

Multimedia device integration system

FILING FEE RECEIVED	FEES: Authority has been given in Paper	☐ All Fees
3755	No._____ to charge/credit DEPOSIT ACCOUNT	☐ 1.16 Fees (Filing)
	No._____ for following:	☐ 1.17 Fees (Processing Ext. of time)
		☐ 1.18 Fees (Issue)
		☐ Other _____
		☐ Credit

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11475847	MARLOWE, IRA
	Examiner	**Art Unit**
	Xu Mei	2614

ORIGINAL		INTERNATIONAL CLASSIFICATION									
CLASS	SUBCLASS	CLAIMED					NON-CLAIMED				
381	86	H	0	4	B	1 / 00 (2006.0)					

CROSS REFERENCE(S)					
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)				
701	36				
455	345				

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☒ T.D. ☐ R.1.47

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
	1		29		57		85	22	113	50	141	78	169	104	197
	2		30		58		86	23	114	51	142	79	170	105	198
	3		31		59		87	24	115	52	143	80	171	106	199
	4		32		60		88	25	116	53	144	81	172	107	200
	5		33		61		89	26	117	54	145	82	173	108	201
	6		34		62		90	27	118	55	146	83	174	109	202
	7		35		63		91	28	119	57	147	84	175	110	203
	8		36		64	1	92	29	120	58	148	85	176	111	204
	9		37		65	2	93	30	121	59	149	86	177	112	205
	10		38		66	3	94	31	122	56	150	87	178	113	206
	11		39		67	4	95	32	123	60	151	88	179	114	207
	12		40		68	5	96	33	124	61	152	89	180	115	208
	13		41		69	6	97	34	125	62	153	94	181	116	209
	14		42		70	7	98	35	126	63	154	90	182	117	210
	15		43		71	8	99	36	127	64	155	91	183	118	211
	16		44		72	9	100	37	128	65	156	92	184	119	212

		Total Claims Allowed:	
(Assistant Examiner)	(Date)	121	
/XU MEI/ Primary Examiner.Art Unit 2614	02/12/2012	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11475847	MARLOWE, IRA
	Examiner	**Art Unit**
	Xu Mei	2614

☐ **Claims renumbered in the same order as presented by applicant** ☐ **CPA** ☒ **T.D.** ☐ **R.1.47**

	17		45		73	10	101	38	129	66	157	93	185	120	213
	18		46		74	11	102	39	130	67	158	95	186	121	214
	19		47		75	12	103	40	131	68	159	96	187		
	20		48		76	13	104	41	132	69	160	97	188		
	21		49		77	14	105	42	133	70	161	98	189		
	22		50		78	15	106	43	134	71	162	99	190		
	23		51		79	16	107	44	135	72	163	100	191		
	24		52		80	17	108	45	136	73	164	101	192		
	25		53		81	18	109	46	137	74	165		193		
	26		54		82	19	110	47	138	75	166		194		
	27		55		83	20	111	48	139	76	167	102	195		
	28		56		84	21	112	49	140	77	168	103	196		

		Total Claims Allowed:	
(Assistant Examiner)	(Date)	121	
/XU MEI/ Primary Examiner.Art Unit 2614	02/12/2012	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
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CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

7590 02/16/2012

IRA M. MARLOWE
BLITZSAFE OF AMERICA, INC.
33 HONECK STREET
ENGLEWOOD, NJ 07631

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I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/475,847	06/27/2006	Ira Marlowe		9001

TITLE OF INVENTION: MULTIMEDIA DEVICE INTEGRATION SYSTEM

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	$870	$300	$0	$1170	05/16/2012

EXAMINER	ART UNIT	CLASS-SUBCLASS
MEI, XU	2614	381-086000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 Anatoly S. Weiser, Esq.
2 Acuity Law Group
3 ---

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

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5. **Change in Entity Status** (from status indicated above)

☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.
☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

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Electronic Patent Application Fee Transmittal

Application Number:	11475847
Filing Date:	27-Jun-2006
Title of Invention:	MULTIMEDIA DEVICE INTEGRATION SYSTEM
First Named Inventor/Applicant Name:	Ira Marlowe
Filer:	Anatoly Weiser.
Attorney Docket Number:	

Filed as Small Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Utility Appl issue fee	2501	1	870	870
Publ. Fee- early, voluntary, or normal	1504	1	300	300

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**1170**

Electronic Acknowledgement Receipt	
EFS ID:	12098011
Application Number:	11475847
International Application Number:	
Confirmation Number:	9001
Title of Invention:	MULTIMEDIA DEVICE INTEGRATION SYSTEM
First Named Inventor/Applicant Name:	Ira Marlowe
Correspondence Address:	IRA M. MARLOWE - BLITZSAFE OF AMERICA, INC. 33 HONECK STREET ENGLEWOOD NJ 07631 US - -
Filer:	Anatoly Weiser.
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	16-FEB-2012
Filing Date:	27-JUN-2006
Time Stamp:	18:38:57
Application Type:	Utility under 35 USC 111(a)

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Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$1170

RAM confirmation Number	5897
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	IssueFee-PartB.pdf	94993 040924b31b24ea2b9ef286ea234134d89dd35890	no	1
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	31620 b136c8cf043405bf84d6f196989488ef80fab6ae	no	2
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If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

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<u>New International Application Filed with the USPTO as a Receiving Office</u>
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/475,847	06/27/2006	Ira Marlowe		9001

7590 02/27/2012

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BLITZSAFE OF AMERICA, INC.
33 HONECK STREET
ENGLEWOOD, NJ 07631

EXAMINER	
MEI, XU	

ART UNIT	PAPER NUMBER
2614	

MAIL DATE	DELIVERY MODE
02/27/2012	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
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Application No. : 11475847
Applicant : Marlowe
Filing Date : 06/27/2006
Date Mailed : 02/27/2012

NOTICE TO FILE CORRECTED APPLICATION PAPERS

Notice of Allowance Mailed

This application has been accorded an Allowance Date and is being prepared for issuance. The application, however, is incomplete for the reasons below.

Applicant is given 1 month(s) from the mail date of this Notice, or the time remaining from the Notice of Allowance and Fee(s) Due, whichever is longer, within which to respond.

The informalities requiring correction are indicated in the attachment(s). If the informality pertains to the abstract, specification (including claims) or drawings, the informality must be corrected with an amendment in compliance with 37 CFR 1.121 (or, if the application is a reissue application, 37 CFR 1.173). Such an amendment may be filed after payment of the issue fee if limited to correction of informalities noted herein. See Waiver of 37 CFR 1.312 for Documents Required by the Office of Patent Publication, 1280 Off. Gaz. Patent Office 918 (March 23, 2004). In addition, if the informality is not corrected until after payment of the issue fee, for purposes of 35 U.S.C. 154(b)(1)(iv), "all outstanding requirements" will be considered to have been satisfied when the informality has been corrected. A failure to respond within the above-identified time period will result in the application being ABANDONED. **This period for reply is NOT extendable under 37 CFR 1.136(a).**

See attachment(s).

A copy of this notice MUST be returned with the reply. Please address response to "Mail Stop Issue Fee,Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450".

/Tamika Tolbert/
Publication Branch
Office of Data Management
(571) 272-4200

Application No. 11475847

IDENTIFICATION OF APPLICATION DEFICIENCIES

[X] Applicant must provide legible text for the following item(s).

- [X] Specification filed 06/27/2006, page(s) 1.
- [ ] Claims filed , claim(s) .
- [ ] Oath/declaration filed .
- [ ] Other: .

[X] Applicant must provide missing information on the following page(s) of the specification by amending the specification to add the missing text. No new matter may be added. 1

[ ] The specification refers to one or more applications by attorney docket number and does not show the U.S. application number(s). Applicant must supply the U.S. application number in place of each attorney docket number.

[ ] Applicant must provide an Abstract of the Disclosure.

[ ] Applicant has submitted a DECLARATION (37 CFR 1.63) FOR A UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76) (e.g., form PTO/SB/01A). The Application Data Sheet, however, is not present with the filed application. Applicant must submit an Application Data Sheet or file a new oath or declaration (e.g., PTO/SB/01) executed by the inventors and containing the information required in 37 CFR 1.63.

[ ] Applicant must provide an executed declaration.

[ ] Applicant must provide the missing page(s) of the oath/declaration or Application Data Sheet filed

[ ] Applicant must provide a declaration signed by inventor(s) .

[ ] The oath/declaration filed shows non-initialed and/or non-dated alterations. Applicant must file a new oath/declaration in compliance with 37 CFR 1.67(a).

[ ] Applicant(s) in the latest-filed oath/declaration or Application Data Sheet (ADS) did not show the inventor's residence at all, or did not show both a city and state in the U.S. inventor's residence, or did not show both a city and country in the non-U.S. inventor's residence. Applicant must supply an oath/declaration or Application Data Sheet (ADS) that shows each U.S. inventor's city and state of residence and each non-U.S. inventor's city and country of residence.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: **Ira Marlowe**	Group Art Unit: **2614**
	Examiner: **Xu Mei**
Serial No.: **11/475,847**	Attorney File No.: **IM002**
Filed: **June 27, 2006**	Office Action Mailed On: **2/27/2012**
For: **MULTIMEDIA DEVICE INTEGRATION SYSTEM**	Confirmation No.: **9001**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

REPLY TO NOTICE TO FILE CORRECTED APPLICATION PAPERS

Sir:

In this Reply, Applicant responds to the outstanding Notice to File Corrected Application Papers mailed on 2/27/2012 (the "Notice" hereinafter). The Notice set a period of one month for reply. This Reply is filed within the set period and therefore is timely.

Amendment to the specification begins on page 2 of this paper.

Remarks begin on page 3 of this paper.

REMARKS

This amendment is filed in response to the express requirement set forth in the Notice. The amendment updates the status of parent applications. It does not insert new matter,

Applicant respectfully submits that the amendment complies with the express requirement of the Notice. If the Office considers otherwise, kindly contact the undersigned attorney or applicant to allow us to comply fully with the Office's requirements.

To discuss any matter pertaining to the application, Office personnel are invited to call the undersigned attorney at (858) 720-9431.

Respectfully submitted,

Dated: February 27, 2012

/Anatoly S. Weiser/

Anatoly S. Weiser, Reg. No. 43,229
Acuity Law Group
3525 Del Mar Heights Road, #295
San Diego, CA 92130
(858) 720-9431

Electronic Acknowledgement Receipt	
EFS ID:	12164584
Application Number:	11475847
International Application Number:	
Confirmation Number:	9001
Title of Invention:	MULTIMEDIA DEVICE INTEGRATION SYSTEM
First Named Inventor/Applicant Name:	Ira Marlowe
Correspondence Address:	IRA M. MARLOWE - BLITZSAFE OF AMERICA, INC. 33 HONECK STREET ENGLEWOOD NJ 07631 US - -
Filer:	Anatoly Weiser.
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	27-FEB-2012
Filing Date:	27-JUN-2006
Time Stamp:	14:01:00
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Amendment after Notice of Allowance (Rule 312)	Amendment3-AfterPaymentOfIssueFee-Image.pdf	278315 2c77cdf249497a845c5a4a8f7c4bf5e26c7d21ac	no	3
Warnings:					
Information:					
		Total Files Size (in bytes):	278315		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

AMENDMENT OF THE SPECIFICATION

Please replace paragraph on lines 15-20 of page 1 of the specification, immediately following the RELATED APPLICATIONS heading, with the following amended paragraph:

-- This application is a continuation-in-part of U.S. Patent Application Serial No. 11/071,667, filed March 3, 2005; ~~2005, now U.S. Patent No. _____~~, which is a continuation-in-part of U.S. Patent Application Serial No. 10/732,909 filed December 10, 2003; ~~2003, now U.S. Patent No. _____~~, which is a continuation-in-part of U.S. Patent Application Serial No. 10/316,961 filed December 11, 2002, now U.S. Patent No. 7,489,786, ~~No. _____~~, the entire disclosures of which applications are each expressly incorporated herein by reference.--

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/475,847	06/27/2006	Ira Marlowe		9001

7590 03/01/2012

IRA M. MARLOWE
BLITZSAFE OF AMERICA, INC.
33 HONECK STREET
ENGLEWOOD, NJ 07631

EXAMINER	
MEI, XU	

ART UNIT	PAPER NUMBER
2614	

MAIL DATE	DELIVERY MODE
03/01/2012	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Response to Rule 312 Communication	Application No.	Applicant(s)
	11/475,847	MARLOWE
	Examiner	Art Unit
	MEI	2614

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address –

1. ☒ The amendment filed on *27 February 2012* under 37 CFR 1.312 has been considered, and has been:

   a) ☒ entered.

   b) ☐ entered as directed to matters of form not affecting the scope of the invention.

   c) ☐ disapproved because the amendment was filed after the payment of the issue fee.
   Any amendment filed after the date the issue fee is paid must be accompanied by a petition under 37 CFR 1.313(c)(1) and the required fee to withdraw the application from issue.

   d) ☐ disapproved. See explanation below.

   e) ☐ entered in part. See explanation below.

Publishing Division

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /X.M./

INFORMATION DISCLOSURE CITATION

(Use several sheets if necessary)

Docket Number (Optional)	Application Number
99879-00026	11/475,847
Applicant(s) Ira Marlowe	
Filing Date 06/27/2006	**Group Art Unit** 2618

U.S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	1	6,993,615	01/31/2006	Falcon	710	303	11/15/2002
Change(s) applied to document, /T.C.T./ 3/6/2012	2	~~6,629,164~~ 6629197	09/30/2003	Bhogal, et al.	711	111	11/03/2000
	3	6,653,948	11/25/2003	Kunimatsu, et al.	340	995.19	06/05/2000
	4	6,648,661	11/18/2003	Byrne, et al.	439	188	11/08/2002
	5	6,591,085	07/08/2003	Grady	455	42	07/17/2002

U.S. PATENT APPLICATION PUBLICATIONS

*EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	6	US 2005/0239434 A1	10/27/2002	Marlowe	455	345	03/03/2005
	7	US 2004/0151327 A1	08/05/2004	Marlowe	381	86	12/10/2003
	8	US 2004/0091123 A1	05/13/2004	Stark, et al.	381	86	11/08/2002
	9	US 2003/0215102 A1	11/20/2003	Marlowe	381	77	12/11/2002

FOREIGN PATENT DOCUMENTS

	REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation YES	Translation NO

OTHER DOCUMENTS *(Including Author, Title, Date, Pertinent Pages, Etc.)*

	10	VoiceBox Technologies, printout from website http://www.voiceboxtechnologies.com/auto.php (2 pages). 2001-2006.
	11	"Video: A Dashboard That is Really a PC," printout from website http://news.com.com/1606-2_3-6052333.html (3 pages). 2006.

EXAMINER	DATE CONSIDERED
/Xu Mei/	02/07/12

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP Section 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/475,847	04/10/2012	8155342		9001

7590 03/21/2012

IRA M. MARLOWE
BLITZSAFE OF AMERICA, INC.
33 HONECK STREET
ENGLEWOOD, NJ 07631

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 516 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

Ira Marlowe, Fort Lee, NJ;

Trials@uspto.gov
571-272-7822

Paper 19
Entered: April 27, 2016

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

UNIFIED PATENTS INC,
Petitioner

v.

BLITZSAFE TEXAS, LLC,
Patent Owner

Case IPR2016-00118
Patent 8,155,342 B2

Before JAMESON LEE, THOMAS L. GIANNETTI, and HUNG H. BUI, *Administrative Patent Judges.*

BUI, *Administrative Patent Judge.*

DECISION
Denying Institution of *Inter Partes* Review
37 C.F.R. § 42.108

I. INTRODUCTION

Petitioner, Unified Patents Inc., filed a Petition requesting an *inter partes* review of claims 1–25, 49, 73, 97, 120, and 121 of U.S. Patent No. 8,155,342 B2 (Ex. 1001, "the '342 patent"). Paper 1 ("Pet."). In response, Patent Owner, Blitzsafe Texas, LLC, filed a Preliminary Response. Paper 11 ("Prelim. Resp."). We have jurisdiction under 35 U.S.C. § 314, which provides that an *inter partes* review may not be instituted "unless . . . the information presented in the petition . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition."

Upon consideration of the arguments and evidence presented by Petitioner and Patent Owner, we are not persuaded that Petitioner has demonstrated a reasonable likelihood that it would prevail in showing the unpatentability of any one of claims 1–25, 49, 73, 97, 120, and 121 of the '342 patent. For reasons discussed below, we deny the Petition as to all challenges.

A. Related Matters

The '342 patent is involved in the following on-going litigations: (1) *Blitzsafe Texas, LLC v. Nissan Motor Co., Ltd. et al.*, 2-15-cv-01276, TXED, July 16, 2015; (2) *Blitzsafe Texas, LLC v. Toyota Motor Corp. et al.*, 2-15-cv-01277, TXED, July 16, 2015; (3) *Blitzsafe Texas, LLC v. Volkswagen Group of Am., Inc. et al.*, 2-15-cv-01278, TXED, July 16, 2015; (4) *Blitzsafe Texas, LLC v. Hyundai Motor Co. et al.*, 2-15-cv-01275, TXED, July 16, 2015; (5) *Blitzsafe Texas, LLC v. Honda Motor Co., Ltd. et al.*, 2-15-cv-

01274, TXED, July 16, 2015; (6) *Marlowe Patent Holdings LLC v. Dice Elects., LLC, et al.*, 3-10-cv-01199, NJD, March 5, 2010; and (7) *Card Verification Solutions, LLC v. JP Morgan Chase & Co.*, 1-13-cv-006338, ILND, September 4, 2013. Pet. 1–2.

Patent Owner also identifies other petitions requesting *inter partes* review of the '342 patent based on different prior art references, including: (1) *Toyota Motor Corp. v. Blitzsafe Texas, LLC*, IPR2016-00418, Petition for *Inter Partes* Review, (Dec. 30, 2015); and (2) *Toyota Motor Corp. v. Blitzsafe Texas, LLC*, IPR2016-00419, Petition for *Inter Partes* Review, (Dec. 30, 2015).

B. Real Party-in-Interest[1]

Petitioner certifies that Unified Patents Inc. is the real party-in-interest, and "further certifies that no other party exercised control or could exercise control over Unified's participation in this proceeding, the filing of this petition, or the conduct of any ensuing trial." Pet. 1. In support of this assertion, Petitioner files "Voluntary Interrogatory Responses," signed by its counsel and verified by its CEO. Ex. 1019.

---

[1] Patent Owner contends that the Petition fails to identify all real parties-in-interest, as required under 35 U.S.C. § 312(a)(2). Prelim. Resp. 4–10. However, because we do not institute *inter partes* review, we need not address the real-parties-in-interest (RPI) issue substantively.

C. The '342 Patent

The '342 patent relates to a multimedia device integration system that allows a plurality of "after-market" portable devices to be integrated into an existing car audio/video (stereo) system, via an "integration subsystem," while allowing information to be displayed on, and control to be provided from, the car audio/video system. *See* Ex. 1001, 2:44–54; Abstract. Examples of these portable devices include CD players, CD changers, digital media devices (e.g., MP3 players, Apple iPod, WMV players, portable media centers, and other devices), satellite receivers, DAB receivers, auxiliary input sources, video devices (e.g., DVD players), cellular telephones, or any combination thereof. *Id.*

The '342 patent claims are directed to certain embodiments where wireless integration is provided between a car audio/video system and a portable device, via an integration subsystem. Ex. 1001, 33:43–46.

Figure 18 shows an integration subsystem positioned within a portable device, and Figure 19 shows an integration subsystem positioned within a car audio/video system, as reproduced below.

FIG. 18

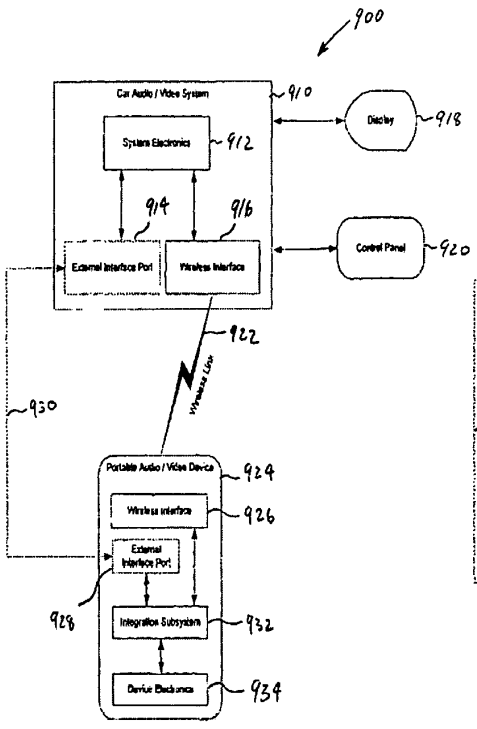
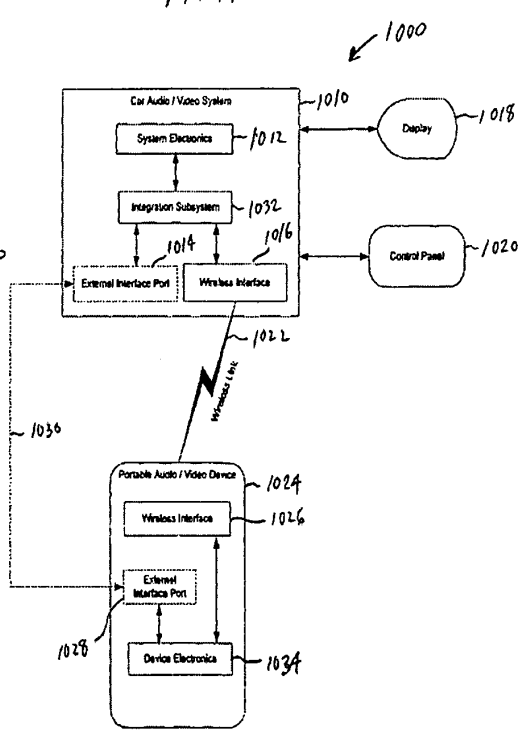


FIG. 19



Figures 18 and 19 of the '342 patent show integration subsystems 932 and 1032 positioned, respectively, within portable device 924 or within car audio/video system 1010.

As shown in Figure 18, integration subsystem 932 positioned within portable device 924 allows information (data and control signals) to be exchanged between portable device 924 and car audio/video system 910, and processes and formats data accordingly so that instructions and data from car audio/video system 910 are processed by portable device 924, and vice versa. *See id.* at 33:43–35:62; Fig. 18. Similarly, as shown in Figure 19, integration subsystem 1032 positioned within car audio/video system 1010 allows information (data and control signals) to be exchanged between

portable device 1024 and car audio/video system 1010, and processes and formats data accordingly so that instructions and data from car audio/video system 1010 are processed by portable device 1024, and vice versa. *See id.* at 33:43–35:62; Fig. 19.

D. Illustrative Claim

Of the challenged claims, claims 1, 25, 49, 73, 97, 120, and 121 are independent. Claims 2–24 depend, directly or indirectly, from claim 1.

Claim 1, reproduced below, is illustrative.

> 1. A multimedia device integration system, comprising:
>
> an integration subsystem in communication with a portable device, the portable device external to a car audio/video system; and
>
> a first wireless interface in communication with said integration subsystem, said first wireless interface establishing a wireless communication link with a second wireless interface in communication with the car audio/video system,
>
> wherein said integration subsystem obtains information about an audio file stored on the portable device, transmits the information over said wireless communication link to the car audio/video system for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the audio file in response to a user selecting the audio file using controls of the car audio/video system, and transmits audio generated by the portable device over said wireless communication link to the car audio/video system for playing on the car audio/video system.

Ex. 1001, 39:5–25:24.

Claim 25 is substantially identical to claim 1, except that the audio file is "received by" instead of "stored on" the portable device. *Id.* at 40:50–

41:2. Similarly, claim 49 is substantially identical to claim 1, but leaves out the phrase "integration subsystem in communication with the portable device," and recites the second wireless interface as being with the portable device, instead of with the car audio/video system. *Id.* at 42:29–49. Claim 73 is substantially identical to claim 49, except that the audio file is "received by" instead of "stored on" the portable device. *Id.* at 44:4–23.

Claim 97 is similar to claim 1, but adds that the car stereo control commands are in a format incompatible with the portable device, and are re-formatted for purposes of compatibility. *Id.* at 45:45–63. Likewise, claim 120 is similar to claim 1, but adds that the data from the portable device is in a format incompatible with the car audio/video device, and is then re-formatted for purposes of compatibility. *Id.* at 46:63–47:18. Claim 121 is also similar to claim 1, but requires separate wireless links with both the portable device and the car audio/video system. *Id.* at 47:19–48:20.

E. Prior Art Relied Upon

Petitioner relies upon the following prior art references:

Ohmura	US 2001/0028717 A1	Oct. 11, 2001	(Ex. 1004)
Owens	US 2002/0084910 A1	July 4, 2002	(Ex. 1005)
Ahn	WO 02/096137 A1	Nov. 28, 2002	(Ex. 1006)
Coon	US 6,539,358 B1	Mar. 25, 2003	(Ex. 1007)
Beckert	US 6,175,789 B1	Jan. 16, 2001	(Ex. 1008)
Perry	US 2003/0025830 A1	Feb. 6, 2003	(Ex. 1010)
Flick	US 2001/0029415 A1	Oct. 11, 2001	(Ex. 1011)
Tranchina	US 7,493,645 B1	Feb. 17, 2009	(Ex. 1012)
Lutter	US 2002/0196134 A1	Dec. 26, 2002	(Ex. 1013)
McConnell	US 6,608,399 B2	Aug. 19, 2003	(Ex. 1014)
Eiche	US 2002/0137505 A1	Sept. 26, 2002	(Ex. 1015)

Petitioner also relies on the Declaration of Dr. Prasant Mohapatra ("Mohapatra Decl."). Ex. 1002.

F. Asserted Grounds of Unpatentability

Petitioner challenges claims 1–25, 49, 73, 97, 120, and 121 of the '342 patent under 35 U.S.C. § 102[2] and § 103(a) on the following grounds:

Challenged Claims	Basis	References
Claims 1–4 and 49	§ 102	Ohmura
Claims 1–4 and 49	§ 103(a)	Owens and Ahn
Claims 25 and 73	§ 103(a)	Ohmura and Anh
Claims 5 and 97	§ 103(a)	Ohmura and Flick
Claims 5 and 97	§ 103(a)	Owens, Ahn, and Flick
Claims 6 and 120	§ 103(a)	Ohmura and Tranchina
Claims 6 and 120	§ 103(a)	Owens, Anh, and Tranchina
Claims 7–10	§ 103(a)	Ohmura and Coon
Claims 7–10	§ 103(a)	Owens, Ahn, and Coon
Claim 11	§ 103(a)	Ohmura and Lutter
Claim 11	§ 103(a)	Owens, Ahn, and Lutter
Claims 12–18, 20–21, and 23–24	§ 103(a)	Ohmura and McConnell
Claims 12–18, 20–21, and 23–24	§ 103(a)	Owens, Ahn, and McConnell
Claim 19	§ 103(a)	Ohmura and Beckert

[2] Petitioner does not identify the subsection of 35 U.S.C. § 102 for anticipation based on Ohmura. Nevertheless, in this case no such identification is necessary because the reference does not disclose all elements of any claim.

Challenged Claims	Basis	References
Claim 19	§ 103(a)	Owens and Ahn
Claim 22	§ 103(a)	Ohmura, McConnell, and Tranchina
Claim 22	§ 103(a)	Owens, Ahn, McConnell, and Tranchina
Claim 121	§ 103(a)	Ohmura and Eiche
Claim 121	§ 103(a)	Owens, Ahn, and Eiche

II. ANALYSIS

A. Claim Construction

In an *inter partes* review, claim terms in an unexpired patent are given their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *see also In re Cuozzo Speed Techs., LLC*, 778 F.3d 1271, 1281–1282 (Fed. Cir. 2015), *cert. granted sub nom. Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 890 (mem.) (2016). Even under the rule of broadest reasonable interpretation, claim terms are given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

Petitioner proposes constructions for two claim terms: (1) "integration subsystem" and (2) "multimedia device integration system" as recited in challenged claims 1–25, 49, 73, 97, 120, and 121. Pet. 15–16. The term "multimedia device integration system" is recited as a preamble of each of independent claims 1, 25, 49, 73, 97, and 120, whereas the term "integration

subsystem" is recited in the body of each independent claim 1, 25, 49, 73, 97, 120, and 121.

Petitioner proposes that the term "integration subsystem" means "a processor and associated software and memory." Pet. 15. According to Petitioner, the '342 patent simply shows a box labelled "integration subsystem" positioned within the portable device or within the car audio/video system, shown in Figures 18–23, and describes "integration" as being handled by a microcontroller to perform the functions: "obtaining information about the audio file, transmitting a control command to select a file, and instructing the audio device to transmit the file." *Id.* at 15 (citing Ex. 1001, 8:64–9:19, 13:9–19).

Patent Owner responds that a construction of "integration subsystem" is not necessary, but if such a construction were necessary, Petitioner's proffered construction of "integration subsystem" is incorrect and inconsistent with its ordinary and customary meaning in light of the claims and Specification of the '342 patent. Prelim. Resp. 11–13. Specifically, Patent Owner argues Petitioner's proposed construction fails to account for the special definition of the term "integration" described in the '342 patent's Specification and the plain meaning of the term "subsystem" itself, which requires that the subsystem be subordinate to another system. *Id.* at 12–13.

We agree with Patent Owner that a proper construction of "integration subsystem" must serve the purpose of "integration" and must be a "subsystem" as described in the '342 patent and as recited in the claims. *Id.* at 13. At the outset, we note the term "integration" is expressly defined in the '342 patent as follows:

> As used herein, the term "*integration*" or "*integrated*" is intended to mean [1] connecting one or more external devices or inputs to an existing car stereo or video system via an interface, [2] processing and handling signals, audio, and/or video information, [3] allowing a user to control the [external] devices via the car stereo or video system, and [4] displaying data from the devices on the car stereo or video system.

Ex. 1001, 8:64–9:3 (emphasis added) (brackets added).

When the specification of a patent contains a "special definition given to a claim term by the patentee," that definition controls interpretation of the term as it is used in the claim. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1316 (Fed. Cir. 2005) (en banc).

The term "integration subsystem" is used in the '342 patent in relation to wireless integration embodiments between an existing car audio/video system and a portable device, shown in Figures 18–24. Ex. 1001, 33:43–38:67, Figs. 18–24. In particular, the '342 patent's Specification describes the "integration subsystem" as being positioned within the portable device, shown in Figure 18, or within the car audio/video system, shown in Figure 19. Ex. 1001, 34:9–13, 35:23–28; Figures 18–19.

Based on the special definition of the term "integration" provided by the '342 patent, we construe the term "integration subsystem" as meaning:

> A subsystem to perform at least: (1) connecting one or more portable devices or inputs to the car audio/video system via an interface, (2) processing and handling signals, audio, and/or video information, (3) allowing a user to control the one or more portable devices via the car audio/video system, and (4) displaying data from the one or more portable devices on the car audio/video system.

With respect to the term "multimedia device integration system," Petitioner proposes that term as meaning "a system that provide [sic] audio or video and a display." Pet. 15–16. Patent Owner responds that a construction of "multimedia device integration system" is not necessary, but if such a construction were necessary, Petitioner's proffered construction of "integration subsystem" is incorrect for failure to account for the "integration" limitation. Prelim. Resp. 14.

We agree with Patent Owner. Nevertheless, having construed the term "integration subsystem," we are not persuaded that an express construction of the term "multimedia device integration system" is necessary except to say simply that the integration system must perform the "integration" function defined in the Specification of the '342 patent. *See Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) ("[O]nly those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy.")

B. Legal Standard for 35 U.S.C. §§ 102 & 103(a)

Having considered the meaning of the claims, we turn next to whether claims 1–25, 49, 73, 97, 120, and 121 of the '342 patent are unpatentable under 35 U.S.C. §§ 102 & 103(a) in view of the prior art submitted by Petitioner. A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of Cal.*, 814 F.2d 628, 631 (Fed. Cir. 1987).

Obviousness is determined on the basis of underlying factual inquiries, including: (1) the scope and content of the prior art; (2) differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) secondary considerations of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). A patent claim is unpatentable under 35 U.S.C. § 103 if *the differences* between the claimed subject matter and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007) (emphasis added). However, a conclusion of obviousness "cannot be sustained with mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006).

For this decision, we determine that no express finding on the level of ordinary skill in the art is necessary, and that the level of ordinary skill in the art is reflected by the prior art of record. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995); *In re Oelrich*, 579 F.2d 86, 91 (CCPA 1978).

