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.

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:	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:					
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		Total Files Size (in bytes):	1335453		

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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 7-8 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,

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.

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Signature of Person Mailing Correspondence

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Mark Nikolsky

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

PTO/SB/08A (10-07)
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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
	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	
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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.**

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(Use as many sheets as necessary)

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	

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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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<u>New Applications Under 35 U.S.C. 111</u>
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<u>New International Application Filed with the USPTO as a Receiving Office</u>
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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)
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

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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

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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
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Alexandria, VA 22313-1450

37 CFR 1.97(b)

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37 CFR 1.97(c)

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   ☐ 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

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

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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: 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

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 (07-09)
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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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-			
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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]
	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

	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]
	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)	
	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)	
	5	Copy of Office Action dated March 18, 2010, from co-pending Application No. 11/071,667 (13 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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CN1315021 (C)

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.

[19] 中华人民共和国国家知识产权局

[51] Int. Cl[7]
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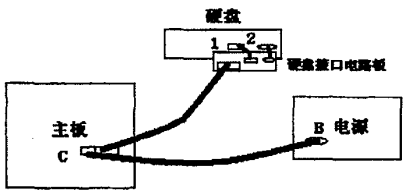
权利要求书 3 页 说明书 9 页 附图 3 页

[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。

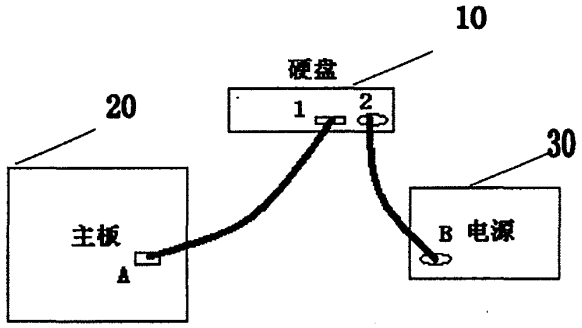
10
硬盘
20
1
2
30
主板
A
B 电源

图1

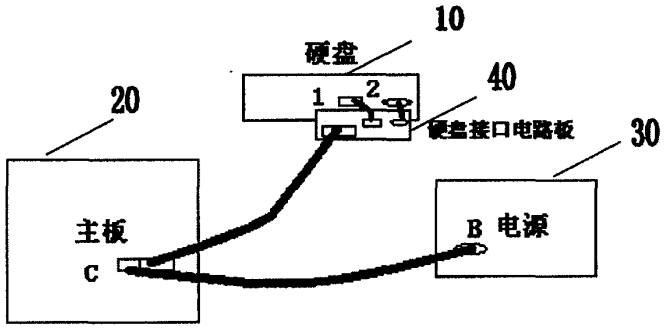
10
硬盘
40
20
1
2
硬盘接口电路板
30
主板
C
B 电源

图2

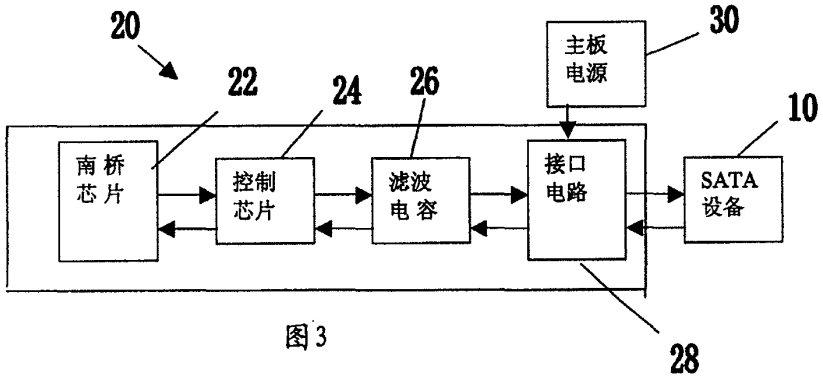
20
22
24
26
主板
电源
30
10
南桥
芯片
控制
芯片
滤波
电容
接口
电路
SATA
设备
28

图3

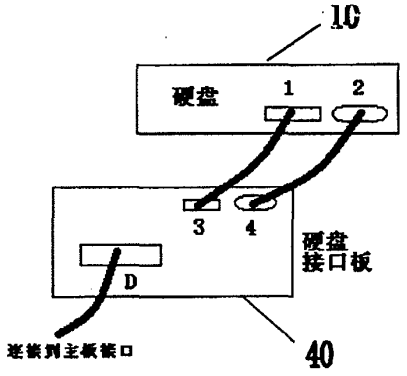

图4

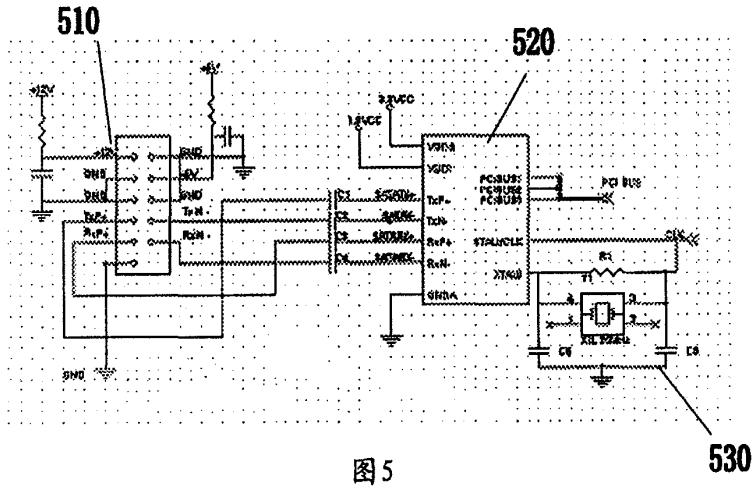

图5

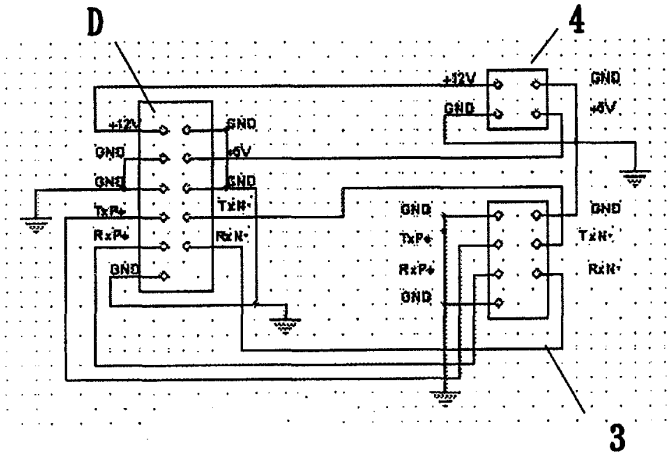

图6

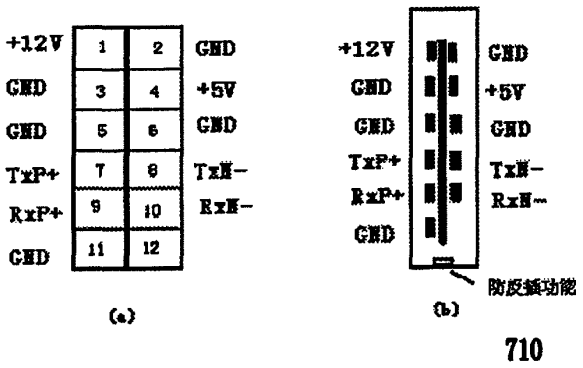
+12V
GND
GND
TxP+
RxP+
GND
1
2
3
4
5
6
7
8
9
10
11
12
GND
+5V
GND
TxN-
RxN-
(a)
+12V
GND
GND
TxP+
RxP+
GND
GND
+5V
GND
TxN-
RxN-
防反插功能
(b)
710

图7

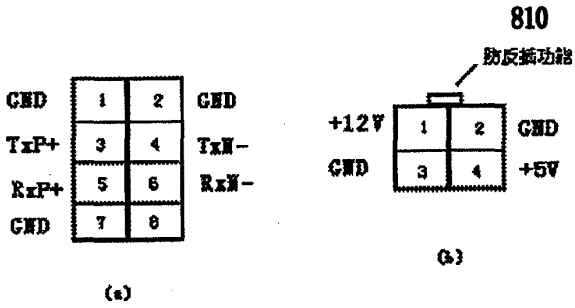
GND
TxP+
RxP+
GND
1
2
3
4
5
6
7
8
GND
TxN-
RxN-
(a)
810
防反插功能
+12V
GND
1
2
3
4
GND
+5V
(b)

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:					
This is not an USPTO supplied IDS fillable form					
4	Foreign Reference	Ref2.pdf	707076 167cfcfb361e0216e089241bd68abbed539f0340	no	17
Warnings:					
Information:					
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:					
Information:					
		Total Files Size (in bytes):	2185769		

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/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

Mark E. Nikolsky
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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
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 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

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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: 5/6/2010

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Fax: (973) 297-6624

cc:

P10A/REV06

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

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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

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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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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:

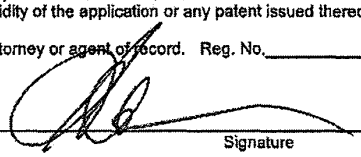
expires for failure to pay a maintenance fee;
is held unenforceable;
is found invalid by a court of competent jurisdiction;
is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321;
has all claims canceled by a reexamination certificate;
is reissued; or
is in any manner terminated 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
Reg. No. 48,319
McCarter & English, LLP
Four Gateway Center
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)
Approved for use through 1/31/2007. OMB 0651-0032
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.

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), (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	
	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/06 (07-06)
Approved for use through 1/31/2007. OMB 0651-0032
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.

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), (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	
	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/

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 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-			
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	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					
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NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
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	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
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Claim		Date									
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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
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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
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S23	2077	S22 and interfac$3	US-PGPUB; USPAT	OR	OFF	2010/02/09 13:18
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S27	192	S26 and (portable with (player source))	US-PGPUB; USPAT	OR	OFF	2010/02/09 13:21
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S36	49	("20020009978" | "20030026440" | "20050021190" | "20050282600" | "20070149115" | "20070230099" | "20090017866" | "20090018682" | "3940743" | "4047162" | "4068104" | "4091455" | "4234919" | "4562533" | "4772079" | "4817130" | "4943978" | "5339362" | "5410675" | "5794164" | "5978689" | "6005488" | "6052603" | "6058319" | "6134456" | "6157725" | "6163079" | "6163711" | "6255961" | "6278697" | "6282464" | "6295033" | "6330337" | "6346917" | "6374177" | "6389332" | "6396164" | "6539358" | "6591085" | "6629164" | "6648661" | "6653948" | "6889064" | "6993615" | "7062255" | "7187947" | "7324833" | "7440772" | "7486926").PN.	US-PGPUB; USPAT	OR	OFF	2010/02/25 14:43
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S40	252	S39 and (car vehicle)	US-PGPUB; USPAT	OR	OFF	2010/02/25 15:11
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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
/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.	
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/JK/	12	US- 6,282,464	08/28/2001	Obradovich	
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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	/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] 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
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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]
/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)	

Examiner Signature	/Jason Kurr/	Date Considered	02/27/2010

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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- 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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FOREIGN PATENT DOCUMENTS

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Sheet 2 of 2

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Examiner Name	Kurr, Jason R.
Attorney Docket Number	99879-00026

NON PATENT LITERATURE DOCUMENTS

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/JK/	6	Copy of Office Action dated December 11, 2009, from co-pending Application No. 11/805,799 (14 pages)	
/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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Examiner Signature	/Jason Kurr/	Date Considered	02/27/2010

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Art Unit	2614
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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

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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
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Sheet 1 of 1

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Art Unit	2614
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Attorney Docket Number	99879-00026

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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
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Customer No. 27614
Confirmation No. 9001

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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.**

1/27/2010
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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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:
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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))

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Dated: 1/27/2010

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

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Application Number:	11475847
International Application Number:	
Confirmation Number:	9001
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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

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Warnings:					
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4	NPL Documents	Ref1.pdf	113526 87db49173d1afd8b3cec751f54904d6255f1a451	no	2
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		Total Files Size (in bytes):	314526		

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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/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,

1/14/10
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

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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**

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

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Mark Nikolsky

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/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	

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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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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)	

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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:				
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:

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Payment Type	Deposit Account
Payment was successfully received in RAM	$180
RAM confirmation Number	98
Deposit Account	503571
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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	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:					
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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
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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

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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))

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Mark 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

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))

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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
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	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	
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	7	US- 7,324,833	01/29/2008	White, et al.	
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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)
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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]
	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	

*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 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)	

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	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		

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 (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

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 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:

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

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
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.

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), (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	11/30/2009	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	** 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)					
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:
/TARA J. WITCHER/

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:

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.

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 15, 2009.

Ann J. Erbetta

MEI 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

ME1 8776502v.1

2255

United States Patent and Trademark Office

Return To USPTO Home Page | Finance Online Shopping Page

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	97088-00057	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	6951484	99868-00002	2551	$490.00	$34,508.00
03/05 4116	11639142	116236-00004	1806	$180.00	$34,328.00
03/05 10906	6671768	96964-00289 AXE	1553	$4,110.00	$30,218.00
03/06 14558	6286360	96979-00032 AXE	2552	$1,240.00	$28,978.00
~~03/06 14696~~	~~10978284~~	~~J&J-2844-DIP2~~	~~1801~~	~~$849.00~~	~~$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
✓03/10 4460	11475847	99879-00026	2265	$1,175.00	$26,033.00
✓03/10 5270	11475847	99879-00026	2255	$1,175.00	$24,858.00
✓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	~~9809/1-00019-0005~~	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	462	$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	3530	$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	890	$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	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 Patent Application Fee Transmittal

Application Number:	11475847
Filing Date:	27-Jun-2006
Adjustment date: 10/22/2009 SDIRETA1 03/10/2009 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

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
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100 Mulberry Street
Newark, NJ 07102
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Fax: (973) 297-6627

United States Patent and Trademark Office

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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
✓03/10	4460	11475847	99879-00026	2255	$1,175.00	$26,033.00
✓03/10	5270	11475847	99879-00026	2255	$1,175.00	$24,858.00
✓03/10	11804	12191743	114905-00002	8021	$40.00	$24,818.00
✓03/10	15490	11077680	41017 60334 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	41964-01149	8007	$40.00	$20,993.00
✓03/12	2399	10592569	97086-00075	1253	$1,110.00	$19,883.00
✓03/13	506	10316961	98091-99879-00005	1811	$100.00	$19,783.00
✓03/13	14046	12403653	116490-00001	4011	$82.00	$19,701.00

✓03/13	14047	12403653	116490-00001	2111	462	$270.00	$19,431.00
✓03/13	14048	12403653	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	3530	$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	890	$860.00	$14,931.00
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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 a573e1c489851527791f625f097099ceae4c2241	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.

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 05/28/2009

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
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-			
	E	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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*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								
Final	Original	8/4/08	5/18/09							
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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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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 Marlowe
Art Unit	2614
Examiner Name	Kurr, Jason R.
Attorney Docket Number	99879-00026

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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.	
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/JK/	20	WO 2008/002954	01/03/2008	Ira Marlowe		
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/JK/	22	WO 2004/053722	06/24/2004	BlitzSafe of America, Inc		
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/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

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/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	
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/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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Sheet 3 of 7

Complete if Known	
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First Named Inventor	Ira Marlowe
Art Unit	2614
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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]
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/JK/	32	"BlitzSafe News," http://www.blitzsafe.com/blitz_news/news031124/body_news031124.html, November 24, 2003 (1 page)	
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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

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/JK/	40	"Digital Connect," Mobile Electronics, May, 2002 (1 page)	
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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)	
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/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)	
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/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)	
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Art Unit	2614
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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)	
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/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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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
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Applicant(s)	
Ira Marlowe	
Filing Date	**Group Art Unit**
06/27/2006	2618

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/JK/	33	"Blitzsafe Overview," from Blitzsafe.com website-"The Worldwide Leader in Aftermarket Interfaces and OEM Engineering" (1 page).

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/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/	44	Re. 34,536	02/08/1994	Frimmel, Jr.	379	88	06/28/1990
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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/	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).

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 Marlwe	
	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).
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/JK/	76	"P.I.E. Millennium Price Guide Make the Precision Decision," Precision Interface Electronics, Inc. (6 pages).
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EXAMINER	/Jason Kurr/	DATE CONSIDERED	05/18/2009

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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.)*
/JK/	80	Invoice dated January 28, 1998 from Precision Interface Electronics, Inc. for "Ford FCU-Sanyo Protocol," and "Ford RCU Sanyo Protocol" (1 page).
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/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).
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/JK/	87	Invoice dated December 17, 2001 from Precision Interface Electronics, Inc. for "98-02 Ford/Lincoln/Mercury" (1 page).
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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.)*
/JK/	92	Ford/Audiovox Translator diagram, created December 29, 1997 (2 pages).
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/JK/	98	"PIE Virtual Catalog," printout from http://web.archive.org/web/19981205005802/http:/www.pie.net/sec12sbl.htm (2 pages).
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/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).
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EXAMINER /Jason Kurr/	DATE CONSIDERED 05/18/2009

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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.)*
/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).
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/JK/	113	"VWCDPIC News, "printout from http://web.archive.org/web/20020701101541/http:/www.ajusd.org/~edward/vwcdpic/ (8 pages).
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EXAMINER /Jason Kurr/	DATE CONSIDERED 05/18/2009

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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

*EXAMINER INITIAL		OTHER DOCUMENTS *(Including Author, Title, Date, Pertinent Pages, Etc.)*
/JK/	116	"Mobile Electronic E-Newsletter" dated January 13, 2005 (4 pages)
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EXAMINER	DATE CONSIDERED
/Jason Kurr/	05/18/2009

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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

☒ 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: 3/9/09

Michael R. Friscia
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I 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

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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**

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

☒ 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.