C. Alleged Anticipation of Claims 1–4 and 49 based on Ohmura

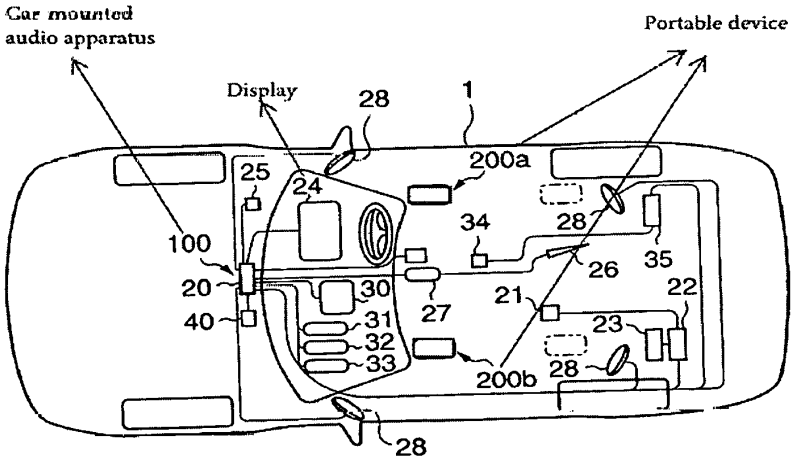
Petitioner contends that claims 1–4 and 49 are anticipated by Ohmura under 35 U.S.C. § 102. Pet. 17–24. To support its contentions, Petitioner provides a claim chart and detailed explanations as to how Ohmura allegedly meets each claim limitation. *Id.* at 21–22. Petitioner also relies upon a

Declaration of Dr. Prasant Mohapatra, who has been retained as an expert witness by Petitioner for the instant proceeding. Ex. 1002. For the reasons that follow, Petitioner has not shown a reasonable likelihood that it would prevail in establishing anticipation of any one of claims 1–4 and 49 by Ohmura.

(1) Ohmura: Exhibit 1004

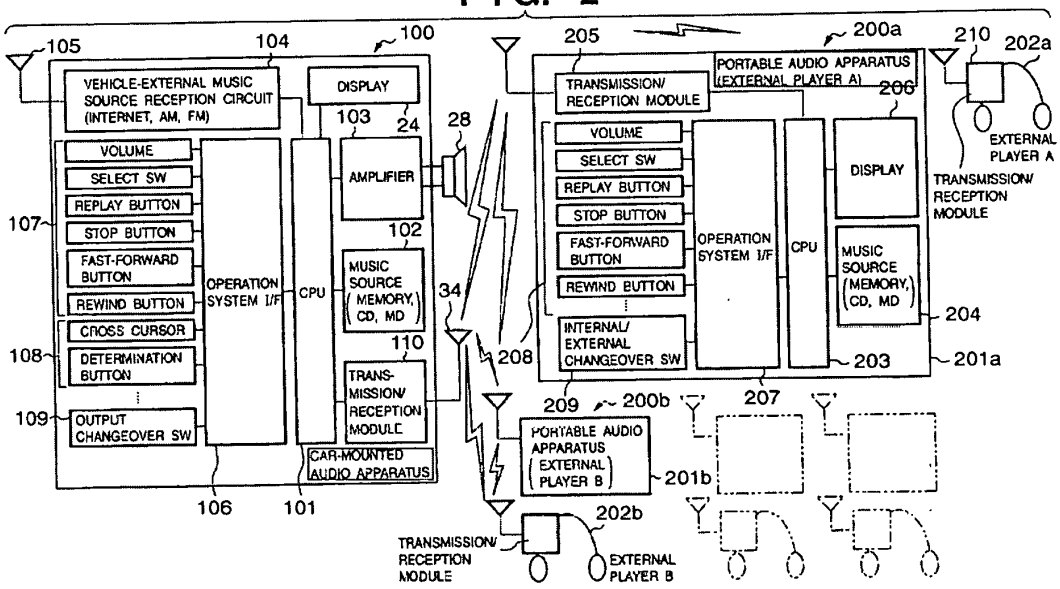
Ohmura discloses car audio/video system 100 mounted in vehicle 1 and portable devices 200a–200b carried into vehicle 1 by passengers that communicate wirelessly with car audio/video system 100, shown in Figures 1 and 2. Ex. 1004 ¶ 56, Abstract. Ohmura's Figures 1 and 2 are reproduced below with additional markings inserted, in red, for illustration.

FIG. 1



Ohmura's Figure 1 shows car audio/video system 100 with display 24 mounted in vehicle 1 and portable devices 200a–200b that communicate wirelessly with car audio/video system 100.

FIG. 2



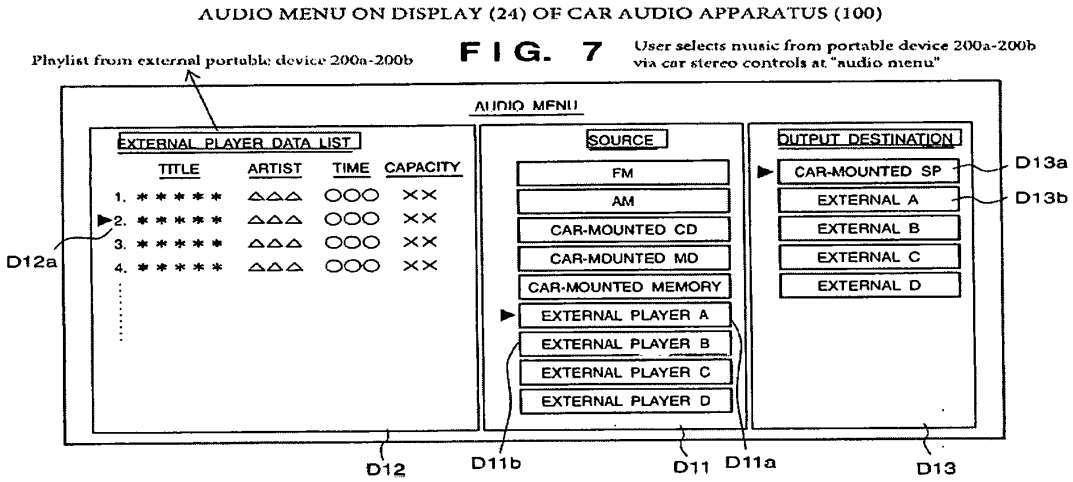
Ohmura's Figure 2 shows car audio/video system 100 with display 24 that communicates wirelessly with portable devices 200a–200b, via Bluetooth.

As shown in Ohmura's Figure 2, car audio/video system 100 and portable devices 200a–200b transmit/receive music data to/from each other via transmission/reception modules 110, 205[3] using a short-range radio such as Bluetooth, and allow car audio system 100 to control portable devices 200a–200b. Ex. 1004 ¶¶ 84–85, 89.

Ohmura describes the use of an "audio menu" on display 24 of car audio/video system 100, as shown in Figure 7, to provide a visual display of a playlist of music data (e.g., music titles, artist names and data volumes) for

[3] In Ohmura's Figure 2, only portable device 200a is shown in detail. However, it is understood that portable device 200b has the same transmission/reception module as portable device 200a.

user selection of music data from a music source (e.g., FM, AM, car-mounted CD or external portable devices A–D) for an output destination (e.g., car-mounted speakers or external portable devices A–D). Ex. 1004 ¶¶ 113–115. Figure 7 of Ohmura is reproduced below with additional markings inserted, in red, for illustration.



Ohmura's Figure 7 shows an "audio menu" screen provided on display 24 of car audio/video system 100 to allow a user to select music data from a music source D11 (portable devices 200a–200b) for an output destination D13.

(2) Analysis of Anticipation

Independent claims 1 and 49 each recite a "multimedia device integration system" which comprises: [A] "an integration subsystem" and [B] first and second wireless interfaces, and requires the [A] "integration subsystem" *inter alia:* [C] "instructs the portable device to play the audio file in response to a user selecting the audio file using controls of the car audio/video system, and [transmits/receives] *audio generated by the portable device* over said wireless communication link to the car audio/video

system for playing on the car audio/video system." Ex. 1001, 39:6–24 (emphasis added).

Based on its own proffered construction of "integration subsystem" as "a processor and associated software and memory" and Dr. Mohapatra's testimony (Ex. 1002 ¶¶ 20–24), Petitioner argues that (1) the claimed [A] "integration subsystem" is met by Ohmura's operating system 106 and CPU 101 of the car audio/video system 100 or the operating system 207 and CPU 203 of the portable device 200a–200b and its inherent associated memory, shown in Figure 2; and (2) the claimed [B] "first and second wireless interfaces" are met by the "transmission/reception modules" 110 (car audio/video system) and 205 (portable device). Pet. 8–9.

Patent Owner does not dispute Ohmura's "transmission/reception modules" 110, 205 as the claimed [B] "first and second wireless interfaces." However, Patent Owner argues that: (1) Ohmura's operating system does not constitute "software" and (2) there is no memory inherently present in Ohmura's CPU. Prelim. Resp. 18–19. According to Patent Owner, Ohmura's operating system can also be implemented purely as hardware such as a field-programmable gate array (FPGA). *Id.* at 18.

Neither party sufficiently addresses the claim limitation at issue. As previously discussed, our construction of "integration subsystem" is:

> A subsystem to perform at least: (1) connecting one or more portable devices or inputs to the car audio/video system via an interface, (2) processing and handling signals, audio, and/or video information, (3) allowing a user to control the one or more portable devices via the car audio/video system, and (4) displaying data from the one or more portable devices on the car audio/video system.

Based on our construction, we are not sufficiently persuaded that Ohmura's CPU 101, 203 positioned within car audio system 100 or portable device 200a–200b, shown in Figures 2 and 7, alone can be said to meet the "integration subsystem" recited in independent claims 1 and 49. Petitioner does not account for or direct us to where each of the functions performed by the claimed "integration subsystem" is found in Ohmura's CPU as is required by 37 C.F.R. § 42.104(b)(4).

Claims 1 and 49 also require that the [A] "integration subsystem ... [C] instructs the portable device to play the audio file in response to a user selecting the audio file using controls of the car audio/video system, and [transmits/receives] *audio generated by the portable device* over said wireless communication link to the car audio/video system for playing on the car audio/video system." Ex. 1001, 39:14–24, 42:37–47 (emphasis added). In claim 1, the integration subsystem instructs the portable device to play an audio file and transmits the audio generated by the portable device over a wireless link to the car audio/video system. In claim 49, the integration subsystem also instructs the portable device to play an audio file, but the integration subsystem receives the audio generated by the portable device over the wireless link for playing on the car audio/video system.[4] In both claims, the "audio generated by the portable device" is the result of

[4] The difference between Claims 1 and 49 is that in Claim 1, the integration subsystem is connected to the car audio/video system by a wireless link, whereas in Claim 49, the integration subsystem is connected to the portable device by a wireless link. In both claims, however, the portable device plays the audio file. Ex. 1001, 39:14–24, 42:37–47.

playing the audio file. We refer to the requirement that audio generated by the portable device as the result of playing the audio file as "the audio generated by the portable device" limitation.

Petitioner contends that the additional [C] functions of the claimed [A] "integration subsystem" are met by Ohmura's CPU 101 and associated functions, shown in Figure 4, including user selection of an audio file from a play list from the portable device, via "audio menu" screen provided on display 24 of the car audio/video apparatus 100, shown in Figure 7, described in paragraphs 84, 99, 111, 113, and 204 as outlined in a claim chart at pages 21–22 of the Petition. Pet. 19–22 (citing Ohmura ¶¶ 84, 99, 111, 113, 204). In particular, Petitioner argue that the additional [C] functions "of controlling the portable device with the car stereo controls is shown in paragraph 111" of Ohmura. *Id.* at 20.

Patent Owner responds that Ohmura does not disclose the "audio generated by the portable device" limitation as recited in the challenged claims 1 and 49. Prelim. Resp. 19–22. According to Patent Owner, Ohmura does not disclose that the portable device plays an audio file because Ohmura teaches that audio data ("music file") is stored on the car audio/video system and played at the car audio/video system. *Id.* at 20 (citing Ex. 1004 ¶¶ 68–69). Likewise, the cited paragraphs of Ohmura outlined in the claim chart only describe: (1) user selection of an audio file from a list of audio files and (2) audio generated by the car audio/video system. *Id.* at 20–22 (citing Exhibit 1004 ¶¶ 69, 84, 113). The cited paragraphs of Ohmura do not describe the "audio generated by the portable device" limitation as recited in the challenged claims 1 and 49. *Id.*

We agree with Patent Owner. According to Ohmura, when music is selected by a user from a portable device 200a–200b, for an output destination D13, i.e., speakers in the vehicle shown in Ohmura's Figure 7, music data (i.e., music file) is sent from the portable device 200a–200b and received at the car audio/video system 100. *See* Ex. 1004 ¶¶ 71, 113. That music data (music file) is temporarily stored in an information storage unit of the car audio system 100 and is then reproduced or outputted as music (audio) from the speakers 28 in the vehicle. Ex. 1004 ¶¶ 119–122. In other words, Ohmura's music data, i.e., the music file, is transferred from the portable device to the car audio/video system. *Id.* at ¶ 84. According to Ohmura, audio is generated on the car audio/video system by playing a transferred music file and *not* generated on the portable device by playing a music file on the portable device as is required by the claims.

Because Ohmura does not disclose the "integration subsystem" and the "audio generated by the portable device" limitations, we are not persuaded that Petitioner has established a reasonable likelihood that independent claims 1 and 49 and dependent claims 2–4 are anticipated by Ohmura under 35 U.S.C. § 102(b).

D. Alleged Obviousness of Remaining Claims 5–25, 73, 97, 120, and 121 based on Ohmura and Various Secondary References, including Ahn, Coon, Beckert, Flick, Tranchina, Lutter, McConnell, and Eiche.

Claims 25, 73, 97, 120, and 121 are independent and each also recites the "integration subsystem" and the "audio generated by the portable device" limitations of challenged claims 1 and 49 in addition to other

limitations not disclosed by Ohmura. For example, claims 25 and 73 each further require the audio file to be "received by" instead of "stored on" the portable device (e.g., the portable device that streams or receives music). Ex. 1001, 40:50–41:2. Claim 97 further requires the car stereo control commands to be in a format incompatible with the portable device, and to be re-formatted for purposes of compatibility. *Id.* at 45:45–63. Likewise, claim 120 further requires the data from the portable device is in a format incompatible with the car audio/video device, and is then re-formatted for purposes of compatibility. *Id.* at 46:63–47:18. Claim 121 further requires the integration subsystem have separate wireless links with both the portable device and the car audio/video system. *Id.* at 47:19–48:20.

Petitioner contends these additional features are disclosed in several secondary references. For example, Petitioner alleges: (1) music streaming feature recited in claims 25 and 73 is allegedly disclosed by Ahn (Pet. 34–35); (2) conversion of incompatible control signals recited in claim 97 is allegedly disclosed by Flick (Pet. 35–37); (3) conversion of incompatible data recited in claim 120 is allegedly disclosed by Tranchina (Pet. 37–39); and (4) separate wireless links with both the portable device and the car audio system recited in claim 121 are allegedly disclosed by Eiche (Pet. 55–56) in order to support the conclusion of obviousness. Pet. 34–39, 55–56.

Because Ohmura does not disclose the "integration subsystem" and the "audio generated by the portable device" limitations and these secondary references do not remedy the deficiencies of Ohmura, we are not persuaded that Petitioner has established a reasonable likelihood that the remaining independent claims 25, 73, 97, 120, and 121 are unpatentable under

35 U.S.C. § 103(a) as obvious over Ohmura in view of these secondary references.

Similarly, claims 5–24 depend, directly or indirectly, from independent claim 1, and each further recites additional aspects of integration, control signals and data format conversion, voice recognition, speech synthesizer, and different types of portable devices. Petitioner contends these additional features are disclosed by Flick (Pet. 37), Tranchina (Pet. 37–40, 53), Coon (Pet. 40–42), Lutter (Pet. 44–45), McConnell (Pet. 46–52), and Beckert (Pet. 52–53). Again, because Ohmura does not disclose the "integration subsystem" and the "audio generated by the portable device" limitations and these secondary references do not remedy the deficiencies of Ohmura, we are not persuaded that Petitioner has established a reasonable likelihood that dependent claims 5–24 are unpatentable under 35 U.S.C. § 103(a) as obvious over Ohmura in view of these secondary references.

E. Alleged Obviousness of Claims 1–4 and 49 based on Owens and Ahn

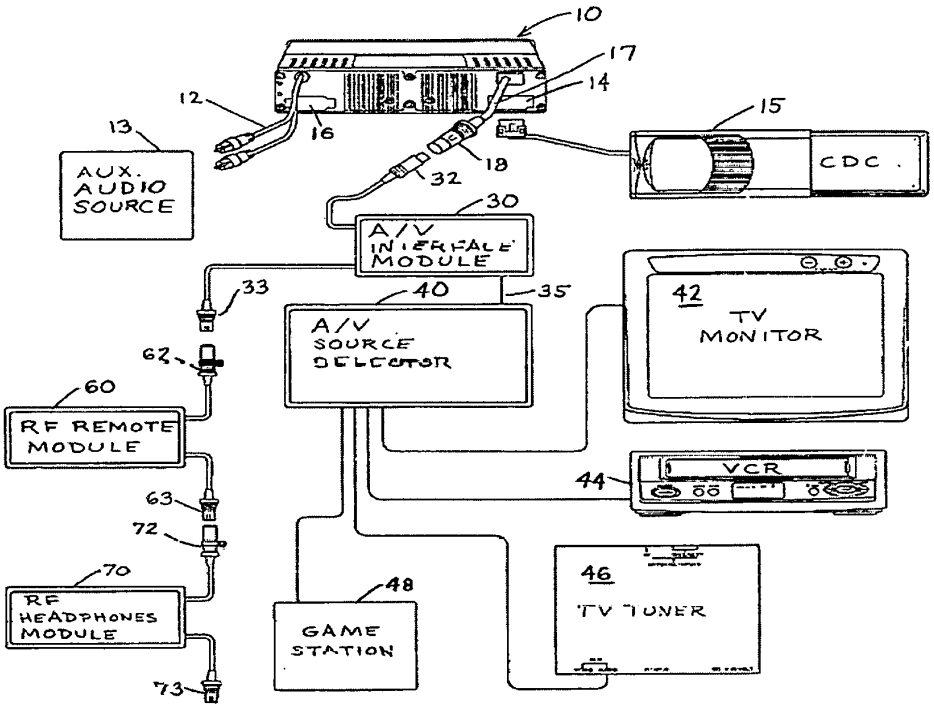
Petitioner contends that claims 1–4 and 49 are unpatentable under 35 U.S.C. § 103(a) as obvious over the combination of Owens and Ahn. Pet. 24–34. To support its contentions, Petitioner provides a claim chart and detailed explanations as to how the combination of Owens and Ahn meets each claim limitation. *Id.* at 31–32. Petitioner also relies upon the

Declaration of Dr. Mohapatra to support the assertion of obviousness. Ex. 1002 (citing ¶¶ 29–44).

We have considered Petitioner's analysis and supporting evidence, as well as Patent Owner's arguments presented in the Preliminary Response (Prelim. Resp. 23–34), and are not persuaded that Petitioner has demonstrated a reasonable likelihood that it would prevail on this challenge.

(1) Owens: Exhibit 1005

Owens describes traditional "head unit" 10 of a car audio system to allow various expansion modules to be added-on and connected thereto, via traditional cables 12, 14, 16–18, including, for example, CD changer (CDC) 15 and A/V interface module 30 connecting to a variety of other devices, shown in Figure 1. Ex. 1005 ¶¶ 6, 10; Abstract. Figure 1 of Owens is reproduced below.



Owens' Figure 1 shows "head unit" 10 of a car audio system to provide add-on expansion modules, via traditional cables 12, 14, 16–18, including CDC 15 and A/V interface module 30.

Owens describes a schematic circuit diagram of "head unit" 10, shown in Figure 9, in terms of a dedicated integrated circuit (IC) including a "master microprocessor" to perform all the system selection functions, to send/receive signals from various expansion modules, and to control all the indicia which appear on the display 21. Ex. 1005 ¶ 34. Figure 9 of Owens is reproduced below.

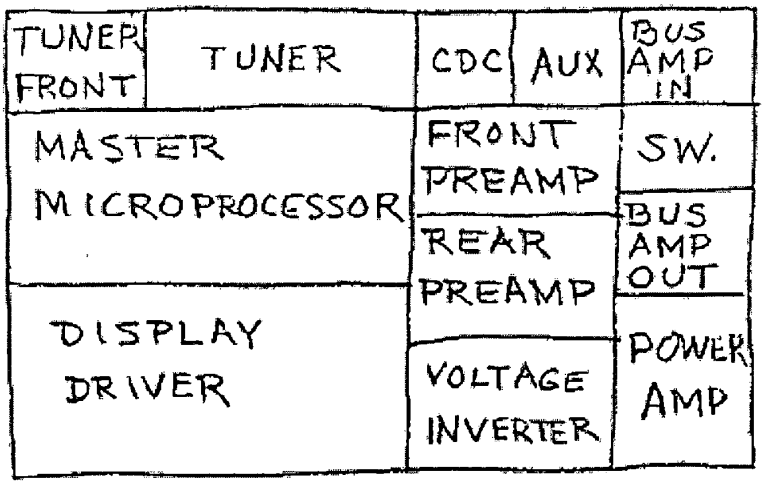
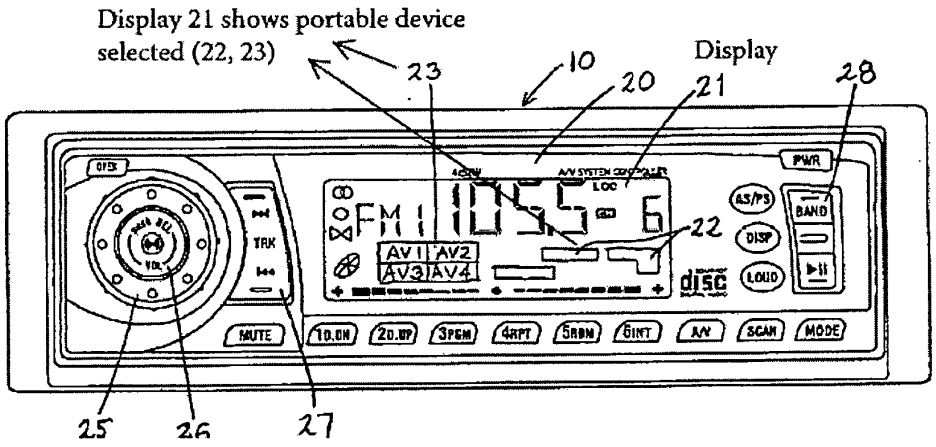


FIG. 9

Owens' Figure 9 shows a dedicated integrated circuit (IC) in head unit 10 including a "master microprocessor."

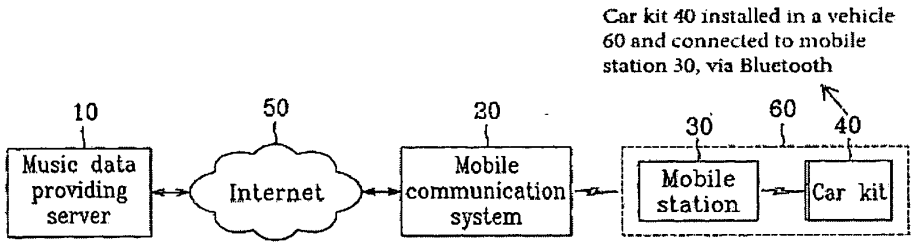
Owens shows car stereo LCD display 21 and various controls to provide a visual display of portable devices selected 22, 23, as shown in Figure 10. Ex. 1005 ¶¶ 35–36. Figure 10 of Owens is reproduced below with additional markings inserted, in red.



Owens' Figure 10 shows LCD display 21 of a car audio system to display added-on portable devices selected 22, 23.

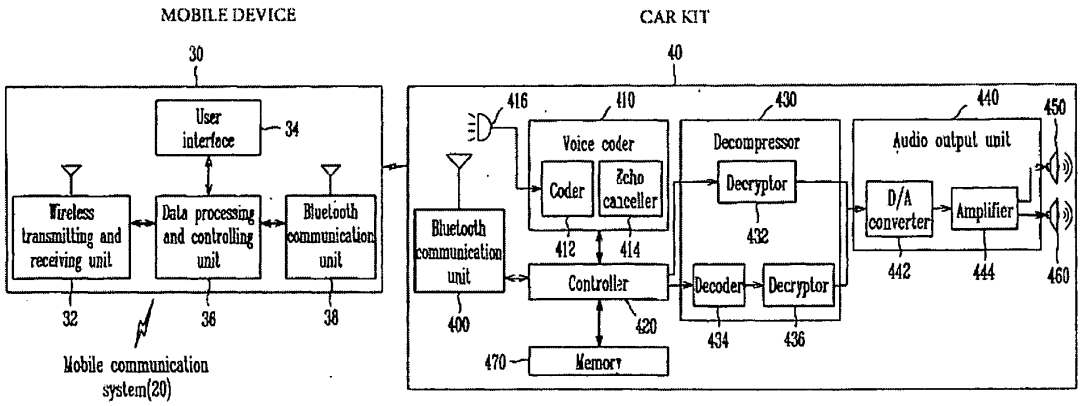
(2) Ahn: Exhibit 1006

Ahn describes an online music providing system, shown in Figures 1 and 2, to stream music over Internet 50 wirelessly to mobile device 30, which in turn provides the music to car audio system (car kit) 40, via a wireless Bluetooth. Ex. 1006, Abstract. Ahn's Figure 1 is reproduced below with additional markings inserted, in red, for illustration:



Ahn's Figure 1 shows an online music providing system, via car audio system (car kit) 40.

Ahn describes the use of Bluetooth transceiver 38 in mobile device 30 and Bluetooth transceiver 400 in car audio system (car kit) 40 for wireless communication, as reproduced below with additional markings.



Ahn's Figure 2 shows the use of Bluetooth transceivers 38, 400 (in red box) in mobile device 30 and car audio system (car kit) 40.

(3) Analysis of Obviousness

Petitioner relies on Owens for allegedly disclosing all aspects of the challenged claims 1 and 49, except for the wireless Bluetooth connection disclosed by Ahn. Pet. 28–30. Petitioner then concludes that "it would have been obvious to substitute the Bluetooth interface of *Ahn* for the wired bus of *Owens*" so as "to provide a more flexible wireless connection in place of the wired connection of *Owens*." *Id.* at 29, 30. Petitioner also concludes that because Owens also describes the use of a wireless remote control of the "head unit," a person skilled in the art also would look for wireless implementations of data and other control functions, as shown in Ahn. *Id.* at 30 (citing Owens ¶¶ 40–41).

In particular, Petitioner argues that: (1) the claimed [A] "integration subsystem" is met by Owens' "master microprocessor" of the car audio system, shown in Owens' Figure 9 and its inherent associated memory; and (2) the claimed [B] "first and second wireless interfaces" are met by what Petitioner describes as "the 'transmission/reception modules' 110 (car audio/video system) and 205 (portable apparatus) of *Ahn*."[5] *Id.* at 29. Petitioner also argues that the additional claimed [C] functions of controlling the portable device with the car stereo controls performed by the claimed

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[5] Ahn does not disclose any "'transmission/reception modules' 110 (car audio/video system) and 205 (portable apparatus)" as alleged by Petitioner. Instead, Ahn discloses the use of Bluetooth communication unit 400 (car audio system) and 38 (portable device), as shown in Figure 2. It appears that Petitioner has cut and pasted that portion from the proposed ground of anticipation based on Ohmura from page 20 of the Petition.

[A] "integration subsystem" are met by the operations of Owens' "master microprocessor" outlined in a claim chart at pages 31–32 of the Petition. *Id.* at 29–30 (citing Owens ¶¶ 6, 34–35, 37, 39).

Patent Owner responds that Petitioner's *Graham* analysis is deficient for several reasons including the failure to: (1) specify the differences between the claim and the asserted references; (2) articulate with particularity where each element of the claims are found; and (3) specify why one of ordinary skill in the art would have been motivated to modify one or more of the references to arrive at the claim. Prelim. Resp. 23–34 (citing 37 C.F.R. § 42.104(b)(4)). For example, Patent Owner contends the Petitioner fails to identify how either Owens or Ahn teaches or suggests:

> (i) "an integration subsystem" and (ii) "instructs the portable device to play the audio file in response to a user selecting the audio file using controls of the car audio/video system and [transmits/receives] audio generated by the portable device . . ." or a "portable device" either alone or in combination.

Id. at 26 (emphasis added). According to Patent Owner, Petitioner fails to account for: (1) the "associated software and memory" with Owens' "master microprocessor" shown in Figure 9; and (2) Owens' "master microprocessor" "instructs the portable device to play the audio file ... and [transmits/receives] audio generated by the portable device" as recited in the challenged claims 1 and 49. *Id.* at 27–28 (emphasis added).

Patent Owner further contends Petitioner's reason to combine Owens and Ahn is conclusory because "Petitioner does not explain how or why a wireless connection is more flexible than a wired connection, ignores any drawbacks or challenges in substituting a wireless connection for a wired

connection, and does not identify the specific changes that would be required to implement the substitution." *Id.* at 30. For example, Patent Owner argues there is no support for the premise that Owens' disclosure of a remote control, which transmits only control signals to a head unit, would have motivated an artisan to use a wireless interface for (1) transmitting control signals *from the integration subsystem to the portable device*, and (2) for transmitting *audio* generated by the portable device to the integration subsystem. *Id.* at 31.

We agree with Patent Owner in part. First, as previously discussed, our construction of "integration subsystem" is:

> A subsystem to perform at least: (1) connecting one or more portable devices or inputs to the car audio/video system via an interface, (2) processing and handling signals, audio, and/or video information, (3) allowing a user to control the one or more portable devices via the car audio/video system, and (4) displaying data from the one or more portable devices on the car audio/video system.

Based on our construction, we are not persuaded that Owens' master microprocessor installed at "head unit" 10 of the car audio system, shown in Owens' Figure 9, alone can be said to meet the "integration subsystem" recited in independent claims 1 and 49. Petitioner does not account for or direct us to where each of the functions performed by the claimed "integration subsystem" is found in Owens' master microprocessor as required by 37 C.F.R. § 42.104(b)(4).

Second, we are also not persuaded that Owens' "master microprocessor" in the form of a dedicated integrated circuit (IC) shown in

Figure 9, "instructs the portable device to play the audio file ... and [transmits/receives] audio generated by the portable device" in the manner recited in the challenged claims 1 and 49. Rather, Owens' "master microprocessor" is only described as performing "all the system selection functions as may be selected by the menu and remote controls," and sending and receiving "signals to the various peripherals in clocked time slots." *See* Owens, Exhibit 1005 ¶ 34, Figure 9. Likewise, Owen's Figure 9 only shows the dedicated integrated circuit (IC) installed at "head unit" 10 of the car audio system, and not at the alleged "portable device," which Petition contends is the CD changer in Owens. *Id.* Contrary to Petitioner's contention, Owen's disclosure is insufficient to establish the "integration" functions of the claimed "integration subsystem" and the specific relationship between the claimed "integration subsystem" and the portable device, i.e., instructing the portable device to play the audio file and then transmitting/receiving "audio generated by the portable device" as the result of playing the audio file in the manner suggested by the claims.

Third, "a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art." *KSR*, 550 U.S. at 418. A determination of unpatentability on a ground of obviousness must include "articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *Id.* (quoting *In re Kahn*, 441 F.3d at 988). The reasoning is important "because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known."

Id. at 418–19. Petitioner must not only articulate a reason to combine the teachings of Owens and Ahn supported by "some rational underpinnings," but must also show that the combination of Owens and Ahn meets the subject matter of the '342 patent with a reasonable expectation of success. *See PAR Pharm., Inc. v. TWI Pharm., Inc.*, 773 F.3d 1186, 1193 (Fed. Cir. 2014).

Here, because Owens' "master microprocessor" fails to account for the claimed "integration subsystem" including (1) its "integration" functions and (2) the "audio generated by the portable device" limitation, we are not persuaded that the proposed modification of Owens to incorporate wireless Bluetooth connections as disclosed by Ahn would arrive at the subject matter of the '342 patent. For example, incorporating the wireless Bluetooth connections as disclosed by Ahn into Owens' "head unit" for a car audio system equipped with traditional cables for added-on expansion modules may allow for Owens' "head unit" of the car audio system to communicate with Ahn's mobile device, via Bluetooth. However, Owen's "head unit" still does not and cannot instruct Ahn's mobile device or any other portable device to play the audio file and transmit/receive "audio generated by the portable device" as the result of playing the audio file in the manner suggested by the claims.

Because neither Owens nor Ahn discloses the "integration subsystem" and the "audio generated by the portable device" limitations and because Petitioner's proposed modification of Owens to incorporate wireless Bluetooth connections as disclosed by Ahn fails to arrive at the subject matter of the '342 patent, we are not persuaded that Petitioner has

established a reasonable likelihood that independent claims 1 and 49 and dependent claims 2–4 are unpatentable under 35 U.S.C. § 103(a) as obvious over Owens and Ahn.

F. Alleged Obviousness of Remaining Claims 5–25, 73, 97, 120, and 121 based on Owens, Ahn and Other Secondary References, including Flick, Tranchina, Coon, Lutter, McConnell, and Eiche.

Claims 25, 73, 97, 120, and 121 are independent and each recite the "integration subsystem" and the "audio generated by the portable device" limitations recited in the challenged claims 1 and 49 in combination with additional features not said to be disclosed by either Owens or Ahn. Similarly, claims 5–24 depend, directly or indirectly, from independent claim 1, and further recite additional aspects of integration, control signals and data format conversion, voice recognition, speech synthesizer, and different types of portable devices.

Because Petitioner's obviousness arguments are deficient for reasons discussed above and none of these secondary references, as applied by Petitioner, cures the defects of the combination of Owens and Ahn, we are not persuaded that Petitioner has established a reasonable likelihood that the remaining claims 5–25, 73, 97, 120, and 121 are unpatentable under 35 U.S.C. § 103(a) as obvious over the combination of Owens and Ahn in view of these secondary references.

III. CONCLUSION

For the foregoing reasons, and having considered the Petition and all of the arguments presented in the Preliminary Response, we determine the information presented in the Petition does not establish a reasonable

likelihood that Petitioner would prevail in showing the unpatentability of any one of claims 1–25, 49, 73, 97, 120, and 121 of the '342 patent.

IV. ORDER

Accordingly, it is:

ORDERED that the Petition is *denied* as to all challenged claims and no trial is instituted.

IPR2016-00118
Patent 8,155,342 B2

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Paper 13
Entered: July 8, 2016

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TOYOTA MOTOR CORPORATION,
Petitioner

v.

BLITZSAFE TEXAS, LLC,
Patent Owner

Case IPR2016-00418
Patent 8,155,342 B2

Before JAMESON LEE, THOMAS L. GIANNETTI, and HUNG H. BUI, *Administrative Patent Judges.*

BUI, *Administrative Patent Judge.*

DECISION
Institution of *Inter Partes* Review
37 C.F.R. § 42.108

I. INTRODUCTION

On December 30, 2015, Petitioner, Toyota Motor Corporation, filed a Petition requesting an *inter partes* review of claims 49–57, 62–64, 66, 68, 70, 71, 73–80, 94, 95, 97, 99–103, 106, 109–111, 113, 115, and 120 of U.S. Patent No. 8,155,342 B2 (Ex. 1001, "the '342 patent"). Paper 1 ("Pet."). Patent Owner, Blitzsafe Texas, LLC, filed a Preliminary Response on April 11, 2016. Paper 10 ("Prelim. Resp.").

To institute an *inter partes* review, we must determine that "the information presented in the petition . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition." 35 U.S.C. § 314(a). Having considered both the Petition and the Preliminary Response, we determine that Petitioner has demonstrated a reasonable likelihood that it would prevail in establishing the unpatentability of claims 49–57, 62–64, 66, 68, 70, 71, 73–80, 94, 95, 97, 99–103, 106, 109–111, 113, 115, and 120 of the '342 patent. Accordingly, we institute an *inter partes* review of those claims.

A. Related Matters

The '342 patent is involved in the following litigations: (1) *Blitzsafe Texas, LLC v. Nissan Motor Co., Ltd.*, 2-15-cv-01276 (E.D. Tex. July 16, 2015), (2) *Blitzsafe Texas, LLC v. Toyota Motor Corp.*, 2-15-cv-01277 (E.D. Tex. July 16, 2015), (3) *Blitzsafe Texas, LLC v. Volkswagen Group of Am., Inc.*, 2-15-cv-01278 (E.D. Tex. July 16, 2015), (4) *Blitzsafe Texas, LLC v. Hyundai Motor Co.*, 2-15-cv-01275 (E.D. Tex. July 16, 2015), (5) *Blitzsafe Texas, LLC v. Honda Motor Co., Ltd.*, 2-15-cv-01274 (E.D. Tex. July 16,

2015), (6) *Marlowe Patent Holdings LLC v. Dice Elects., LLC,*, 3-10-cv-01199 (D.N.J.), and (7) *Marlowe Patent Holdings LLC v. Ford Motor Co.*, 3-10-cv-07044 (D.N.J.). Pet. 1–2. The '342 patent is also involved in IPR2016-00118 and IPR2016-00418. Related Patent 7,489,786 B2 is involved in IPR2016-00421 and IPR2016-00422.

B. The '342 Patent

The '342 patent relates to a multimedia device integration system that allows a plurality of "after-market" portable devices to be integrated into an existing car audio/video (stereo) system, via an "integration subsystem," while allowing information to be displayed on, and control to be provided from, the car audio/video system. *See* Ex. 1001, 2:44–54; Abstract. Examples of these portable devices include CD players, CD changers, digital media devices (e.g., MP3 players, Apple iPod, WMV players, portable media centers, and other devices), satellite receivers, DAB receivers, auxiliary input sources, video devices (e.g., DVD players), cellular telephones, or any combination thereof. *Id.*

The '342 patent claims are directed to several embodiments where wireless integration is provided between a car audio/video system and a portable device, via an integration subsystem. Ex. 1001, 33:43–46. For example, Figure 18 shows an integration subsystem positioned within a portable device, and Figure 19 shows an integration subsystem positioned within a car audio/video system. Figures 18–19 are reproduced below.

FIG. 18

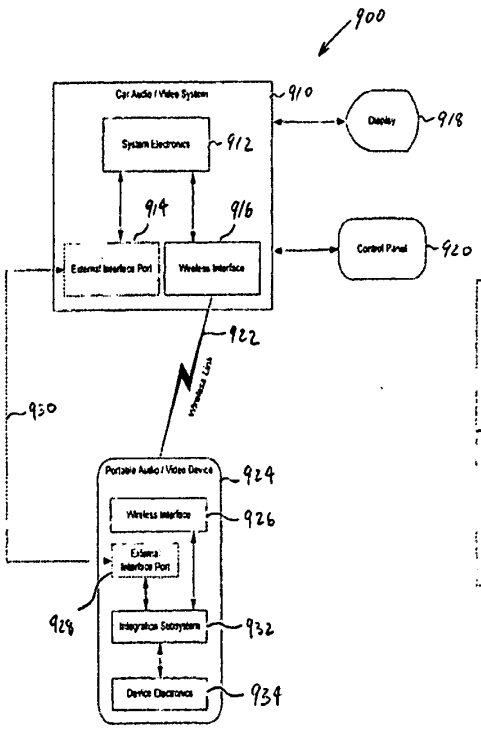
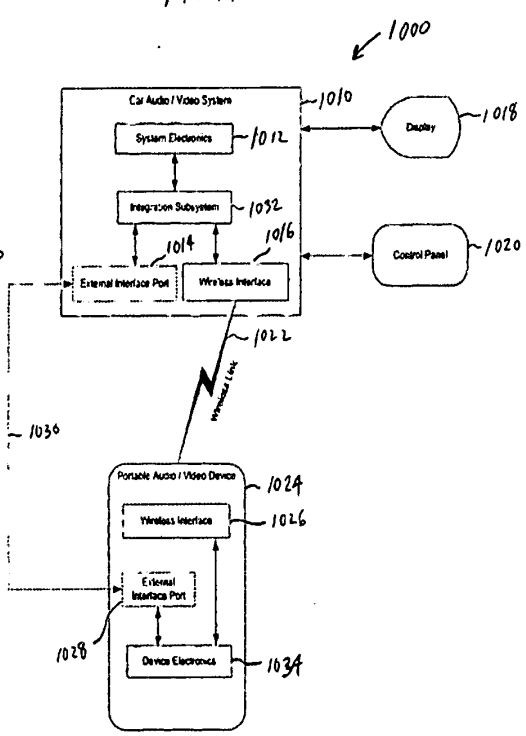


FIG. 19



Figures 18 and 19 of the '342 patent show integration subsystems 932 and 1032 positioned, respectively, within portable device 924 or within car audio/video system 1010.

As shown in Figure 18, integration subsystem 932 positioned within portable device 924 allows information (data and control signals) to be exchanged between portable device 924 and car audio/video system 910, and processes and formats data accordingly so that instructions and data from car audio/video system 910 are processed by portable device 924, and vice versa. *See id.* at 33:43–35:62, Fig. 18. Similarly, as shown in Figure 19, integration subsystem 1032 positioned within car audio/video system 1010 allows information (data and control signals) to be exchanged between

portable device 1024 and car audio/video system 1010, and processes and formats data accordingly so that instructions and data from car audio/video system 1010 are processed by portable device 1024, and vice versa. *See id.* at 33:43–35:62, Fig. 19.

C. Illustrative Claim

Of the challenged claims, claims 49, 73, 97, and 120 are independent. Claims 50–57, 62–64, 66, 68, 70, and 71 depend, directly or indirectly, from claim 49.

Claim 49, reproduced below, is illustrative.

> 49. A multimedia device integration system, comprising:
>
> an integration subsystem in communication with a car audio/video system; and
>
> a first wireless interface in communication with said integration subsystem, said first wireless interface establishing a wireless communication link with a second wireless interface in communication with a portable device external to the car audio/video system,
>
> wherein said integration subsystem obtains, using said wireless communication link, information about an audio file stored on the portable device, transmits the information to the car audio/video system for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the audio file in response to a user selecting the audio file using controls of the car audio/video system, and receives audio generated by the portable device over said wireless communication link for playing on the car audio/video system.

Ex. 1001, 42:29–47.

Claim 73 is substantially identical to claim 49, except that the audio file is "received by" instead of "stored on" the portable device. *Id.* at 44:4–23. Claim 97 is similar to claim 49, but further defines that the "audio generated by the portable device" corresponds to "an audio file played by the portable device" and adds that the car stereo control commands are in a format incompatible with the portable device, and are re-formatted for purposes of compatibility. *Id.* at 45:45–63. Likewise, claim 120 is similar to claim 49, but further defines that the "audio generated by the portable device" corresponds to "an audio file played by the portable device" and adds that the data from the portable device is in a format incompatible with the car audio/video device, and is then re-formatted for purposes of compatibility. *Id.* at 46:63–47:18.

D. Prior Art Relied Upon

Petitioner relies upon the following prior art references:

Reference		Date	Exhibit
Clayton	US 2006/0181963 A1	Aug. 17, 2006	Ex. 1002
Clayton Provisional	U.S. Provisional Application No. 60/651,963	Feb. 11, 2005	Ex. 1003
Berry	US 6,559,773 B1	May 6, 2003	Ex. 1004
Marlowe	US 2003/0215102 A1	Nov. 20, 2003	Ex. 1005
Gioscia	US 6,421,305 B1	Jul. 16, 2002	Ex. 1006

Petitioner also relies on the Declaration of Dr. Thomas Matheson. Ex.

1016.

E. Asserted Grounds of Unpatentability

Petitioner challenges claims 49–57, 62–64, 66, 68, 70, 71, 73–80, 94, 95, 97, 99–103, 106, 109–111, 113, 115, and 120 of the '342 patent under 35 U.S.C. § 103(a) on the following grounds:

Challenged Claims	Basis	References
Claims 49–55, 57, 62–64, 71, 73–80, 95, 97, 99–103, 109–111, and 120	§ 103(a)	Clayton and Berry
Claims 49–57, 62–64, 66, 70, 71, 73–80, 94, 95, 97, 99–103, 106, 109–111, 113, and 120	§ 103(a)	Clayton, Berry, and Marlowe
Claims 68 and 115	§ 103(a)	Clayton, Berry, Marlowe, and Gioscia

II. ANALYSIS

A. Claim Construction

In an *inter partes* review, claim terms in an unexpired patent are given their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *see also In re Cuozzo Speed Techs., LLC*, 793 F.3d 1268, 1275–1279 (Fed. Cir. 2015), *aff'd Cuozzo Speed Techs., LLC v. Lee*, No. 15-446, 2016 WL 3369425, at *12 (U.S. June 20, 2016). Under the rule of broadest reasonable interpretation, claim terms are given their ordinary and customary meaning, as would be

understood by one of ordinary skill in the art in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

"Claims are not interpreted in a vacuum, but are part of and are read in light of the specification." *Slimfold Mfg. Co. v. Kinkead Indus., Inc.*, 810 F.2d 1113, 1116 (Fed. Cir. 1987). Although it is improper to read a limitation from the specification into the claims, *In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993), the claims still must be read in view of the specification of which they are a part. *Microsoft Corp. v. Multi-Tech Sys., Inc.*, 357 F.3d 1340, 1347 (Fed. Cir. 2004).

If a limitation of an embodiment described in the specification is not necessary to give meaning to a claim term, it would be "extraneous" and should not be read into the claim. *See Hoganas AB v. Dresser Indus., Inc.*, 9 F.3d 948, 950 (Fed. Cir. 1993); *E.I. du Pont de Nemours & Co. v. Phillips Petroleum Co.*, 849 F.2d 1430, 1433 (Fed. Cir. 1988). If the applicants for patent desire to be their own lexicographer, the purported definition must be set forth in either the specification or prosecution history. *See CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002). Such a definition must be set forth with reasonable clarity, deliberateness, and precision. *See Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1249 (Fed. Cir. 1998); *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994). Only terms which are in controversy need to be construed, and only to the extent necessary to resolve the controversy. *See Wellman, Inc. v. Eastman Chem. Co.*, 642 F.3d 1355, 1361 (Fed. Cir. 2011); *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999).

Petitioner proposes constructions for three claim terms: (1) "integration subsystem," (2) "car audio/video system" and (3) "device presence signal." Pet. 9–15. The terms (1) "integration subsystem" and (2) "car audio/video system" are recited in all challenged claims, whereas the term "device presence signal" is recited only in challenged claims 56 and 106.

1. "*Integration subsystem*"

Each of independent claims 49, 73, 97, and 120 recites an "integration subsystem." Ex. 1001, 42:30, 44:5, 45:50, 47:1.

Petitioner argues because the term "subsystem" is used interchangeably in the '342 patent with the term "module," "integration subsystem" must be considered as a "means-plus-function" (MPF) element that must be construed under 35 U.S.C. § 112, 6th paragraph. *See Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1349 (Fed. Cir. 2015). Pet. 10–15. When the claimed "integration subsystem" is construed as a "means-plus-function" limitation, Petitioner argues "the claimed 'integration subsystem' does not have sufficient corresponding structure disclosed in the Specification of the '342 patent, and is therefore indefinite under 35 U.S.C. § 112, 2nd paragraph." *Id.* at 13. According to Petitioner, the flowchart of Figure 24 of the '342 patent is considered as a "one-step algorithm" and, as such, "does not constitute sufficient corresponding structure for a computer-implemented function recited in a claim." *Id.* at 10–13.

Petitioner, relying on Dr. Matheson's testimony (Ex. 1016 ¶¶ 84–86), then proposes that the term "integration subsystem" means "a

microcontroller or processor provided within the portable device or the car audio/video system and programmed to perform the method of FIG. 24." *Id.* at 14–15 (citing Ex. 1016 ¶ 86). The method of Figure 24 of the '342 patent is reproduced below:

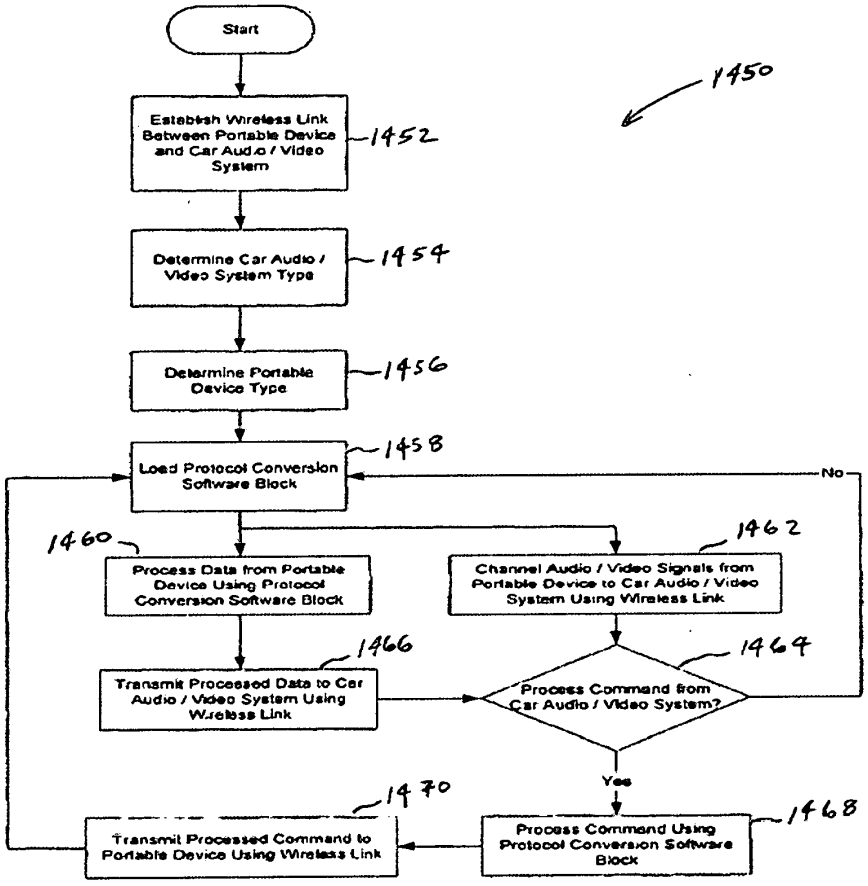


Figure 24 of the '342 patent shows a method for wirelessly integrating a portable device for use with a car audio/video system.

As shown in Figure 24, that method comprises determining a car audio/video system type and a portable device type at steps 1454–1456; loading a protocol conversion software block at step 1458; processing data from the portable device using the protocol conversion software block at step 1460 for transmission to the car audio/video system, via wireless link at step 1466; and processing command from the car audio/video system using the protocol conversion software block for transmission to the portable device at step 1470. Ex. 1001, 38:9–67. Thus, method of Figure 24 of the '342 patent further requires the conversion of command/data using a protocol conversion software block corresponding to a determined car audio/video system type and a determined portable device type for format compatibility. For purposes of this decision, we refer to that requirement as the "command/data format conversion" limitation.

Patent Owner does not propose a construction, but responds that the term "integration subsystem" does not invoke 35 U.S.C. § 112 ¶ 6 as argued by Petitioner. Prelim. Resp. 6. According to Patent Owner, the claims do not recite a "module" or a nonce term, and there is no authority for the proposition that the term "integration subsystem" must be considered a nonce term. *Id.* at 6–10. According to Patent Owner,

> Petitioner's conclusion that the term "integration subsystem" is indefinite under 35 U.S.C. 112 ¶ 2 is incorrect because (1) the alleged functions of the integration subsystem are not "computer-implemented" and thus do not require an algorithm; (2) even if the functions required an algorithm, Figure 24 is sufficient; and (3) Petitioner ignores the voluminous algorithms and source code provided in the '342 Patent specification that provide sufficient structure.

Id. at 10–17.

We agree with Patent Owner that Petitioner has not sufficiently shown that the term "integration subsystem" should be construed as a mean-plus-function recitation. As such, we decline to consider the term "integration subsystem" as a means-plus-function recitation under 35 U.S.C. § 112, ¶ 6 and *Williamson*, 792 F.3d at 1349. We also note that Petitioner may not, in an an *inter partes* review, assert a ground of unpatentability based on indefiniteness under 35 U.S.C. § 112, ¶ 2. *See* 35 U.S.C. § 311(b).

Turning now to Petitioner's proposed construction of the term "integration subsystem," that proposal is unpersuasive for several reasons. First, the proposed construction is too narrow by requiring the "integration subsystem" to be a microcontroller or processor programmed to perform the method of Figure 24 of the '342 patent. In the Specification of the '342 patent, the term "integration subsystem" is described as follows:

> [t]he integration subsystem 932 contains *circuitry similar to the circuitry disclosed in the various embodiments* of the present invention discussed herein, and *could include* a PIC16F872 or PIC16F873 microcontroller manufactured by Microchip, Inc. and programmed in accordance with the flowchart discussed below with respect to FIG. 24.

Ex. 1001 at 34:63–66 (emphasis added).

According to the '342 patent's Specification, the "circuitry similar to the circuitry disclosed in the various embodiments of the present invention" refers to various "integration" circuit embodiments shown in Figures 3A, 3B1–3B2, 3C1–3C2, and 3D, including not only a microcontroller or

processor but also several discrete components, such as resistors, diodes, capacitors, transistors, oscillators, amplifiers, and multiplexers for performing various "integration" functions. Ex. 1001, 12:55–16:29. In addition, the "integration subsystem" can also include: (1) "conversion circuitry (e.g., using the video format conversion chips discussed above with respect to FIG. 12a) for converting video information generated by the portable device 924 for display on the display 918 of the car system 910 (e.g., by converting composite video signals to red, green, and blue (RGB) video signals, or vice versa)"; (2) "[t]he voice recognition subsystem 1336[, which] could comprise the HM2007 speech recognition processor manufactured by Hualon Microelectric Corporation, the VRP6679 speech recognition processor manufactured by Oki, Inc., or any other suitable speech recognition processor"; and (3) "[t]he speech synthesizer 1338[, which] could include the RC 8650 or RC 8660 speech synthesis chipsets manufactured by RC Systems, Inc., or any other suitable speech synthesizer." *Id.* at 34:48–54, 36:53–58, 37:30–55, Fig. 23. Further, "the voice recognition subsystem 1336 and the speech synthesizer 1338 could [also] be formed on a single integrated circuit forming part of the integration subsystem 1332." *Id.* at 37:48–51, Fig. 23.

Thus, the term "integration subsystem" itself is not limited to a microcontroller or processor, nor is it limited to the functions described in the flowchart shown in Figure 24 of the '342 patent. In that regard, we note that if the term "integration subsystem" is construed as a microcontroller or processor programmed to perform the method of Figure 24 of the '342 patent, as Petitioner proposes, then the additional functions of the claimed

"integration subsystem" recited in the challenged claims would serve no meaningful purpose.

Second, we note that a proper construction of "integration subsystem" must serve the purpose of "integration" as described in the '342 patent's Specification and must be a "subsystem" — subordinate to another system. In the Specification of the '342 patent, the term "integration" is expressly defined as follows:

> As used herein, the term "*integration*" or "*integrated*" is intended to mean [1] connecting one or more external devices or inputs to an existing car stereo or video system via an interface, [2] processing and handling signals, audio, and/or video information, [3] allowing a user to control the [external] devices via the car stereo or video system, and [4] displaying data from the devices on the car stereo or video system.

Ex. 1001, 8:64–9:3 (emphasis added) (brackets added).

When the specification of a patent contains a "special definition given to a claim term by the patentee," that definition controls interpretation of the term as it is used in the claim. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1316 (Fed. Cir. 2005) (en banc).

The term "integration subsystem" is used in the '342 patent in relation to wireless integration embodiments between an existing car audio/video system and a portable device, shown in Figures 18–24. Ex. 1001, 33:43–38:67, Figs. 18–24. In particular, the '342 patent's Specification describes the "integration subsystem" as being positioned within the portable device, shown in Figure 18, or within the car audio/video system, shown in Figure 19. Ex. 1001, 34:9–13, 35:23–28; Figs. 18–19.

Based on the special definition of the term "integration" provided by the '342 patent and other language in the claims, we construe the term "integration subsystem" as meaning:

> A subsystem to perform at least: (1) connecting one or more portable devices or inputs to the car audio/video system via an interface, (2) processing and handling signals, audio, and/or video information, (3) allowing a user to control the one or more portable devices via the car audio/video system, and (4) displaying data from the one or more portable devices on the car audio/video system.

2. "*Car audio/video system*"

Independent claims 49 and 73 also require the "integration subsystem" in communication with a "car audio/video system." Ex. 1001, 42:30–31, 44:5–6. Similarly, independent claims 97 and 120 require the "integration subsystem" in communication with a wireless communication link between a "car audio/video system" and a portable device. Ex. 1001, 45:46–51, 46:65–47:2.

Petitioner proposes as the proper construction of "car audio/video system" "a car audio system, a car video system, or a car audio and video system." Pet. 15. According to the '342 patent's Specification, the term "car audio/video system" is described as a car audio or a car video system. 1001, 8:38–46. In addition,

> the terms "car stereo" and "car radio" are used interchangeably and are intended to include all presently existing car stereos, radios, video systems, such as physical devices that are present at any location within a vehicle, in addition to software and/or graphically- or display-driven receiver.

Ex. 1001, 9:21–25.

Patent Owner does not dispute Petitioner's proposed construction. Prelim. Resp. 7. For purposes of this decision, we adopt Petitioner's construction of the "car audio/video system" as "a car audio system, a car video system, or a car audio and video system."

3. "*Device presence signal*"

Each of dependent claims 56 and 106 further requires the "integration subsystem generates a device presence signal and transmits the device presence signal to the car audio/video system to maintain the car audio/video system in a state responsive to the portable device." Ex. 1001, 43:5–9, 36:20–24.

Petitioner proposes that the term "device presence signal" be construed the way it has been construed by the district court in related actions involving the great-grandparent of the '342 patent, U.S. Patent 7,489,786 ("the '786 patent"), i.e., "transmission of a continuous signal indicating an audio device is present." Pet. 15–16 (citing Ex. 1007, 14–17). Patent Owner does not propose a construction. For two reasons, we do not adopt Petitioner's proposed construction.

First, the proposed construction is too narrow because (1) the continuous transmission is not necessary to accord meaning to the term, and (2) the presence of a specific type of device is not required. Nothing in the claims require the recited signal to be continuous. Likewise, the "device presence signal" need not be limited to an audio device presence signal. According to the Specification of the '342 patent:

> the [device presence] signal need not be limited to a CD player device presence signal, but rather, could be any type of device presence signal (e.g., MP3 player device presence signal, satellite receiver presence signal, *video* device presence signal, cellular telephone presence signal, or any other type of device presence signal).

Ex. 1001, 18:52–58 (emphasis added).

In other words, if a portable device is a CD player/changer, then the "device presence signal" is a signal indicating that a CD player/changer is present. Ex. 1001, 16:40–58. However, if a portable device is a video player, then the "device presence signal" is a signal indicating that a video player is present. Ex. 1001, 18:51–58.

Second, in claims 56 and 106, the device presence signal is generated and transmitted by the "integration subsystem" to the car audio/video system so as to maintain the car audio/video system in a state responsive to the portable device. In the context of these claims, the portable device the presence of which is signaled by the "integration subsystem" is that portable device which connects to the "integration subsystem" to communicate with the car audio/video system.

On the record before us, we construe "device presence signal" as "a signal indicating that a portable device is connected to the car audio/video system through the integration subsystem."

B. Legal Standard for 35 U.S.C. § 103(a)

Having considered the meaning of the claims, we turn next to whether claims 49–57, 62–64, 66, 68, 70, 71, 73-80, 94, 95, 97, 99–103, 106, 109–111, 113, 115, and 120 of the '342 patent are unpatentable under 35 U.S.C.

§ 103(a) in view of the prior art submitted by Petitioner. Obviousness is determined on the basis of underlying factual inquiries, including: (1) the scope and content of the prior art; (2) differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) secondary considerations of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). A patent claim is unpatentable under 35 U.S.C. § 103 if *the differences* between the claimed subject matter and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007) (emphasis added). However, a conclusion of obviousness "cannot be sustained with mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006).

For this decision, we determine that no express finding on the level of ordinary skill in the art is necessary, and that the level of ordinary skill in the art is reflected by the prior art of record. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995); *In re Oelrich*, 579 F.2d 86, 91 (CCPA 1978).

C. Alleged Obviousness of Claims 49–55, 57, 62–64, 71, 73–80, 95, 97, 99–103, 109–111, and 120 based on Clayton and Berry

Petitioner contends that claims 49–55, 57, 62–64, 71, 73–80, 95, 97, 99–103, 109–111, and 120 are unpatentable under 35 U.S.C. § 103(a) as

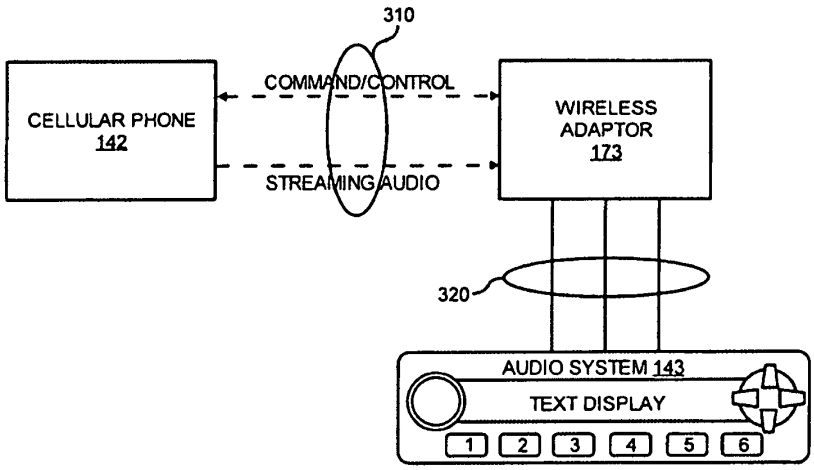
obvious over the combination of Clayton and Berry. Pet. 24–50. To support its contention, Petitioner provides a claim chart and detailed explanations as to how the prior art meets each claim limitation. *Id.* at 29–50. Petitioner also relies upon a Declaration of Dr. Thomas Matheson, who has been retained as an expert witness by Petitioner for the instant proceeding. Ex. 1016.

(1) Clayton: Exhibit 1002

Clayton[1] discloses an audio/video integration system, shown in Figures 2–4 and 6, that provides wireless integration between car audio/video system 143 and portable device 142 such as a cellular phone and/or an MP3 player, via a wireless adapter 173. Ex. 1002 ¶ 50, Figs. 2–4, 6, Abstract; *see, e.g.*, Ex. 1003 at 3, 5, 12, 16, 139, 259, 333–340, 485.

Clayton's Figure 3 is reproduced below.

[1] Clayton (Ex. 1002) was published on August 17, 2006, has a filing date of December 8, 2005 and, as such, can only qualify as prior art for purposes of pre-AIA 35 U.S.C. § 102(e). As § 102(e) prior art, evidence of prior conception and diligent reduction to practice can be submitted to antedate the earliest filing date of the Clayton reference, including its provisional applications (Ex. 1003), which Patent Owner has reserved the right to do. Prelim. Resp. 20.



Clayton's Figure 3 shows an audio/video integration system including an integration subsystem in the form of wireless adapter 173 to provide wireless integration between car audio/video system 143 and portable device 142.

As shown in Figure 3 of Clayton, portable device 142 stores content received from (1) a content provider, via Internet and cellular network, or (2) personal computer, via a wired connection or a wireless proximity network (shown in Figure 2). Ex. 1002 ¶ 46. Portable device 142 can be controlled by functional controls on its own user interface 152, functional controls on user interface 153 of car audio/video system 143, or both (shown in Figure 2). Ex. 1002 ¶ 63, Fig. 2.

According to Clayton,

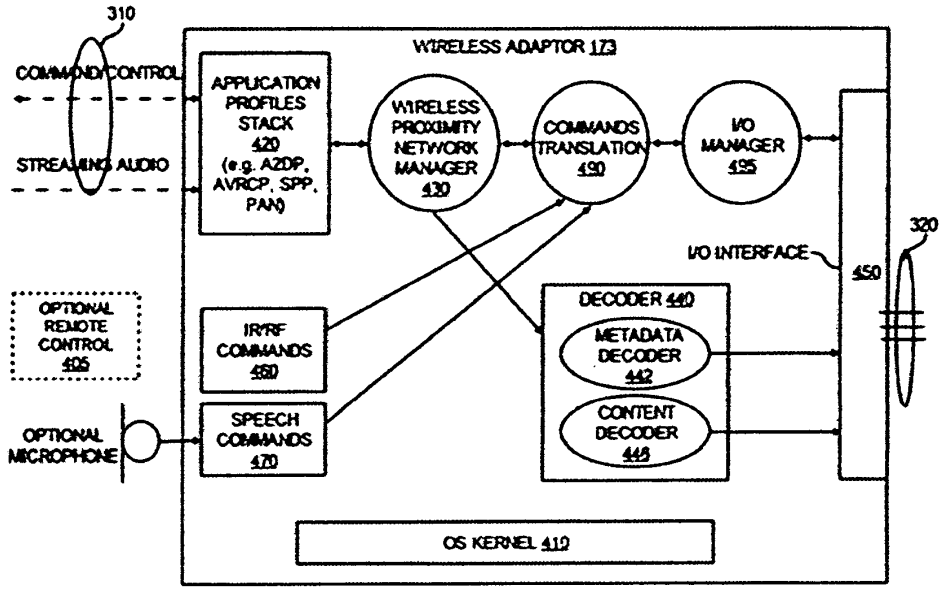
> [c]ontent may include: media such as ***audio***, video, text; multimedia that includes two or more of audio, video and text; or other types of data. Examples of content include but are not limited to media files, such as MP3 files, other types of audio files, video files, textual music play lists, and other types of files.

Ex. 1002 ¶ 14 (emphasis added).

Content (audio) can be played back at or generated by portable device 142, via user interface 152 or 153 (shown in Figure 2), i.e., selection of a preset channel, to rewind, fast forward, pause, play, etc., and can also be sent from portable device 142 to car audio/video system 143, via wireless interface 148, as "streaming audio." *Id.* ¶¶ 49, 52, 63, 66–67, Fig. 3.

Wireless adaptor 173 can be separate from car audio/video system 143, but can also be a part of or integrated within car audio/video system 143. *Id.* ¶¶ 52–53. Such wireless adapter 173 enables communications between portable device 142 and car audio/video system 143, including, for example: (1) connecting portable device 142 or inputs to car audio/video system 143, via an interface (*id.* ¶¶ 52, 54, 61, 66); (2) processing and handling signals, audio, and/or video information (*id.* ¶¶ 55, 58); (3) allowing a user to control portable device 142, via car audio/video system 143 (*id.* ¶¶ 52, 63, 66–67, 70); and (4) displaying data from portable device 143 on a display of car audio/video system 143 (*id.* ¶¶ 52, 56, 63, 66–67, 70, 73).

Clayton's Figure 4, which shows the detail of wireless adapter 173, is reproduced below.