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Signature

Dated: 3/9/09

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

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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))

☐ A check in the amount of is attached.

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

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Mark Ellery

Signature

Dated: 3/9/2009

Mark E. Nikolsky
Registration No. 48,319
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100 Mulberry Street
Newark, NJ 07102
Tel: (973) 639-6987
Fax: (973) 297-6624

cc:

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

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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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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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

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	
		US-			
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FOREIGN PATENT DOCUMENTS

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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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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 3 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]
	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
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

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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)	

Examiner Signature		Date Considered	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 5 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

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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)	
	54	Copy of Office Action dated July 12, 2007, from co-pending Application Serial No.: 10/316,961 (71 pages)	
	55	Copy of Office Action dated February 20, 2008, from co-pending Application Serial No.: 10/316,961 (52 pages)	
	56	Copy of Interview Summary dated April 9, 2008, from co-pending Application Serial No.: 10/316,961 (4 pages)	
	57	Copy of Interview Summary dated April 21, 2008, from co-pending Application Serial No.: 10/316,961 (4 pages)	
	58	Copy of Office Action dated August 8, 2006, from co-pending Application Serial No.: 10/732,909 (29 pages)	
	59	Copy of Interview Summary dated December 15, 2006, from co-pending Application Serial No.: 10/732,909 (3 pages)	

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Sheet 6 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

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	60	Copy of Interview Summary dated January 3, 2007, from co-pending Application Serial No.: 10/732,909 (3 pages)	
	61	Copy of Office Action dated April 20, 2007, from co-pending Application Serial No.: 10/732,909 (20 pages)	
	62	Copy of Office Action dated October 3, 2007, from co-pending Application Serial No.: 10/732,909 (28 pages)	
	63	Copy of Interview Summary dated October 26, 2007, from co-pending Application Serial No.: 10/732,909 (3 pages)	
	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)	
	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)	
	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)	
	67	International Preliminary Report on Patentability issued Oct. 16, 2007, issued in connection with International Patent Appln. No. PCT/US06/008043 (1 page)	
	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)	
	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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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 7 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

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	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)	
	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)	
	72	Copy of Office Action dated July 9, 2008, from co-pending Application Serial No.: 10/732,909 (33 pages)	
	73	Notice of Allowance mailed July 31, 2008, issued in connection with co-pending Application Serial No. 10/316,961 (12 pages)	
	74	Notice of Allowance mailed December 29, 2008, issued in connection with co-pending Application Serial No. 10/316,961 (8 pages)	
	75	Copy of Office Action dated February 24, 2009, from co-pending Application Serial No. 10/732,909 (20 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.

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
3 January 2008 (03.01.2008)

PCT

(10) International Publication Number
WO 2008/002954 A2

(51) International Patent Classification:
H05K 11/02 (2006.01) *H04B 1/06* (2006.01)

(21) International Application Number:
PCT/US2007/072182

(22) International Filing Date: 27 June 2007 (27.06.2007)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
11/475,847 27 June 2006 (27.06.2006) US
11/805,799 24 May 2007 (24.05.2007) US

(71) Applicant and
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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.

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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.

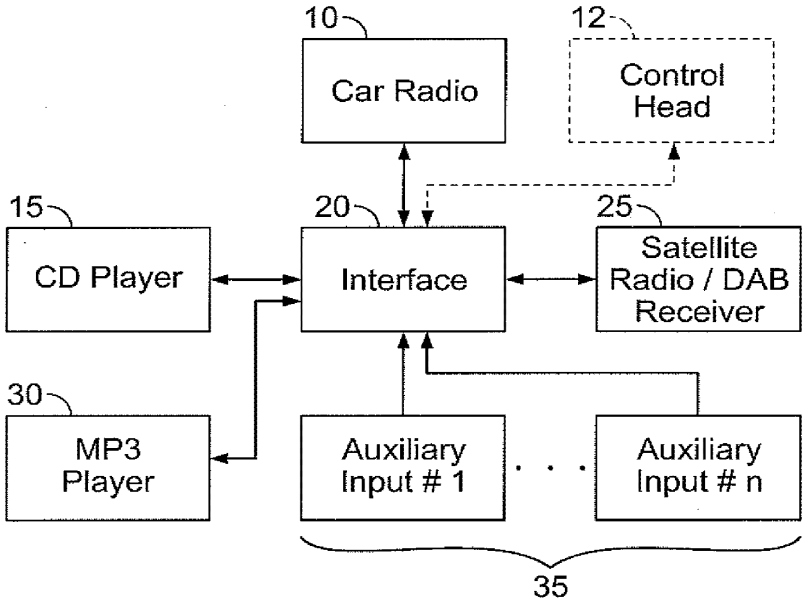
10
Car Radio
12
Control Head
15
CD Player
20
Interface
25
Satellite Radio / DAB Receiver
30
MP3 Player
Auxiliary Input # 1
Auxiliary Input # n
35

FIG. 1

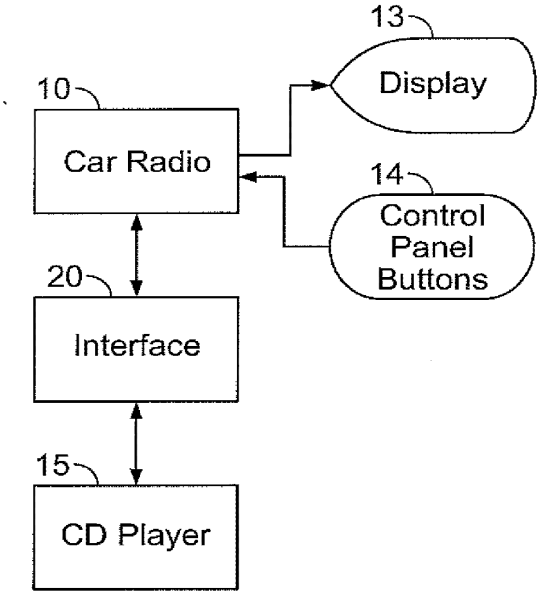
13
Display
10
Car Radio
14
Control Panel Buttons
20
Interface
15
CD Player

FIG. 2A

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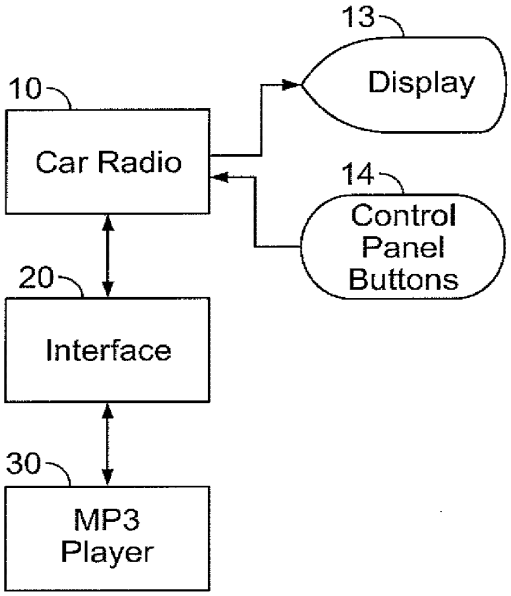

FIG. 2B

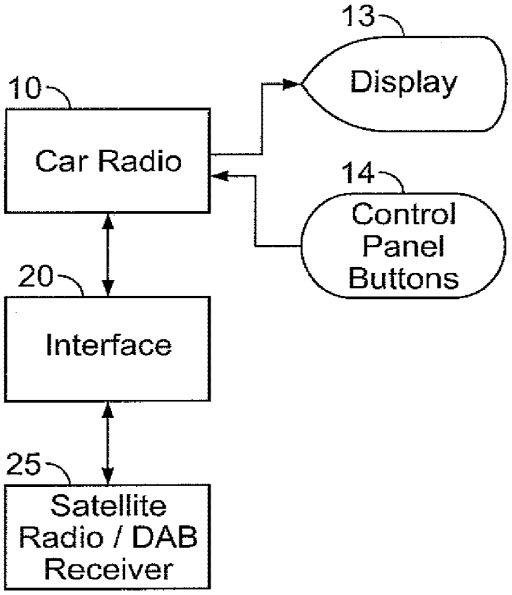

FIG. 2C

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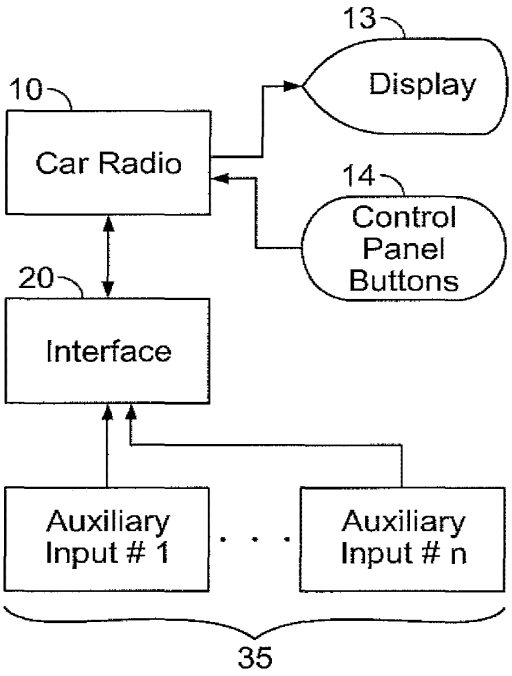

FIG. 2D

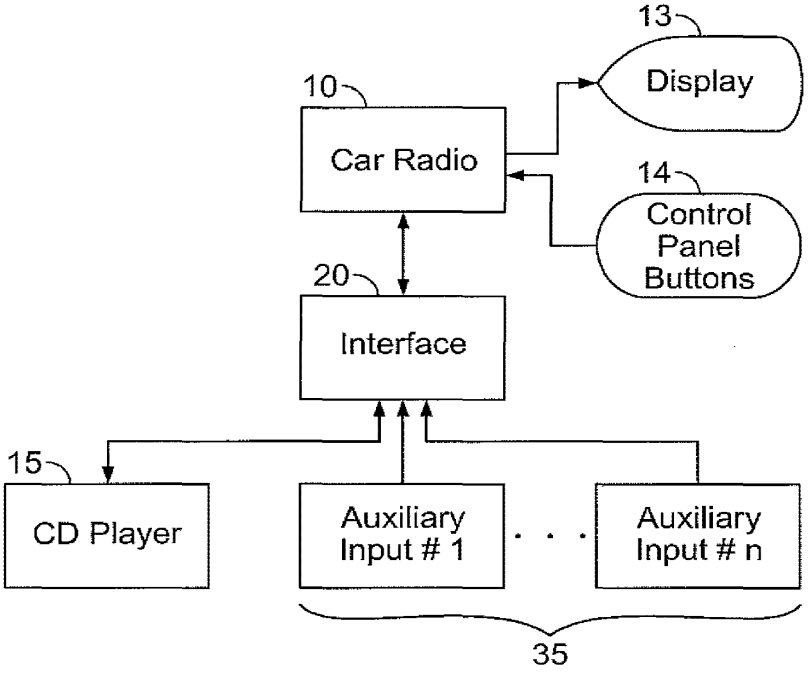

FIG. 2E

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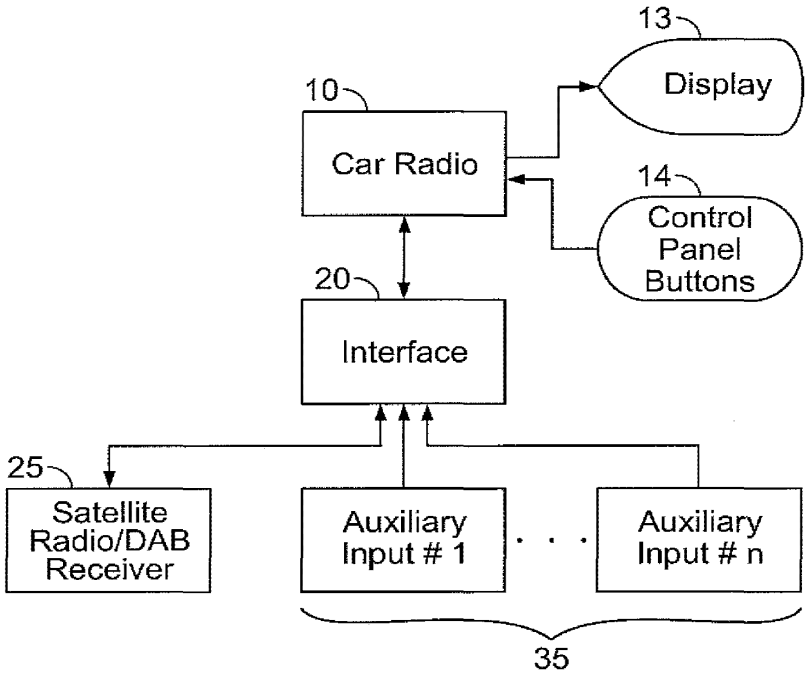

FIG. 2F

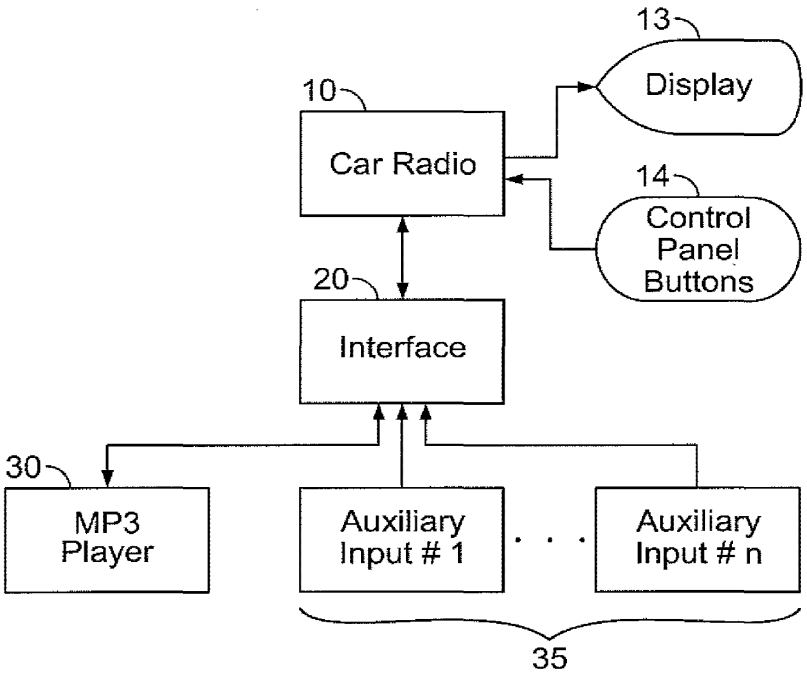

FIG. 2G

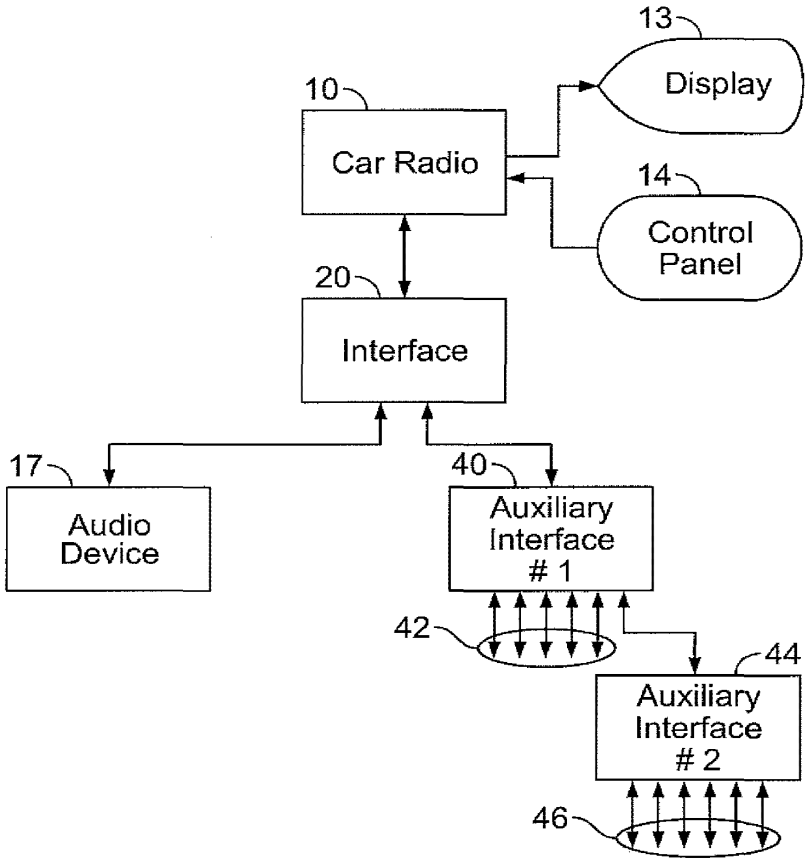
13
Display
10
Car Radio
14
Control Panel
20
Interface
17
Audio Device
40
Auxiliary Interface # 1
42
44
Auxiliary Interface # 2
46

FIG. 2H

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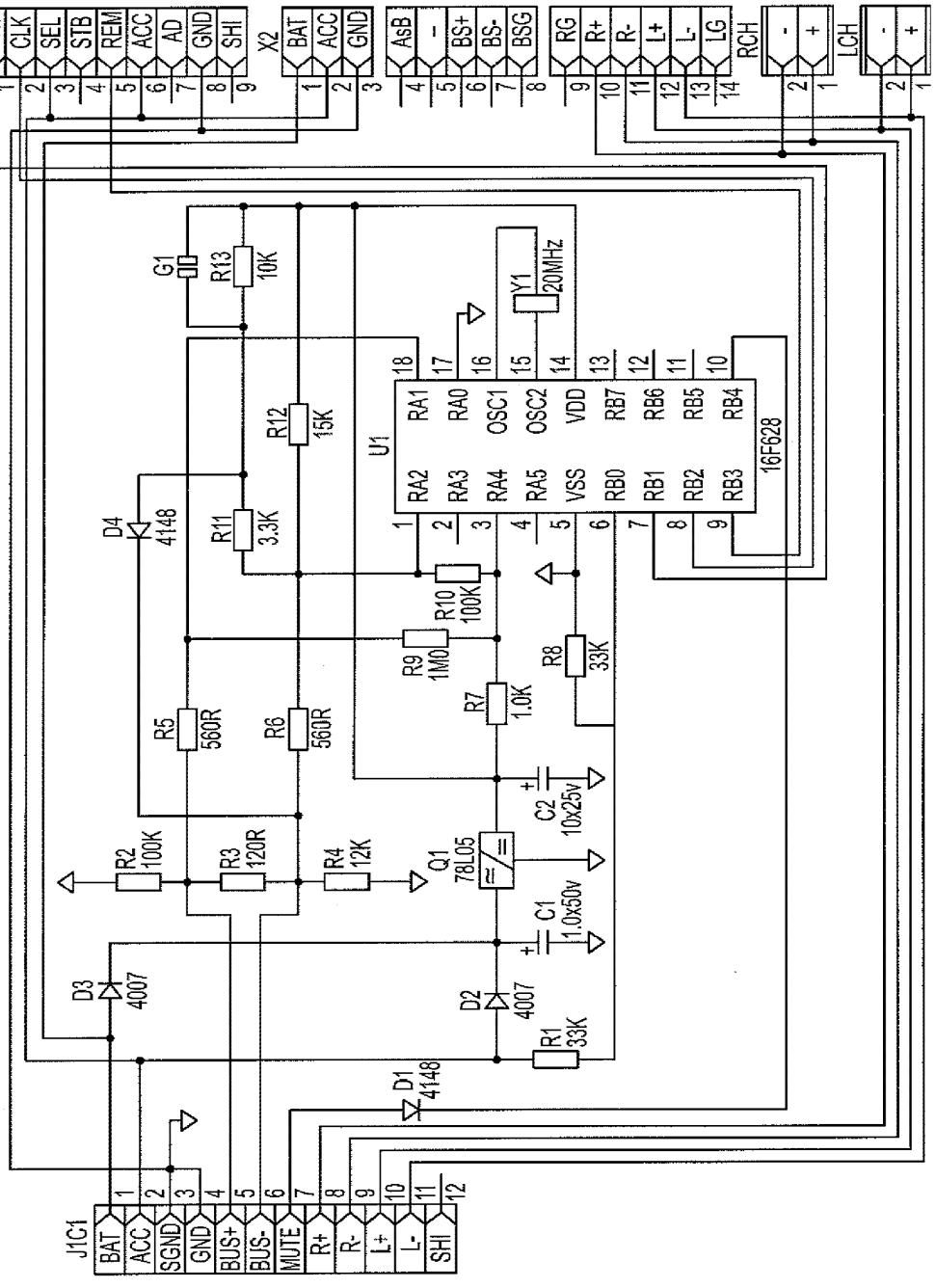

SUBSTITUTE SHEET (RULE 26)

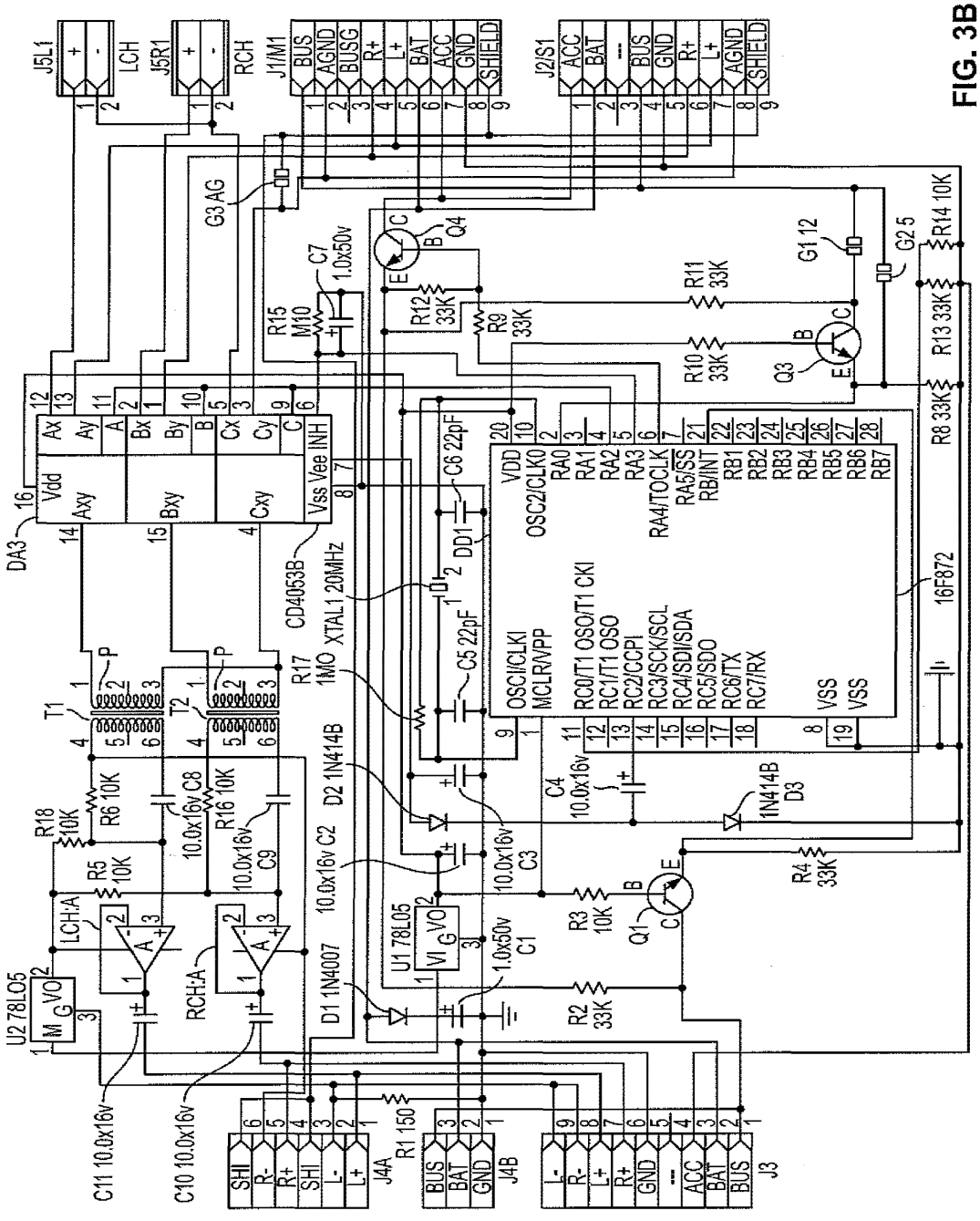
J5L1
LCH
J5R1
RCH
J1/M1
BUS
AGND
BUSG
R+
L+
BAT
ACC
GND
SHIELD
J2/S1
G3 AG
G1 12
G2 5
R14 10K
R13 33K
R8 33K
R11 33K
R12 33K
R9 33K
R10 33K
Q4
Q3
C7 1.0x50v
R15 M10
DA3
CD4053B
XTAL1 20MHz
C6 22pF
C5 22pF
DD1
R17 1MO
T1
T2
R18 10K
R6 10K
R16 10K
R5 10K
C8 10.0x16v
C9 10.0x16v
C2 10.0x16v
D2 1N414B
D1 1N4007
U2 78L05
U1 78L05
C1 1.0x50v
C3 10.0x16v
C4 10.0x16v
D3 1N414B
R4 33K
R3 10K
R2 33K
Q1
R1 150
C11 10.0x16v
C10 10.0x16v
LCH:A
RCH:A
16F872
J4A
J4B
J3

FIG. 3B

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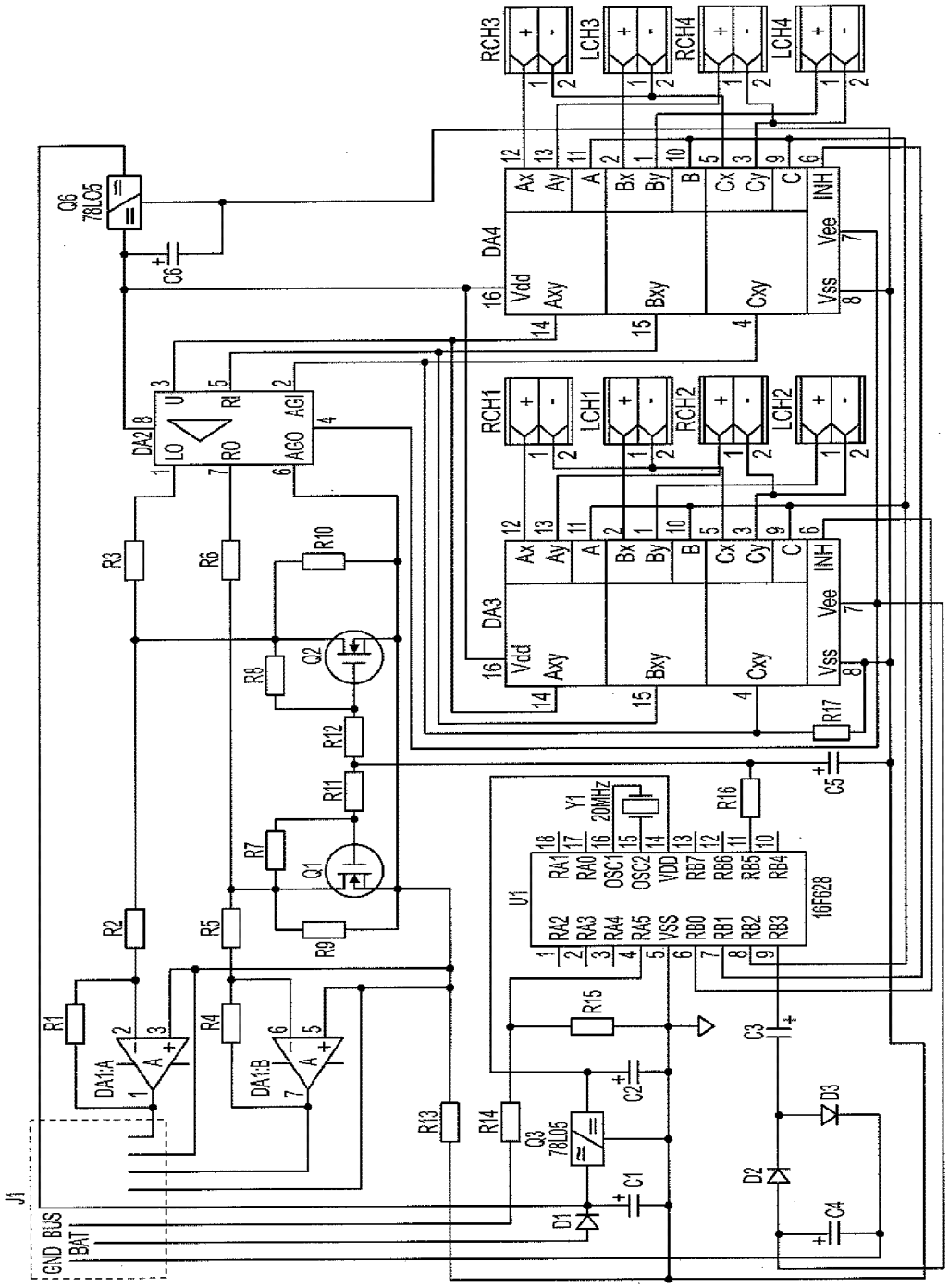

SUBSTITUTE SHEET (RULE 26)

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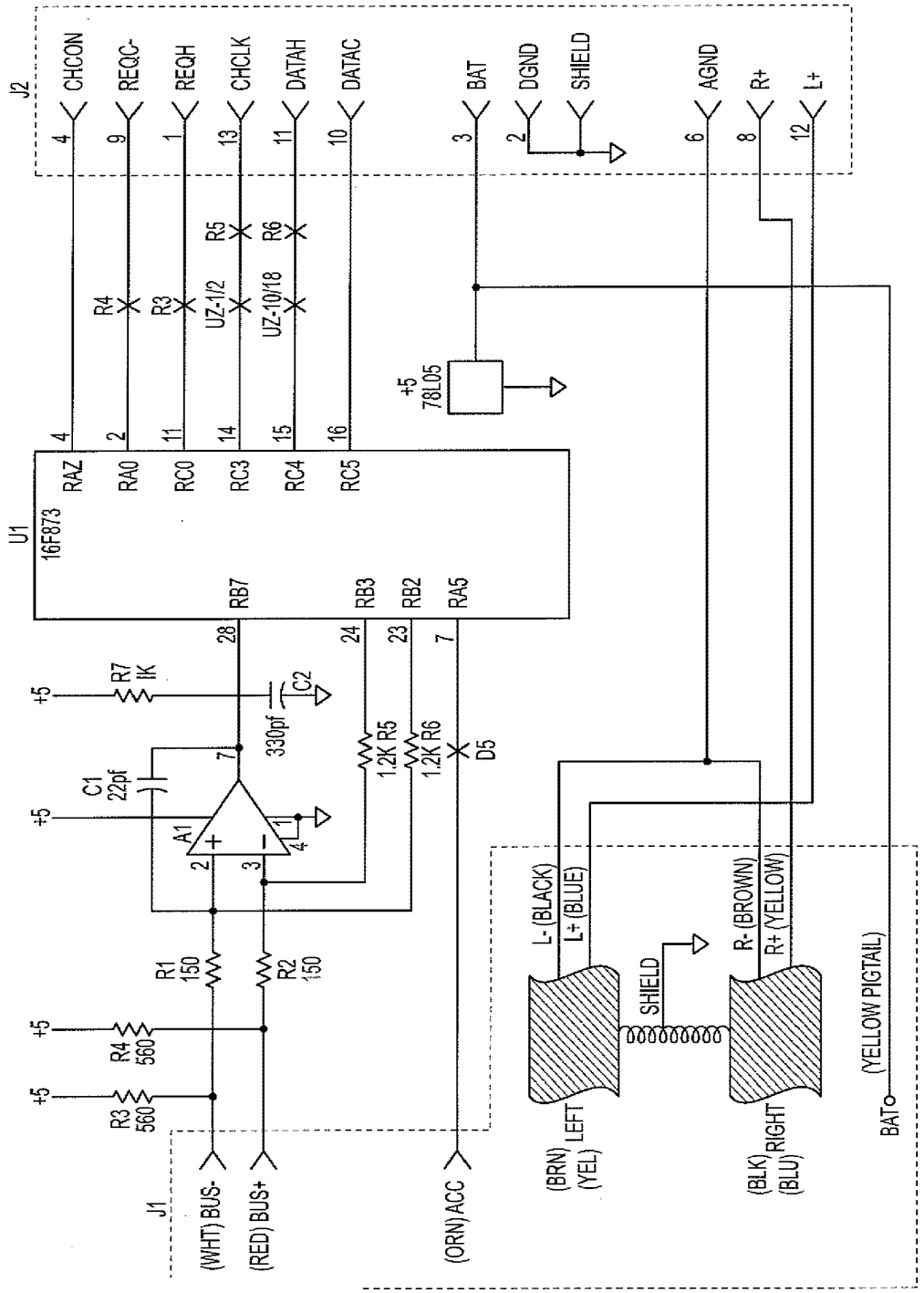