Clayton's Figure 4 shows an example embodiment of wireless adapter 173 to provide wireless integration between car audio/video system 143 and portable device 142.

As shown in Figure 4 of Clayton, wireless adapter 173 includes operating system (OS) kernel 410; application profile stack 420 to provide wireless communication links between car audio/video system 143 and portable device 142; decoder 440 having content decoder 446 to decode content 181 received from portable device 142 and metadata decoder 442 to decode any metadata for content (e.g., song titles, artist names, playlists) for displaying on car audio/video system 143; network manager 430 to control operation of decoder 440; and command translation module 90 to translate or convert command/control signals for format compatibility between portable device 142 and car audio/video system 143 so that wireless adapter 173 can be operable with different car audio/video system from different

manufacturers. *Id.* ¶¶ 56–63, Fig. 4. These commands may be received via voice recognition subsystem 470 that receives and processes spoken control commands issued by a user. *Id.* ¶ 67. In addition, wireless adapter 173 also includes RF hardware (not shown in Figure 4) for a baseband controller and radio (i.e., wireless interface) for communication with portable device 142, and I/O interface 450 to interface with available I/O interface of car audio/video system 143. *Id.* ¶¶ 56, 67.

(2) Berry: Exhibit 1004

Berry discloses the use of an interface specifier (protocol conversion software block) corresponding to a specific combination of display type (determined car audio/video system type) and device type (determined portable device type) in the context of a car audio/video system having reconfigurable control panel/display subsystem 10, shown in Figure 1, for processing and translating commands and data for format compatibility between a portable device and a car audio/video system. Ex. 1004, 3:62–4:3, 4:55–61, Abstract, Fig. 1.

Berry's Figure 1 is reproduced below:

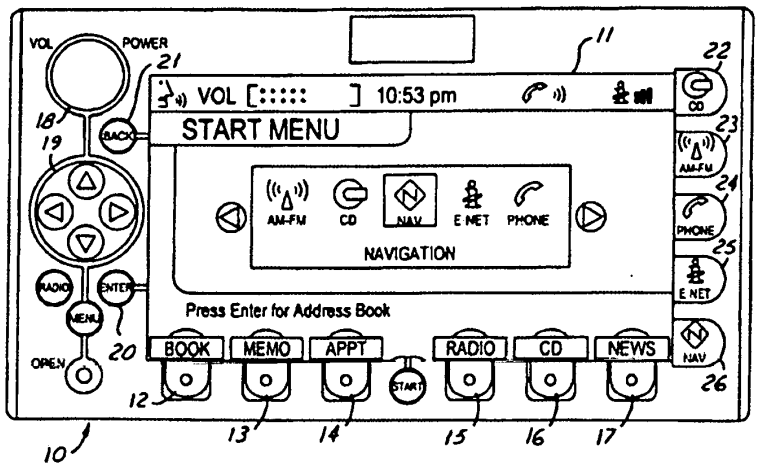


Figure 1 of Berry shows a control panel/display subsystem 10 of a car audio/video system to interact with multiple portable devices.

According to Berry, human-machine interface (HMI) controller 34 in display subsystem 30 (shown in Figure 2) interfaces with a portable device (such as an MP3 player or a cellular phone) connected to a car audio/video system and issues control commands thereto according to a received input (such as a voice input). *See id.* at 3:6–4:14, 4:55–61. Based on the display type identifier for the car audio/video system and the device type identifier for the portable device, HMI controller 34 loads a corresponding interface specifier in order to support interaction between the two components, *i.e.*, to process user input events, to process device events, to render graphic displays, and to process and translate commands and data between the portable device and the car audio/video system. *See id.* at 3:27–39, 3:62–7:9, 5:14–40, 6:26–27, 6:45–50.

(3) Analysis of Obviousness

Independent claims 49 and 73 each recite a "multimedia device integration system" which comprises "an integration subsystem" and first and second wireless interfaces, and the claims each require that the "integration subsystem," *inter alia*, "instruct[] the portable device to play the audio file in response to a user selecting the audio file using controls of the car audio/video system, and receive[] *audio generated by the portable device* over said wireless communication link to the car audio/video system for playing on the car audio/video system." Ex. 1001, 42:29–47, 44:4–23 (emphasis added). Similarly, independent claims 97 and 120 require that the "integration subsystem," *inter alia*, "channel[] *audio generated by the portable device* to the car audio/video system using the wireless communication link for subsequent playing on the car audio/video system." Ex. 1001, 45:52–56, 47:7–12 (emphasis added).

In addition, claim 97 further requires that the "integration subsystem" "receive[] a control command issued by a user through one or more controls of the car audio/video system in a format incompatible with the portable device, process[] the control command into a format command compatible with the portable device, and dispatch[] the formatted command to the portable device for execution thereby." Ex. 1001, 45:57–63. In other words, claim 97 further requires the car stereo control commands to be in a format incompatible with the portable device, and to be re-formatted for purposes of compatibility. Similarly, claim 120 requires that the "integration system" "receive[] data generated by the portable device in a format incompatible with the car audio/video system, process[] the data into formatted data

compatible with the car audio/video system, and transmit[] the processed data to the car audio/video system for subsequent display of the processed data on a display of the car audio/video system." Ex. 1001, 47:12–18. In other words, claim 120 further requires that the data from the portable device is in a format incompatible with the car audio/video device, and is then re-formatted for purposes of compatibility. Thus, both claims 97 and 120 expressly require format conversion of command and/or data for format compatibility between portable device 142 and car audio/video system 143.

Based on its own proffered construction of "integration subsystem" as "a microcontroller or processor provided within the portable device or the car audio/video system and programmed to perform the method of FIG. 24" and Dr. Matheson's testimony (Ex. 1016 ¶¶ 84–86), Petitioner argues that: (1) the claimed "integration subsystem" is met by Clayton's wireless adapter 173 when integrated with car audio/video system 143, shown in Figures 3–4; and (2) the claimed "first and second wireless interfaces" are met by wireless interfaces 148, 150 included in portable device 142, shown in Figure 2, and RF hardware (i.e., baseband controller and radio) and application profile stack 420 included in wireless adapter 173, shown in Figure 4. Pet. 31–32 (citing Ex. 1002 ¶¶ 48, 53, 56–61, 65–66). Because Petitioner's proposed construction of "integration subsystem" requires the method of Figure 24 of the '342 patent, including the "command/data format conversion" limitation, Petitioner further relies on Berry as expressly teaching the "command/data format conversion" limitation in order to support the conclusion of obviousness, i.e.,

> [i]t would have been obvious to modify the integration subsystem disclosed by Clayton so as to incorporate the determining of component types and loading and using of a corresponding protocol conversion software block for the purpose of providing a car audio and/or video system that is automatically reconfigurable when a new device is connected thereto and to allow the new device to work with the car audio and/or video system.

Pet. 27–28 (citing Ex. 1002, 1:7–14, 1:63–67, 2:43–59; Ex. 1016 ¶¶ 100–101).

Patent Owner does not dispute that Clayton's (1) wireless interfaces 148, 150 included in portable device 142, shown in Figure 2, and (2) RF hardware (i.e., baseband controller and radio) and application profile stack 420 included in wireless adapter 173, shown in Figure 4, are the claimed "first and second wireless interfaces."[2] Similarly, Patent Owner does not dispute Berry's disclosure of the "command/data format conversion" limitation shown in the method of Figure 24 of the '342 patent, and the

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[2] According to Clayton, portable device 142 (cellular phone), as shown in Figure 2, includes (1) wireless interface 148 used to connect to content service 120, via hotspots 133, and (2) wireless interface 150 used to transfer content to car audio/video system 142. However, these wireless interfaces 148 and 150 can also be combined "as a single wireless interface that performs all functions of the wireless interfaces 148 and 150." Ex. 1002 ¶ 48. As such, both wireless interfaces 148 and 150 of Clayton can be considered as the claimed "first wireless interface," while the RF hardware (i.e., baseband controller and radio) and application profile stack 420 included in Clayton's wireless adapter 173, shown in Figure 4, can be considered as the claimed "second wireless interface" as recited in independent claims 49, 73, 97, and 120.

format conversion of command and/or data expresssly required by claims 97 and 120.

Instead, Patent Owner argues that neither Clayton nor Berry teaches the "audio generated by the portable device" limitation recited in each of independent claims 49, 73, 97, and 120. Prelim. Resp. 21–25. In particular, Patent Owner acknowledges Clayton describes content transferred from portable device 142 to car audio/video system 143 as "streaming audio" shown in Figure 3. *See* Ex. 1002, Fig. 3. However, Patent Owner argues "Clayton never describes any transfer of audio other than the transfer of 'content' between the portable audio device and the wireless adapter 173." Prelim. Resp. 22 (citing Ex. 1002 ¶¶ 1, 14). According to Patent Owner,

> "Content" is not audio generated by a portable device, rather it is described by Clayton as "media files, such as MP3 files, other types of audio files, video files, textual music play lists, and other types of files." Ex. 1002 at ¶ 0014. This content is decoded (*i.e.* converted [from] data such as MP3 into "generated" audio) only in the "content decoder 446" which is contained within the "wireless adapter 173," and, therefore, not in the portable device.

Id. at 23.

Patent Owner also argues that paragraph [0063] of Clayton cited in the claim chart on page 32 of the Petition only describes the transfer of content (i.e., audio files) stored from portable device 142 to car audio/video system 143 as "streaming audio" and the use of network manager 430, shown in Clayton's Figure 4, to control content decoder 446 to decode the "streaming audio" into a format understood by car audio/video system 143. *Id.* at 23 (citing Exhibit 1002 ¶ 63, Fig. 4). According to Patent Owner, the

cited paragraph [0063] of Clayton and the "remaining paragraphs cited to by Petitioner similarly confirm that content, i.e., audio files, are sent to the wireless adapter 173 where the audio is decoded," and therefore do not meet the "audio generated by the portable device" limitation as recited in each of independent claims 49, 73, 97, and 120. *Id.* at 24 (citing Exhibit 1002 ¶¶ 33, 42, 48, 56, 63).

Patent Owner further argues that because Berry does not teach the "audio generated by the portable device" limitation and therefore does not cure the deficiencies of Clayton, Petitioner fails to point out the differences between the references and the claims, and Petitioner's arguments for combining Clayton and Berry are merely conclusory and are not supported by "articulated reasoning with rational underpinning" required to demonstrate obviousness. Prelim. Resp. 28–31.

At the outset, we note that neither party sufficiently addresses the claim limitation "integration subsystem" at issue. As previously discussed, our construction of "integration subsystem" is:

> A subsystem to perform at least: (1) connecting one or more portable devices or inputs to the car audio/video system via an interface, (2) processing and handling signals, audio, and/or video information, (3) allowing a user to control the one or more portable devices via the car audio/video system, and (4) displaying data from the one or more portable devices on the car audio/video system.

Based on our construction, we agree with Petitioner that Clayton's wireless adapter 173, shown in Figures 3–4, alone, meets the "integration subsystem" recited in independent claims 49, 73, 97, and 120. This is

because Clayton's wireless adapter 173 is also a subsystem — subordinate to car audio/video system 143, i.e., when integrated within car audio/video system 143, and operates to enable communications between portable device 142 and car audio/video system 143, including, for example: (1) connecting portable device 142 or inputs to car audio/video system 143, via an interface (Ex. 1002 ¶¶ 52, 54, 61, 66); (2) processing and handling signals, audio, and/or video information (*id.* ¶¶ 55, 58); (3) allowing a user to control portable device 142, via car audio/video system 143 (*id.* ¶¶ 52, 63, 66–67, 70); and (4) displaying data from portable device 143 on a display of car audio/video system 143 (*id.* ¶¶ 52, 56, 63, 66–67, 70, 73).

With respect to the "audio generated by the portable device" limitation, we disagree with Patent Owner that it is not met by Clayton. Prelim. Resp. 22–23. According to Clayton, the content stored at portable device 142 may also include "media such as audio, video, text; multimedia . . . or other types of data" and such audio (e.g., music or talk radio) can be played back, i.e., generated by portable device 142, via user interface 152 or 153 (shown in Figure 2), i.e., selection of a preset channel, to rewind, fast forward, pause, play, etc. Ex. 1002 ¶¶ 14, 20–21, 49, 52, 66–67. The audio generated by portable device 142 is then transmitted to car audio/video system 143, via wireless interface 148 (shown in Figure 2) in the form of "streaming audio" shown in Figure 3, for playing on car audio/video system 143, i.e., output as music (audio) at car audio/video system 143. *Id.* ¶¶ 49, 52, 63, 66–67. In other words, Clayton's wireless interface 173 (i.e., the claimed "integration subsystem") also receives the "audio generated by the portable device," via a wireless communication link,

for playing on car audio/video system 143, as recited in each of independent claims 49, 73, 97, and 120. *See* Ex. 1002 ¶¶ 49, 52, 55, 63, 66–67.

Because our construction of "integration subsystem" does not require the method of Figure 24 of the '342 patent, including the "command/data format conversion" limitation, and because Clayton discloses the "integration subsystem" and the "audio generated by the portable device" limitations, no teaching from Berry is necessary for combination with Clayton to meet independent claims 49 and 73 and their respective dependent claims 50–55, 57, 62–64, 71, 74–80, and 95. Assuming, however, that "integration subsystem" requires the "command/data format conversion" limitation, we are persuaded that Petitioner has made a sufficient showing that Berry teaches that limitation and that Petitioner has articulated reasoning with rational underpinnings to incorporate that teaching into Clayton's system. For instance, Berry discloses loading and using a protocol conversion software block corresponding to a determined car audio and/or video system and a determined portable device type, to process and translate commands and data therebetween. Pet. 28; Ex. 1016 ¶ 99. As such, we are persuaded that Petitioner has provided sufficient evidence that it would have been obvious to modify the "integration subsystem" disclosed by Clayton so as to incorporate these features from Berry. *Id.* at 28–29; Ex. 1016 ¶¶ 100–101.

For these reasons, we are persuaded that Petitioner has established a reasonable likelihood that it would prevail in its challenge to independent claims 49 and 73 and their respective dependent claims 50–55, 57, 62–64, 71, 74–80, and 95 as obvious over Clayton and Berry.

With respect to the limitations in claims 97 and 120 expressly pertaining to format conversion of command and/or data, we are also persuaded that Petitioner has made a sufficient showing that Berry teaches those limitations and that Petitioner has articulated reasoning with rational underpinning to incorporate that teaching into Clayton's system. In particular, Clayton's wireless interface 173 is already provided with commands translation module 490 used to translate command/control signals for format compatibility between portable device 142 and different types of car audio/video systems 143. Ex. 1002 ¶ 58. Berry adds to Clayton and further discloses loading and using a protocol conversion software block corresponding to the type of car audio/video system 143 and portable device 142, to process and translate commands and data therebetween. Ex. 1016 ¶ 99.

Based on the teachings of Clayton and Berry, we agree with Petitioner's assertion that "[i]t would have been obvious [to a person skilled in the art] to modify the integration subsystem disclosed by Clayton so as to incorporate the determining of component types and loading and using of a corresponding protocol conversion software block for the purpose of providing a car audio and/or video system that is automatically reconfigurable when a new device is connected thereto and to allow the new device to work with the car audio and/or video system." Pet. 28 (citing Ex. 1016 ¶¶ 100–101). On the current record, we also agree that a modification of Clayton's wireless interface 173 to incorporate format conversion of command and/or data between car audio/video system 143 and portable device 142 external to car audio/video system 143 would have been obvious

as a use of a known technique to improve car audio/video system 143 to obtain predictable results, as Petitioner argues. Pet. 28–29 (citing *KSR*, 550 U.S. at 415–421).

Based on the record before us, we are persuaded that Petitioner has established a reasonable likelihood that it would prevail in its challenge to independent claims 97 and 120 and their respective dependent claims 99–103, 109–111 of the '342 patent as obvious based on Clayton and Berry.

D. Alleged Obviousness of Claims 49–57, 62–64, 70, 71, 73–80, 94, 95, 97, 99–103, 106, 109–111, 113, and 120 based on Clayton, Berry, and Marlowe.

Petitioner contends that claims 49–57, 62–64, 70, 71, 73–80, 94, 95, 97, 99–103, 106, 109–111, 113, and 120 of the '342 patent are also unpatentable under 35 U.S.C. § 103(a) as obvious over Clayton, Berry, and Marlowe[3] (Ex. 1005). Pet. 50–57. To support its contention, Petitioner further relies on Marlowe for expressly teaching (1) a car stereo as "a car audio and video system" to further transfer "a video file" as recited in claims 66, 70, 94, and 113, and (2) the use of a "device presence signal" as recited in claims 56 and 106. Ex. 1005 ¶¶ 10, 38, 52, 71, 74, 75, 100. According to Petitioner,

> [i]t would have been obvious to one skilled in the art to combine the device presence signal teachings of Marlowe with the disclosure of Clayton in view of Berry to indicate to the car audio system that the portable device is present and thereby prevent the car audio system "from shutting off, entering a sleep mode, or

[3] Marlowe (Ex. 1005) was published on November 20, 2003, and qualifies as prior art against the '342 patent.

> otherwise being unresponsive to signals and/or data from an external source." Ex. 1005 at ¶ [0071]; Ex. 1016 at ¶ 104. Such a modification would also have been obvious as a use of a known technique (generate and transmit a device presence signal) to improve similar devices (car head unit) in the same way to obtain predictable results (preventing the head unit from being unresponsive to signals and/or data from an external source). MPEP 2143(I)(C); *see also KSR*, 550 U.S. at 415–421, 82 USPQ2d at 1395–97.

Pet. 52.

Patent Owner responds that Petitioner fails (1) to identify "the differences between Clayton and Berry as they would relate to device presence signals sent between a wireless interface and the car audio/video system" and (2) to provide "articulated reasoning with some rational underpinning" required to demonstrate obviousness. Prelim. Resp. 32–36. According to Patent Owner, Petitioner's "stated combination would modify the wrong component" because "the claims require that the device presence signal is generated by the integration subsystem, **not the head unit**." *Id.* at 36.

We find Petitioner's reasoning and evidence persuasive on the current record. As discussed above, Petitioner has made a sufficient showing of obviousness of claims 49–55, 57, 62–64, 71, 73–80, 95, 97, 99–103, 109–111, and 120 based on Clayton and Berry. As previously discussed, Clayton teaches that wireless adapter 173 ("integration subsystem"), as shown in Figure 6, is used to detect a presence of portable device 142 when it is located nearby or in proximity to wireless adapter 173, and then establishes a wireless communication link with portable device 142, via a wireless

network (e.g., Bluetooth or Wi-Fi network), to access content stored in portable device 142. Ex. 1002 ¶ 72. The signal that Clayton's wireless adapter 173 ("integration subsystem") detects based on the presence of portable device 142 can be considered a "device presence signal" as recited in claims 56 and 106.

Marlowe further teaches that the same "device presence signal" can be generated by an "integration subsystem" and then transmitted to car audio/video system 143 in order to maintain car audio/video system 143 in a state responsive to portable device 142. Ex. 1005 ¶¶ 70–71, 74. According to Marlowe, the "device presence signal" is used to prevent car audio/video system 143 "from shutting off, entering a sleep mode, or otherwise being unresponsive to signals and/or data from an external source." *Id.* ¶ 71.

Thus, contrary to Patent Owner's assertion that Petitioner's combination of Clayton and Marlowe "would modify the wrong component," both Clayton and Marlowe specifically teach that the "device presence signal" is generated by the "integration subsystem" (Clayton's wireless adapter 173) and is then used to maintain car audio/video system 143 in a state responsive to portable device 142, i.e., to prevent car audio/video system 143 "from shutting off, entering a sleep mode, or otherwise being unresponsive to signals and/or data from an external source" in the manner recited in claims 56 and 106. Ex. 1001, 43:5–9, 46:20–24.

Based on the teachings of Clayton and Marlowe, we agree with Petitioner's assertion that "[i]t would have been obvious to one skilled in the art to combine the device presence signal teachings of Marlowe with the disclosure of Clayton in view of Berry to indicate to the car audio system

that the portable device is present and thereby prevent the car audio system 'from shutting off, entering a sleep mode, or otherwise being unresponsive to signals and/or data from an external source.'" Pet. 52 (citing Ex. 1005 ¶ 71; Ex. 1016 ¶ 104).

For these reasons, we are persuaded that Petitioner has established a reasonable likelihood that it would prevail in its challenge to claims 49–57, 62–64, 70, 71, 73–80, 94, 95, 97, 99–103, 106, 109–111, 113, and 120 of the '342 patent as obvious based on Clayton, Berry, and Marlowe.

E. Alleged Obviousness of Claims 68 and 115 based on Clayton, Berry, Marlowe, and Gioscia

Dependent claims 68 and 115 further recite that "the video file comprises a video clip stored on the portable device." Ex. 1001, 43:49–50, 46:50–51. In other words, claims 68 and 115 require wireless transmission of video.

Petitioner contends that claims 68 and 115 are unpatentable under 35 U.S.C. § 103(a) as obvious over the combination of Clayton, Berry, Marlowe, and Gioscia (Ex. 1006). Pet. 57–58. To support its contention, Petitioner further relies on Gioscia for expressly teaching a car audio/video system to display a video file comprising a picture (i.e., cover art) as recited in claims 68 and 115. Ex. 1006, 3:29–49, 4:30–33, 4:56–5:30, Figs. 1–3. We find Petitioner's evidence and reasoning persuasive on the current record.

As discussed above, Petitioner has made a sufficient showing of obviousness of claims 49, 66, 97, and 113, from which claims 68 and 115 directly or indirectly depend based on Clayton, Berry, and Marlowe.

Petitioner has also sufficiently shown that Gioscia teaches the additional limitations of dependent claims 68 and 115, and has provided articulated reasoning with some rational underpinning to support the conclusion of obviousness for those claims. Thus, we are also persuaded that Petitioner has established a reasonable likelihood that it would prevail in its challenge to claims 68 and 115 of the '342 patent as obvious based on Clayton, Berry, Marlowe, and Gioscia.

III. CONCLUSION

For the foregoing reasons, and considering Patent Owner's Preliminary Response, we determine the information presented in the Petition establishes that there is a reasonable likelihood that Petitioner would prevail in challenging claims 49–57, 62–64, 66, 68, 70, 71, 73–80, 94, 95, 97, 99–103, 106, 109–111, 113, 115, and 120 of the '324 patent. At this juncture, we have not made a final determination with respect to the patentability of the challenged claims, or the construction of any claim term. Our final decision will be based on the record, as fully developed during trial.

IV. ORDER

Accordingly, it is:

ORDERED that, pursuant to 35 U.S.C. § 314, an *inter partes* review is instituted for claims 49–57, 62–64, 66, 68, 70, 71, 73–80, 94, 95, 97, 99–103, 106, 109–111, 113, 115, and 120 of the '342 patent on the following grounds:

1. Claims 49–55, 57, 62–64, 71, 73–80, 95, and 97, 99–103, 109–111, and 120 as unpatentable under 35 U.S.C. § 103 over Clayton and Berry;

2. Claims 49–57, 62–64, 66, 70, 71, 73–80, 94, 95, 97, 99–103, 106, 109–111, 113, and 120 as unpatentable under 35 U.S.C. § 103 over Clayton, Berry, and Marlowe; and

3. Claims 68 and 115 as unpatentable under 35 U.S.C. § 103 over Clayton, Berry, Marlowe, and Gioscia;

FURTHER ORDERED that no other ground of unpatentability asserted in the Petition is authorized for this *inter partes* review; and

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4(b), notice is hereby given of the institution of a trial, which commences on the entry date of this decision.

IPR2016-00418
Patent 8,155,342 B2

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Paper 15
Entered: December 20, 2016

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

HYUNDAI MOTOR COMPANY LTD., HYUNDAI MOTOR AMERICA, HYUNDAI MOTOR MANUFACTURING ALABAMA, LLC, KIA MOTORS CORPORATION, KIA MOTORS AMERICA, INC., KIA MOTORS MANUFACTURING GEORGIA, INC., NISSAN NORTH AMERICA, INC., NISSAN MOTOR CO., LTD., and AMERICAN HONDA MOTOR CO., INC.,
Petitioner,

v.

BLITZSAFE TEXAS, LLC,
Patent Owner.

Cases IPR2016-01533, IPR2016-01557, IPR2016-01560
Patent 8,155,342 B2

Before JAMESON LEE, THOMAS L. GIANNETTI, MIRIAM L. QUINN, and KERRY BEGLEY, *Administrative Patent Judges.*[1]

QUINN, *Administrative Patent Judge.*

DECISION

Institution of *Inter Partes* Review and Grant of Motion for Joinder
37 C.F.R. § 42.108 and 37 C.F.R. § 42.122(b)

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[1] This is not a decision by an expanded panel of the Board. Judges Quinn, Lee, and Giannetti are paneled in IPR2016-01557 and IPR2016-01560. Judges Quinn, Begley, and Lee are paneled in IPR2016-01533.

I. INTRODUCTION

Various Hyundai and Kia entities, listed in the caption above, filed a Petition (IPR2016-01557, Paper 1) requesting *inter partes* review of claims 49–57, 62–64, 66, 68, 70, 71, 73–80, 94, 95, 97, 99–103, 106, 109–111, 113, 115, and 120 ("the challenged claims") of U.S. Patent No. 8,155,342 B2 (Ex. 1001, "the '342 patent"), and concurrently filed a Motion for Joinder (IPR2016-01557, Paper 8, "Mot."). The Nissan entities captioned above filed a substantively identical Petition (IPR2016-01560, Paper 3), and a Motion for Joinder (IPR2016-01560, Paper 4). Finally, American Honda Motor Co. also filed a substantively identical Petition (IPR2016-01533, Paper 2) and a Motion for Joinder (IPR2016-01533, Paper 3).

The pending Motions for Joinder seek joinder of these proceedings with *Toyota Motor Corporation v. Blitzsafe Texas, LLC.*, Case IPR2016-00418 ("the Toyota IPR"). Mot. 1.[2] Patent Owner filed Oppositions to the Motions for Joinder. Paper 13 ("Opp.").[3] Petitioner replied to Patent Owner's opposition. Paper 14 ("Reply"). Patent Owner did not file a Preliminary Response. For the reasons described below, we institute an

[2] Given the similarities in the filed motions for joinder, we refer hereinafter to the Motion for Joinder filed in IPR2016-01557.

[3] Patent Owner filed Oppositions in IPR2016-01557 and IPR2016-01533 but did not file an Opposition to the Motion for Joinder in IPR2016-01560. For ease of reference, hereinafter we refer to the Opposition filed in IPR2015-01557.

inter partes review of the challenged claims and *grant* the Motions for Joinder.

II. INSTITUTION OF *INTER PARTES* REVIEW

The Petitions in these proceeding assert the same grounds as those we considered in the Toyota IPR, filed by Toyota Motor Corporation ("Toyota Petitioner"), in which we instituted *inter partes* review of the '342 patent on July 8, 2016 based on all asserted grounds. *See* Mot. 1, 8; Pet. 5.[4] Indeed, according to Petitioner the instant Petitions are "intentionally identical to the petition in the Toyota IPR in all substantive aspects." Mot. 6. There is no dispute otherwise, and our inspection of the filings reveal that the grounds (and prior art) upon which the requested reviews of the '342 patent are presented in these proceedings are identical to the grounds on which we instituted trial in the Toyota IPR. The Petitions in these proceedings also are supported by a declaration of Dr. Thomas Matheson (Ex. 1016) that is "substantively identical" to the declaration of Dr. Thomas Matheson filed in the Toyota IPR. Mot. 6.

Accordingly, for essentially the same reasons set forth in our Decision on Institution[5] in the Toyota IPR, we hereby *grant* the instant Petitions on all asserted grounds.

III. GRANT OF MOTION FOR JOINDER

Joinder in *inter partes* review is subject to the provisions of 35 U.S.C. § 315(c):

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[4] We refer hereinafter to the Petition filed in IPR2015-01557.

[5] TOYOTA IPR, Paper 13.

> (c) JOINDER.—If the Director institutes an inter partes review, the Director, in his or her discretion, may join as a party to that inter partes review any person who properly files a petition under section 311 that the Director, after receiving a preliminary response under section 313 or the expiration of the time for filing such a response, determines warrants the institution of an inter parties review under section 314.

As the moving party, Petitioner bears the burden of proving that it is entitled to the requested relief. 37 C.F.R. § 42.20(c). A motion for joinder should: (1) set forth the reasons joinder is appropriate; (2) identify any new grounds of unpatentability asserted in the petition; and (3) explain what impact (if any) joinder would have on the trial schedule for the existing review. *See* Frequently Asked Question H5, http://www.uspto.gov/patentsapplication-process/appealing-patentdecisions/trials/patent-reviewprocessing-system-prps-0.

Petitioner asserts that joinder is appropriate as all the claims challenged in these proceedings, the grounds, prior art, and evidence submitted in support of the Petition are the same as in the Toyota IPR. Mot. 6. Joinder, thus, would avoid duplicate efforts and "secure the just, speedy, and inexpensive resolution of these related proceedings." *Id.* at 6–7. Petitioner further asserts that no impact to the trial schedule would ensue if joinder is granted. Mot. 9. In particular, Petitioner agrees to adhere to the deadlines set in the ongoing trial in the Toyota IPR. *Id.* Petitioner also agrees to consolidated discovery and consolidated filings. *Id.* at 8.

Patent Owner opposes the joinder on the basis that estoppel provisions under 35 U.S.C. § 315(b)[6] would be violated if joinder were granted. Opp. 1. In particular, Patent Owner argues that Petitioner "filed its joinder Petitioner more than one year after it had been served with a complaint alleging infringement" of the '342 patent. *Id.* Citing § 315(b), Patent Owner takes the position that Petitioner is barred from filing the Petition and joinder motion. *Id.* at 2.

Patent Owner also argues that joining Petitioner with the Toyota IPR would result in the Hyundai/Kia entities and the Honda entities being allowed to "simultaneously argue two different positions" because these entities filed another petition for *inter partes* review concerning the '342 patent (IPR2016-01476 and IPR2016-01473, respectively). Opp. 2–3. At this time, we note that the Board has not made a determination with respect to other petitions in IPR2016-01476 and IPR2016-01473. At this juncture, there is no evidence of inconsistent positions. Should such inconsistencies arise, the panel will address those at the appropriate time.

We are not persuaded by Patent Owner's argument that the time bar codified in § 315(b) prevents joinder. Although we recognize that, in enacting the one-year time-bar provision applicable to *inter partes* review, a concern was repeated harassment of patent holders, that concern does not inform our understanding of whether joinder is proper under the circumstances argued here. Specifically, we note that § 315(b), the statutory

[6] Patent Owner also cites § 316(a)(11), but fails to argue how this statute would be violated by granting joinder in this proceeding.

provision barring a Petitioner who has been sued more than one year before filing the Petition ("one-year bar"), exempts requests for joinder. *See* Reply 2 (arguing that the Board implements a statutory exception with respect to joinder requests).

Joinder is discretionary based on the particular circumstances of each proceeding. For the captioned proceedings, we agree with Petitioner that joinder is appropriate and will not unduly impact the ongoing trial in the Toyota IPR. Because the ongoing trial is well under way, we limit Petitioner's participation in the joined proceeding, such that (1) the Toyota Petitioner, alone, is responsible for all Petitioner filings until such a time that the Toyota Petitioner is no longer an entity in the proceeding, and (2) all joined Petitioner entities are bound by those filings. These are conditions precedent to granting this joinder. This arrangement promotes the just and efficient administration of the ongoing trial and protects the interests of Petitioner and Patent Owner. Finally, to the extent a Petitioner continues to maintain several proceedings before the Office regarding the '342 patent, the parties may request briefing to address what impact, if any, 35 U.S.C. § 315(e)(1) will have on the pending proceedings.

IV. ORDER

In view of the foregoing, it is

ORDERED that IPR2016-01533, IPR2016-01557, and IPR2016-01560 are hereby instituted as to all challenged claims 49–57, 62–64, 66, 68, 70, 71, 73–80, 94, 95, 97, 99–103, 106, 109–111, 113, 115, and 120 of the '342 patent;

FURTHER ORDERED that Petitioner's Motions for Joinder in IPR2016-01533 (Paper 3), IPR2016-01557 (Paper 8), and IPR2016-01560 (Paper 4) with IPR2016-00418 are *granted*;

FURTHER ORDERED that the grounds on which trial in IPR2016-00418 was instituted are unchanged and no other grounds are included in the joined proceeding;

FURTHER ORDERED that the Scheduling Order entered in IPR2016-00418 (Paper 14) and schedule changes agreed-to by the parties in that proceeding (pursuant to the Scheduling Order) shall govern the schedule of the joined proceeding;

FURTHER ORDERED that, throughout the joined proceeding, all substantive filings in the joined proceeding, IPR2016-00418, will be the responsibility of the Toyota Petitioner, alone, and all joined Petitioner entities are bound by those filings;

FURTHER ORDERED that a copy of this Decision will be entered into the record of IPR2016-00418;

FURTHER ORDERED that IPR2016-01533, IPR2016-01557, and IPR2016-01560 are terminated under 37 C.F.R. § 42.72 and all further filings in the joined proceeding are to be made in IPR2016-00418; and

FURTHER ORDERED that the case caption in IPR2016-00418 shall be changed to reflect joinder with this proceeding in accordance with the attached example.