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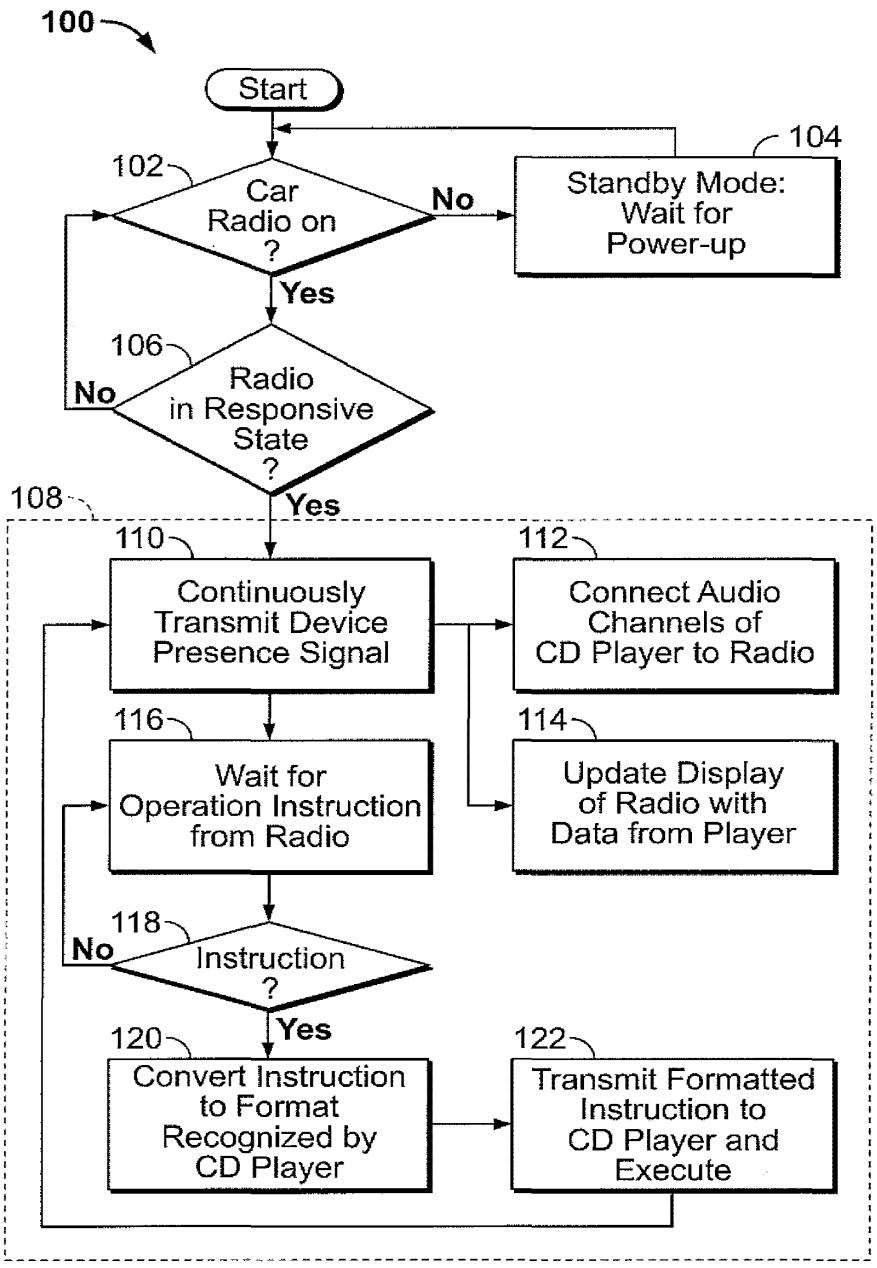
100
Start
102
Car Radio on ?
No
104
Standby Mode: Wait for Power-up
Yes
106
Radio in Responsive State ?
No
Yes
108
110
Continuously Transmit Device Presence Signal
112
Connect Audio Channels of CD Player to Radio
116
Wait for Operation Instruction from Radio
114
Update Display of Radio with Data from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

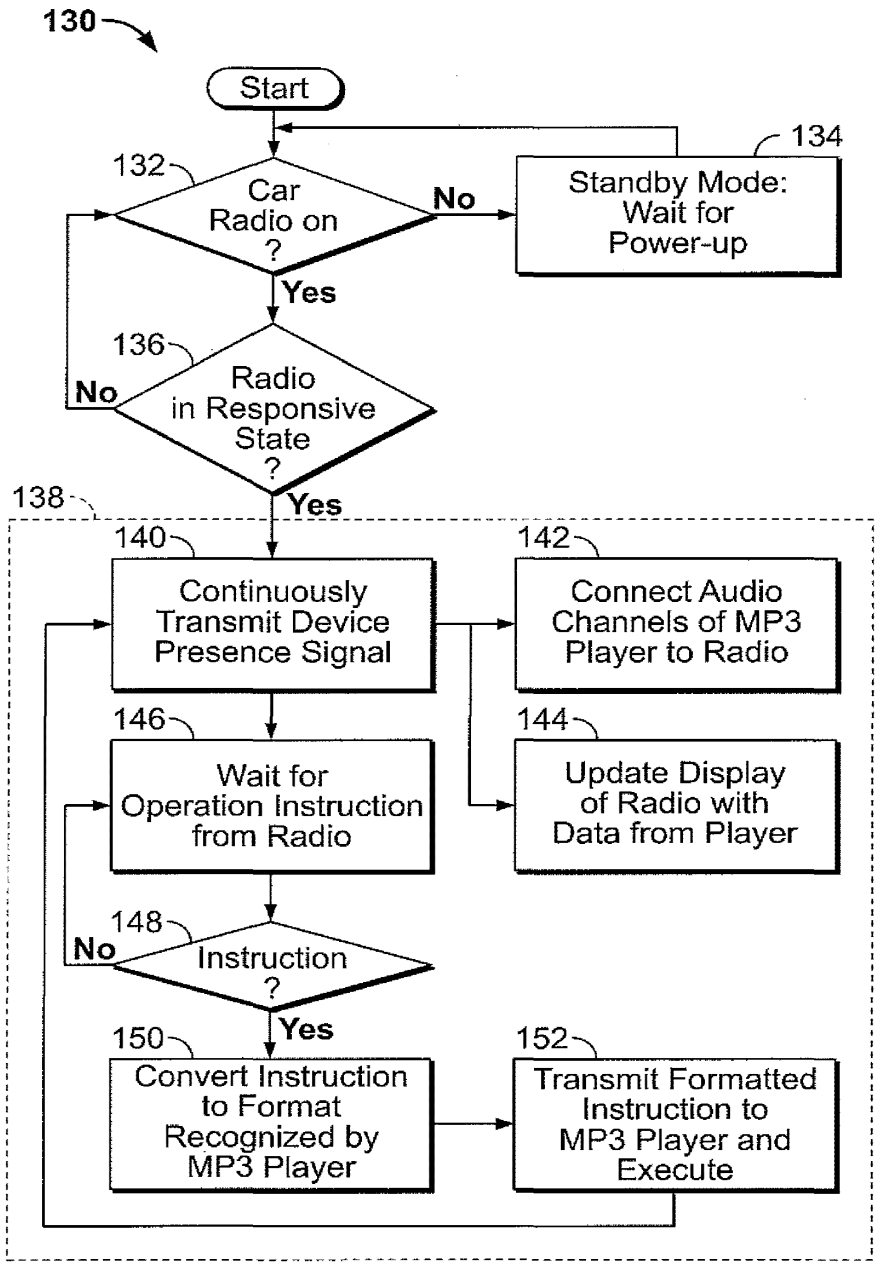
130
Start
132
Car Radio on ?
No
134
Standby Mode: Wait for Power-up
Yes
136
Radio in Responsive State ?
No
Yes
138
140
Continuously Transmit Device Presence Signal
142
Connect Audio Channels of MP3 Player to Radio
146
Wait for Operation Instruction from Radio
144
Update Display of Radio with Data from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

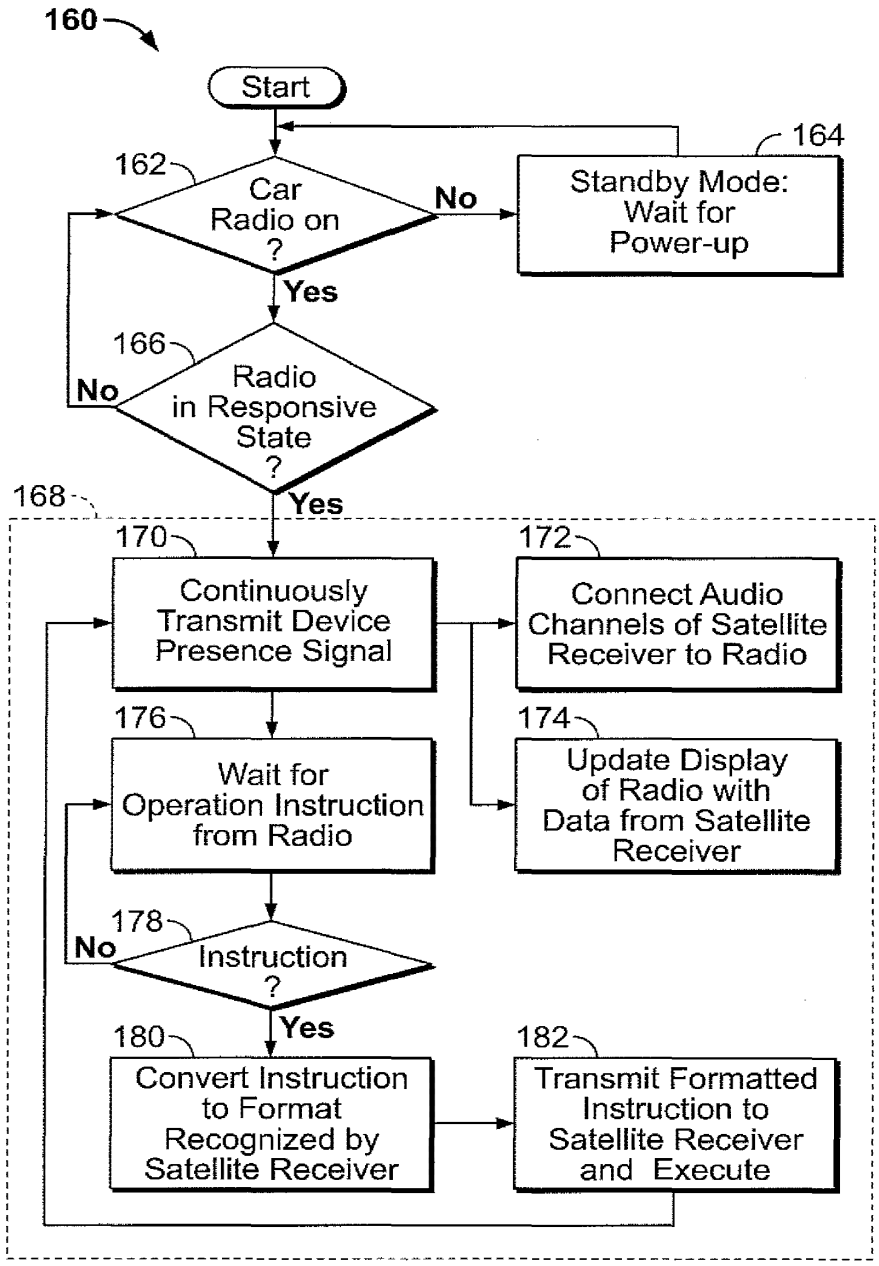
160
Start
162
Car Radio on ?
No
164
Standby Mode: Wait for Power-up
Yes
166
Radio in Responsive State ?
No
Yes
168
170
Continuously Transmit Device Presence Signal
172
Connect Audio Channels of Satellite Receiver to Radio
176
Wait for Operation Instruction from Radio
174
Update Display of Radio with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

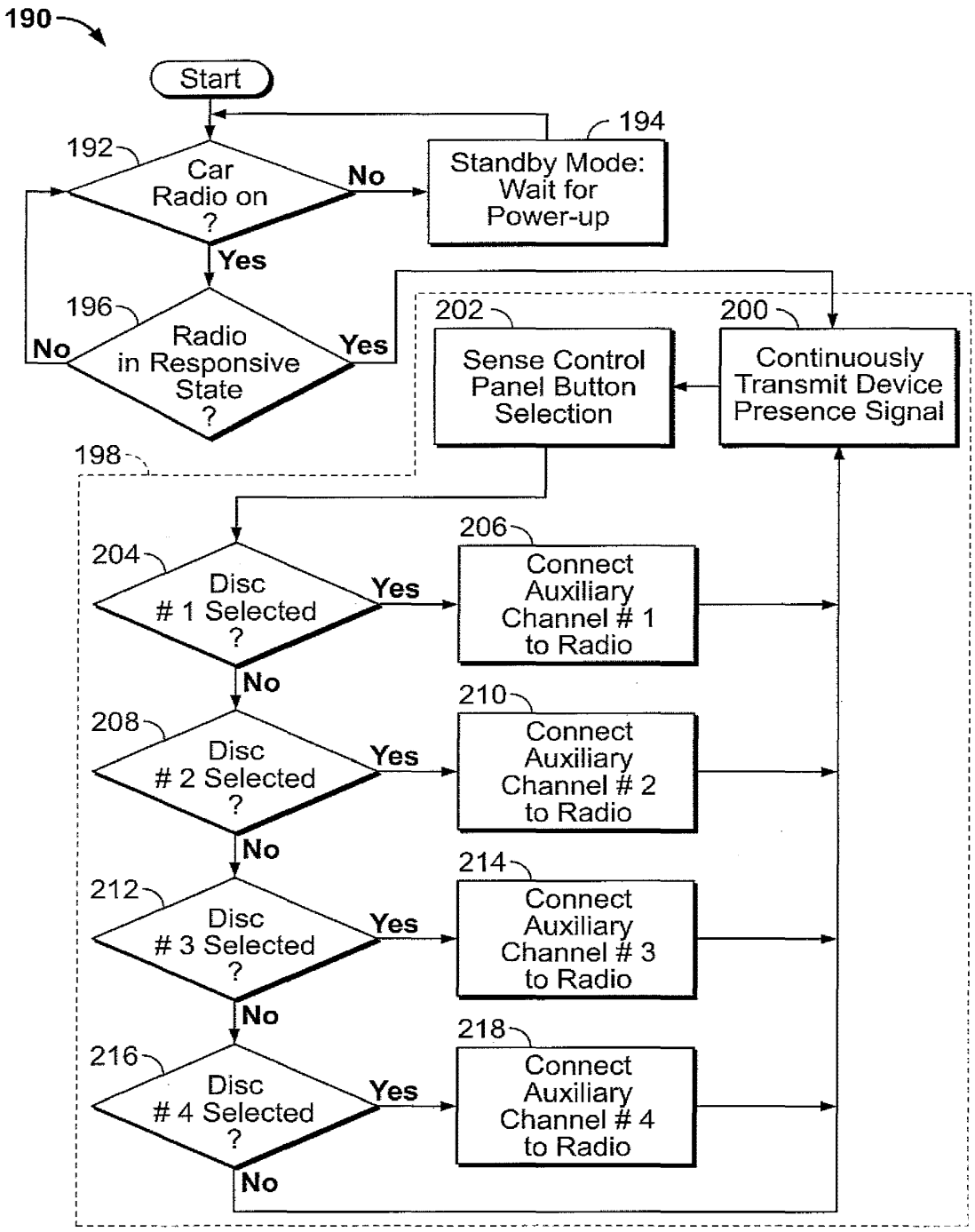
190
Start
192
Car Radio on ?
No
194
Standby Mode: Wait for Power-up
Yes
196
Radio in Responsive State ?
No
Yes
202
Sense Control Panel Button Selection
200
Continuously Transmit Device Presence Signal
198
204
Disc # 1 Selected ?
Yes
206
Connect Auxiliary Channel # 1 to Radio
No
208
Disc # 2 Selected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

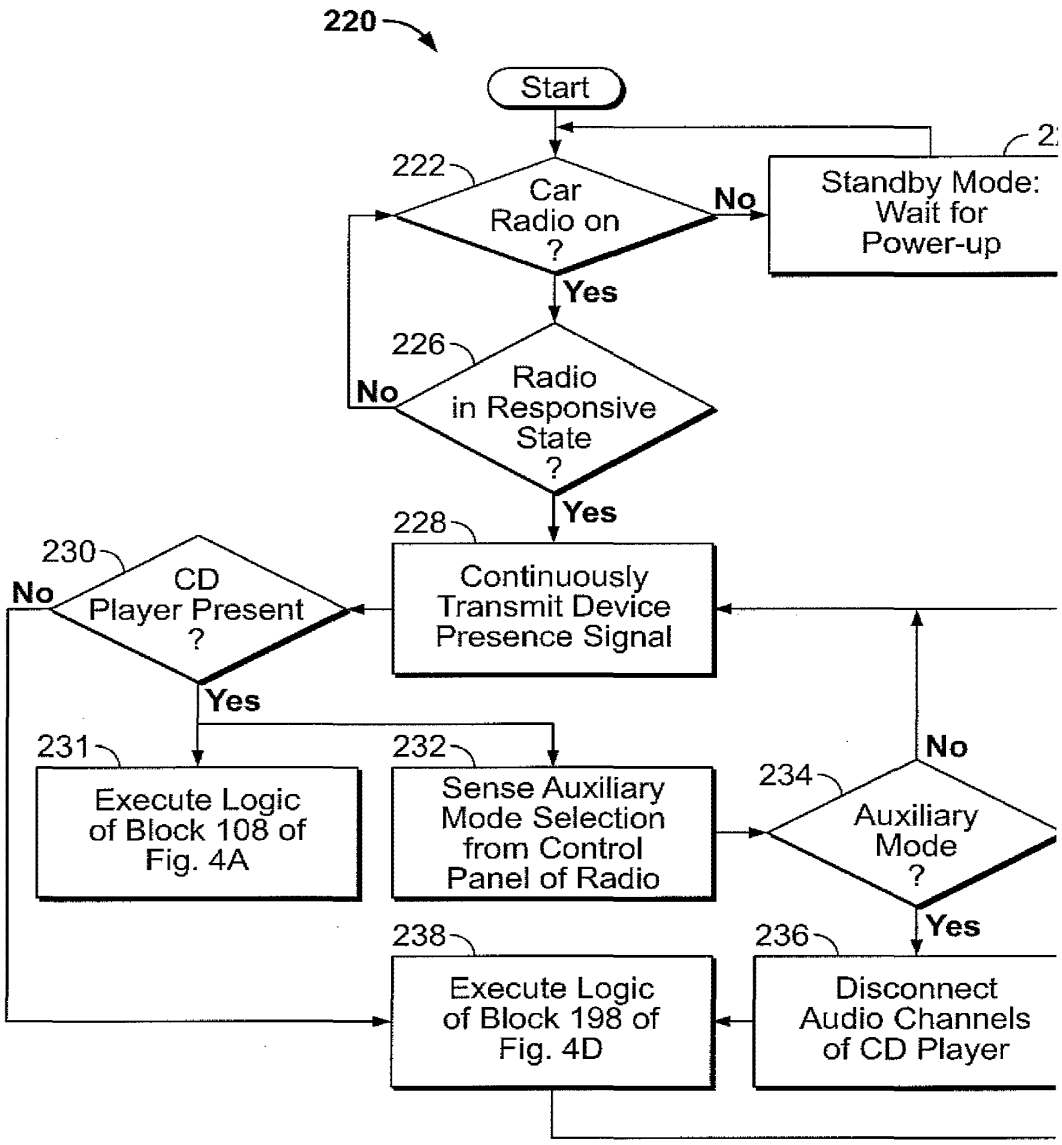
220
Start
222
Car Radio on ?
No
Standby Mode: Wait for Power-up
Yes
226
Radio in Responsive State ?
No
Yes
228
Continuously Transmit Device Presence Signal
230
CD Player Present ?
No
Yes
231
Execute Logic of Block 108 of Fig. 4A
232
Sense Auxiliary Mode Selection from Control Panel of Radio
234
Auxiliary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

FIG. 4E

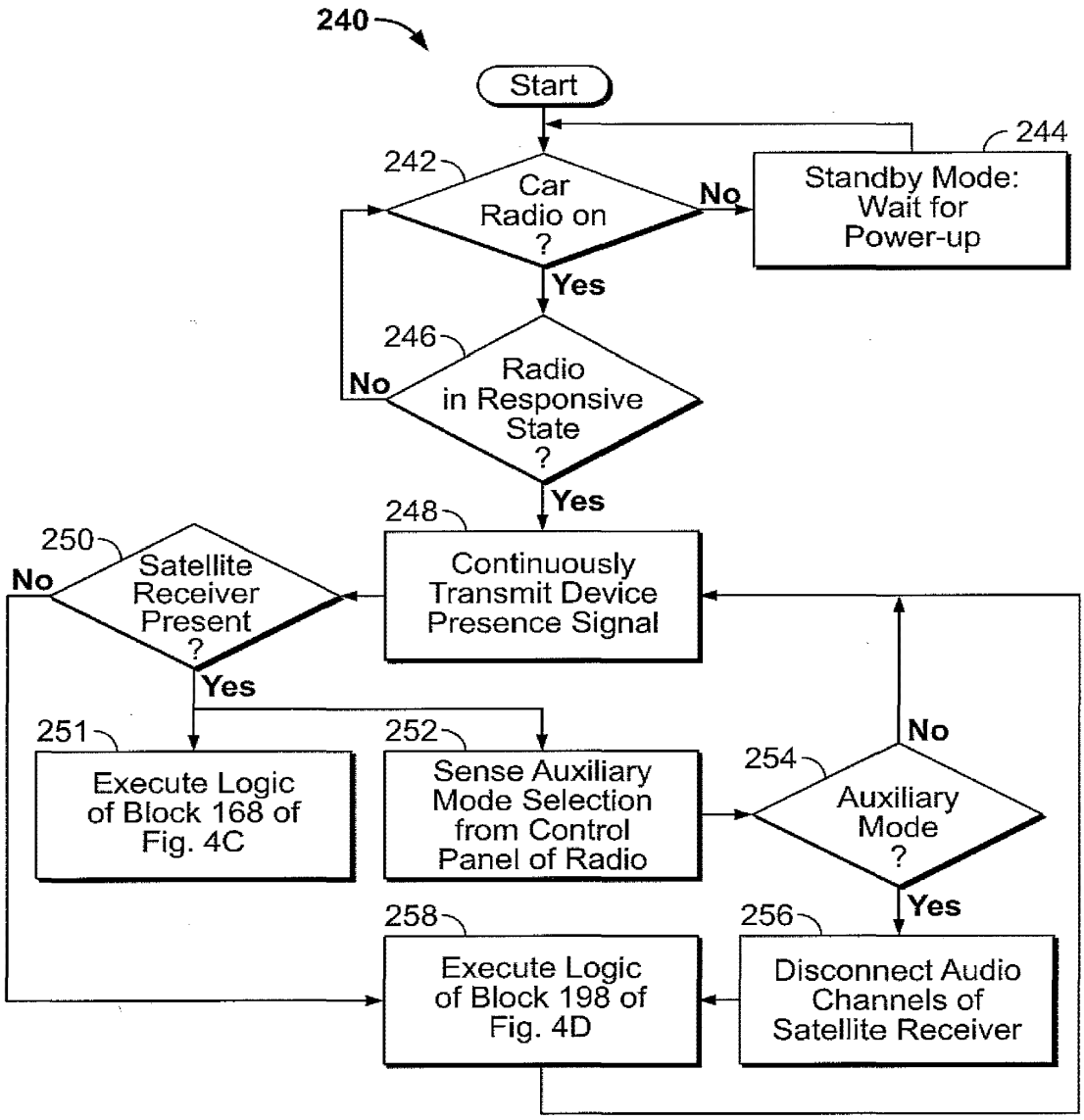
240
Start
242
Car Radio on ?
No
244
Standby Mode: Wait for Power-up
Yes
246
Radio in Responsive State ?
No
Yes
248
Continuously Transmit Device Presence Signal
250
Satellite Receiver Present ?
No
Yes
251
Execute Logic of Block 168 of Fig. 4C
252
Sense Auxiliary Mode Selection from Control Panel of Radio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

FIG. 4F

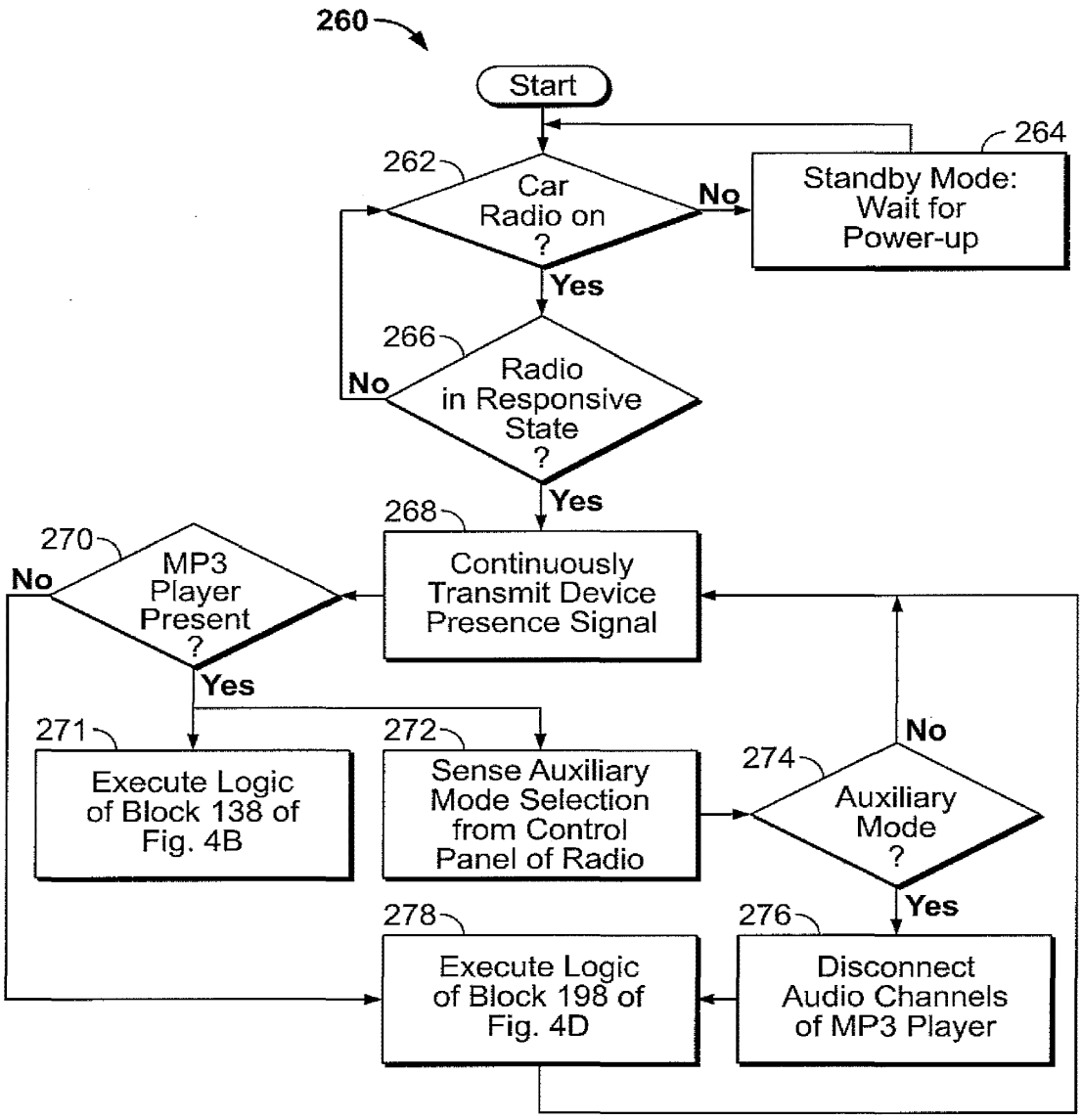
260
Start
262
Car Radio on ?
No
264
Standby Mode: Wait for Power-up
Yes
266
Radio in Responsive State ?
No
Yes
268
Continuously Transmit Device Presence Signal
270
MP3 Player Present ?
No
Yes
271
Execute Logic of Block 138 of Fig. 4B
272
Sense Auxiliary Mode Selection from Control Panel of Radio
274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

FIG. 4G

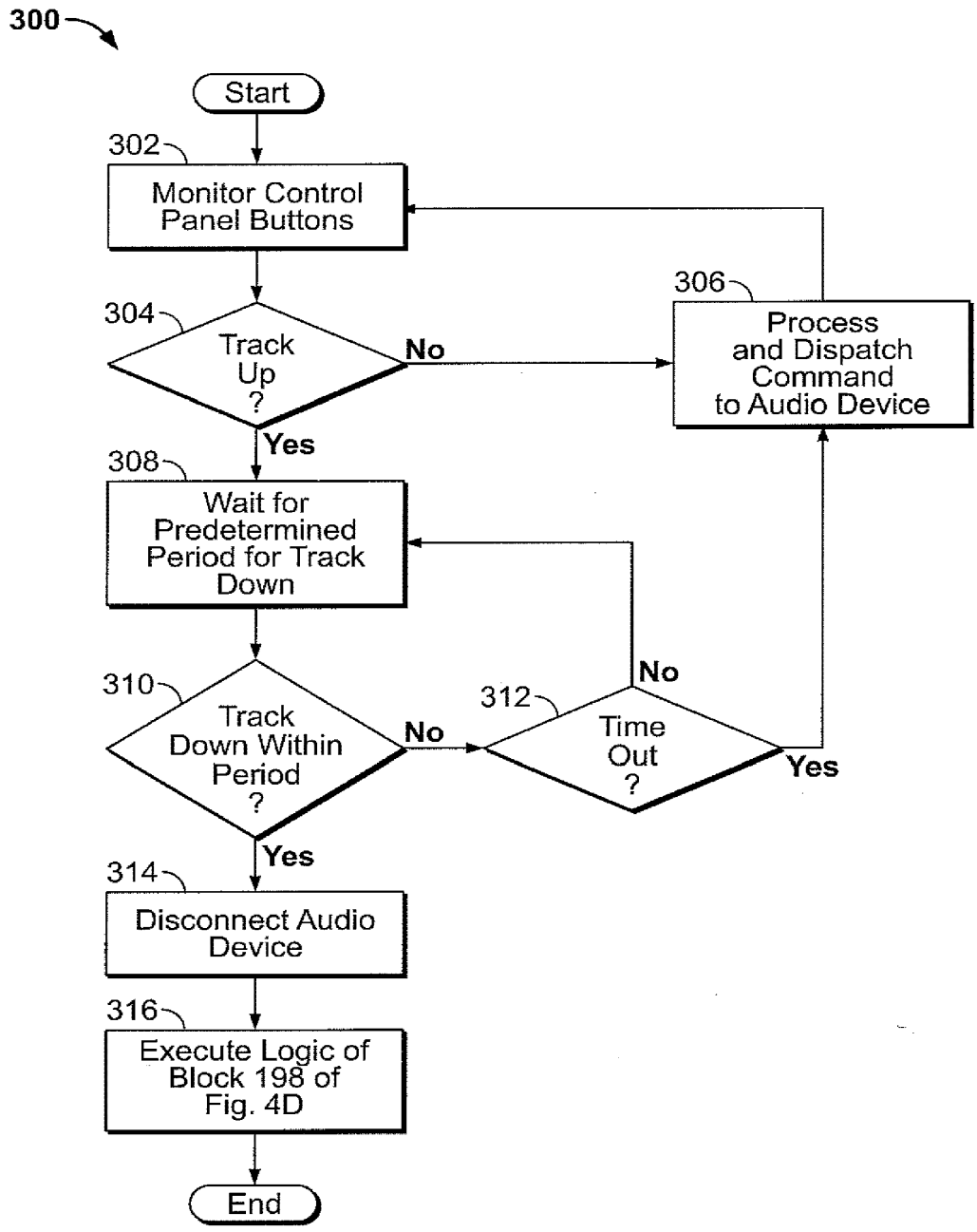
300
Start
302
Monitor Control Panel Buttons
304
Track Up ?
No
306
Process and Dispatch Command to Audio Device
Yes
308
Wait for Predetermined Period for Track Down
310
Track Down Within Period ?
No
312
Time Out ?
No
Yes
Yes
314
Disconnect Audio Device
316
Execute Logic of Block 198 of Fig. 4D
End

FIG. 5

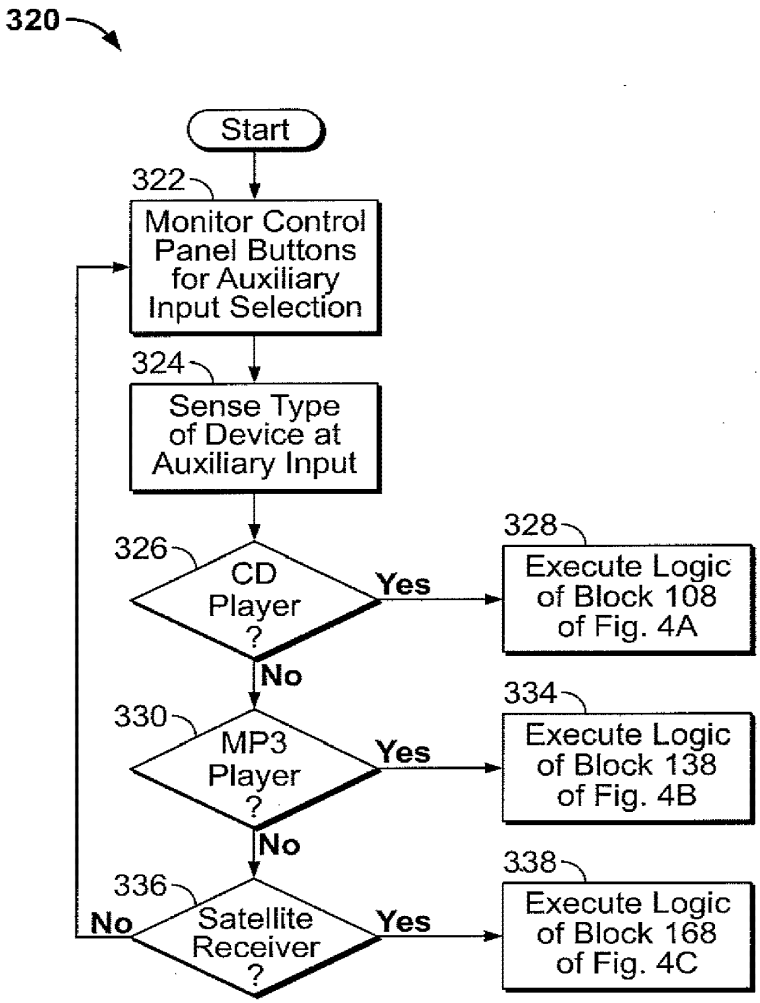
320
Start
322
Monitor Control Panel Buttons for Auxiliary Input Selection
324
Sense Type of Device at Auxiliary Input
326
CD Player ?
Yes
328
Execute Logic of Block 108 of Fig. 4A
No
330
MP3 Player ?
Yes
334
Execute Logic of Block 138 of Fig. 4B
No
336
Satellite Receiver ?
No
Yes
338
Execute Logic of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