IPR2016-01533
IPR2016-01557
IPR2016-01560
Patent No. 8,155,342 B2

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IPR2016-01533
IPR2016-01557
IPR2016-01560
Patent No. 8,155,342 B2

PATENT OWNER:

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Paper 15
Entered: December 20, 2016

Example Case Caption for Joined Proceeding

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TOYOTA MOTOR CORPORATION, HYUNDAI MOTOR COMPANY LTD., HYUNDAI MOTOR AMERICA, HYUNDAI MOTOR MANUFACTURING ALABAMA, LLC, KIA MOTORS CORPORATION, KIA MOTORS AMERICA, INC., KIA MOTORS MANUFACTURING GEORGIA, INC., NISSAN NORTH AMERICA, INC., NISSAN MOTOR CO., LTD., and AMERICAN HONDA MOTOR CO., INC.,

Petitioner,

v.

BLITZSAFE TEXAS, LLC,
Patent Owner.

Case IPR2016-00418[1]
Patent 8,155,342 B2

---

[1] Cases IPR2016-01533, IPR2016-01557, and IPR2016-01560 have been joined with this proceeding.

Trials@uspto.gov
Tel: 571-272-7822

Paper 10
Entered: December 20, 2016

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

HYUNDAI MOTOR COMPANY LTD., HYUNDAI MOTOR AMERICA, HYUNDAI MOTOR MANUFACTURING ALABAMA, LLC, KIA MOTORS CORPORATION, KIA MOTORS AMERICA, INC., KIA MOTORS MANUFACTURING GEORGIA, INC., NISSAN NORTH AMERICA, INC., NISSAN MOTOR CO., LTD., and AMERICAN HONDA MOTOR CO., INC.,
Petitioner,

v.

BLITZSAFE TEXAS, LLC,
Patent Owner.

Cases IPR2016-01533, IPR2016-01557, IPR2016-01560
Patent 8,155,342 B2

Before JAMESON LEE, THOMAS L. GIANNETTI, MIRIAM L. QUINN, and KERRY BEGLEY, *Administrative Patent Judges.*[1]

QUINN, *Administrative Patent Judge.*

DECISION

Institution of *Inter Partes* Review and Grant of Motion for Joinder
37 C.F.R. § 42.108 and 37 C.F.R. § 42.122(b)

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[1] This is not a decision by an expanded panel of the Board. Judges Quinn, Lee, and Giannetti are paneled in IPR2016-01557 and IPR2016-01560. Judges Quinn, Begley, and Lee are paneled in IPR2016-01533.

I. INTRODUCTION

Various Hyundai and Kia entities, listed in the caption above, filed a Petition (IPR2016-01557, Paper 1) requesting *inter partes* review of claims 49–57, 62–64, 66, 68, 70, 71, 73–80, 94, 95, 97, 99–103, 106, 109–111, 113, 115, and 120 ("the challenged claims") of U.S. Patent No. 8,155,342 B2 (Ex. 1001, "the '342 patent"), and concurrently filed a Motion for Joinder (IPR2016-01557, Paper 8, "Mot."). The Nissan entities captioned above filed a substantively identical Petition (IPR2016-01560, Paper 3), and a Motion for Joinder (IPR2016-01560, Paper 4). Finally, American Honda Motor Co. also filed a substantively identical Petition (IPR2016-01533, Paper 2) and a Motion for Joinder (IPR2016-01533, Paper 3).

The pending Motions for Joinder seek joinder of these proceedings with *Toyota Motor Corporation v. Blitzsafe Texas, LLC.*, Case IPR2016-00418 ("the Toyota IPR"). Mot. 1.[2] Patent Owner filed Oppositions to the Motions for Joinder. Paper 13 ("Opp.").[3] Petitioner replied to Patent Owner's opposition. Paper 14 ("Reply"). Patent Owner did not file a Preliminary Response. For the reasons described below, we institute an

[2] Given the similarities in the filed motions for joinder, we refer hereinafter to the Motion for Joinder filed in IPR2016-01557.

[3] Patent Owner filed Oppositions in IPR2016-01557 and IPR2016-01533 but did not file an Opposition to the Motion for Joinder in IPR2016-01560. For ease of reference, hereinafter we refer to the Opposition filed in IPR2015-01557.

inter partes review of the challenged claims and *grant* the Motions for Joinder.

II. INSTITUTION OF *INTER PARTES* REVIEW

The Petitions in these proceeding assert the same grounds as those we considered in the Toyota IPR, filed by Toyota Motor Corporation ("Toyota Petitioner"), in which we instituted *inter partes* review of the '342 patent on July 8, 2016 based on all asserted grounds. *See* Mot. 1, 8; Pet. 5.[4] Indeed, according to Petitioner the instant Petitions are "intentionally identical to the petition in the Toyota IPR in all substantive aspects." Mot. 6. There is no dispute otherwise, and our inspection of the filings reveal that the grounds (and prior art) upon which the requested reviews of the '342 patent are presented in these proceedings are identical to the grounds on which we instituted trial in the Toyota IPR. The Petitions in these proceedings also are supported by a declaration of Dr. Thomas Matheson (Ex. 1016) that is "substantively identical" to the declaration of Dr. Thomas Matheson filed in the Toyota IPR. Mot. 6.

Accordingly, for essentially the same reasons set forth in our Decision on Institution[5] in the Toyota IPR, we hereby *grant* the instant Petitions on all asserted grounds.

III. GRANT OF MOTION FOR JOINDER

Joinder in *inter partes* review is subject to the provisions of 35 U.S.C. § 315(c):

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[4] We refer hereinafter to the Petition filed in IPR2015-01557.

[5] TOYOTA IPR, Paper 13.

> (c) JOINDER.—If the Director institutes an inter partes review, the Director, in his or her discretion, may join as a party to that inter partes review any person who properly files a petition under section 311 that the Director, after receiving a preliminary response under section 313 or the expiration of the time for filing such a response, determines warrants the institution of an inter parties review under section 314.

As the moving party, Petitioner bears the burden of proving that it is entitled to the requested relief. 37 C.F.R. § 42.20(c). A motion for joinder should: (1) set forth the reasons joinder is appropriate; (2) identify any new grounds of unpatentability asserted in the petition; and (3) explain what impact (if any) joinder would have on the trial schedule for the existing review. *See* Frequently Asked Question H5, http://www.uspto.gov/patentsapplication-process/appealing-patentdecisions/trials/patent-reviewprocessing-system-prps-0.

Petitioner asserts that joinder is appropriate as all the claims challenged in these proceedings, the grounds, prior art, and evidence submitted in support of the Petition are the same as in the Toyota IPR. Mot. 6. Joinder, thus, would avoid duplicate efforts and "secure the just, speedy, and inexpensive resolution of these related proceedings." *Id.* at 6–7. Petitioner further asserts that no impact to the trial schedule would ensue if joinder is granted. Mot. 9. In particular, Petitioner agrees to adhere to the deadlines set in the ongoing trial in the Toyota IPR. *Id.* Petitioner also agrees to consolidated discovery and consolidated filings. *Id.* at 8.

Patent Owner opposes the joinder on the basis that estoppel provisions under 35 U.S.C. § 315(b)[6] would be violated if joinder were granted. Opp. 1. In particular, Patent Owner argues that Petitioner "filed its joinder Petitioner more than one year after it had been served with a complaint alleging infringement" of the '342 patent. *Id.* Citing § 315(b), Patent Owner takes the position that Petitioner is barred from filing the Petition and joinder motion. *Id.* at 2.

Patent Owner also argues that joining Petitioner with the Toyota IPR would result in the Hyundai/Kia entities and the Honda entities being allowed to "simultaneously argue two different positions" because these entities filed another petition for *inter partes* review concerning the '342 patent (IPR2016-01476 and IPR2016-01473, respectively). Opp. 2–3. At this time, we note that the Board has not made a determination with respect to other petitions in IPR2016-01476 and IPR2016-01473. At this juncture, there is no evidence of inconsistent positions. Should such inconsistencies arise, the panel will address those at the appropriate time.

We are not persuaded by Patent Owner's argument that the time bar codified in § 315(b) prevents joinder. Although we recognize that, in enacting the one-year time-bar provision applicable to *inter partes* review, a concern was repeated harassment of patent holders, that concern does not inform our understanding of whether joinder is proper under the circumstances argued here. Specifically, we note that § 315(b), the statutory

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[6] Patent Owner also cites § 316(a)(11), but fails to argue how this statute would be violated by granting joinder in this proceeding.

provision barring a Petitioner who has been sued more than one year before filing the Petition ("one-year bar"), exempts requests for joinder. *See* Reply 2 (arguing that the Board implements a statutory exception with respect to joinder requests).

Joinder is discretionary based on the particular circumstances of each proceeding. For the captioned proceedings, we agree with Petitioner that joinder is appropriate and will not unduly impact the ongoing trial in the Toyota IPR. Because the ongoing trial is well under way, we limit Petitioner's participation in the joined proceeding, such that (1) the Toyota Petitioner, alone, is responsible for all Petitioner filings until such a time that the Toyota Petitioner is no longer an entity in the proceeding, and (2) all joined Petitioner entities are bound by those filings. These are conditions precedent to granting this joinder. This arrangement promotes the just and efficient administration of the ongoing trial and protects the interests of Petitioner and Patent Owner. Finally, to the extent a Petitioner continues to maintain several proceedings before the Office regarding the '342 patent, the parties may request briefing to address what impact, if any, 35 U.S.C. § 315(e)(1) will have on the pending proceedings.

IV. ORDER

In view of the foregoing, it is

ORDERED that IPR2016-01533, IPR2016-01557, and IPR2016-01560 are hereby instituted as to all challenged claims 49–57, 62–64, 66, 68, 70, 71, 73–80, 94, 95, 97, 99–103, 106, 109–111, 113, 115, and 120 of the '342 patent;

FURTHER ORDERED that Petitioner's Motions for Joinder in IPR2016-01533 (Paper 3), IPR2016-01557 (Paper 8), and IPR2016-01560 (Paper 4) with IPR2016-00418 are *granted*;

FURTHER ORDERED that the grounds on which trial in IPR2016-00418 was instituted are unchanged and no other grounds are included in the joined proceeding;

FURTHER ORDERED that the Scheduling Order entered in IPR2016-00418 (Paper 14) and schedule changes agreed-to by the parties in that proceeding (pursuant to the Scheduling Order) shall govern the schedule of the joined proceeding;

FURTHER ORDERED that, throughout the joined proceeding, all substantive filings in the joined proceeding, IPR2016-00418, will be the responsibility of the Toyota Petitioner, alone, and all joined Petitioner entities are bound by those filings;

FURTHER ORDERED that a copy of this Decision will be entered into the record of IPR2016-00418;

FURTHER ORDERED that IPR2016-01533, IPR2016-01557, and IPR2016-01560 are terminated under 37 C.F.R. § 42.72 and all further filings in the joined proceeding are to be made in IPR2016-00418; and

FURTHER ORDERED that the case caption in IPR2016-00418 shall be changed to reflect joinder with this proceeding in accordance with the attached example.

IPR2016-01533
IPR2016-01557
IPR2016-01560
Patent No. 8,155,342 B2

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IPR2016-01533
IPR2016-01557
IPR2016-01560
Patent No. 8,155,342 B2

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Paper 10
Entered: December 20, 2016

Example Case Caption for Joined Proceeding

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TOYOTA MOTOR CORPORATION, HYUNDAI MOTOR COMPANY LTD., HYUNDAI MOTOR AMERICA, HYUNDAI MOTOR MANUFACTURING ALABAMA, LLC, KIA MOTORS CORPORATION, KIA MOTORS AMERICA, INC., KIA MOTORS MANUFACTURING GEORGIA, INC., NISSAN NORTH AMERICA, INC., NISSAN MOTOR CO., LTD., and AMERICAN HONDA MOTOR CO., INC.,

Petitioner,

v.

BLITZSAFE TEXAS, LLC,
Patent Owner.

Case IPR2016-00418[1]
Patent 8,155,342 B2

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[1] Cases IPR2016-01533, IPR2016-01557, and IPR2016-01560 have been joined with this proceeding.

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Paper 11
Entered: December 20, 2016

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

HYUNDAI MOTOR COMPANY LTD., HYUNDAI MOTOR AMERICA, HYUNDAI MOTOR MANUFACTURING ALABAMA, LLC, KIA MOTORS CORPORATION, KIA MOTORS AMERICA, INC., KIA MOTORS MANUFACTURING GEORGIA, INC., NISSAN NORTH AMERICA, INC., NISSAN MOTOR CO., LTD., and AMERICAN HONDA MOTOR CO., INC.,
Petitioner,

v.

BLITZSAFE TEXAS, LLC,
Patent Owner.

Cases IPR2016-01533, IPR2016-01557, IPR2016-01560
Patent 8,155,342 B2

Before JAMESON LEE, THOMAS L. GIANNETTI, MIRIAM L. QUINN, and KERRY BEGLEY, *Administrative Patent Judges.*[1]

QUINN, *Administrative Patent Judge.*

DECISION

Institution of *Inter Partes* Review and Grant of Motion for Joinder
37 C.F.R. § 42.108 and 37 C.F.R. § 42.122(b)

---

[1] This is not a decision by an expanded panel of the Board. Judges Quinn, Lee, and Giannetti are paneled in IPR2016-01557 and IPR2016-01560. Judges Quinn, Begley, and Lee are paneled in IPR2016-01533.

I. INTRODUCTION

Various Hyundai and Kia entities, listed in the caption above, filed a Petition (IPR2016-01557, Paper 1) requesting *inter partes* review of claims 49–57, 62–64, 66, 68, 70, 71, 73–80, 94, 95, 97, 99–103, 106, 109–111, 113, 115, and 120 ("the challenged claims") of U.S. Patent No. 8,155,342 B2 (Ex. 1001, "the '342 patent"), and concurrently filed a Motion for Joinder (IPR2016-01557, Paper 8, "Mot."). The Nissan entities captioned above filed a substantively identical Petition (IPR2016-01560, Paper 3), and a Motion for Joinder (IPR2016-01560, Paper 4). Finally, American Honda Motor Co. also filed a substantively identical Petition (IPR2016-01533, Paper 2) and a Motion for Joinder (IPR2016-01533, Paper 3).

The pending Motions for Joinder seek joinder of these proceedings with *Toyota Motor Corporation v. Blitzsafe Texas, LLC.*, Case IPR2016-00418 ("the Toyota IPR"). Mot. 1.[2] Patent Owner filed Oppositions to the Motions for Joinder. Paper 13 ("Opp.").[3] Petitioner replied to Patent Owner's opposition. Paper 14 ("Reply"). Patent Owner did not file a Preliminary Response. For the reasons described below, we institute an

[2] Given the similarities in the filed motions for joinder, we refer hereinafter to the Motion for Joinder filed in IPR2016-01557.

[3] Patent Owner filed Oppositions in IPR2016-01557 and IPR2016-01533 but did not file an Opposition to the Motion for Joinder in IPR2016-01560. For ease of reference, hereinafter we refer to the Opposition filed in IPR2015-01557.

inter partes review of the challenged claims and *grant* the Motions for Joinder.

II. INSTITUTION OF *INTER PARTES* REVIEW

The Petitions in these proceeding assert the same grounds as those we considered in the Toyota IPR, filed by Toyota Motor Corporation ("Toyota Petitioner"), in which we instituted *inter partes* review of the '342 patent on July 8, 2016 based on all asserted grounds. *See* Mot. 1, 8; Pet. 5.[4] Indeed, according to Petitioner the instant Petitions are "intentionally identical to the petition in the Toyota IPR in all substantive aspects." Mot. 6. There is no dispute otherwise, and our inspection of the filings reveal that the grounds (and prior art) upon which the requested reviews of the '342 patent are presented in these proceedings are identical to the grounds on which we instituted trial in the Toyota IPR. The Petitions in these proceedings also are supported by a declaration of Dr. Thomas Matheson (Ex. 1016) that is "substantively identical" to the declaration of Dr. Thomas Matheson filed in the Toyota IPR. Mot. 6.

Accordingly, for essentially the same reasons set forth in our Decision on Institution[5] in the Toyota IPR, we hereby *grant* the instant Petitions on all asserted grounds.

III. GRANT OF MOTION FOR JOINDER

Joinder in *inter partes* review is subject to the provisions of 35 U.S.C. § 315(c):

---

[4] We refer hereinafter to the Petition filed in IPR2015-01557.

[5] TOYOTA IPR, Paper 13.

> (c) JOINDER.—If the Director institutes an inter partes review, the Director, in his or her discretion, may join as a party to that inter partes review any person who properly files a petition under section 311 that the Director, after receiving a preliminary response under section 313 or the expiration of the time for filing such a response, determines warrants the institution of an inter parties review under section 314.

As the moving party, Petitioner bears the burden of proving that it is entitled to the requested relief. 37 C.F.R. § 42.20(c). A motion for joinder should: (1) set forth the reasons joinder is appropriate; (2) identify any new grounds of unpatentability asserted in the petition; and (3) explain what impact (if any) joinder would have on the trial schedule for the existing review. *See* Frequently Asked Question H5, http://www.uspto.gov/patentsapplication-process/appealing-patentdecisions/trials/patent-reviewprocessing-system-prps-0.

Petitioner asserts that joinder is appropriate as all the claims challenged in these proceedings, the grounds, prior art, and evidence submitted in support of the Petition are the same as in the Toyota IPR. Mot. 6. Joinder, thus, would avoid duplicate efforts and "secure the just, speedy, and inexpensive resolution of these related proceedings." *Id.* at 6–7. Petitioner further asserts that no impact to the trial schedule would ensue if joinder is granted. Mot. 9. In particular, Petitioner agrees to adhere to the deadlines set in the ongoing trial in the Toyota IPR. *Id.* Petitioner also agrees to consolidated discovery and consolidated filings. *Id.* at 8.

Patent Owner opposes the joinder on the basis that estoppel provisions under 35 U.S.C. § 315(b)[6] would be violated if joinder were granted. Opp. 1. In particular, Patent Owner argues that Petitioner "filed its joinder Petitioner more than one year after it had been served with a complaint alleging infringement" of the '342 patent. *Id.* Citing § 315(b), Patent Owner takes the position that Petitioner is barred from filing the Petition and joinder motion. *Id.* at 2.

Patent Owner also argues that joining Petitioner with the Toyota IPR would result in the Hyundai/Kia entities and the Honda entities being allowed to "simultaneously argue two different positions" because these entities filed another petition for *inter partes* review concerning the '342 patent (IPR2016-01476 and IPR2016-01473, respectively). Opp. 2–3. At this time, we note that the Board has not made a determination with respect to other petitions in IPR2016-01476 and IPR2016-01473. At this juncture, there is no evidence of inconsistent positions. Should such inconsistencies arise, the panel will address those at the appropriate time.

We are not persuaded by Patent Owner's argument that the time bar codified in § 315(b) prevents joinder. Although we recognize that, in enacting the one-year time-bar provision applicable to *inter partes* review, a concern was repeated harassment of patent holders, that concern does not inform our understanding of whether joinder is proper under the circumstances argued here. Specifically, we note that § 315(b), the statutory

[6] Patent Owner also cites § 316(a)(11), but fails to argue how this statute would be violated by granting joinder in this proceeding.

provision barring a Petitioner who has been sued more than one year before filing the Petition ("one-year bar"), exempts requests for joinder. *See* Reply 2 (arguing that the Board implements a statutory exception with respect to joinder requests).

Joinder is discretionary based on the particular circumstances of each proceeding. For the captioned proceedings, we agree with Petitioner that joinder is appropriate and will not unduly impact the ongoing trial in the Toyota IPR. Because the ongoing trial is well under way, we limit Petitioner's participation in the joined proceeding, such that (1) the Toyota Petitioner, alone, is responsible for all Petitioner filings until such a time that the Toyota Petitioner is no longer an entity in the proceeding, and (2) all joined Petitioner entities are bound by those filings. These are conditions precedent to granting this joinder. This arrangement promotes the just and efficient administration of the ongoing trial and protects the interests of Petitioner and Patent Owner. Finally, to the extent a Petitioner continues to maintain several proceedings before the Office regarding the '342 patent, the parties may request briefing to address what impact, if any, 35 U.S.C. § 315(e)(1) will have on the pending proceedings.

IV. ORDER

In view of the foregoing, it is

ORDERED that IPR2016-01533, IPR2016-01557, and IPR2016-01560 are hereby instituted as to all challenged claims 49–57, 62–64, 66, 68, 70, 71, 73–80, 94, 95, 97, 99–103, 106, 109–111, 113, 115, and 120 of the '342 patent;

FURTHER ORDERED that Petitioner's Motions for Joinder in IPR2016-01533 (Paper 3), IPR2016-01557 (Paper 8), and IPR2016-01560 (Paper 4) with IPR2016-00418 are *granted*;

FURTHER ORDERED that the grounds on which trial in IPR2016-00418 was instituted are unchanged and no other grounds are included in the joined proceeding;

FURTHER ORDERED that the Scheduling Order entered in IPR2016-00418 (Paper 14) and schedule changes agreed-to by the parties in that proceeding (pursuant to the Scheduling Order) shall govern the schedule of the joined proceeding;

FURTHER ORDERED that, throughout the joined proceeding, all substantive filings in the joined proceeding, IPR2016-00418, will be the responsibility of the Toyota Petitioner, alone, and all joined Petitioner entities are bound by those filings;

FURTHER ORDERED that a copy of this Decision will be entered into the record of IPR2016-00418;

FURTHER ORDERED that IPR2016-01533, IPR2016-01557, and IPR2016-01560 are terminated under 37 C.F.R. § 42.72 and all further filings in the joined proceeding are to be made in IPR2016-00418; and

FURTHER ORDERED that the case caption in IPR2016-00418 shall be changed to reflect joinder with this proceeding in accordance with the attached example.

IPR2016-01533
IPR2016-01557
IPR2016-01560
Patent No. 8,155,342 B2

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IPR2016-01533
IPR2016-01557
IPR2016-01560
Patent No. 8,155,342 B2

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Paper 11
Entered: December 20, 2016

Example Case Caption for Joined Proceeding

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TOYOTA MOTOR CORPORATION, HYUNDAI MOTOR COMPANY LTD., HYUNDAI MOTOR AMERICA, HYUNDAI MOTOR MANUFACTURING ALABAMA, LLC, KIA MOTORS CORPORATION, KIA MOTORS AMERICA, INC., KIA MOTORS MANUFACTURING GEORGIA, INC., NISSAN NORTH AMERICA, INC., NISSAN MOTOR CO., LTD., and AMERICAN HONDA MOTOR CO., INC.,

Petitioner,

v.

BLITZSAFE TEXAS, LLC,
Patent Owner.

Case IPR2016-00418[1]
Patent 8,155,342 B2

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[1] Cases IPR2016-01533, IPR2016-01557, and IPR2016-01560 have been joined with this proceeding.

Trials@uspto.gov
571.272.7822

Paper No. 12
Filed: January 24, 2017

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

HYUNDAI MOTOR COMPANY, HYUNDAI MOTOR AMERICA, HYUNDAI MOTOR MANUFACTURING ALABAMA, LLC, KIA MOTORS CORPORATION, KIA MOTORS AMERICA, INC., and KIA MOTORS MANUFACTURING GEORGIA, INC.,
Petitioner,

v.

BLITZSAFE TEXAS, LLC,
Patent Owner.

Case IPR2016-01476
Patent 8,155,342 B2

Before JAMESON LEE, MIRIAM L. QUINN, and KERRY BEGLEY, *Administrative Patent Judges*.

BEGLEY, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review
35 U.S.C. § 314(a), 37 C.F.R. § 42.108

Hyundai Motor Company, Hyundai Motor America, Hyundai Motor Manufacturing Alabama, LLC, Kia Motors Corporation, Kia Motors America, Inc., and Kia Motors Manufacturing Georgia, Inc. (collectively,

"Petitioner") filed a Petition requesting *inter partes* review of claims 49–57, 62–64, 71, 73, 77–80, 95, 97, 99–103, 106, 109–111, and 120 ("challenged claims") of U.S. Patent No. 8,155,342 B2 (Ex. 1001, "the '342 patent"). Paper 1 ("Pet."). Blitzsafe Texas, LLC ("Patent Owner") filed a Preliminary Response to the Petition. Paper 11 ("Prelim. Resp.").

Pursuant to 35 U.S.C. § 314(a), an *inter partes* review may not be instituted unless "the information presented in the petition . . . and any response . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition." Having considered the Petition and the Preliminary Response, we determine that the information presented does not show that there is a reasonable likelihood that Petitioner would prevail in establishing the unpatentability of any of the challenged claims of the '342 patent. Accordingly, we deny institution of an *inter partes* review.

I. BACKGROUND

A. RELATED MATTERS

The parties represent that the '342 patent is the subject of five ongoing infringement actions before the U.S. District Court for the Eastern District of Texas and was previously the subject of two infringement actions before the U.S. District Court for the District of New Jersey. Pet. 2; Paper 8, 1–2. In addition, the '342 patent is or was previously the subject of several *inter partes* review proceedings before the Office, namely IPR2016-00118, IPR2016-00418, IPR2016-00419, IPR2016-01445, IPR2016-01449, IPR2016-01473, IPR2016-01533, IPR2016-01557, and IPR2016-01560. Paper 8, 2; *see* Pet. 2. Related U.S. Patent No. 7,489,786 B2 is or was previously involved in IPR2016-00421, IPR2016-00422, IPR2016-01448, IPR2016-01472, and IPR2016-01477. Paper 8, 2; *see* Pet. 2.

B. THE '342 PATENT

The '342 patent explains that integrating an after-market audio/video system with an existing car audio/video system, such as a stereo system provided by an original equipment manufacturer ("OEM"), presents a problem because "signals generated by both systems are in proprietary formats" and "are not capable of being processed by" or recognized by the other system. Ex. 1001, 1:54–60; *see id.* at 2:58–67. Thus, "in order to integrate after-market systems with existing car stereo and video systems, it is necessary to convert signals between such systems." *Id.* at 1:60–63.

The '342 patent is directed to a multimedia device integration system that allows after-market portable devices to be integrated into an existing car audio/video system, such that data from the portable device can be displayed on the car system and control commands can be issued at the car system for execution by the portable device. *Id.* at [57], 2:44–54, 3:7–14. The portable device could, for example, comprise "a CD player, CD changer, digital media device (e.g., MP3 player, MP4 player, WMV player, Apple iPod, portable media center, or other device)," or "cellular telephone." *Id.* at [57]; *see id.* at 2:59–64, 5:9–13, 33:48–56.

Certain embodiments of the '342 patent provide for the "wireless integration" of a portable device with a car audio/video system, including "the wireless exchange" of commands, data, and signals between the portable device and the car system. *Id.* at 5:7–18; *see id.* at 33:43–35:37. These embodiments include an integration subsystem or module that can be positioned within either the portable device or the car audio/video system. *Id.* at 5:13–15, 5:29–31, 34:12–14, 35:23–25, Figs. 18–19. The integration subsystem or module receives control commands, such as a play command,

issued at the car audio/video system; processes the commands into a format compatible with the portable device; and transmits them to the portable device for execution. *Id.* at 5:19–23, 34:19–32; *see id.* at [57]. The integration subsystem or module also receives data from the portable device, such as track, song, artist, and time information; processes the data into a format compatible with the car system; and transmits the data to the car system for display. *Id.* at 5:23–29, 34:32–42; *see id.* at [57].

Figure 19 of the '342 patent is reproduced below.

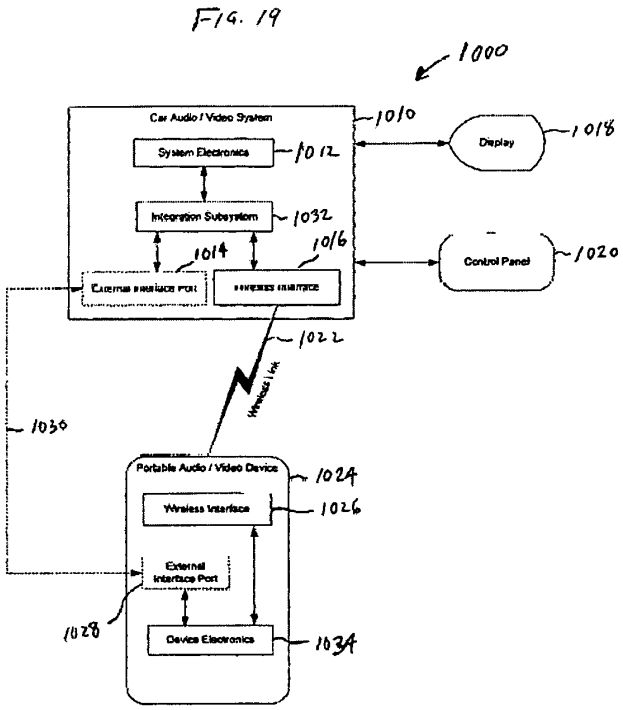

Figure 19 illustrates an embodiment of the disclosed system that provides wireless integration between car audio/video system 1010 and portable device 1024 in which integration subsystem 1032 is positioned within the car system. *Id.* at 8:3–8, 35:17–32. Wireless interface 1016 in the car system and wireless interface 1026 in the portable device form wireless link 1022. *Id.* at 34:15–18; *see id.* at 35:21–23.

C. ILLUSTRATIVE CLAIM

Of the challenged claims, claims 49, 73, 97, and 120 of the '342 patent are independent. Claim 49, reproduced below, is illustrative:

> 49. A multimedia device integration system, comprising:
> an integration subsystem in communication with a car audio/video system; and
> a first wireless interface in communication with said integration subsystem, said first wireless interface establishing a wireless communication link with a second wireless interface in communication with a portable device external to the car audio/video system,
> wherein said integration subsystem
> obtains, using said wireless communication link, information about an audio file stored on the portable device,
> transmits the information to the car audio/video system for subsequent display of the information on a display of the car audio/video system,
> instructs the portable device to play the audio file in response to a user selecting the audio file using controls of the car audio/video system, and
> receives audio generated by the portable device over said wireless communication link for playing on the car audio/video system.

Ex. 1001, 42:29–47 (line breaks added).

D. ASSERTED PRIOR ART

The Petition relies upon the following asserted prior art references:

- U.S. Patent No. 7,110,755 B2 (filed July 22, 2002) (issued Sept. 19, 2006) (Ex. 1006, "Shibasaki");
- Advanced Audio Distribution Profile Specification (Version 1.0 2003) (Ex. 1009, "A2DP");
- Audio/Video Remote Control Profile (Version 1.0 2003) (Ex. 1008, "AVRCP"); and
- Larry Tong & Jimmy Lai, *Optimize Bluetooth Car Kit Design, Implementation* (Nov. 17, 2003) (Ex. 1007, "Tong").

In addition to these references, the Petition supports its contentions with the Declaration of Chris Kyriakakis, Ph.D. (Ex. 1003).

E. Asserted Grounds of Unpatentability

Petitioner asserts the following grounds of unpatentability. Pet. 5–6.

Challenged Claims	Basis	Reference(s)
49–52, 54, 56, 62–64, 71, and 120	§ 102[1]	Shibasaki
53, 73–78, 95, 97, 99–101, 106, and 109–111	§ 103	Shibasaki and the Knowledge of a Person of Ordinary Skill in the Art
55, 57, 73, 79, and 80	§ 103	Shibasaki and Tong
53 and 77	§ 103	Shibasaki and AVRCP
49, 73, 97, and 120	§ 103	Shibasaki and A2DP

II. ANALYSIS

A. Level of Ordinary Skill in the Art

We begin our analysis by addressing the level of ordinary skill in the art. We determine that in this case, no express articulation of the level of ordinary skill is necessary and that the level of ordinary skill in the art is reflected by the prior art of record. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995); *In re Oelrich*, 579 F.2d 86, 91 (CCPA 1978).

B. Claim Construction

The Board interprets claims terms of an unexpired patent using the "broadest reasonable construction in light of the specification of the patent." 37 C.F.R. § 42.100(b); *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144–46 (2016). Under this standard, we presume a claim term carries its

[1] The Leahy-Smith America Invents Act ("AIA"), Pub. L. No. 112–29, 125 Stat. 284, 287–88 (2011), revised 35 U.S.C. §§ 102–103, effective March 16, 2013. Because the patent application resulting in the '342 patent was filed before the effective date of the AIA, we refer to the pre-AIA versions of §§ 102 and 103 throughout this Decision.

"ordinary and customary meaning," which "is the meaning that the term would have to a person of ordinary skill in the art" at the time of the invention. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). A claim term will be interpreted more narrowly than its ordinary and customary meaning only where: (1) the "patentee sets out a definition and acts as [its] own lexicographer," or (2) the "patentee disavows the full scope of a claim term either in the specification or during prosecution." *Aventis Pharma S.A. v. Hospira, Inc.*, 675 F.3d 1324, 1330 (Fed. Cir. 2012).

1. *"integration subsystem"*

Each challenged independent claim of the '342 patent, claims 49, 73, 97, and 120, recites an "integration subsystem." Ex. 1001, 42:29–47, 44:4–23, 45:45–63, 46:63–47:19. Challenged dependent claims 50, 53–57, 74, 77–80, 99, 102, 103, and 106 also recite the term. *Id.* at 42:48–46:24. Petitioner states that in prior Decisions on Institution in IPR2016-00118[2] and IPR2016-00418,[3] the Board construed this term as:

> A subsystem to perform at least: (1) connecting one or more portable devices or inputs to the car audio/video system via an interface, (2) processing and handling signals, audio, and/or video information, (3) allowing a user to control the one or more portable devices via the car audio/video system, and (4) displaying data from the one or more portable devices on the car audio/video system.