FIG. 6

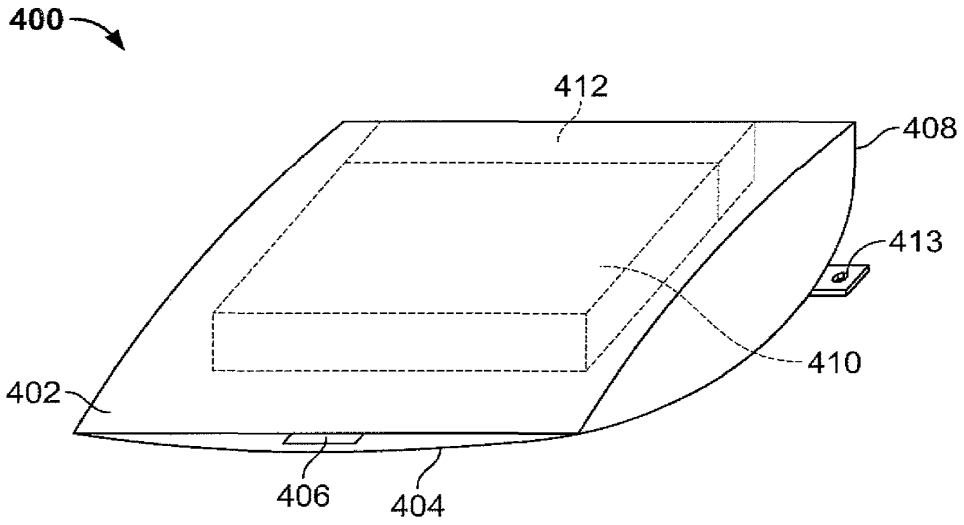

FIG. 7A

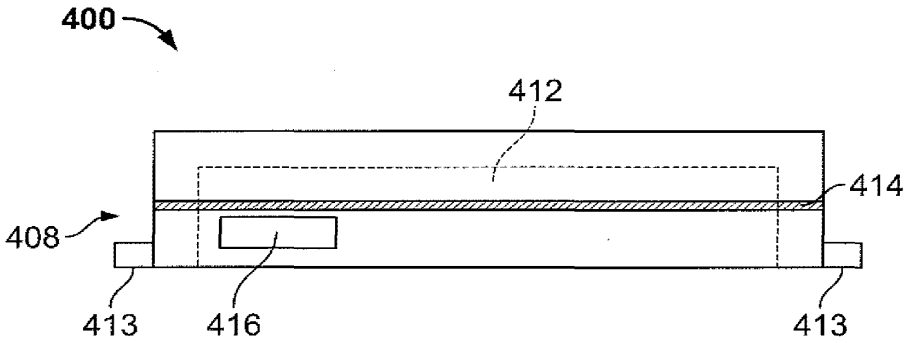

FIG. 7B

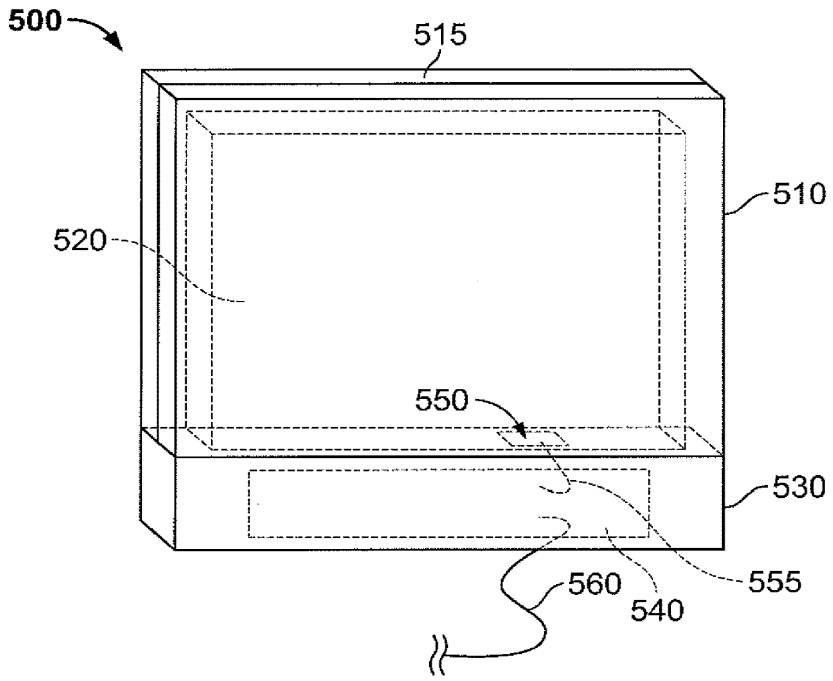

FIG. 8A

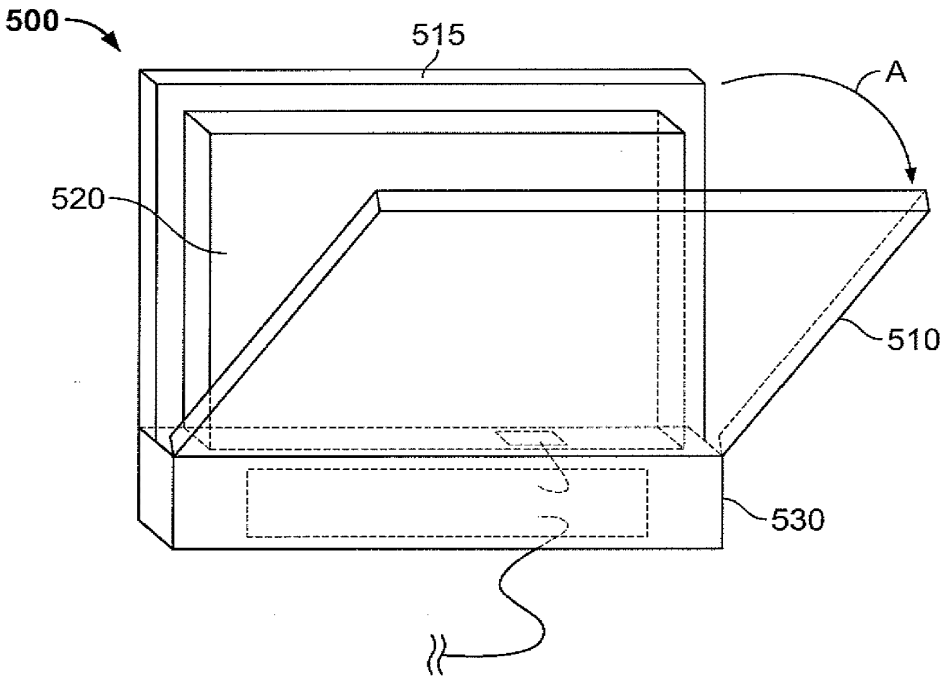

FIG. 8B

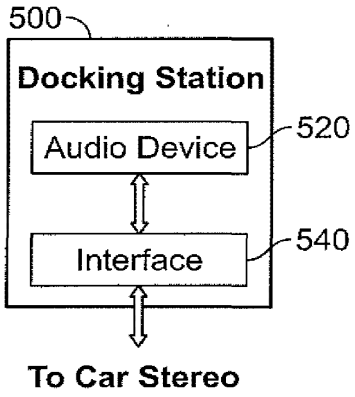
500
Docking Station
Audio Device
520
Interface
540
To Car Stereo

FIG. 9

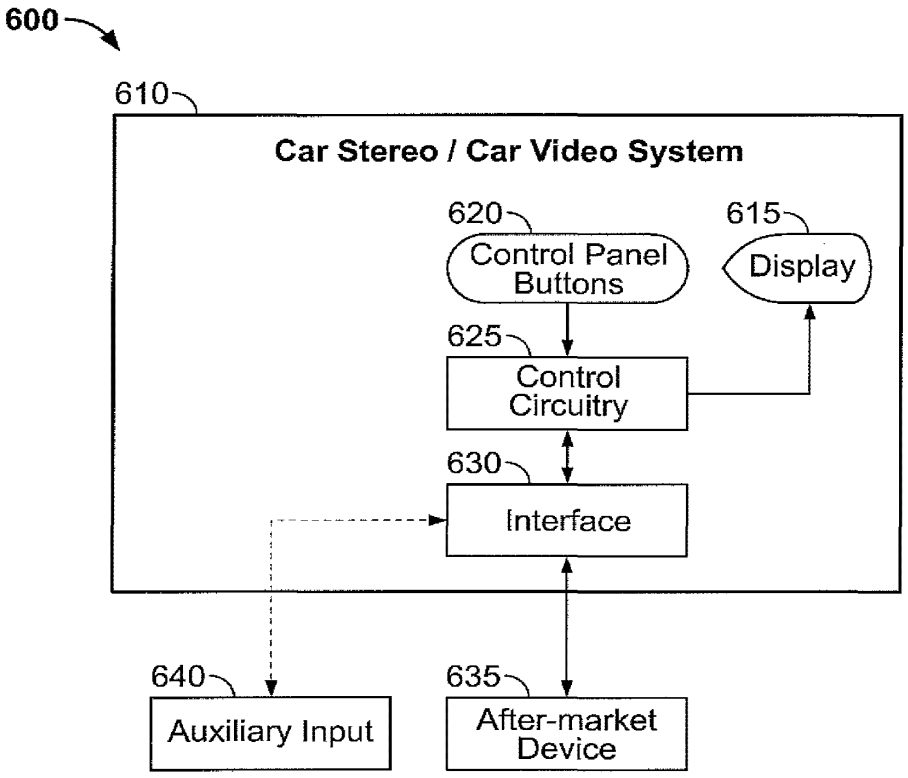
600
610
Car Stereo / Car Video System
620
Control Panel Buttons
615
Display
625
Control Circuitry
630
Interface
640
Auxiliary Input
635
After-market Device

FIG. 10

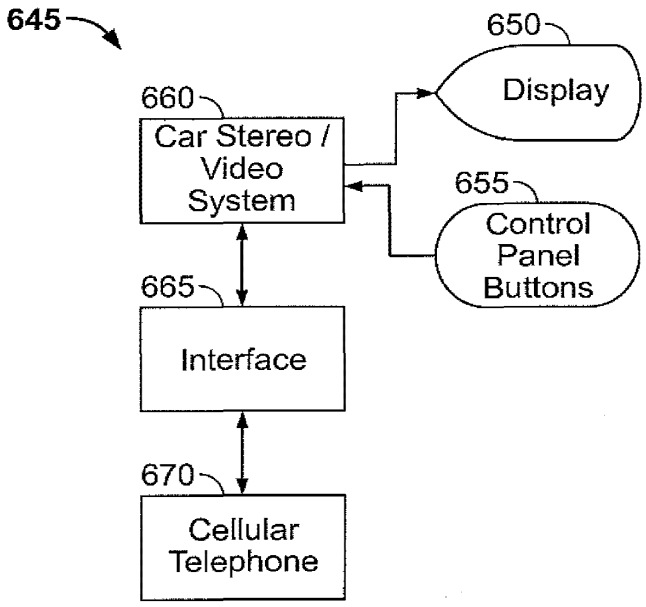
645
650
Display
660
Car Stereo / Video System
655
Control Panel Buttons
665
Interface
670
Cellular Telephone

FIG. 11A

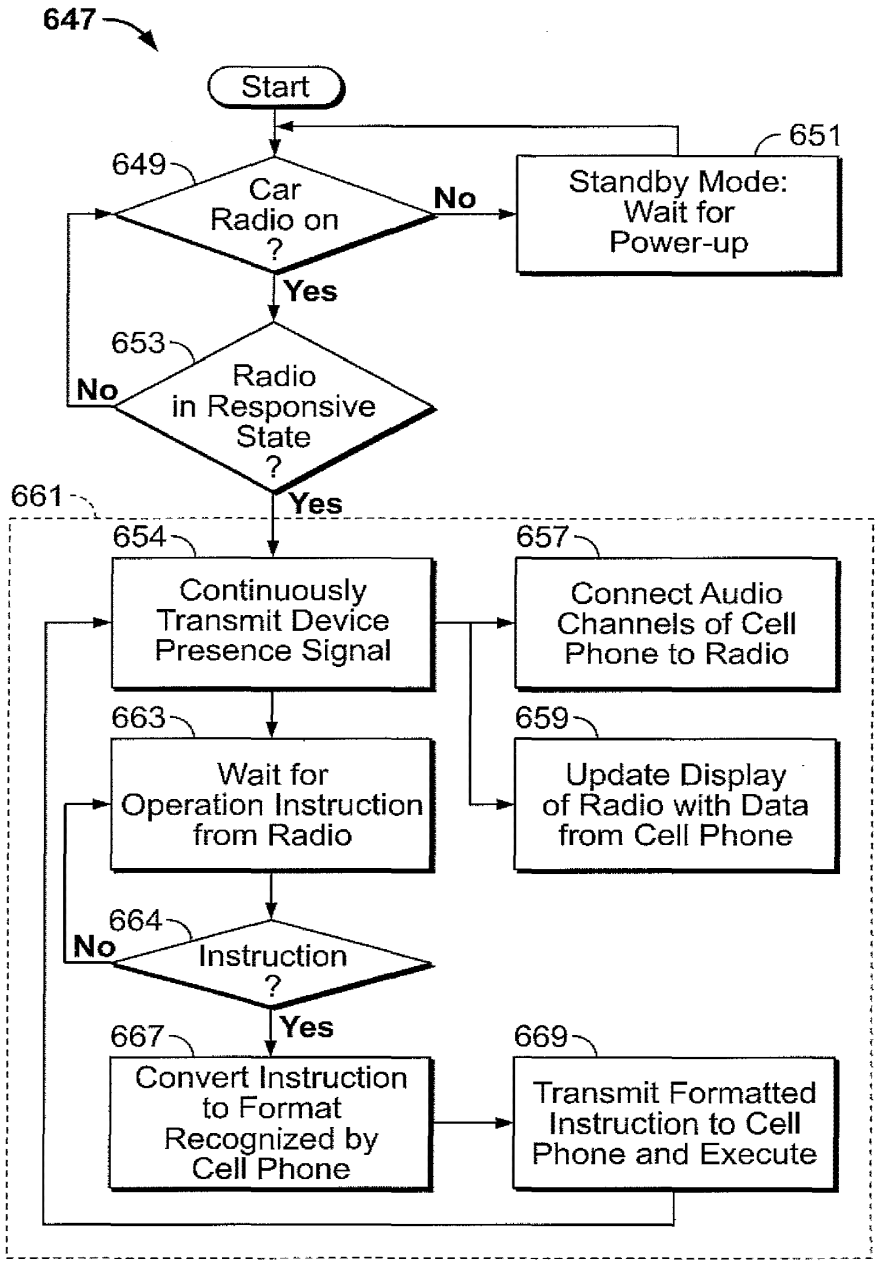
647
Start
649
Car Radio on ?
No
651
Standby Mode: Wait for Power-up
Yes
653
Radio in Responsive State ?
No
Yes
661
654
Continuously Transmit Device Presence Signal
657
Connect Audio Channels of Cell Phone to Radio
663
Wait for Operation Instruction from Radio
659
Update Display of Radio with Data from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

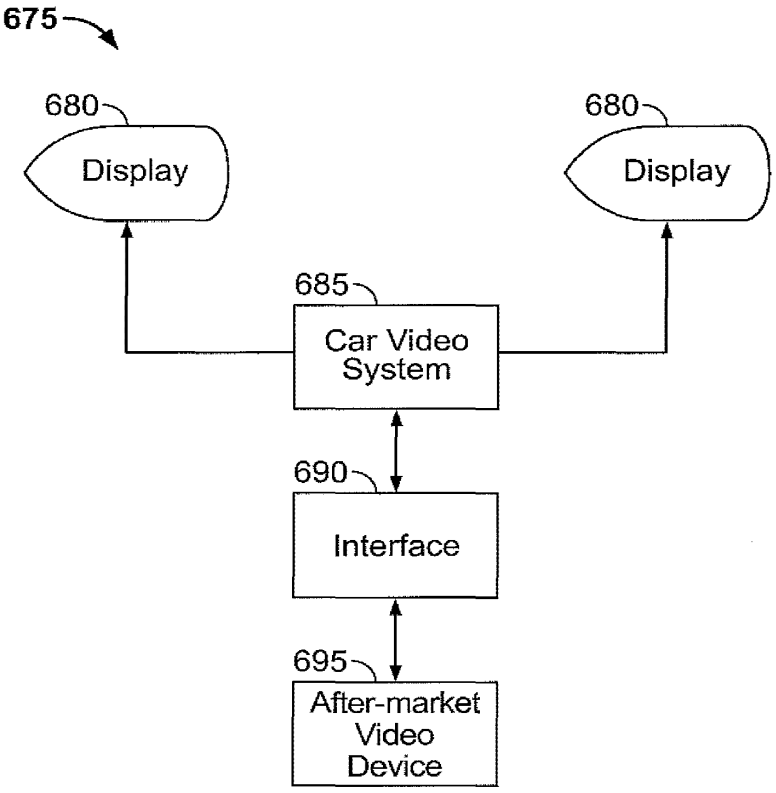
675
680
Display
680
Display
685
Car Video System
690
Interface
695
After-market Video Device

FIG. 12A

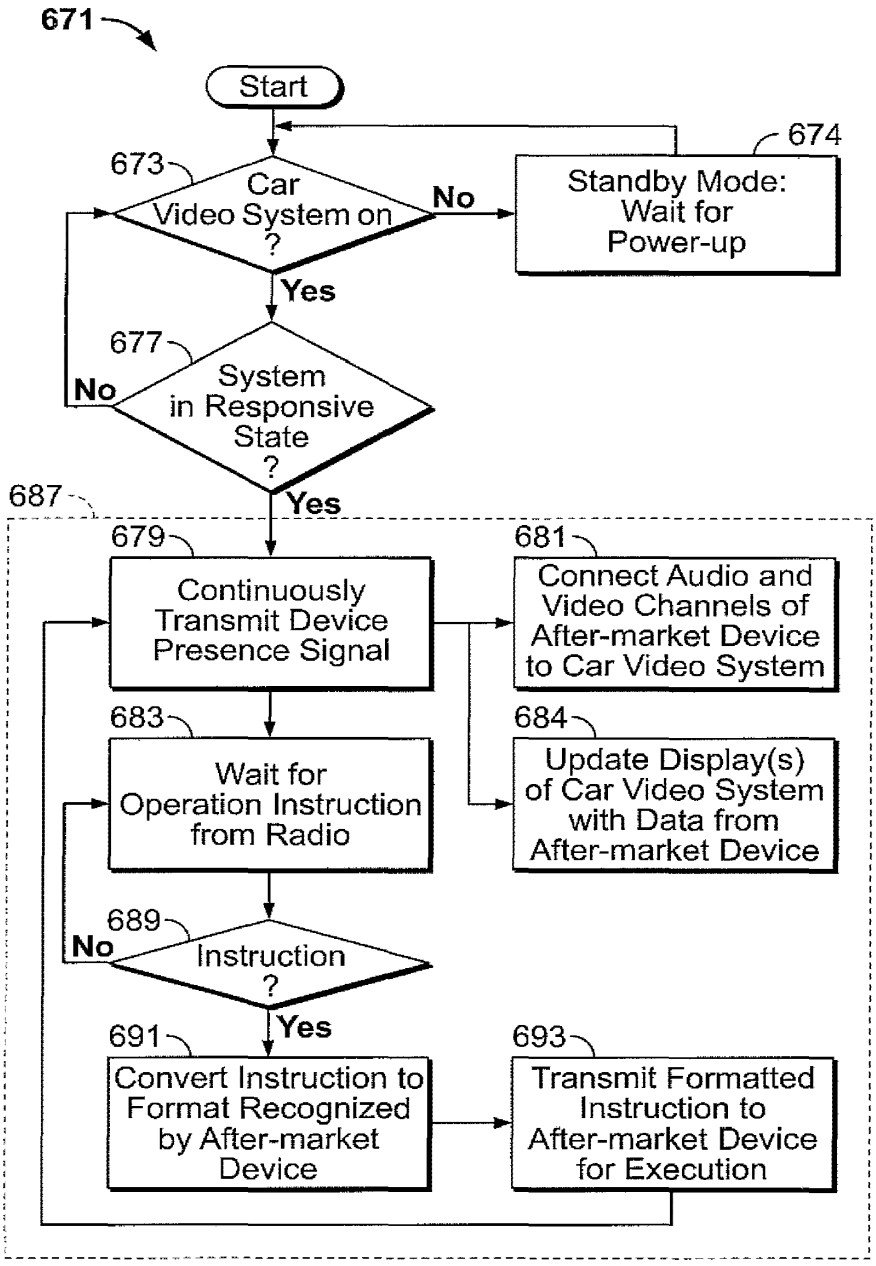
671
Start
673
Car Video System on ?
No
674
Standby Mode: Wait for Power-up
Yes
677
System in Responsive State ?
No
Yes
687
679
Continuously Transmit Device Presence Signal
681
Connect Audio and Video Channels of After-market Device to Car Video System
683
Wait for Operation Instruction from Radio
684
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

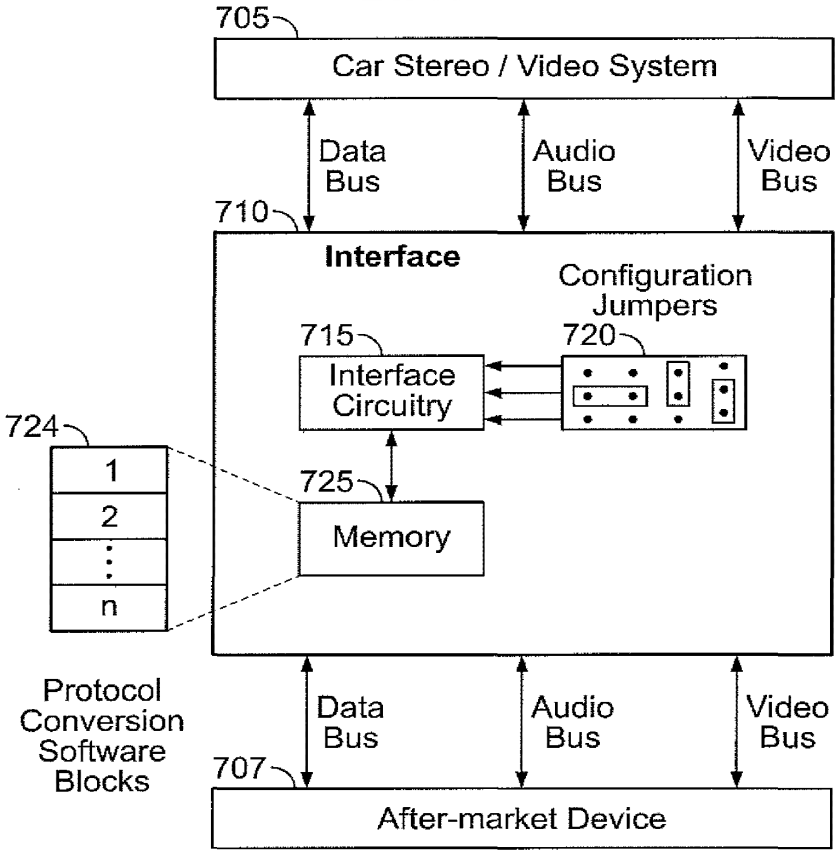

FIG. 13A

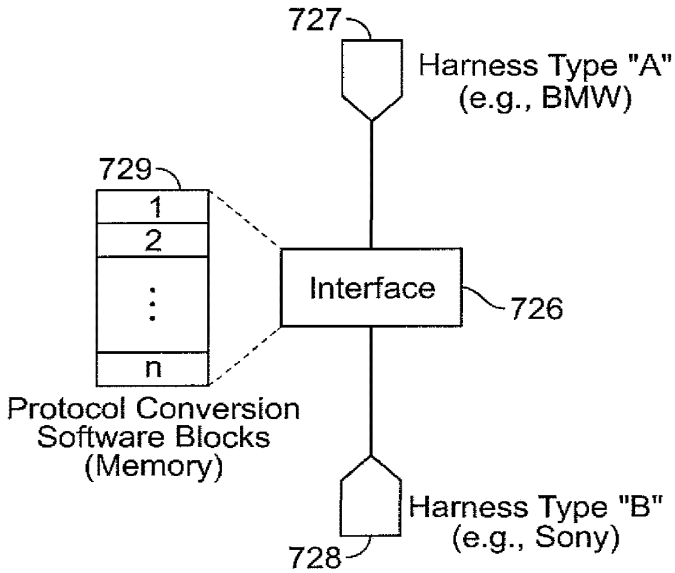

FIG. 13B

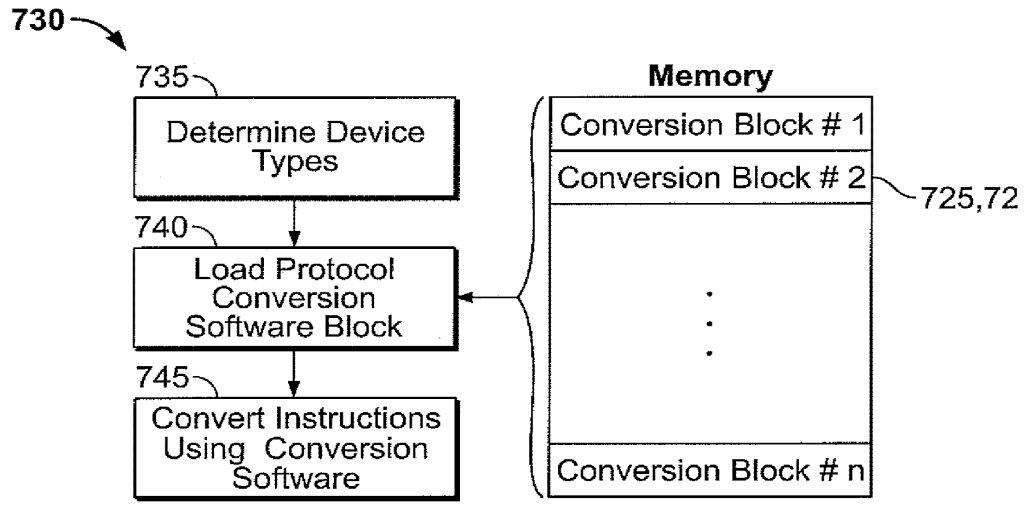
730
735
Determine Device Types
740
Load Protocol Conversion Software Block
745
Convert Instructions Using Conversion Software
Memory
Conversion Block # 1
Conversion Block # 2
725,72
Conversion Block # n

FIG. 14

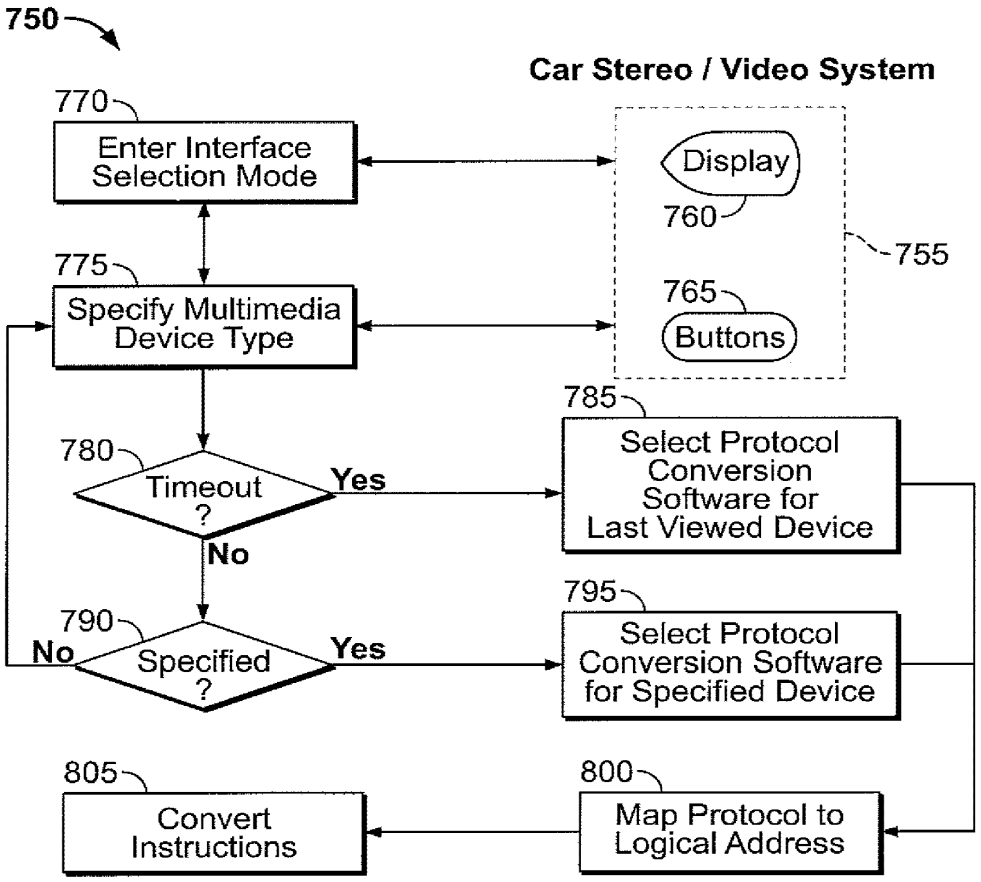
750
Car Stereo / Video System
770
Enter Interface Selection Mode
775
Specify Multimedia Device Type
Display
760
765
Buttons
755
780
Timeout ?
Yes
No
785
Select Protocol Conversion Software for Last Viewed Device
790
No
Specified ?
Yes
795
Select Protocol Conversion Software for Specified Device
805
Convert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

FIG. 15

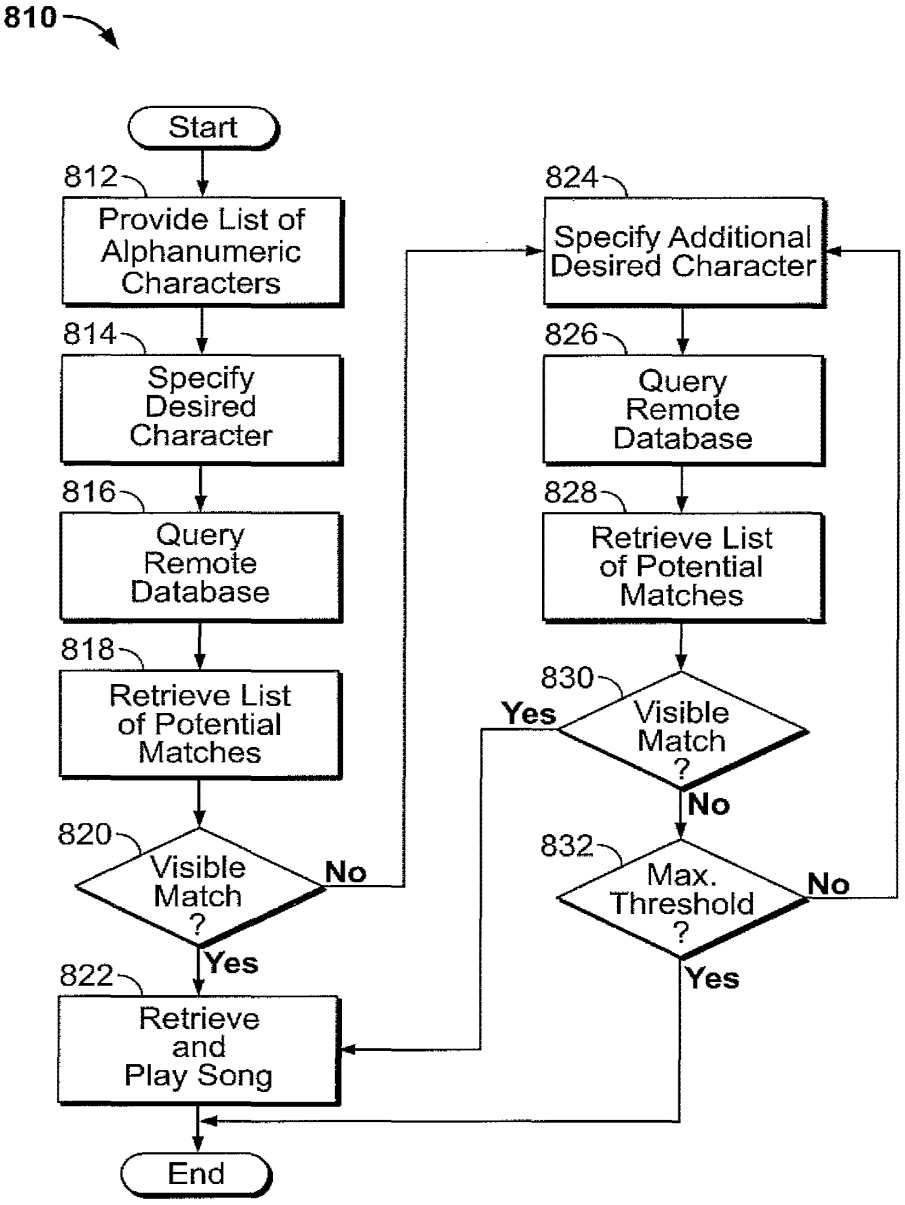
810
Start
812
Provide List of Alphanumeric Characters
814
Specify Desired Character
816
Query Remote Database
818
Retrieve List of Potential Matches
820
Visible Match ?
No
Yes
822
Retrieve and Play Song
End
824
Specify Additional Desired Character
826
Query Remote Database
828
Retrieve List of Potential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

FIG. 16

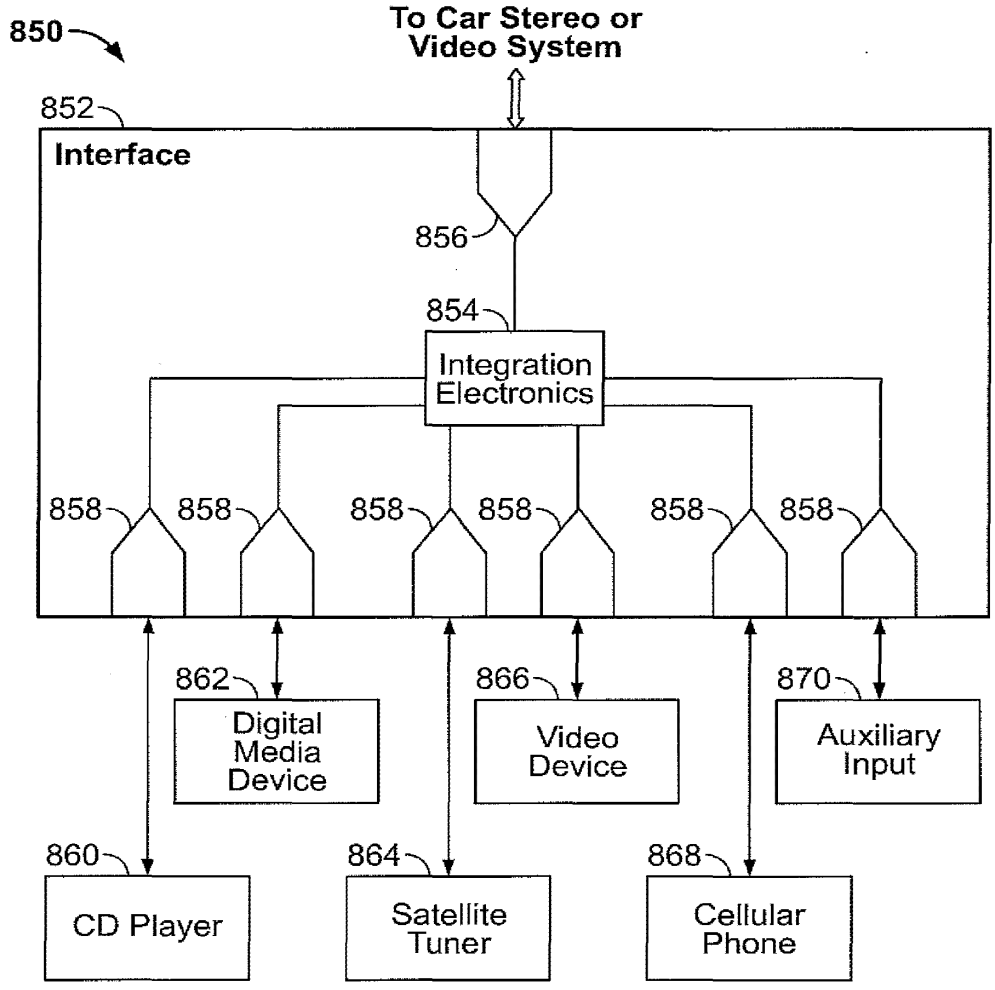
850
To Car Stereo or Video System
852
Interface
856
854
Integration Electronics
858
858
858
858
858
858
862
Digital Media Device
866
Video Device
870
Auxiliary Input
860
CD Player
864
Satellite Tuner
868
Cellular Phone