Pet. 15 (quoting 118-IPR Decision 11; 418-Decision 15). Petitioner adopts this construction in presenting its asserted grounds in the Petition. *Id.* at 14–15, 20. Patent Owner, in turn, represents that the Board stated in the

[2] *Unified Patents Inc. v. Blitzsafe Texas LLC*, Case IPR2016-00118, Paper 19 (PTAB Apr. 27, 2016) ("118-IPR Decision").
[3] *Toyota Motor Corp. v. Blitzsafe Texas, LLC*, Case IPR2016-00418, Paper 13 (PTAB July 8, 2016) ("418-IPR Decision").

118-IPR Decision that a "subsystem" must be subordinate to another system to comply with the plain meaning of the term. Prelim. Resp. 3, 11–12 (citing 118-IPR Decision 10).

The Board construed the term "integration subsystem" in the 118- and 418-IPR Decisions as well as a Decision on Institution in IPR2016-00419.[4] 118-IPR Decision 11–12; 418-IPR Decision 15; 419-IPR Decision 15–16. By way of a summary, the Board determined that the "integration subsystem" performs "integration" as defined in the '342 patent. *E.g.*, 418-IPR Decision 14. In particular, the following passage of the specification, which defines "integration," supports the Board's construction:

> As used herein, the term "*integration*" or "*integrated*" is intended to mean [1] connecting one or more external devices or inputs to an existing car stereo or video system via an interface, [2] processing and handling signals, audio, and/or video information, [3] allowing a user to control the [external] devices via the car stereo or video system, and [4] displaying data from the devices on the car stereo or video system.

Ex. 1001, 8:64–9:3 (emphases and brackets added). Accordingly, guided by the express definition in the specification, we adopted the above-described functions as the definition of "integration" subsystem.

The passage above, however, focuses on "integration" and does not expressly address the term "subsystem." With regard to "subsystem," the Board noted in the 418- and 419-IPR Decisions that a "subsystem" is subordinate to another system. 418-IPR Decision 14; 419-IPR Decision 14; *see* 118-IPR Decision 10. This interpretation necessitates explanation given the parties' positions in this proceeding. For example, to resolve the parties'

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[4] *Toyota Motor Corp. v. Blitzsafe Texas, LLC*, Case IPR2016-00419, Paper 13 (PTAB July 19, 2016) ("419-IPR Decision").

dispute, we must determine whether a "subsystem" is itself a "system" that is subordinate to another system. *See* Prelim. Resp. 3, 11–13.

We conclude that the plain and ordinary meaning of the word "subsystem" as understood by a person of ordinary skill in the art requires that both the "subsystem" and the "system" to which it is subordinate must be "systems." As evidence of this construction, we note that a dictionary of electrical and electronics terms defines "subsystem" as "[a] system which is subordinate to another system." *Subsystem*, WILEY ELECTRICAL AND ELECTRONICS ENGINEERING DICTIONARY 755 (2004) (also defining the term as "[a] system which is a part of, or assists, a larger system") (Ex. 3001); *see subsystem*, ACADEMIC PRESS DICTIONARY OF SCIENCE AND TECHNOLOGY 2126 (1992) ("a portion of a system that can be treated as a single element in the main system, but that can also be considered a distinct system itself") (Ex. 3002).

We also note that, although the specification does not define the term, it describes the "integration subsystem" consistently with the above-referenced dictionary definition. Figures 18 and 19, for example, illustrate that integration subsystem 932, 1032 may be subordinate either to portable audio/video device 924 or car audio/video system 1010, depending on where the integration subsystem is located. Ex. 1001, Figs. 18–19; *see also id.* at Figs. 20–23 (similarly depicting or describing the integration subsystem). More particularly, the written description corresponding to Figure 18 provides that for Figure 18, the portable device includes *its own device electronics* ("e.g., circuitry and components provided by the portable device manufacturer") *in addition to* an integration subsystem or module and a wireless interface/transceiver. *Id.* at 34:9–13. For Figure 19, the

specification also states that the car audio/video system includes the integration subsystem *in addition to the car system electronics* ("e.g., circuitry and components provided by an OEM or after-market car audio and/or video system manufacturer"), wireless interface/transceiver, display, control panel, and an optional external interface port. *Id.* at 33:57–62, 35:21–28. That is, regardless of where it is positioned, the integration subsystem is a system distinct from any other system (e.g., the car audio/video system).

Accordingly, based on the express definition of the term "integration" provided by the '342 patent, we reiterate here our previous construction of "integration subsystem" from IPR2016-00118, IPR2016-00418, and IPR2016-00419 for purposes of this Decision:

> A subsystem to perform at least: (1) connecting one or more portable devices or inputs to the car audio/video system via an interface, (2) processing and handling signals, audio, and/or video information, (3) allowing a user to control the one or more portable devices via the car audio/video system, and (4) displaying data from the one or more portable devices on the car audio/video system.

To the above definition, consistent with the broadest reasonable interpretation in light of the specification, we add that the "integration subsystem" is a "system which is subordinate to another system."

2. "*generated . . . for playing on the car audio/video system*"

The Petition represents that in a related case before the U.S. District Court for the Eastern District of Texas, Patent Owner proposed that "generated . . . for playing on the car audio/video system," as recited in claims 49 and 73 of the '342 patent, should be construed to mean "produced by the portable device during playback." Pet. 16 (citing Ex. 1004, 47). As support, Petitioner provides a citation to the parties' joint claim construction

chart filed with the district court. *See id.*; Ex. 1004, 47. Petitioner states that it presents this interpretation "to the Board for consideration in determining the [broadest reasonable interpretation] because Patent Owner considers [it] proper, and therefore necessarily within the scope of the [broadest reasonable interpretation]." Pet. 14. Patent Owner responds that the construction it advanced before the district court has "no bearing on the present proceeding where the claim construction standard is 'broadest reasonable construction.'" Prelim. Resp. 5.

Under 37 C.F.R. § 42.104(b)(3), the Petition "must set forth . . . [h]ow the challenged claim is to be construed." Here, the Petition falls short of this requirement by merely listing, without endorsing, Patent Owner's proposed construction before the district court under a different claim construction standard supported only by a citation to a claim chart filed in the district court, which lacks any analysis or evidentiary support (e.g., citations to the intrinsic record of the '342 patent). *See* Pet. 13–14, 16; Ex. 1004, 47; *see also PPC Broadband, Inc. v. Corning Optical Commc'ns RF, LLC*, 815 F.3d 734, 740–43 (Fed. Cir. 2016) (explaining that district courts apply the claim construction standard articulated in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) and that this standard differs from the broadest reasonable interpretation standard that the Board applies to unexpired patents). Therefore, Petitioner has not complied with 37 C.F.R. § 42.104(b)(3) or adequately proffered the term for construction in this proceeding.

Moreover, having considered the specification of the '342 patent and the parties' arguments in this proceeding, we determine that "generated . . . for playing on the car audio/video system," as recited in claims 49 and 73 of the '342 patent, does not require an express construction beyond the plain and ordinary meaning of its terms to resolve the issues presented by the

patentability challenges. *See Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (holding that only claim terms that "are in controversy" need to be construed and "only to the extent necessary to resolve the controversy").

3. *Other Claim Terms*

Based on our review of the record and the dispositive issues in our determination of whether to institute *inter partes* review on the asserted grounds of unpatentability, we need not address the construction of any other claim terms. *See id.*; Pet. 13–16; Prelim. Resp. 5.

C. ALLEGED ANTICIPATION BY SHIBASAKI

Petitioner argues claims 49–52, 54, 56, 62–64, 71, and 120 of the '342 patent are unpatentable as anticipated by Shibasaki. Pet. 5, 17–43.

1. *Shibasaki*

Shibasaki discloses an information processing system in which car audio apparatus 10 forms a piconet with information terminals 20, such as MP3 players and mobile telephones, using a Bluetooth ("BT") radio communication system. Ex. 1006, [57], 8:53–9:23, Fig. 1. The piconet enables car audio apparatus 10 to communicate with information terminals 20 and to "determine[] and collect" from the terminals "music files that can be played in the car audio apparatus 10." *Id.* at [57], 12:3–7, 14:44–52, 14:61–65.

Shibasaki explains that car audio apparatus 10 includes system control section 101, external storage section 103, internal storage section 105, operation section 107, data processing section 109, playback section 111, display section 113, and BT transmission/reception section 115. *Id.* at 9:61–10:3, Fig. 2. System control section 101 "is implemented as, for example, a CPU, a DSP (digital signal processor) . . . for controlling the components of

the car audio apparatus 10." *Id.* at 10:4–6. Operation section 107, in turn, is "a remote controller [or] a console panel" for accepting user input. *Id.* at 10:7–10. BT transmission/reception section 115 "consists mainly of a general-purpose BT module" and transmits and receives signals to and from other BT machines. *Id.* at 10:10–15. Data processing section 109 processes music data, including data received through BT transmission/reception section 115 and read from external storage section 103. *Id.* at 10:38–46. Playback section 111 converts music data "into sound for output." *Id.* at 10:44–50.

Figure 4 of Shibasaki is reproduced below.

FIG. 4

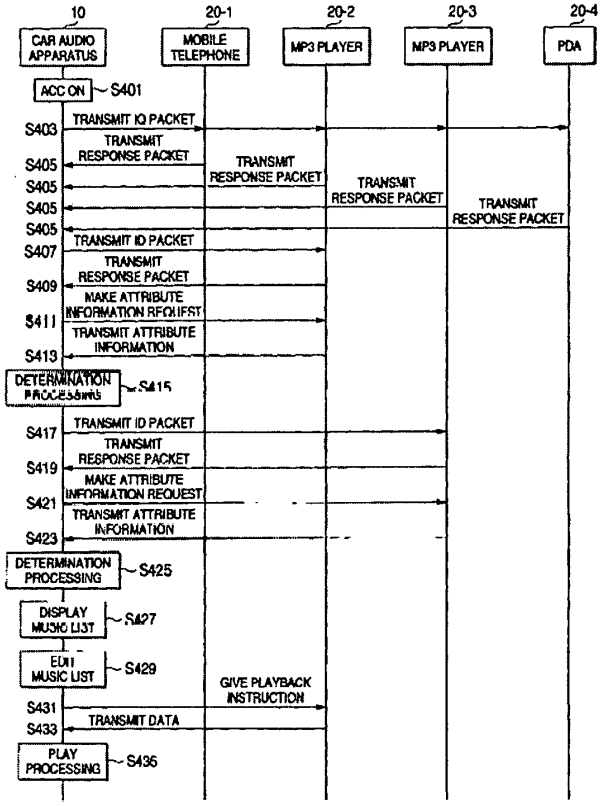

Figure 4 is a sequence chart depicting file processing in the disclosed information processing system. *Id.* at 11:39–41; *see id.* at 8:15–17.

Shibasaki discloses that car audio apparatus 10, after being powered on in step S401, performs "INQUIRY processing" in steps S403 and S405 to inquire whether there is a communicable BT machine in its periphery. *Id.* at 11:45–67. Next, in steps S407–S413 and S417–423, car audio apparatus 10 performs "PAGING processing," in which it transmits an ID packet and attribute information request to machines that it determines "hav[e] a high possibility of having a music file," for example, MP3 player 20-2 and MP3 player 20-3, and receives responsive information. *Id.* at 12:1–26, 13:16–21. Then, car audio apparatus 10 "performs determination processing of determining whether" each MP3 player 20-2 (step S415) and MP3-player 20-3 (step S425) "has a music file that can be played in the car audio apparatus 10" based on the received attribute information, i.e., the "headers of the files" stored on the MP3 player. *Id.* at 12:27–32, 13:16–21; *see id.* at 9:23–26.

For "each of the music files (music data) determined to be playable" in car audio apparatus 10, car audio apparatus 10 takes information regarding the music file, for example, the title, artist, play time, compression format, and storage location in the MP3 player, from the file header and displays the information in a list on display section 113 in step S427. *Id.* at 13:22–29; *see id.* at 9:25–28, 13:30–35, Fig. 6. In step S429, the user edits the displayed music list, for example, by changing the order of the music pieces. *Id.* at 13:36–41. When car audio apparatus 10 accepts a user's playback instruction of a music piece in the edited music list, it transmits the instruction to "the MP3 player 20-2 having the music file corresponding to the given playback instruction ([step] S431), the MP3 player 20-2 storing the music file transmits the music file corresponding to the given playback instruction through the BT radio communication system

(step S433), and the car audio apparatus 10 performs streaming of encoding the received music file in real time and performing play processing (step S435)." *Id.* at 13:41–51; *see id.* at 14:61–67.

2. *Discussion*

Anticipation under 35 U.S.C. § 102 requires "the presence in a single prior art disclosure of all elements of a claimed invention arranged as in the claim." *Therasense, Inc. v. Becton, Dickinson & Co.*, 593 F.3d 1325, 1332 (Fed. Cir. 2010). Specifically, "each claim element must be disclosed, either expressly or inherently, in a single prior art reference, and the claimed arrangement or combination of those elements must also be disclosed, either expressly or inherently, in that same prior art reference." *Id.* at 1332–33. Inherent disclosure is established where the reference "must necessarily include" an "unstated limitation." *Id.* (emphasis omitted).

a. Independent Claims 49 and 120

i. "audio generated by the portable device"

Independent claim 49 of the '342 patent recites that the "integration subsystem" "instructs the portable device to play the audio file" and "receives *audio generated by the portable device* over said wireless communication link for playing on the car audio/video system." Ex. 1001, 42:37–47 (emphasis added). Similarly, independent claim 120 recites that the "integration subsystem instructs the portable device to play an audio file" and "channels *audio generated by the portable device* to the car audio/video system using the wireless communication link for subsequent playing of the audio on the car audio/video system, *the audio corresponding to the audio file played by the portable device*." *Id.* at 47:3–12 (emphases added). Thus, each claim requires that "audio generated by the portable device" be transmitted over a wireless communication link for playing on the car

audio/video system. Each claim expressly distinguishes the recited "audio file," played by the portable device, from the recited "audio" that is generated by the portable device and transmitted over the wireless communication link for playing on the car audio/video system. Stated more generally, the recited "audio" is distinct from the recited "audio file."

Petitioner argues Shibasaki discloses the "audio generated by the portable device" limitation of claim 49 and claim 120. *See* Pet. 19, 27–29, 42, 52–53. Relevant to this assertion, the Petition represents in an overview discussion of Shibasaki that the functions of car audio apparatus 10 include "instructing the device 20 to play music, receiving the music from the device 20, and playing the music (e.g., steps 429-435)," citing as support column 12, lines 27–33 and column 13, lines 16–58 of Shibasaki. *Id.* at 18–19 (citing Ex. 1006, 12:27–33, 13:16–58). In addition, the Petition's claim chart for the "audio generated by the portable device" limitation of claim 49 features citations to column 8, lines 15–17, column 13, lines 41–51, and Figure 4 of Shibasaki as well as pages 37–39 of Dr. Kyriakakis's declaration. *Id.* at 27–29. The claim chart states that Shibasaki "expressly discloses" "streaming audio over Bluetooth" and represents that in Shibasaki, "[t]he portable device streams the audio file, which is processed in real time by the car audio apparatus." *Id.* at 27–28 (citing Ex. 1003, 37–39). The chart further represents that a person of ordinary skill in the art "would understand" Shibasaki's disclosure at column 13, lines 49–50 "to mean the car audio apparatus receives Bluetooth-encoded streaming audio from the portable device after initiating playback on the portable device." *Id.* at 28. Moreover, the Petition's claim chart for the "audio generated by

the portable device" limitation of claim 120[5] features citations to column 8, lines 11–12, column 13, lines 41–51, and Figure 2 of Shibasaki in addition to pages 64–65 of Dr. Kyriakakis's declaration. *Id.* at 42, 52–53.

Pages 37–39 and 64–65 of Dr. Kyriakakis's declaration, cited in the Petition's claim charts for the "audio generated by the portable device" limitation of claim 49 and claim 120, respectively, feature claim charts identical to those in the Petition other than the omission of citations to the declaration and the addition of "in my opinion" and "[i]t is my opinion that." *See id.* at 27–29 (citing Ex. 1003, 37–39), 42, 52–53 (citing Ex. 1003, 64–65); Ex. 1003, 37–39, 64–65.

Patent Owner argues Shibasaki fails to disclose or teach the "audio generated by the portable device" limitation of claim 49 and claim 120. Prelim. Resp. 6–11. According to Patent Owner, Petitioner's relevant characterizations of Shibasaki are "erroneous" and "unsupported." *Id.* at 7, 10. Patent Owner argues that each passage of Shibasaki cited in the

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[5] The Petition's claim chart for the "audio generated by the portable device" limitation of claim 120 includes a cross-reference to the "above" "discussion of" the nearly identical limitation of independent claim 97. Pet. 42, 52; *see* Ex. 1001, 45:52–57, 47:7–12. The cross-reference is erroneous, because claim 97 is challenged in two asserted obviousness grounds that are addressed subsequently in the Petition. *See, e.g.*, Pet. 5–6, 52–53. Nonetheless, we understand the cross-reference to refer to the Petition's claim chart for the "audio generated by the portable device" limitation of claim 97 in the asserted ground of obviousness over Shibasaki and the knowledge of a person of ordinary skill in the art. *See id.* at 43, 52–53. Although this chart is for an obviousness—not an anticipation—ground, the error is harmless because the chart states that Shibasaki "discloses" the relevant limitation. *Id.* at 52. Accordingly, we treat the discussion in this claim chart for the "audio generated by the portable device" limitation of claim 97 as applicable to the corresponding limitation of claim 120 in this asserted anticipation ground. *See id.* at 42, 52–53.

Petition for the "audio generated by the portable device" limitations does not describe the claim requirements, and Patent Owner details the alleged deficiencies of each cited passage of Shibasaki in this regard. *Id.* at 7–11.

For example, Patent Owner asserts that column 13, lines 46–52 of Shibasaki "teaches the exact opposite of the claimed invention." *Id.* at 9; *see id.* at 10–11. According to Patent Owner, Shibasaki "explicitly states that an audio 'file,' not generated audio [as the claims require], is" transmitted by the MP3 player and "received by the car audio apparatus 10" for playback. *Id.* at 10–11; *see id.* at 9. Moreover, Patent Owner contends that "[i]nstead of 'audio generated by the portable device,' Shibasaki teaches play processing by the car [audio apparatus 10]." *Id.* at 9; *see id.* at 11. In addition, Patent Owner argues Shibasaki "defines streaming as 'encoding the received music file in real time and performing play processing' and teaches that streaming is performed at the car audio apparatus." *Id.* at 9. With regard to the Petition's statement as to how one of ordinary skill in the art allegedly would have understood column 13, lines 49–50 of Shibasaki, Patent Owner argues the statement is "unsupported" and seeks to "change both the functionality of the car audio apparatus 10 and [the] meaning of streaming explicitly set forth by Shibasaki" in order to meet the "audio generated by the portable device" limitations. *Id.* at 10 (quoting Pet. 28).

We agree with Patent Owner that Petitioner has not shown adequately and persuasively that Shibasaki discloses the "audio generated by the portable device" limitation of claim 49 and claim 120, or that Shibasaki supports the Petition's and Dr. Kyriakakis's relevant representations

regarding its disclosures.[6] Beginning with cited column 13, lines 16–58 of Shibasaki, the most relevant passage that Petitioner quotes in its claim charts is featured in lines 41–51:

> When a user's playback instruction of the music piece in the music list edited at step S429 is accepted through the operation section 107, the playback instruction is transmitted to the MP3 player 20-2 having the music file corresponding to the given playback instruction (S431), the *MP3 player 20-2 storing the music file transmits the music file* corresponding to the given playback instruction through the BT radio communication system (step S433), and the car audio apparatus 10 performs streaming of encoding the *received music file* in real time and performing play processing (step S435).

Ex. 1006, 13:41–51 (emphases added); *see* Pet. 19, 28, 52; Ex. 1003, 38, 52, 64–65. Although the Petition, as well as Dr. Kyriakakis's declaration, characterize this passage as disclosing that "music" or "audio" is being transmitted from MP3 player 20-2 (the recited "portable device") to car audio apparatus 10 (Pet. 19, 28; Ex. 1003, 38), Patent Owner is correct that Shibasaki expressly discloses that what MP3 player 20-2 "transmits" over the Bluetooth system and what car audio apparatus 10 "receive[s]" is the

[6] We address in our analysis the disclosures of Shibasaki that the Petition cites in the claim charts for the "audio generated by the portable device" limitations of claims 49 and 120 and as support for representations in the "Overview of Shibasaki" section (Section IV.E.1) that we determine to be directly relevant to these limitations. To the extent Petitioner intended to rely on additional passages of Shibasaki as supporting its position on these limitations, the Petition is required to specify where each element of the claims is found in Shibasaki and the supporting portions of Shibasaki. *See* 37 C.F.R. § 42.104(b)(4)–(5); Prelim. Resp. 1–4, 7. The Petition does not meet these requirements for any portions of Shibasaki beyond those discussed in our analysis. Nonetheless, we have reviewed and considered all disclosures of Shibasaki cited in the Petition and do not find them to support Petitioner's position that Shibasaki discloses the "audio generated by the portable device" limitations of claims 49 and 120.

"music *file*." Ex. 1006, 13:46–50 (emphasis added); *see, e.g.*, *id.* at 14:44–64 ("[T]he music *files* that can be played in the car audio apparatus 10 and can be subjected to streaming play processing in real time can be collected from other machines . . . .") (emphasis added); Prelim. Resp. 9–11. Even the Petition and Dr. Kyriakakis's declaration elsewhere refer to this passage as disclosing that an "audio *file*," rather than audio, is transmitted by the MP3 player and processed by the car audio apparatus. Pet. 28 ("The portable device streams the audio *file*, which is processed in real time by the car audio apparatus.") (emphasis added); Ex. 1003, 38 (same). Moreover, as Patent Owner argues, this passage discusses only car audio apparatus 10 performing "play processing." Ex. 1006, 13:49–51; *see* Prelim. Resp. 9, 11. It does not disclose or otherwise refer to the MP3 player playing the music file and instead, states only that the MP3 player "transmits" the file. Ex. 1006, 13:46–47. Thus, Petitioner has not shown persuasively that this passage demonstrates that Shibasaki discloses "*audio* generated by the portable device"—rather than an audio *file*—being transmitted over a wireless communication link, as claims 49 and 120 require.

In addition, the representations in the Petition and Dr. Kyriakakis's declaration regarding streaming—namely, that this passage of Shibasaki means that the MP3 player, or portable device, "*streams the audio file*" and sends "*Bluetooth-encoded streaming audio*" to the car audio apparatus—are unpersuasive for several reasons. Pet. 27–28 (emphases added); Ex. 1003, 38 (emphases added). Not only are these representations internally inconsistent as to whether the audio file or audio is being streamed, as noted above, but they also are inconsistent with Shibasaki's disclosures regarding streaming, as Patent Owner argues. *See* Prelim. Resp. 9–10. In particular, Shibasaki states that "car audio apparatus 10 performs streaming"—not the

MP3 player, as Petitioner represents. Ex. 1006, 13:49–51. Furthermore, the "streaming" is "of encoding the received music file in real time and performing play processing"—not of "audio," as Petitioner alleges. *Id.*; *see, e.g.*, *id.* at 14:61–67 ("[T]he music *files* that can be played in the car audio apparatus 10 and can be subjected to *streaming play processing in real time* can be collected from other machines . . . .") (emphases added).

Turning specifically to Dr. Kyriakakis's stated opinion in his declaration that Shibasaki discloses "streaming audio" and that one of ordinary skill in the art would have understood column 13, lines 49–51, in particular, "to mean the car audio apparatus receives Bluetooth-encoded streaming audio from the portable device after initiating playback on the portable device," these representations lack explanation and evidentiary support. Ex. 1003, 38. Specifically, for the reasons explained above, Dr. Kyriakakis's representations are unsupported by the express disclosures in the cited passage of Shibasaki. Dr. Kyriakakis does not offer any explanation as to why one of ordinary skill in the art would have understood the passage in a manner that differs substantially and meaningfully from the express language used in the reference. Moreover, Dr. Kyriakakis's representations regarding Shibasaki's disclosures are self-contradictory, in back-to-back sentences, as to whether the MP3 player in Shibasaki is allegedly streaming "audio" or an "audio file"—despite the distinction between the portable device transmitting generated "audio," rather than an "audio file," being a clear and key distinction in the claim language. *See id.* In addition, Dr. Kyriakakis's representations are particularly unconvincing and of minimal probative weight given that they merely repeat verbatim the precise statements in the Petition. *Compare* Pet. 27–28, *with* Ex. 1003, 37–38. Therefore, we are not persuaded by and do not credit these conclusory

representations as to what Shibasaki's disclosures, particularly column 13, lines 49–51, would have conveyed to a person of ordinary skill. *See* 37 C.F.R. § 42.65(a); *In re Am. Acad. of Sci. Tech Ctr.*, 367 F.3d 1359, 1368 (Fed. Cir. 2004) (explaining that "the Board has broad discretion" to weigh declarations and "conclude that the lack of factual corroboration warrants discounting the opinions expressed"); *Rohm & Haas Co. v. Brotech Corp.*, 127 F.3d 1089, 1092 (Fed. Cir. 1997) ("Nothing in the [federal] rules [of evidence] or in our jurisprudence requires the fact finder to credit the unsupported assertions of an expert witness."); *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 294 (Fed. Cir. 1985) ("Lack of factual support for expert opinion going to factual determinations . . . may render the testimony of little probative value . . . .").

Accordingly, Petitioner does not demonstrate or explain persuasively and with sufficient record support how column 13, lines 16–58 of Shibasaki supports that the reference discloses the "audio generated by the portable device" limitations of claims 49 and 120.

Moreover, Shibasaki's Figure 4 and explanation of this figure in column 8, lines 15–17 do not provide the requisite support for Petitioner's position on the "audio generated by the portable device" limitations. *See* Pet. 28–29 (citing Ex. 1006, Fig. 4, 8:15–17). Column 8, lines 15–17 of Shibasaki merely state that "FIG. 4 is a sequence chart to show processing in the information processing system according to the first embodiment of the invention." Ex. 1006, 8:15–17. We agree with Patent Owner that this non-specific overview statement regarding Figure 4 adds nothing of relevance to show that Shibasaki discloses the limitations. *See* Prelim. Resp. 9–10. Moreover, consistent with the relevant disclosure regarding the figure in column 13, discussed above, Figure 4 itself illustrates that after

receiving a playback instruction from car audio apparatus 10 (S431), MP3 player 20-2, "transmit[s] *data*" to car audio apparatus 10 (S433) and then car audio apparatus 10 alone, not the MP3 player, performs "play processing" (S435). Ex. 1006, Fig. 4 (emphasis added); *see id.* at 13:41–51. Again, Petitioner has not shown sufficiently that this depiction of processing in Shibasaki's system supports that the MP3 player, or portable device, generates "audio" and transmits that "audio"—as opposed to an audio file—over a wireless communication link, as claims 49 and 120 require.

Turning to column 12, lines 27–33, this portion of Shibasaki states:

> Next, the car audio apparatus 10 performs determination processing of determining whether or not the MP3 player 20-2 has a *music file that can be played in the car audio apparatus 10* based on the attribute information of the MP3 player 20-2 obtained at step S413 (the headers of the files that the MP3 player 20-2 has) (step S415).

Id. at 12:27–33 (emphasis added); *see* Pet. 19 (citing Ex. 1006, 12:27–33). The Petition cites this portion of Shibasaki in support of its representation that Shibasaki's car audio apparatus 10 "receive[s] *music* from the device 20, and play[s] the *music*." *See* Pet. 19 (emphases added). Yet we agree with Patent Owner that this passage does not support Petitioner's contention that Shibasaki discloses the "audio generated by the portable device" limitations, because it "describes a file-type compatibility determination, *i.e.*, whether a music file (not generated audio) can be played using the car audio apparatus 10 (not a portable device)." Prelim. Resp. 8. This disclosure of Shibasaki's car audio apparatus 10 determining whether the MP3 player has a "music *file* that can be *played in car audio apparatus 10*" supports that car audio apparatus 10 plays the music *file* from the MP3 player. Ex. 1006, 12:27–31 (emphases added); *see, e.g.*, *id.*

at 9:21–28 ("[C]ar audio apparatus . . . determines whether or not each information terminal 20 has a *music file that can be played in the self-terminal (car audio apparatus 10)* . . . .") (emphasis added), 12:4–5, 14:45–64 ("[T]he music *files that can be played in the car audio apparatus 10* . . . can be collected from other machines . . . .") (emphasis added). Again, given the explicit reference to a music file—rather than music or audio, as Petitioner represents—the passage demonstrably fails to support Petitioner's position that Shibasaki discloses the "audio generated by the portable device" limitation of claim 49 and claim 120, as well as the Petition's supporting representation that Shibasaki's car audio apparatus 10 "receive[s]" and "play[s] music" from the MP3 player, for which it is cited. *See* Pet. 19.

Finally, the Petition's claim chart cites Shibasaki's Figure 2 and the accompanying disclosure in column 8, lines 11–12, which explains that the figure "is a block diagram to show the detailed configuration of a car audio apparatus," but lacks any explanation as to how they support that the reference discloses the "audio generated by the portable device" limitations. *Id.* at 42, 52–53; Ex. 1006, 8:11–12, Fig. 2; *see* Ex. 1003, 64–65. Having considered this figure and explanatory statement regarding the figure, we are not persuaded that they support Petitioner's contention that Shibasaki discloses "audio generated by the portable device," as claims 49 and 120 require.

For the reasons given, Petitioner has not made a sufficient showing, with adequate record support, that Shibasaki discloses, whether expressly or inherently, the "audio generated by the portable device" limitation of claim 49 and claim 120 of the '342 patent.

ii. "integration subsystem"

Petitioner contends that Shibasaki discloses "an integration subsystem in communication with a car audio/video system," as recited in independent claim 49, and "an integration subsystem in communication with said wireless communication link," as recited in independent claim 120. Pet. 20–23, 41. Petitioner identifies as the claimed "integration subsystem" three components of Shibasaki's car audio apparatus 10, specifically "BT Transmission/Reception section 115, system control section 101, and data processing section 109." *Id.* at 20. As support, the Petition's claim chart for the relevant limitations of claims 49 and 120 cites column 8, lines 8–12; column 8, line 67–column 9, line 16; column 10, lines 44–46; column 13, lines 41–51; and Figures 1 and 2 of Shibasaki as well as pages 30–33 of Dr. Kyriakakis's declaration. *Id.* at 20–23, 41. With regard to column 13, lines 41–51 in particular, the Petition states that "Shibasaki discloses that the integration subsystem (i.e., the BT Transmission/Reception section 115, system control section 101, and data processing section 109 of Figure 2) is in communication with the rest of the car audio/video subsystem." *Id.* at 21.

Moreover, the "Overview of Shibasaki" section of the Petition includes a brief statement regarding the function of the various components of car audio apparatus 10, with a citation to column 10, lines 4–53 of Shibasaki. *Id.* at 18. The Petition states that "control section 101 controls the components of the car audio apparatus 10," "BT transmission/reception section 115 communicates with other components of the piconet (e.g., MP3 players or other media devices)," and "data processing section [109] processes music data received through the BT transmission/reception section 115." *Id.*

Pages 30–33 of Dr. Kyriakakis's declaration, cited in the Petition's claim chart for claim 49, include a claim chart identical to that in the Petition with the exception of omitting the citation to the declaration and adding "[i]t is my opinion that." *See id.* at 20–23; Ex. 1003, 30–33.

Patent Owner responds that Shibasaki does not disclose or teach the recited "integration subsystem." Prelim. Resp. 3, 11–13. Patent Owner contends that Petitioner merely "cherry-pick[s]" components of car audio apparatus 10, without explaining how the identified components comprise a "subsystem" that is subordinate to another system or "identifying the system to which [the alleged subsystem] is subordinate." *Id.* at 3, 12–13. Moreover, according to Patent Owner, Shibasaki does not disclose or teach that the components selected by Petitioner "are, together, a 'subsystem' subordinate to the remainder of the apparatus 10." *Id.* at 12.

We agree with Patent Owner that Petitioner has not shown sufficiently that Shibasaki discloses the "integration subsystem" recited in independent claims 49 and 120. As we stated above in our construction of the term "integration subsystem," the subsystem and the system to which it is subordinate must both be systems. It is not sufficient for Petitioner to "cherry-pick," as Patent Owner points out, various components of Shibasaki's car audio apparatus 10 and label them as an alleged "integration subsystem." *See id.* at 3, 12–13. Rather, in order for Shibasaki to disclose the recited "integration subsystem," Petitioner must show that the particular selected components of car audio apparatus 10 operate together as a distinct system. Yet neither the Petition nor the cited portions of Dr. Kyriakakis's declaration and Shibasaki sufficiently explain and support that the three identified components of car audio apparatus 10—namely, system control section 101, data processing section 109, and BT transmission/reception

section 115—operate in such a manner. *See* Pet. 18, 20–23, 41; Ex. 1003, 30–33; Ex. 1006, 8:8–12, 8:67–9:16, 10:4–53, 13:41–51, Figs. 1–2.

In addition, we agree with Patent Owner that Petitioner does not adequately identify or explain the system to which the alleged "integration subsystem" in Shibasaki is subordinate. *See* Prelim. Resp. 3, 12–13; *see also* 37 C.F.R. §§ 42.22(a)(2), 104(b)(4)–(5). Moreover, assuming that Shibasaki's car audio apparatus 10 were identified as that system, Petitioner's selection of components from car audio apparatus 10 to allegedly form an "integration subsystem" eviscerates the system of car audio apparatus 10. For example, with system control section 101 as part of the "integration subsystem," as Petitioner alleges, car audio apparatus 10 lacks a means (e.g., a CPU) to "control[]" its remaining components. *See* Ex. 1006, 9:63–66, 10:4–6 ("The system control section 101 is implemented as, for example, a CPU, a DSP (digital signal processor), etc. *for controlling the components of the car audio apparatus 10.*") (emphasis added); Pet. 18 ("The control section 101 *controls the components of the car audio apparatus 10.*") (emphasis added).

Therefore, Petitioner has not demonstrated adequately that Shibasaki discloses, whether expressly or inherently, the "integration subsystem" recited in claims 49 and 120 of the '342 patent.

b. Dependent Claims 50–52, 54, 56, 62–64, and 71

Claims 50–52, 54, 56, 62–64, and 71 of the '342 patent depend, directly or indirectly, from independent claim 49. *See* Ex. 1001, 42:48–43:64. Accordingly, the deficiencies discussed above with respect to Petitioner's showing regarding the "audio generated by the portable device" and "integration subsystem" limitations of independent claim 49 also apply to these claims. Petitioner's specific arguments directed to the additional

limitations of these dependent claims do not cure the deficiencies. *See* Pet. 29–41.

c. Conclusion

For the reasons given, we determine that the Petition does not show a reasonable likelihood that Petitioner would prevail in showing that Shibasaki anticipates claims 49–52, 54, 56, 62–64, 71, and 120 of the '342 patent.

D. ALLEGED OBVIOUSNESS OVER SHIBASAKI AND THE KNOWLEDGE OF A PERSON OF ORDINARY SKILL IN THE ART

Petitioner asserts claims 53, 73–78, 95, 97, 99–101, 106, and 109–111 of the '342 patent would have been obvious over Shibasaki and the knowledge of a person of ordinary skill in the art. Pet. 5, 43–55. Claims 73 and 97 of the '342 patent are independent claims, each of which includes the recitation "integration subsystem" as well as an "audio generated by the portable device" limitation. Ex. 1001, 44:4–23, 45:45–63. The "audio generated by the portable device" limitation of claim 73 is identical to the corresponding limitation of independent claim 49. *Compare id.* at 42:45–47, *with id.* at 44:21–23. In claim 97, this limitation is nearly identical to the corresponding limitation of independent claim 120. *Compare id.* at 45:52–57, *with id.* at 47:7–12.

In this asserted ground of obviousness over Shibasaki and the knowledge of a person of ordinary skill in the art, the Petition relies on Shibasaki alone for the "integration subsystem" and "audio generated by the portable device" limitations of claims 73 and 97. *See* Pet. 46–47, 49, 52–53. The Petition's analysis of the "integration subsystem" limitations of claims 73 and 97 and the "audio generated by the portable device" limitation of claim 73 consists only of internal cross-references to the claim charts for the corresponding limitations of claim 49 in the asserted ground of

anticipation over Shibasaki. *See id.* at 46–47, 49. For the "audio generated by the portable device" limitation of claim 97, the claim chart features citations to portions of Shibasaki and Dr. Kyriakakis's declaration that we addressed above in our discussion of the asserted anticipation ground. *See id.* at 52–53; *supra* note 5.

Accordingly, for substantially the same reasons given above in our analysis of the asserted anticipation ground that the Petition fails to show sufficiently that Shibasaki discloses the "integration subsystem" and "audio generated by the portable device" limitations of independent claims 49 and 120, we likewise are not persuaded that Petitioner has demonstrated adequately that Shibasaki teaches, suggests, or otherwise would have conveyed to one of ordinary skill in the art these limitations of independent claims 49, 73, and 97.

Dependent claims 53, 74–78, 95, 99–101, 106, and 109–111 each depend, directly or indirectly, from one of independent claims 49, 73, and 97 and, thus, these deficiencies in Petitioner's obviousness showing also apply to these dependent claims. Petitioner's specific arguments directed to the limitations added by these dependent claims, relative to their base claims, do not cure the deficiencies. *See* Pet. 43–46, 49–51, 54–55.

Therefore, we determine that the Petition does not demonstrate a reasonable likelihood that Petitioner would prevail in showing that claims 53, 73–78, 95, 97, 99–101, 106, and 109–111 of the '342 patent would have been obvious over Shibasaki and the knowledge of a person of ordinary skill in the art.

E. ALLEGED OBVIOUSNESS OVER SHIBASAKI AND TONG

Petitioner asserts claims 55, 57, 73, 79, and 80 of the '342 patent would have been obvious over Shibasaki and Tong. Pet. 5, 55–63.

Claims 55 and 57 each depend directly from independent claim 49, whereas claim 79 directly depends and claim 80 indirectly depends from independent claim 73. Ex. 1001, 43:1–13, 44:4–52.

The Petition's analysis of the "integration subsystem" and the "audio generated by the portable device" limitations of independent claim 73 for this asserted ground of obviousness over Shibasaki and Tong relies on Shibasaki alone and consists exclusively of internal cross-references to the claim charts for the corresponding limitations of claim 49 in the asserted ground of anticipation over Shibasaki. *See* Pet. 60, 63. Thus, like the previous obviousness ground, Petitioner has not shown sufficiently that Shibasaki teaches, suggests, or otherwise would have conveyed to one of ordinary skill these limitations of claim 73 for substantially the same reasons given above in our analysis of the corresponding limitations of claims 49 and 120 in the asserted anticipation ground.

Moreover, the Petition's arguments directed to dependent claims 55, 57, 79, and 80 in this asserted ground do not cure the deficiencies, outlined above, in Petitioner's showing that Shibasaki teaches or suggests the "integration subsystem" and "audio generated by the portable device" limitations of independent claims 49 and 73, from which these claims depend. *See id.* at 57–60. The Petition does not rely on Tong to address these limitations. *See id.*

Therefore, we determine that the Petition does not show a reasonable likelihood that Petitioner would prevail in showing that Shibasaki and Tong render obvious claims 55, 57, 73, 79, and 80 of the '342 patent.

F. ALLEGED OBVIOUSNESS OVER SHIBASAKI AND AVRCP

Petitioner argues that dependent claims 53 and 77 of the '342 patent are unpatentable as obvious over Shibasaki and AVRCP. Pet. 6, 64–69. The

Petition's analysis of dependent claims 53 and claim 77 and arguments directed to the additional limitations of these claims in this asserted ground do not cure the deficiencies outlined above in Petitioner's showing that Shibasaki teaches or suggests the "integration subsystem" and "audio generated by the portable device" limitations of independent claims 49 and 73, from which claims 53 and 77, respectively, depend. *See id.* at 64–69; Ex. 1001, 42:54–60, 44:30–37. The Petition does not rely on AVRCP to address these limitations. *See* Pet. 64–69.

Therefore, we determine that the Petition does not show a reasonable likelihood that Petitioner would prevail in showing that claims 53 and 77 of the '342 patent would have been obvious over Shibasaki and Tong.

G. ALLEGED OBVIOUSNESS OVER SHIBASAKI AND A2DP

Petitioner contends claims 49, 73, 97, and 120 of the '342 patent are unpatentable as obvious over Shibasaki and A2DP. Pet. 6, 70–75.

1. *A2DP*

A2DP, titled "Advanced Audio Distribution Profile Specification," defines "the features and procedures that are required for interoperability between Bluetooth devices in the Audio Distribution usage model" for distribution of high-quality audio content. Ex. 1009, 1, 9. A2DP details, for example, procedures and parameters for streaming "audio content" or "audio data" between a source ("SRC") device and a recipient device, which is referred to as a sink ("SNK"). *Id.* at 9, 12–19, Fig. 3.1.

2. *"integration subsystem"*

This asserted ground relying on Shibasaki and A2DP involves all challenged independent claims—claims 49, 73, 97, and 120—each of which recites an "integration subsystem." *See* Pet. 5–6, 70–75; Ex. 1001, 42:29–47, 44:4–23, 45:45–63, 46:63–19. The Petition proffers A2DP only to

address the "audio generated by the portable device" limitations of these claims and its analysis of this asserted ground otherwise relies on the asserted grounds of anticipation by Shibasaki and obviousness over Shibasaki and the knowledge of a person of ordinary skill in the art, addressed above. Pet. 71, 74–75. Accordingly, the deficiencies outlined above in Petitioner's showing that Shibasaki discloses, teaches, or suggests an "integration subsystem," as recited in claims 49, 73, 97, and 120, carry through to this asserted ground and have not been cured.

3. *Reasons to Combine*

A patent claim is unpatentable as obvious under 35 U.S.C. § 103(a) if "the differences between" the claimed subject matter "and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." 35 U.S.C. § 103(a). As the Supreme Court explained in *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398 (2007), an invention "composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art." 550 U.S. at 418. Rather, "it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does." *Id.* In other words, "there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *Id.* (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)). Accordingly, the U.S. Court of Appeals for the Federal Circuit has made clear that a petitioner in an *inter partes* review proceeding cannot "satisfy its burden of proving obviousness" by "employ[ing] mere conclusory statements" and "must instead articulate specific reasoning, based on evidence of record" to support

an obviousness determination. *In re Magnum Oil Tools Int'l, Ltd.*, 829 F.3d 1364, 1380–81 (Fed. Cir. 2016).

The "factual inquiry" into the reasons for "combin[ing] references must be thorough and searching, and the need for specificity pervades . . . ." *In re Nuvasive, Inc.*, 842 F.3d 1376, 1381–82 (Fed. Cir. 2016) (internal quotations and citations omitted). A determination of obviousness cannot be reached where the record lacks "explanation as to *how* or *why* the references would be combined to produce the claimed invention." *Trivascular, Inc. v. Samuels*, 812 F.3d 1056, 1066 (Fed. Cir. 2016); *see Nuvasive*, 842 F.3d at 1382–85; *Magnum Oil*, 829 F.3d at 1380–81.

We have determined above that the Petition does not make a sufficient showing that Shibasaki discloses, teaches, or suggest the "audio generated by the portable device" limitations of claims 49, 73, 97, and 120. In this asserted ground, Petitioner argues that "[t]o the extent" the Board concludes that "Shibasaki does not expressly disclose" these limitations, A2DP "discloses streaming audio signals from a portable audio device ('SRC') to the car audio/video system ('SNK')." Pet. 71–72, 75.

Petitioner asserts that it would have been obvious to a person of ordinary skill in the art to apply A2DP's "Bluetooth profile to Shibasaki's Bluetooth-enabled car audio system, given that A2DP was intended for use in audio streaming applications like the ones Shibasaki describes." *Id.* at 72, 75; *see id.* at 70. Petitioner contends that a person of ordinary skill would have noticed the "strong similarities" in Shibasaki's "description[] of a car audio apparatus using Bluetooth to receive audio data from remote devices" and A2DP's "description[] of . . . Bluetooth communications between audio sources and receivers." *Id.* at 71. According to Petitioner, the "rationale" for combining the teachings of the references "includes combining prior art

elements according to known methods to yield predictable results and the use of [a] known technique to improve a similar device in the same way." *Id.* at 70–71. Petitioner further asserts that "it would have been obvious to try the resulting combination as it amounts to merely choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success." *Id.* at 71.

Dr. Kyriakakis's supporting declaration testimony restates, verbatim, the reasoning proffered in the Petition with one addition. *See* Pet. 70–72, 75; Ex. 1003 ¶¶ 87–89, pp. 89–90, 95, 99, 105. Specifically, Dr. Kyriakakis additionally opines that "it would have been very natural for an ordinary practitioner to use the relevant standard Bluetooth profiles for their intended purpose in the intended manner." Ex. 1003 ¶ 88.

Patent Owner contests Petitioner's proffered reasons to combine the teachings of Shibasaki and A2DP, arguing that Petitioner relies on "mere conclusory statements" and "neglects to provide a fact-based" and "persuasive" rationale for combining the references. Prelim. Resp. 15–16. According to Patent Owner, the proposed motivations to combine are "essentially . . . based on the similarities of the references tied with a boilerplate mix of predictable results, uses of known techniques, and obvious to try assertions," which are insufficient to sustain an obviousness determination. *Id.* at 16–17. Patent Owner also contends Petitioner fails to "articulate any specific modifications of the references" and "explain the specific ways the references are to be combined." *Id.* at 15–16.

We agree with Patent Owner that Petitioner does not articulate sufficiently specific reasoning, with adequate evidentiary support, to combine the teachings of Shibasaki with A2DP to reach the "audio generated by the portable device" limitations of claims 49, 73, 97, and 120.

The Petition, as well as Dr. Kyriakakis's declaration, explains similarities between Shibasaki and A2DP in that both references describe using Bluetooth to communicate audio data between devices. Pet. 70–72; Ex. 1003 ¶¶ 87–89, pp. 89–90, 95, 99, 105. These superficial similarities, without more, fail to provide specific reasoning, with rational underpinning, to support the proposed combination and the legal conclusion of obviousness.

Beyond these similarities, however, the reasons to combine proffered in the Petition and Dr. Kyriakakis's declaration generally consist of generic, boilerplate repetition of various factual scenarios that the Supreme Court in *KSR* endorsed as supporting an obviousness determination—but without the requisite factual and evidentiary support to substantiate that reasoning on the record before us. *See KSR*, 550 U.S. at 416–17, 421; Prelim. Resp. 15–16. For example, Petitioner argues the proposed combination consists only of "choosing from a finite number of identified, predictable solutions" but never identifies or explains any such solutions. Pet. 71; Ex. 1003 ¶ 88. Petitioner also refers to alleged "predictable results" and a "reasonable expectation of success," but the record lacks adequate explanation of and support for such expectations and results. Pet. 71; Ex. 1003 ¶¶ 87–88.

Based on our review of the record, there is insufficient explanation, supported by record evidence, as to why and how a person of ordinary skill in the art would have combined Shibasaki and A2DP. Petitioner does not sufficiently proffer a reason why a person of ordinary skill in the art would have modified Shibasaki's existing Bluetooth communication system—which is disclosed as allowing devices having Bluetooth modules, including car audio apparatus 10 and information terminals 20, to communicate with one another—in order to implement A2DP's teachings. *E.g.*, Ex. 1006,

8:63–9:16, 10:10–15, 13:41–51. For example, Petitioner does not articulate a particular benefit of or improvement from such a combination. Nor does Petitioner provide any detail or explanation as to how the proposed combination would have been made, including the specific changes that would have been made to Shibasaki's system to implement A2DP's teachings, whether to Shibasaki's car audio apparatus 10, information terminals 20, or Bluetooth system.

In sum, Petitioner does not articulate specific reasoning with rational underpinning, supported by an adequate factual and evidentiary basis, to combine Shibasaki with A2DP to reach the "audio generated by the portable device" limitations of claims 49, 73, 97, and 120.

4. *Conclusion*

Based on our analysis above, we determine that the Petition does not demonstrate a reasonable likelihood that Petitioner would prevail in showing that Shibasaki and A2DP render obvious claims 49, 73, 97, and 120.

III. CONCLUSION

For the reasons given, we determine that the information presented in the Petition does not establish a reasonable likelihood that Petitioner would prevail in showing that any of the challenged claims of the '342 patent, claims 49–57, 62–64, 71, 73, 77–80, 95, 97, 99–103, 106, 109–111, and 120, are unpatentable. Therefore, we do not institute an *inter partes* review of any of the challenged claims on any of the asserted grounds.

IV. ORDER

For the reasons given, it is:

ORDERED that pursuant to 35 U.S.C. § 314(a), the Petition is *denied*, and no trial is instituted with respect to any claim of U.S. Patent No. 8,155,342 B2.

IPR2016-01476
Patent 8,155,342 B2

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Paper 9
Entered: January 24, 2017

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

AMERICAN HONDA MOTOR CO., INC.,
Petitioner

v.

BLITZSAFE TEXAS, LLC,
Patent Owner.

Case IPR2016-01473
Patent 8,155,342 B2

Before JAMESON LEE, MIRIAM L. QUINN, and KERRY BEGLEY, *Administrative Patent Judges.*

QUINN, *Administrative Patent Judge.*

DECISION
Denying Institution of *Inter Partes* Review
37 C.F.R. § 42.108

I. INTRODUCTION

Petitioner, American Honda Motor Co., Inc., filed a Petition requesting an *inter partes* review of claims 49, 53, 54, 56, 57, 62, 66, 70, 73, 77, and 78 of U.S. Patent No. 8,155,342 B2 ("the '342 patent"). Paper 2 ("Pet."). Patent Owner, Blitzsafe Texas, LLC, filed a Preliminary Response. Paper 8 ("Prelim. Resp."). We have jurisdiction under 35 U.S.C. § 314(a).

For the reasons that follow, we *deny* the Petition.

A. Related Matters

Petitioner asserts that the '342 patent is the subject matter of district court litigation in *Blitzsafe Texas, LLC v. Honda Motor Co., Ltd.*, 2-15-cv-01274-JRG-RSP (Lead Case). Pet. 53. Various ongoing litigation matters have been identified as also involving the '342 patent: *Blitzsafe Texas, LLC v. Nissan Motor Co., Ltd.*, 2-15-cv-01276; *Blitzsafe Texas, LLC v. Toyota Motor Corp.*, 2-15-cv-01277; *Blitzsafe Texas, LLC v. Volkswagen Group of Am., Inc.*, 2-15-cv-01278; and *Blitzsafe Texas, LLC v. Hyundai Motor Co.*, 2-15-cv-01275. *Id.*

Patent Owner asserts that, in addition to the above-identified five district court litigations, the '342 patent was asserted in *Marlowe Patent Holdings LLC v. DICE Electronics, LLC*, 3:10-cv-01199 (D. NJ) and *Marlowe Patent Holdings LLC v. Ford Motor Company*, 3:10-cv-07044 (D. NJ). Paper 5, 1–2. According to Patent Owner, these cases are no longer pending due to settlement. *Id.* at 2.

The '342 patent is the subject matter of an ongoing *inter partes* review, *Toyota Motor Corporation v. Blitzsafe Texas, LLC*, Case

IPR2016-00418. Pet. 53. The '342 patent is also involved in IPR2016-00118 (denied), IPR2016-00419 (denied), IPR2016-01445, IPR20916-01449, IPR2016-01473, IPR2016-01476, IPR2016-01533, and IPR2016-01557. Paper 5, 2. Related U.S. Patent No. 7,489,786 B2 is involved in IPR2016-00421, IPR2016-00422, IPR2016-01472, and IPR2016-01477. *Id.*

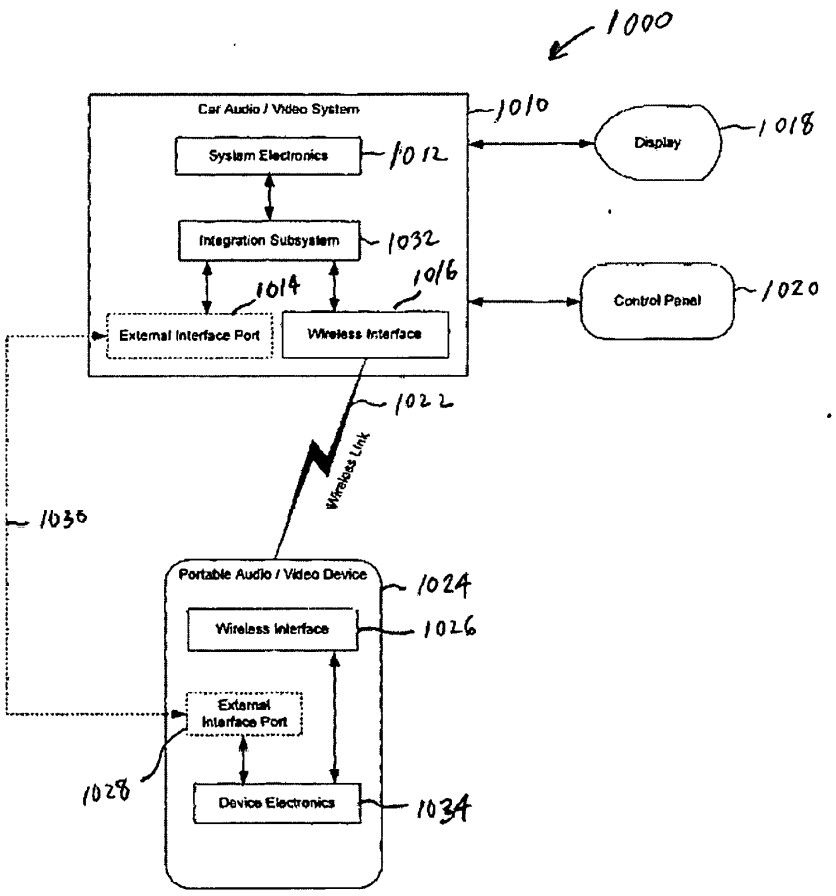
B. The '342 Patent (Ex. 1001)

The '342 patent is titled "Multimedia Device Integration System." Ex. 1001, [54]. The '342 patent describes that a "particular problem with integrating after-market audio and video system with existing car stereo and video systems is that signals generated by both systems are in proprietary formats, and are not capable of being processed by the after-market system." *Id.* at 1:54–58. "Thus, in order to integrate after-market systems with existing car stereo and video systems, it is necessary to convert signals between such systems." *Id.* at 1:60–63.

Certain embodiments of the '342 patent provide a multimedia device integration system that allows "for the wireless integration of a portable audio and/or video device with a car audio and/or video system." *Id.* at 5:7–10. "The portable device could comprise a CD changer, CD player, satellite receiver (e.g., XM or Sirius), digital media device (e.g., MP3, MP4, WMV, or Apple iPod device), video device (e.g., DVD player), or a cellular telephone." *Id.* at 5:9–13. In particular, an integration module, which could be positioned within the car system, receives data from the portable device (including track information, song information, artist information, time information, and other related information) and processes the data into a

format compatible with the car system. *Id.* at 5:23–30. One embodiment illustrated in Figure 19, reproduced below, for example, shows an integration subsystem. *Id.* at 8:3–8.

FIG. 19



As shown in Figure 19, integration subsystem 1032 positioned within car audio/video system 1010 allows information (data and control signals) to be exchanged between portable device 1024 and car audio/video system 1010,

and processes and formats data accordingly so that instructions and data from car audio/video system 1010 are processed by portable device 1024, and vice versa. *See id.* at 33:43–35:62, Fig. 19. Wireless interface 1016 in the car system and wireless interface 1026 in the portable device form wireless link 1022. *Id.* at 34:15–18; *see id.* at 35:21–23.

C. Illustrative Claim

Of the challenged claims, claims 49 and 73 are independent.

Claim 49, reproduced below, is illustrative.

> 49. A multimedia device integration system, comprising:
>
> an integration subsystem in communication with a car audio/video system; and
>
> a first wireless interface in communication with said integration subsystem, said first wireless interface establishing a wireless communication link with a second wireless interface in communication with a portable device external to the car audio/video system,
>
> wherein said integration subsystem obtains, using said wireless communication link, information about an audio file stored on the portable device, transmits the information to the car audio/video system for subsequent display of the information on a display of the car audio/video system, instructs the portable device to play the audio file in response to a user selecting the audio file using controls of the car audio/video system, and receives audio generated by the portable device over said wireless communication link for playing on the car audio/video system.

Ex. 1001, 42:29–47.

D. Prior Art Relied Upon

Petitioner relies upon the following prior art references:

Reference		Date	Exhibit
Riggs	US 2003/007649 A1	Jan. 9, 2003	Ex. 1012
Silvester	US 2003/0171834 A1	Sept. 11, 2003	Ex. 1014
Bhogal	US 6,629,197	Sept. 30, 2003	Ex. 1013
Marlowe	US 2003/0215102 A1	Nov. 20, 2003	Ex. 1009
Simon	US 2005/0281414 A1	Dec. 22, 2005	Ex. 1015
Kandler	App. Pub. CA 2347648 A1	Dec. 1, 2001	Ex. 1016
Plagge	App. Pub. DE 10101702 A1	July 18, 2002	Ex. 1011[1]

Petitioner also relies on the Declaration of James T. Geier. Ex. 1007.

E. Asserted Grounds of Unpatentability

Petitioner challenges claims 49, 53, 54, 56, 57, 62, 66, 70, 73, 77, and 78 of the '342 patent based on the following grounds:

Challenged Claim(s)	**Basis**	**Reference(s)**
49, 53, 54, 56, 62, 66, 70, 73, 77, and 78	§ 103(a)	Marlowe and Plagge
57	§ 103(a)	Marlowe, Plagge, and Riggs

[1] The German version of Plagge is filed as Exhibit 1010. Citations in our Decision refer to the certified translation of Plagge filed as Exhibit 1011.

Challenged Claim(s)	Basis	Reference(s)
49, 53, 54, 56, 62, 66, 70, 73, 77, and 78	§ 103(a)	Marlowe, Plagge, and Bhogal
49, 53, 62, 66, 70, 73, and 77	§ 102(b)	Silvester
54, 56, and 78	§ 103(a)	Silvester and Simon
57	§ 103(a)	Silvester and Kandler
49, 53, 54, 56, 62, 66, 70, 73, 77, and 78	§ 103(a)	Simon and Bhogal

II. ANALYSIS

The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) objective evidence of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). One seeking to establish obviousness based on more than one reference also must articulate sufficient reasoning with rational underpinnings to combine teachings. *See KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 418 (2007).

Neither Petitioner nor Patent Owner proposes anything specific to reflect the level of ordinary skill in the art. We determine, however, that in this case no express articulation in that regard is necessary and that the level of ordinary skill in the art is reflected by the prior art of record. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995); *In re Oelrich*, 579 F.2d 86, 91 (CCPA 1978).

A. Claim Construction

In an *inter partes* review, claim terms in an unexpired patent are interpreted according to their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2142–46 (2016). Consistent with that standard, claim terms also are given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). There are, however, two exceptions to that rule: "1) when a patentee sets out a definition and acts as his own lexicographer," and "2) when the patentee disavows the full scope of a claim term either in the specification or during prosecution." *See Thorner v. Sony Computer Entm't Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012).

If an inventor acts as his or her own lexicographer, the definition must be set forth in the specification with reasonable clarity, deliberateness, and precision. *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1249 (Fed. Cir. 1998). Although it is improper to read a limitation from the specification into the claims, *In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993), claims still must be read in view of the specification of which they are a part. *Microsoft Corp. v. Multi-Tech Sys., Inc.*, 357 F.3d 1340, 1347 (Fed. Cir. 2004).

Only terms which are in controversy need to be construed, and only to the extent necessary to resolve the controversy. *See Wellman, Inc. v. Eastman Chem. Co.*, 642 F.3d 1355, 1361 (Fed. Cir. 2011); *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999). Because

it is dispositive of our determination whether to institute *inter partes* review, we address below only the construction of the claim term "integration subsystem."

Integration subsystem

Each of independent claims 49 and 73 recites an "integration subsystem." Petitioner argues that a previous Board Decision on Institution in IPR2016-00118[2] provided a construction for this claim term as:

> A subsystem to perform at least: (1) connecting one or more portable devices or inputs to the car audio/video system via an interface, (2) processing and handling signals, audio, and/or video information, (3) allowing a user to control the one or more portable devices via the car audio/video system, and (4) displaying data from the one or more portable devices on the car audio/video system.

Pet. 7 (quoting 118-IPR Decision 11). Petitioner states that for "purposes of this petition, Petitioner adopts the same construction." *Id.* Patent Owner does not address any claim construction issues in its Preliminary Response.

The Board previously construed the term "integration subsystem" in the 118-IPR Decision as well as Decisions on Institution in IPR2016-00418[3] and IPR2016-00419.[4] *See* 118-IPR Decision 11–12; 418-IPR Decision 15; 419-IPR Decision 15–16. By way of a summary, the Board determined

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[2] *Unified Patents Inc. v. Blitzsafe Texas LLC*, Case IPR2016-00118, Paper 19 (PTAB Apr. 27, 2016) ("118-IPR Decision").
[3] *Toyota Motor Corp. v. Blitzsafe Texas, LLC*, Case IPR2016-00418, Paper 13 (PTAB July 8, 2016) ("418-IPR Decision").
[4] *Toyota Motor Corp. v. Blitzsafe Texas, LLC*, Case IPR2016-00419, Paper 13 (PTAB July 19, 2016) ("419-IPR Decision").

previously that the "integration subsystem" performs "integration" as defined in the '342 patent. *See* 418-IPR Decision 14. In particular, the following passage of the Specification, which defines "integration," supports the Board's construction:

> As used herein, the term "*integration*" or "*integrated*" is intended to mean [1] connecting one or more external devices or inputs to an existing car stereo or video system via an interface, [2] processing and handling signals, audio, and/or video information, [3] allowing a user to control the [external] devices via the car stereo or video system, and [4] displaying data from the devices on the car stereo or video system.

Ex. 1001, 8:64–9:3 (emphases and brackets added). Accordingly, guided by the express definition in the Specification, we adopted the above-described functions as the definition of "integration" subsystem.

The passage above, however, focuses on "integration" and does not expressly address the term "subsystem." With regard to "subsystem," the Board noted in the 418- and 419-IPR Decisions that a "subsystem" is subordinate to another system. 418-IPR Decision 14; 419-IPR Decision 14. This interpretation necessitates explanation given the parties' positions in this proceeding. For example, to resolve the parties' dispute, we must determine whether a "subsystem" is itself a "system" that is subordinate to another system.

We conclude that the plain and ordinary meaning of the word "subsystem" as understood by a person of ordinary skill in the art requires that both the "subsystem" and the "system" to which it is subordinate must be "systems." As evidence of this construction, we note that a dictionary of electrical and electronics terms defines "subsystem" as "[a] system which is

subordinate to another system." *Subsystem*, WILEY ELECTRICAL AND ELECTRONICS ENGINEERING DICTIONARY 755 (2004) (also defining the term as "[a] system which is a part of, or assists, a larger system") (Ex. 3001); *see also subsystem*, ACADEMIC PRESS DICTIONARY OF SCIENCE AND TECHNOLOGY 2126 (1992) ("a portion of a system that can be treated as a single element in the main system, but that can also be considered a distinct system itself") (Ex. 3002).

We also note that, although the Specification does not define the term, it describes the "integration subsystem" consistently with the above-referenced dictionary definition. Figures 18 and 19, for example, illustrate that integration subsystem 932, 1032 may be subordinate either to portable audio/video device 924 or car audio/video system 1010, depending on where the integration subsystem is located. Ex. 1001, Figs. 18–19; *see also id.* at Figs. 20–23 (similary depicting or describing the integration subsystem). More particularly, the written description corresponding to Figure 18 provides that for Figure 18, the portable device includes *its own device electronics* ("e.g., circuitry and components provided by the portable device manufacturer") *in addition to* an integration subsystem or module and a wireless interface/transceiver. *Id.* at 34:9–13. For Figure 19, the Specification also states that the car audio/video system includes the integration subsystem *in addition to the car system electronics* ("e.g., circuitry and components provided by an OEM [(original equipment manufacturer)] or after-market car audio and/or video system manufacturer"), wireless interface/transceiver, display, control panel, and an optional external interface port. *Id.* at 33:57–62, 35:21–28. That is,

regardless of where it is positioned, the integration subsystem is a system distinct from any other system (e.g., the car audio/video system).

Accordingly, based on the express definition of the term "integration" provided by the '342 patent, we reiterate here our previous construction of the term "integration subsystem" from IPR2016-00118, IPR2016-00418, and IPR2016-00419 for purposes of this Decision:

> A subsystem to perform at least: (1) connecting one or more portable devices or inputs to the car audio/video system via an interface, (2) processing and handling signals, audio, and/or video information, (3) allowing a user to control the one or more portable devices via the car audio/video system, and (4) displaying data from the one or more portable devices on the car audio/video system.

To the above definition, consistent with the broadest reasonable interpretation in light of the specification, we add that the "integration subsystem" is a "system which is subordinate to another system."

B. Obviousness Grounds Based, at Least in Part, on Marlowe

Petitioner proffers three grounds of unpatentability that rely primarily on the combination of Marlowe and Plagge. Pet. 6. A short summary of these references and our analysis of these grounds follow.

(1) Marlowe: Exhibit 1009

Marlowe is titled "Audio Device Integration System." Ex. 1009, [54]. It relates to an "audio device integration system for integrating after-market components such as satellite receivers, CD players, CD changers, MP3 players, Digital Audio Broadcast (DAB) receivers, auxiliary audio sources,

and the like with factory-installed (OEM) or after-market car stereo systems." *Id.* ¶ 2. It describes an "integration system" that "connects to and interacts with the car stereo." *Id.* ¶ 10. Marlowe describes formatting commands received from the car stereo's control panel so the after-market audio device is able to recognize the command. *Id.* Audio from the audio device is channeled to the car stereo and information from the audio device is converted to a format recognizable to the car stereo for display on the car stereo's display. *Id.* Marlowe describes the audio device, such as an MP3 player, electronically connected to an interface and the interface electronically connected with the car stereo. *Id.* ¶¶ 42, 44.

(2) Plagge: Exhibit 1011

Plagge is titled "Vehicle Audio Device." Ex. 1011, [54]. It describes a vehicle audio device that includes an interface for a CD changer and an interface emulator connected to the interface for the CD changer of the vehicle radio for playback of audio data stored in compressed form, such as audio stored in an MP3 player. *Id.* ¶¶ 1, 2, 8. The output of the playback device (MP3 player) for the digital audio signals is connected directly to an input of the vehicle audio device. *Id.* ¶ 9. The output signals of the MP3 player, usually output to headphones, can be output directly to an audio input 3 of vehicle radio 1, from which the signals may be forwarded to the loudspeakers in the motor vehicle. *Id.* ¶ 17.

(3) Analysis

Marlowe and Plagge[5]

Petitioner asserts that Marlowe does not disclose the claim limitation of "a first wireless interface in communication with said integration subsystem." Pet. 12.[6] Although it admits that Marlowe does not disclose the recited wireless communication link, Petitioner asserts that Marlowe discloses the limitation requiring that the integration subsystem "*receive[] audio generated by the portable device over said wireless communication link* for playing on the car audio/video system." *Id.* at 13–14. For this "receive audio" claim limitation, Petitioner focuses solely on Marlowe's disclosure of an MP3 player connected to the car stereo system to allow audio from the MP3 player to be played through the car stereo. *Id.* at 14; *see also id.* at 16 (citing only Marlowe as disclosing the "receive audio" limitation identified by Petitioner as limitation (g)).

On this point, Patent Owner points out two problems with Petitioner's assertions. First, Patent Owner argues that Petitioner's claim chart and explanations pointing out how the prior art allegedly meets the "receive

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[5] This analysis also pertains to the ground relying on the combination of Marlowe, Plagge, and Riggs, concerning claim 57, as Riggs is relied upon for its teachings of spoken commands (Pet. 22–23), and does not cure any of the deficiencies identified with regard to the asserted combination of Marlowe and Plagge.

[6] For the wireless interface limitation, the Petition addresses Plagge's disclosure of a wireless interface. Pet. 12. The claim chart for this ground and the accompanying explanation for the "receive audio" limitation, however, omit discussion or citations to Plagge.

audio" limitation are insufficient. Prelim. Resp. 18. In particular, Petitioner admits that Marlowe does not disclose a wireless communication link, yet Petitioner offers a contradictory position that Marlowe alone teaches or suggests receiving audio generated by a portable device over said wireless communication link. *Id.* 18–19. On this point, we agree with Patent Owner that the Petition is confusing. Reading the Petition broadly, however, Petitioner appears to rely on Plagge for teaching the use a wireless communication link for all the claimed wireless communications. Pet. 12 ("Plagge discloses that interface emulator 4 (the integration subsystem) includes a wireless interface 5."); Pet. 17 ("But unlike the interface of Marlowe, the interface emulator of Plagge is designed to communicate with a portable device via a wireless communication link.").

Notwithstanding our broad reading of the Petition, the arguments and evidence proffered with regards to the motivations to combine is insufficient. This is the second problem that Patent Owner points out. Prelim. Resp. 10. Specifically, Patent Owner argues, and we agree, that in Plagge, the audio from the portable device is transmitted through a wire connection, despite the disclosure of a wireless interface. *Id.* (citing Ex. 1011 ¶ 17). This fact presents two questions. First, why would a person of ordinary skill in the art rely on a teaching of using the wireless interface in Plagge for receiving audio, when Plagge specifically teaches using wireless communication for control signals, but not *audio*. On the record before us, Petitioner fails to allege sufficiently how *both* Marlowe and Plagge would have been modified to implement wireless communication of control signals and *audio generated by a portable device for playing*. In other words, the

combination Petitioner puts forward applies "the wireless capability of the interface emulator of Plagge to the interface of Marlowe." *Id.* But that proffered combination would not yield the claim limitation of wirelessly receiving audio from the portable device, unless both Marlowe and Plagge were modified to do so, a modification that Petitioner fails to allege expressly and we do not infer from the Petition.

Second, even if we were to accept that a person of ordinary skill in the art would know generally to implement a wireless communication link instead of cables (as in Marlowe) for both audio and control signals, Petitioner's mere allegation that improving versatility and ease of use would motivate such an implementation is insufficient. Pet. 17–18; *see* Prelim. Resp. 22 (Patent Owner arguing that "the motivations to combine set forth by Petitioner are all conclusory" and constitute boilerplate statements that lack rational underpinning under *KSR*). We agree with Patent Owner that the proffered rationale to combine the teachings of Marlowe and Plagge is conclusory and lacks a rational underpinning. Seeking "versatility" and "ease of use" is too generic a motivation, which, without more, fails to constitute a reasonable rationale *with a rational underpinning*. Petitioner offers no explanation of what versatility would be gained or what aspects of the system would be easier to use. There is no factual support for concluding that a person of ordinary skill in the art would be motivated by seeking some generic "versatility" and "ease of use." Finally, relying on the Geier Declaration (Ex. 1007 ¶ 57) as support is insufficient, when, as here, the cited paragraphs in the Declaration are repeated in the Petition verbatim, and, thus, offer no more explanation or factual support than what appears in

the Petition. *See* 37 C.F.R. § 42.65(a). Therefore, we are not persuaded that Petitioner has demonstrated a likelihood of prevailing with respect to the grounds that rely on the combination of (1) Marlowe and Plagge; and (2) Marlowe, Plagge, and Riggs.[7]

Marlowe, Plagge, and Bhogal

We also are not persuaded by Petitioner's assertion that "[i]t would have been obvious for a person of ordinary skill in the art to apply the wireless capabilities taught in Bhogal with the combined teachings of Marlowe and Plage to arrive at the claimed subject matter of claims 49 and 73." Pet. 25. Here, Petitioner admits that Plagge does not expressly disclose audio signals transmitted wirelessly from the MP3 player to the interface emulator. *Id.* at 26. Nevertheless, Petitioner asserts that Bhogal teaches transmitting wirelessly both commands and audio. *Id.* (citing Ex. 1013, 5:44–51, 7:39–42, 8:10–14). The portions of Bhogal that Petitioner cites, however, do not support the contention that Bhogal's audio from the CD-changer unit is transmitted wirelessly to the interface emulator. For instance, Petitioner points to the "pass-thru mode" in which "commands" and "data" are being exchanged. Ex. 1013, 7:39–42. Further, the emulator may also read "tracks and track information" from the CD-changer unit. *Id.* at 8:10–14. These passages teach that Bhogal's emulator handles commands, but not audio.

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[7] *See supra* n.5.

Furthermore, to the extent Bhogal discloses use of a wireless communication link generally for connecting the emulator, car stereo and CD-changer units, Petitioner does not show that such a disclosure teaches or suggests that Bhogal also transmits audio wirelessly. *See id.* at 5:44–51. A teaching or suggestion of wireless transmission of audio for playing appears particularly suspect considering that Bhogal is concerned with "providing access to hardcopy digital audio files stored on CDs that are stored within the CD-changer." Ex. 1013, 4:67–5:4; *see also id.* at 10:21–25 ("the emulator unit interprets the CD-changer control signals from the base unit to retrieve the digital audio data from the proper CD track or softcopy file and to send the digital audio data to the base unit from among the virtual CDs"). Petitioner fails to explain how Bhogal's disclosure of accessing or retrieving *digital audio files* in any way constitutes receiving *audio* generated by the portable device over said wireless communication link.

Notwithstanding the failure to show adequately that Bhogal teaches the "receive audio" limitation, Petitioner's assertion of unpatentability regarding Bhogal suffers from the same deficiencies addressed above with regards to the proffered rationale to combine. For instance, Petitioner argues that "[i]t would have been obvious to one of ordinary skill in the art at the time to apply the wireless capabilities disclosed in Bhogal to improve the interface of Marlowe, in view of Plagge, to improve its *versatility and ease of use*." Pet. 26 (relying on Ex. 1007 (Geier Decl.) ¶ 95) (emphasis added). For the same reasons state above, the proffered rationale of "versatility" and "ease of use" is insufficient.

Accordingly, we are not persuaded that Petitioner has demonstrated a reasonable likelihood of prevailing on its assertions that the challenged claims are unpatentable over Marlowe, Plagge, and Bhogal.

C. Anticipation and Obviousness Grounds Based on Silvester

Silvester is titled "Method and Apparatus for Connecting a Portable Media Player Wirelessly to an Automobile Entertainment System." Ex. 1014, [54]. It describes an automobile entertainment system that includes a compact disk player, a tuner, a cassette player, a set of loudspeakers, a video display, and a microphone, all of which are connected to a controller that controls their operation. *Id.* ¶ 18.

In addressing the asserted ground of anticipation by Silvester, Petitioner contends that Silvester discloses the limitation "an integration subsystem in communication with a car audio/video system" by pointing to the automobile entertainment system. Pet. 27. In particular, Petitioner asserts that Silvester's automobile entertainment system corresponds to the recited car audio/video system, and that various components of the same automobile entertainment system correspond to the recited "integration subsystem." *Id.* Reproduced below is an annotated Figure 1 of Silvester (depicting the automobile entertainment system), which discloses, according to Petitioner, "system 100 and a subordinate integration system comprised of" the components identified in red. *Id.*

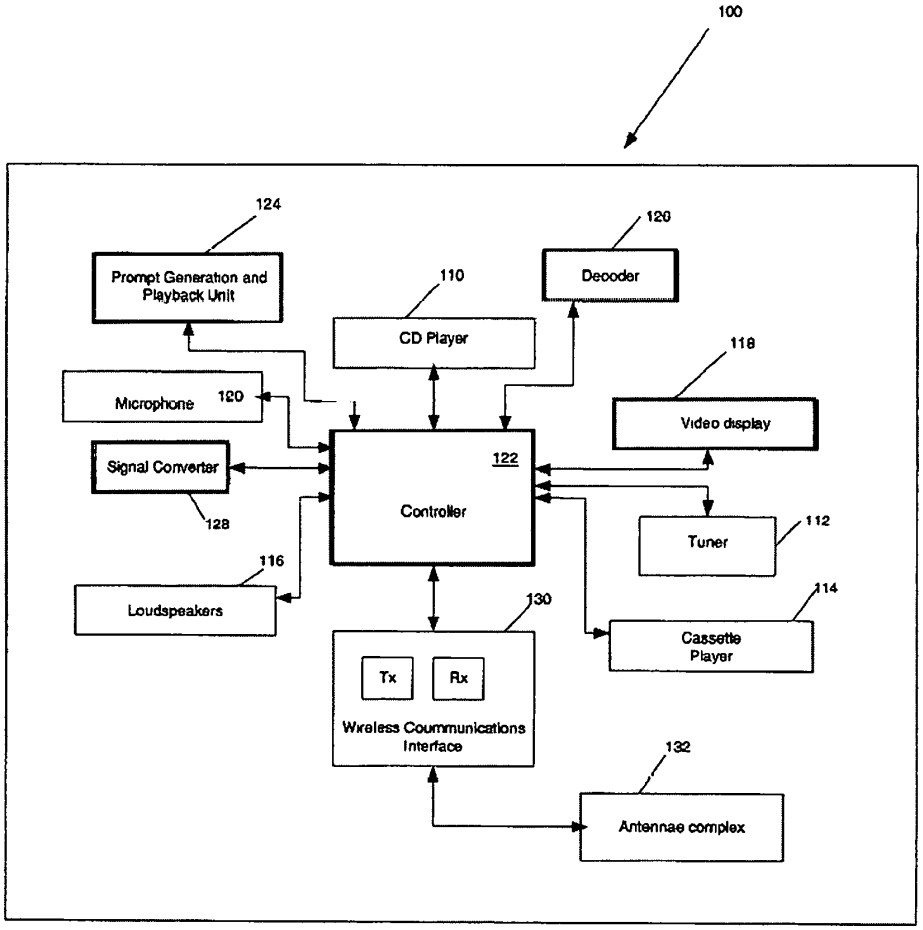

Figure 1

Figure 1 shows a block diagram of an automobile entertainment system 100, comprising controller 122 and various other components. Ex. 1014 ¶¶ 3, 17–18.

Patent Owner responds that Silvester does not disclose an "integration subsystem." Prelim. Resp. 24–25. In particular, Patent Owner contends that the components identified by Petitioner in Silvester's automobile

entertainment system do not comprise any "subsystem" that is subordinate to the remainder of system 100. *Id.* at 25. We agree with Patent Owner.

As we stated above in our construction of "integration subsystem," the subsystem and the system to which it is subordinate must both be systems. Petitioner's selection of components from Silvester's automobile entertainment system that allegedly form an integration subsystem eviscerates the system to which it is supposedly subordinate. For example, once the controller is identified as part of the "integration subsystem," the automobile entertainment system has no controller with which to control the remaining (or non-selected) components of that system. Additionally, it is not enough to "cherry pick," as Patent Owner points out, various components of the automobile entertainment system and label them a "subsystem." Rather, Petitioner must show that the collection of the selected Silvester components within the automobile entertainment system operate together as a distinct system. An arbitrary collection of parts, without evidence of cooperation or coordination to serve a purpose or objective, is not a system. In sum, we are not persuaded that Silvester discloses the "integration subsystem" because Petitioner has not shown that the selected components of the automobile entertainment system comprise a system.

Although Petitioner proffers additional obviousness grounds based on Silvester, those additional grounds pertain to claims that depend from claims 49 and 73, and none of those grounds cure the deficiency noted above with respect to the "integration subsystem" limitation. Pet. 6, 38–43. Therefore, we determine that Petitioner has failed to establish a reasonable likelihood of prevailing regarding unpatentability of all the claims

challenged on the basis of Silvester, either alone or in combination with other references.

D. Obviousness Ground Based on Simon and Bhogal

Petitioner contends that Simon teaches all the limitations of the challenged independent claims, except for the wireless communication link. Pet. 43–49. For the wireless communication link limitation, Petitioner relies on Bhogal. *Id.* In particular, Petitioner asserts that Simon does not disclose audio signals being transmitted over a wireless communication link. *Id.* at 45. But "[i]t would have been obvious for a person of ordinary skill in the art to apply the wireless capabilities taught in Bhogal to the teachings of Simon to arrive at the claimed subject matter of claims 49 and 73." *Id.* As support, Petitioner states that "Bhogal teaches the use of wireless communication to transmit commands, data, as well as *audio* read from tracks from a CD-changer unit." *Id.* (citing Ex. 1013, 5:44–52, 7:39–42, 8:10–14) (emphasis added). As stated above with regard to the Marlowe, Plagge, and Bhogal ground, we are not persuaded that the record supports Petitioner's contention that Bhogal's emulator receives *audio* wirelessly.

Furthermore, Petitioner proffers the same rationale we found lacking with respect to the grounds addressed above. Specifically, the Petition states that "[i]t would have been obvious to one of ordinary skill in the art at the time to apply the wireless capabilities disclosed in Bhogal to improve the interface of Simon to improve its *versatility and ease of use*." Pet. 45 (citing Ex. 1007 ¶ 158) (emphasis added). This is the same generic rationale

addressed above, and for the same stated reasons, we are not persuaded that Petitioner has demonstrated a reasonable likelihood of prevailing in its challenge of unpatentability concerning Simon and Bhogal.

III. CONCLUSION

For the foregoing reasons, we determine that Petitioner has failed to establish a reasonable likelihood of prevailing in challenging claims 49, 53, 54, 56, 57, 62, 66, 70, 73, 77, and 78 over the asserted grounds.

IV. ORDER

Accordingly, it is:

ORDERED that the Petition is *denied* and no trial is instituted.

IPR2016-01473
Patent 8,155,342 B2

PETITIONER:

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Joseph M. Beauchamp
H. Albert Liou
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PATENT OWNER:

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Trials@uspto.gov
571.272.7822

Paper No. 10
Filed: January 31, 2017

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

VOLKSWAGEN GROUP OF AMERICA, INC.,
Petitioner,

v.

BLITZSAFE TEXAS, LLC,
Patent Owner.

Case IPR2016-01445
Patent 8,155,342 B2

Before JAMES T. MOORE, MIRIAM L. QUINN, and KERRY BEGLEY, *Administrative Patent Judges*.

MOORE, *Administrative Patent Judge*.

DECISION
Granting Joint Motion to Dismiss Petition
37 C.F.R. §§ 42.71(a), 42.74

I. BACKGROUND

On July 20, 2016 Petitioner, Volkswagen Group of America, Inc.[1], filed a Petition requesting an *inter partes* review of claims 49–57, 62–64, 66, 68, 70, 71, 73–80, 94, 95, 97, 99–103, 106, 109–111, 113, 115, and 120 of U.S. Patent No. 8,155,342 B2 ("the '342 patent"). Paper 2 ("Pet."). Patent Owner, Blitzsafe Texas, LLC, filed a Preliminary Response. Paper 6 ("Prelim. Resp.").

On January 27, 2017, Petitioner and Patent Owner filed an unopposed Motion to Dismiss the Petition. Paper 8. Furthermore, Petitioner and Patent Owner filed a Joint Request to have their agreement treated as business confidential information under 37 C.F.R. § 42.74(c) and kept separate from the file of the involved patent. Paper 9. Petitioner and Patent Owner also filed a true copy of their written agreement. Ex. 2004. Petitioner and Patent Owner jointly represent that "[t]he *inter partes* review has not been instituted and the Parties have settled their dispute and have agreed to request termination of this *inter partes* review proceeding." Paper 8, 2. Petitioner and Patent Owner contend that dismissal of the Petition is appropriate at this early stage because a decision whether to institute trial has not been issued. *Id.*

Petitioner and Patent Owner have demonstrated that dismissal of the Petition is warranted, and we grant Petitioner and Patent Owner's Motion. *See* 37 C.F.R. § 42.71(a) (petitions are dismissible). We also grant the parties' request to have their agreement treated as business confidential information pursuant to 37 C.F.R. § 42.74(c).

[1] A subsidiary of Volkswagen, AG. Pet. 1.

II. ORDER

Accordingly, it is:

ORDERED that the parties' Joint Motion is granted and the Petition is dismissed; and

FURTHER ORDERED that the parties' Joint Request that their agreement (Ex. 2004) be treated as business confidential information under 37 C.F.R. § 42.74(c) is granted.

PETITIONER:

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PATENT OWNER:

Peter Lambrianakos (lead counsel)
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Trials@uspto.gov
571.272.7822

Paper No. 9
Filed: January 31, 2017

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

VOLKSWAGEN GROUP OF AMERICA, INC.,
Petitioner,

v.

BLITZSAFE TEXAS, LLC,
Patent Owner.

Case IPR2016-01449
Patent 8,155,342 B2

Before JAMES T. MOORE, MIRIAM L. QUINN, and KERRY BEGLEY, *Administrative Patent Judges*.

MOORE, *Administrative Patent Judge*.

DECISION
Granting Joint Motion to Dismiss Petition
37 C.F.R. §§ 42.71(a), 42.74

I. BACKGROUND

Volkswagen Group of America, Inc.[1] ("Petitioner") filed a Petition requesting *inter partes* review of claims 49–57, 62–64, 66, 68, 70, 71, 73–80, 94, 95, 97, 99–103, 106, 109–111, 113, 115, and 120 ("challenged claims") of U.S. Patent No. 8,155,342 B2 (Ex. 1001, "the '342 patent"). Paper 2 ("Pet."). Blitzsafe Texas, LLC ("Patent Owner") filed a Preliminary Response to the Petition. Paper 6 ("Prelim. Resp.").

On January 27, 2017, Petitioner and Patent Owner filed an unopposed Motion to Dismiss the Petition. Paper 7. Furthermore, Petitioner and Patent Owner filed a Joint Request to have their agreement treated as business confidential information under 37 C.F.R. § 42.74(c). Paper 8. Petitioner and Patent Owner also filed a true copy of their written agreement. Ex. 2003. Petitioner and Patent Owner jointly represent that "[t]he *inter partes* review has not been instituted and the Parties have settled their dispute and have agreed to request termination of this *inter partes* review proceeding." Paper 7, 2. Petitioner and Patent Owner contend that dismissal of the Petition is appropriate at this early stage because a decision whether to institute trial has not been issued. *Id.*

Petitioner and Patent Owner have demonstrated that dismissal of the Petition is warranted, and we grant Petitioner and Patent Owner's Motion. *See* 37 C.F.R. § 42.71(a) (petitions are dismissible). We also grant the parties' request to have their agreement treated as business confidential information pursuant to 37 C.F.R. § 42.74(c).

[1] A subsidiary of Volkswagen, AG. Pet. 1.

II. ORDER

Accordingly, it is:

ORDERED that the parties' Joint Motion is granted and the Petition is dismissed; and

FURTHER ORDERED that the parties' Joint Request that their agreement (Ex. 1011) be treated as business confidential information under 37 C.F.R. § 42.74(c) is granted.

PETITIONER:

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PATENT OWNER:

Peter Lambrianakos (lead counsel)
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AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Eastern District of Texas - Marshall Division on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
2:17-CV-105	2/3/2017	Eastern District of Texas - Marshall Division

PLAINTIFF	DEFENDANT
Blitzsafe Texas, LLC	Robert Bosdh LLC and Robert Bosch GmbH

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	7,489,786	2/10/2009	Blitzsafe Texas LLC
2	8,155,342 B2	4/10/2012	Blitzsafe Texas, LLC
3			
4			
5			

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

Trials@uspto.gov
571.272.7822

Paper No. 42
Filed: February 21, 2017

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TOYOTA MOTOR CORPORATION, HYUNDAI MOTOR COMPANY LTD., HYUNDAI MOTOR AMERICA, HYUNDAI MOTOR MANUFACTURING ALABAMA, LLC, KIA MOTORS CORPORATION, KIA MOTORS AMERICA, INC., KIA MOTORS MANUFACTURING GEORGIA, INC., NISSAN NORTH AMERICA, INC., NISSAN MOTOR CO., LTD., and AMERICAN HONDA MOTOR CO., INC.,
Petitioner,

v.

BLITZSAFE TEXAS, LLC,
Patent Owner.

Case IPR2016-00418[1]
Patent 8,155,342 B2

Before JAMESON LEE, MIRIAM L. QUINN, and KERRY BEGLEY, *Administrative Patent Judges.*

QUINN, *Administrative Patent Judge.*

DECISION
Granting Termination as to Petitioner Toyota Motor Corporation
37 C.F.R. § 42.72

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[1] Cases IPR2016-01533, IPR2016-01557, and IPR2016-01560 have been joined with this proceeding.

On authorization from the Board, Petitioner Toyota Motor Corporation ("Toyota") filed, on February 17, 2017, a Joint Motion to Terminate. Paper 38. Toyota also filed a written settlement agreement, made in connection with the termination of the instant proceeding, in accordance with 35 U.S.C. § 317(b) and 37 C.F.R. § 42.74(b). Exhibit 2014. Additionally, the parties submitted a joint request to have their settlement agreement treated as confidential business information under 35 U.S.C. § 317(b) and 37 C.F.R. § 42.74(c). Paper 39. The filings convey that the parties have settled their dispute and have agreed to request termination of the instant proceeding. Paper 38, 1. The filings also state that the parties have settled and dismissed the related district court litigation, which was pending in the U.S. District Court for the Eastern District of Texas. *Id.*

Although this proceeding is in a late stage and we have heard oral argument, the Board has not yet issued a Final Written Decision, which is not due for another four months. However, several other entities will remain as Petitioner in this proceeding. Therefore, although the motion requests termination of the proceeding as to both Toyota and Patent Owner, it would not be appropriate at this juncture, with other entities remaining, to terminate either the proceeding in its entirety or Patent Owner's participation. Upon consideration of the requests before us, we determine that terminating the instant proceeding with respect to only Petitioner Toyota Motor Corporation is proper.

Accordingly, it is:

ORDERED that the joint motion to terminate IPR2016-00418 is *granted in part*;

FURTHER ORDERED that the instant proceeding is hereby *terminated* as to Petitioner Toyota Motor Corporation only; and

FURTHER ORDERED that the joint request that the settlement agreement between Toyota Motor Corporation and Patent Owner be treated as business confidential information, kept separate from the patent file, and made available only to Federal Government agencies on written request, or to any person on a showing of good cause, pursuant to 35 U.S.C. § 317(b) and 37 C.F.R. § 42.74(c), is *granted.*

PETITIONER:

IPR2016-00418:
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Yoshinari Kishimoto (Back-up Counsel)
John F. Rabena (Back-up Counsel)
Fadi N. Kiblawi (Back-up Counsel)
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SKonrad@giplaw.com

IPR2016-00418
Patent 8,155,342 B2

PATENT OWNER:
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Shahar Harel (Back-up Counsel)
Vincent Rubino (Back-up Counsel)
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vrubino@brownrudnick.com

AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Eastern District of Texas, Marshall Division on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
2:15-cv-01277-JRG	7/16/2015	Eastern District of Texas, Marshall Division

PLAINTIFF	DEFENDANT
BLITZSAFE TEXAS, LLC	TOYOTA MOTOR CORPORATION, et al.

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	U.S. No. 7,489,786	2/10/2009	BLITZSAFE TEXAS, LLC
2	U.S. No. 8,155,342	4/10/2012	BLITZSAFE TEXAS, LLC
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

ORDERED that all claims and causes of action asserted by Plaintiff Blitzsafe in this action against Defendants Toyota and all Counterclaims filed by Toyota against Plaintiff Blitzsafe are hereby dismissed with prejudice.

CLERK	(BY) DEPUTY CLERK	DATE
David A. O'Toole	Nakisha Love	**2/21/17**

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

Trials@uspto.gov
571.272.7822

Paper No. 50
Filed: March 10, 2017

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

NISSAN NORTH AMERICA, INC. and NISSAN MOTOR CO., LTD,
Petitioner,

v.

BLITZSAFE TEXAS, LLC,
Patent Owner.

Case IPR2016-00418[1]
Patent 8,155,342 B2

Before JAMESON LEE, MIRIAM L. QUINN, and KERRY BEGLEY,
Administrative Patent Judges.

QUINN, *Administrative Patent Judge.*

DECISION
Granting Motion to Terminate Proceeding
37 C.F.R. § 42.72

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[1] Cases IPR2016-01533, IPR2016-01557, and IPR2016-01560 have been joined with this proceeding.

On authorization from the Board, Nissan North America, Inc. and Nissan Motor Co., Ltd. ("Petitioner") and Patent Owner filed, on March 7, 2017, a Joint Motion to Terminate. Paper 48. The written settlement agreement, made in connection with the termination of the instant proceeding, is filed in the record as Exhibit 2017, in accordance with 35 U.S.C. § 317(b) and 37 C.F.R. § 42.74(b). Exhibit 2017. Additionally, Petitioner and Patent Owner submitted a joint request to have their settlement agreement treated as confidential business information under 35 U.S.C. § 317(b) and 37 C.F.R. § 42.74(c). Paper 49. The filings convey that the parties have settled their dispute and have agreed to request termination of the instant proceeding. Paper 48, 1. The filings also state that the parties have filed a motion to dismiss the related district court litigation, which was pending in the U.S. District Court for the Eastern District of Texas. *Id.*

Although this proceeding is in a late stage and we have heard oral argument, the Board has not yet issued a Final Written Decision, which is not due for another four months. With the exception of Petitioner, as identified above, and Patent Owner, the Board has terminated all other remaining entities. Papers 42, 43, and 46. Therefore, when terminating the participation of Petitioner, no other entity will remain as Petitioner. Under the circumstances of this case, and on the record now before us, we exercise our discretion to terminate this proceeding in its entirety.

Accordingly, it is:

ORDERED that the joint motion to terminate IPR2016-00418 is *granted*;

FURTHER ORDERED that the instant proceeding is hereby *terminated* as to Petitioner and Patent Owner;

FURTHER ORDERED that the instant proceeding, and all the joined proceedings (IPR2016-01533, IPR2016-01557, and IPR2016-01560), are closed; and

FURTHER ORDERED that the joint request that the settlement agreement between Petitioner and Patent Owner be treated as business confidential information, kept separate from the patent file, and made available only to Federal Government agencies on written request, or to any person on a showing of good cause, pursuant to 35 U.S.C. § 317(b) and 37 C.F.R. § 42.74(c), is *granted*.

IPR2016-00418
Patent 8,155,342 B2

PETITIONER:

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Sean Hsu (Back-up Counsel)
Suzanne Konrad
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SKonrad@giplaw.com

PATENT OWNER:

Peter Lambrianakos (Lead Counsel)
Shahar Harel (Back-up Counsel)
Vincent Rubino (Back-up Counsel)
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sharel@brownrudnick.com
vrubino@brownrudnick.com

AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Eastern District of Texas, Marshall Division on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
2:15-cv-01274-JRG	7/16/2015	Eastern District of Texas, Marshall Division

PLAINTIFF	DEFENDANT
BLITZSAFE TEXAS, LLC	HONDA MOTOR CO., LTD., et al.

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	U.S. No. 7,489,786	2/10/2009	BLITZSAFE TEXAS, LLC
2	U.S. No. 8,155,342	4/10/2012	BLITZSAFE TEXAS, LLC
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

it is hereby ORDERED that all claims and causes of action asserted by Plaintiff Blitzsafe in this action against Defendants Honda Motor Co., Ltd. and the U.S. Honda Defendants, and all Counterclaims filed by the U.S. Honda Defendants against Plaintiff Blitzsafe, are hereby dismissed with prejudice

CLERK	(BY) DEPUTY CLERK	DATE
David A. O'Toole	Nakisha Love	4/4/17

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Eastern District of Texas, Marshall Division on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
2:15-cv-01276-JRG	7/16/2015	Eastern District of Texas, Marshall Division

PLAINTIFF	DEFENDANT
BLITZSAFE TEXAS, LLC	NISSAN MOTOR CO., LTD. and NISSAN NORTH AMERICA, INC.

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	U.S. No. 7,489,786	2/10/2009	BLITZSAFE TEXAS, LLC
2	U.S. No. 8,155,342	4/10/2012	BLITZSAFE TEXAS, LLC
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4			
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT
ORDER OF DISMISSAL

CLERK	(BY) DEPUTY CLERK	DATE
David A. O'Toole	Nakisha Love	4/4/17

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Eastern District of Texas - Marshall Division on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
2:17-CV-105	2/3/2017	Eastern District of Texas - Marshall Division

PLAINTIFF	DEFENDANT
Blitzsafe Texas, LLC	Robert Bosdh LLC and Robert Bosch GmbH

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	7,489,786	2/10/2009	Blitzsafe Texas LLC
2	8,155,342 B2	4/10/2012	Blitzsafe Texas, LLC
3			
4			
5			

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1—Upon initiation of action, mail this copy to Director **Copy 3—Upon termination of action, mail this copy to Director**
Copy 2—Upon filing document adding patent(s), mail this copy to Director **Copy 4—Case file copy**

AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court for the Eastern District of Texas - Marshall Division on the following

☐ Trademarks or ☒ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
2:17-cv-418	May 11, 2017	Eastern District of Texas - Marshall Division

PLAINTIFF	DEFENDANT
BLITZSAFE TEXAS, LLC	BAYERISCHE MOTOREN WERKE AG, ET AL.

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	7,489,786	February 10, 2009	Blitzsafe Texas, LLC
2	8,155,342	April 10, 2012	Blitzsafe Texas, LLC
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1—Upon initiation of action, mail this copy to Director **Copy 3—Upon termination of action, mail this copy to Director**
Copy 2—Upon filing document adding patent(s), mail this copy to Director **Copy 4—Case file copy**

AO 120 (Rev. 08/10)

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DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
2:17-cv-422	May 12, 2017	Eastern District of Texas - Marshall Division

PLAINTIFF	DEFENDANT
BLITZSAFE TEXAS, LLC	DAIMLER AG, ET AL.

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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PLAINTIFF	DEFENDANT
BLITZSAFE TEXAS, LLC	BAYERISCHE MOTOREN WERKE AG, ET AL.

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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☐ Trademarks or ☒ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
2:17-cv-420	May 11, 2017	Eastern District of Texas - Marshall Division

PLAINTIFF	DEFENDANT
BLITZSAFE TEXAS, LLC	ZHEJIANG GEELY HOLDING GROUP CO., LTD., ET AL.

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	7,489,786	February 10, 2009	Blitzsafe Texas, LLC
2	8,155,342	April 10, 2012	Blitzsafe Texas, LLC
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☐ Trademarks or ☒ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
2:17-cv-421	May 11, 2017	Eastern District of Texas - Marshall Division

PLAINTIFF	DEFENDANT
BLITZSAFE TEXAS, LLC	SUBARU CORPORATION, ET AL.

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	7,489,786	February 10, 2009	Blitzsafe Texas, LLC
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☐ Trademarks or ☒ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
2:17-cv-423	May 12, 2017	Eastern District of Texas - Marshall Division

PLAINTIFF	DEFENDANT
BLITZSAFE TEXAS, LLC	MAZDA MOTOR CORPORATION and MAZDA MOTOR OF AMERICA, INC., d/b/a MAZDA NORTH AMERICAN OPERATIONS, INC.

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	7,489,786	February 10, 2009	Blitzsafe Texas, LLC
2	8,155,342	April 10, 2012	Blitzsafe Texas, LLC
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☐ Trademarks or ☒ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
2:17-cv-424	May 12, 2017	Eastern District of Texas - Marshall Division

PLAINTIFF	DEFENDANT
BLITZSAFE TEXAS, LLC	TATA MOTORS LTD., ET AL.

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	7,489,786	February 10, 2009	Blitzsafe Texas, LLC
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