FIG. 17

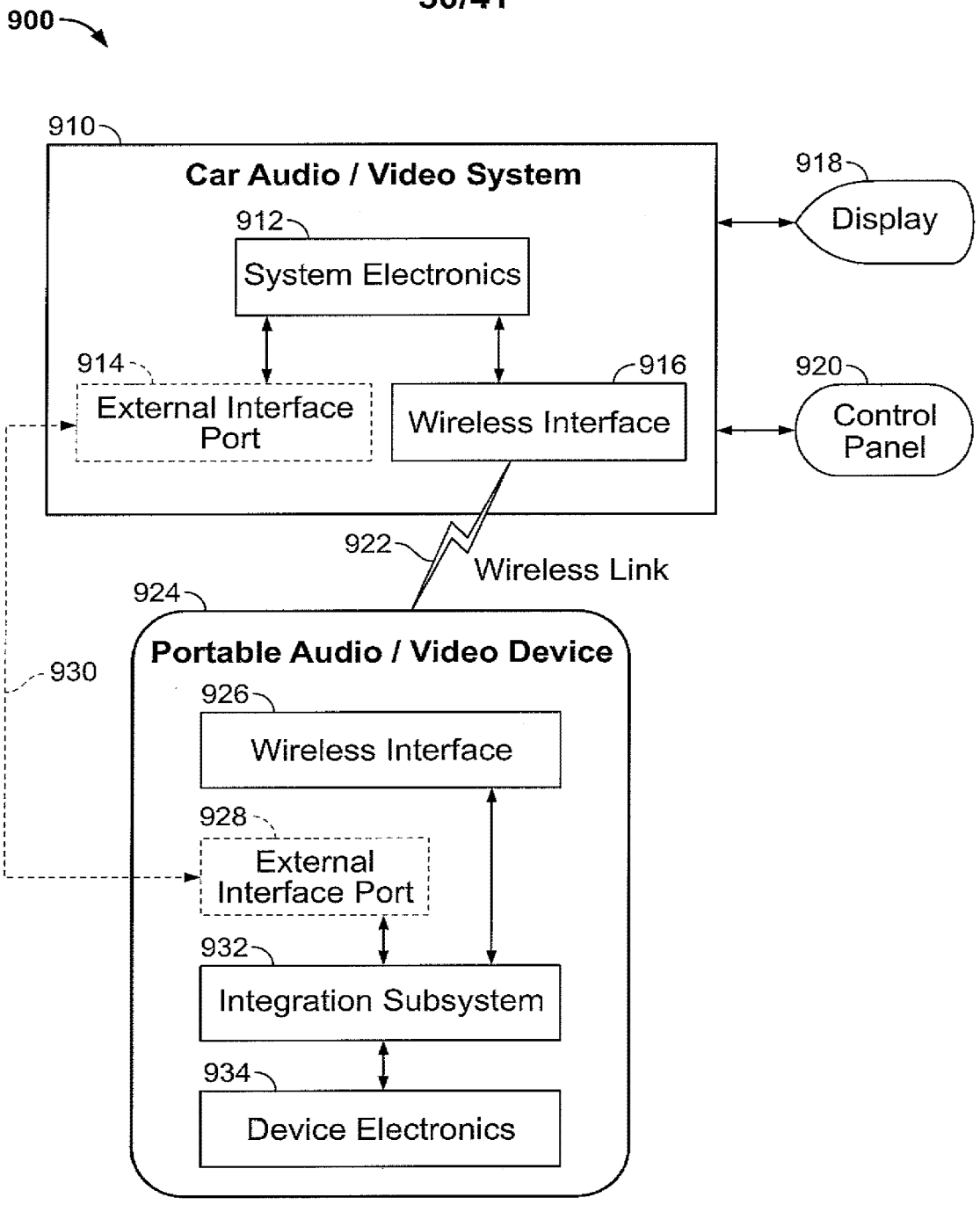
900
910
Car Audio / Video System
912
System Electronics
914
External Interface Port
916
Wireless Interface
918
Display
920
Control Panel
922
Wireless Link
924
Portable Audio / Video Device
926
Wireless Interface
928
External Interface Port
930
932
Integration Subsystem
934
Device Electronics

FIG. 18

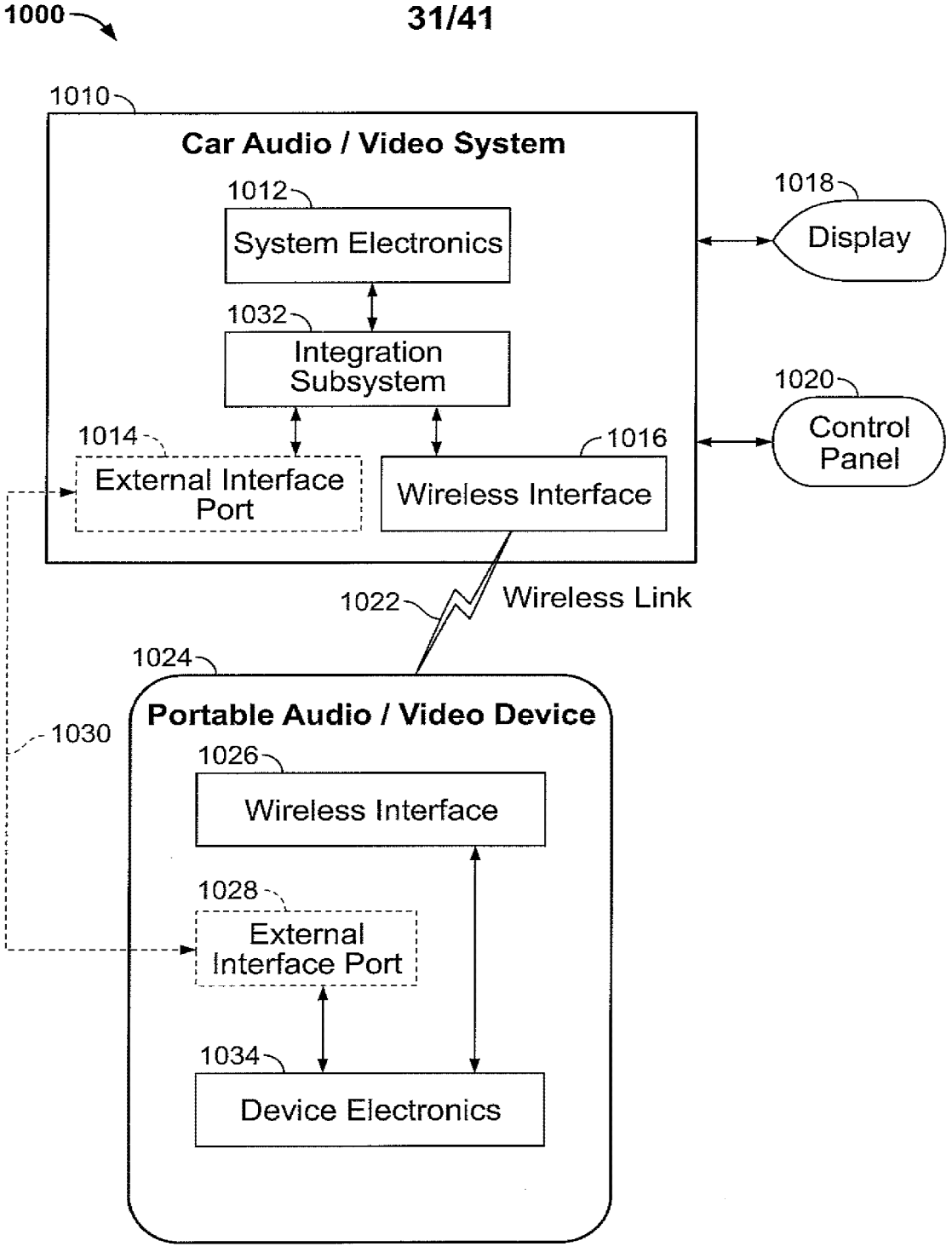
1000
1010
Car Audio / Video System
1012
System Electronics
1032
Integration Subsystem
1014
External Interface Port
1016
Wireless Interface
1018
Display
1020
Control Panel
1022
Wireless Link
1024
Portable Audio / Video Device
1030
1026
Wireless Interface
1028
External Interface Port
1034
Device Electronics

FIG. 19

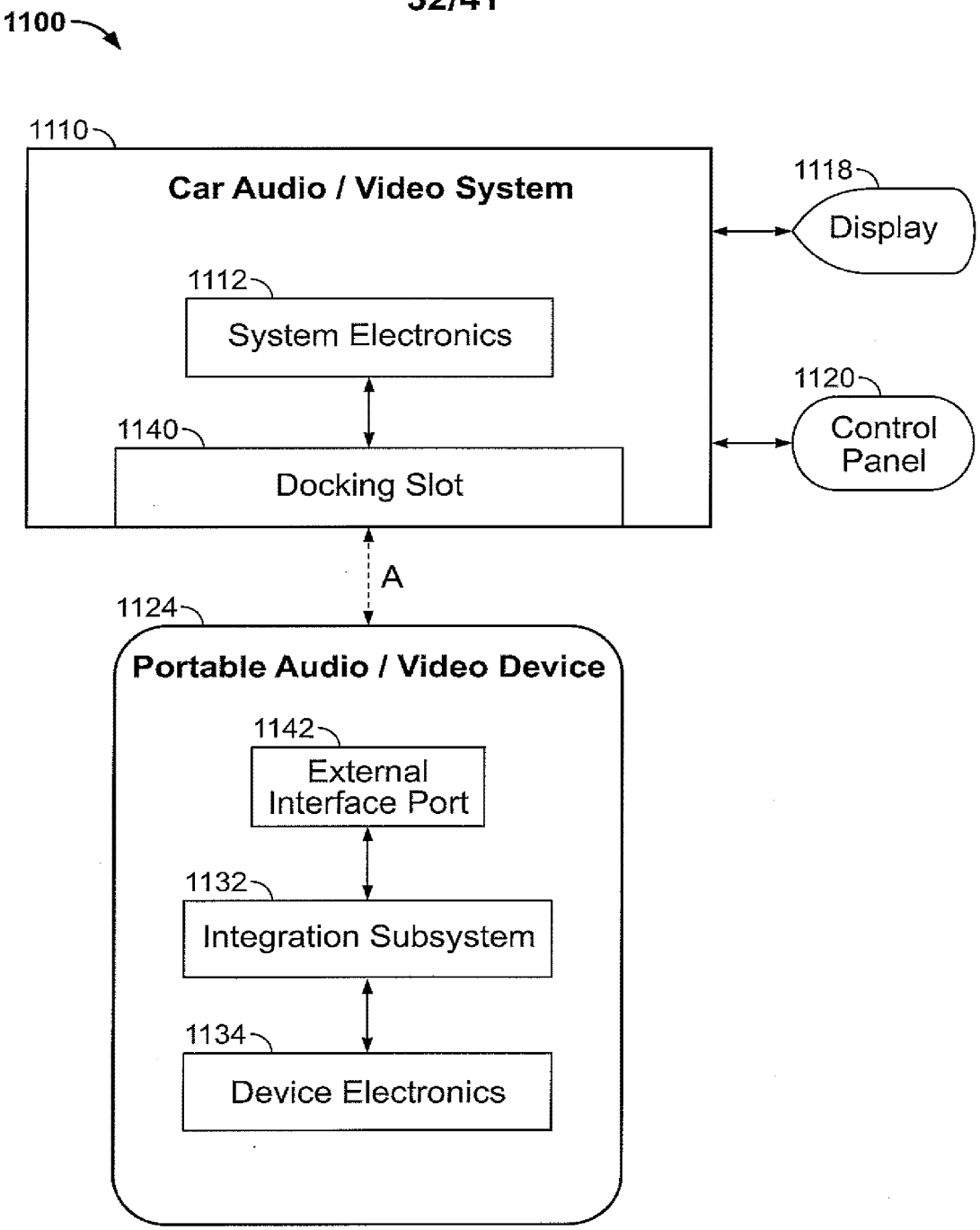
1100
1110
Car Audio / Video System
1118
Display
1112
System Electronics
1120
Control Panel
1140
Docking Slot
A
1124
Portable Audio / Video Device
1142
External Interface Port
1132
Integration Subsystem
1134
Device Electronics

FIG. 20

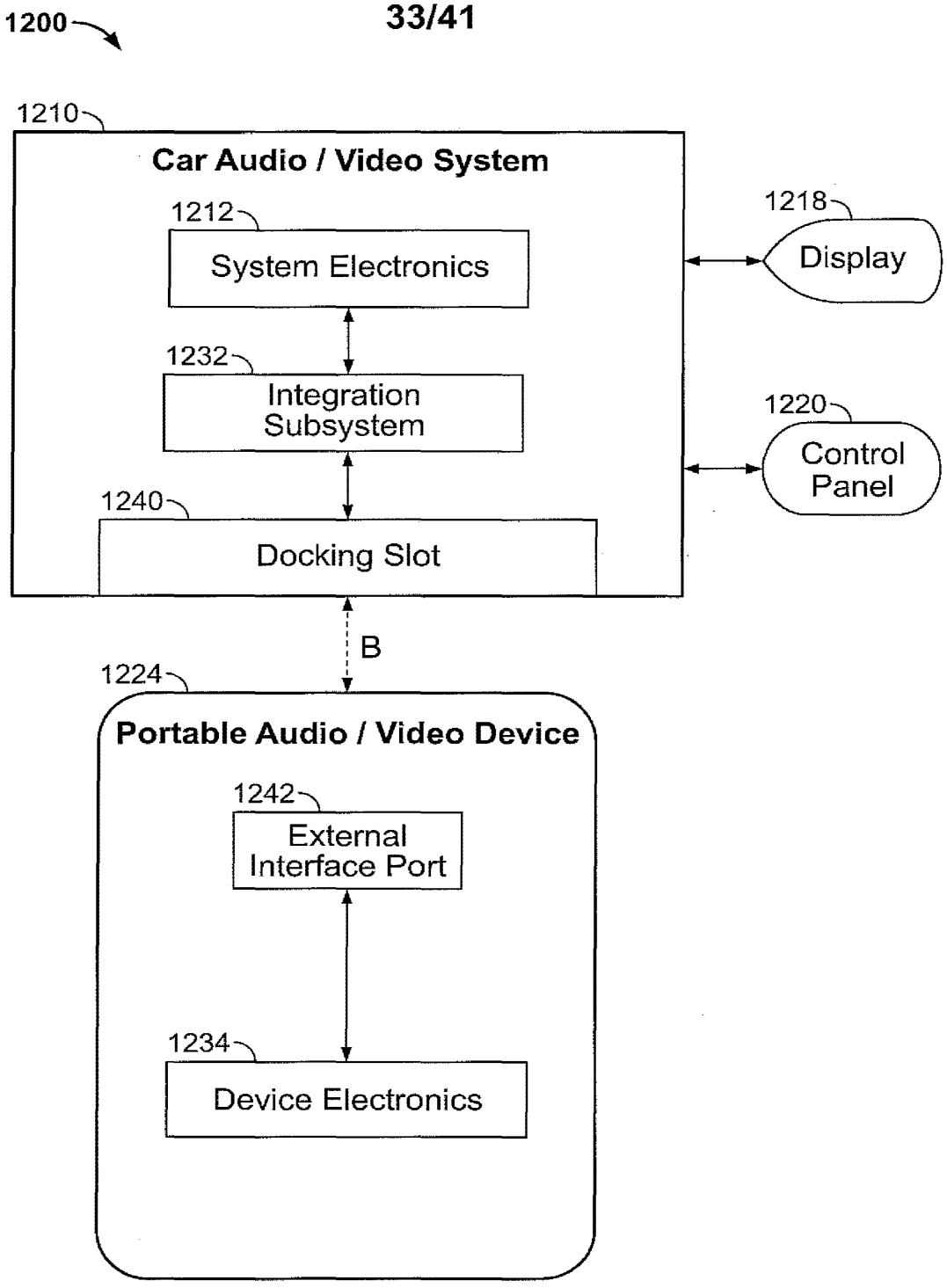
1200
1210
Car Audio / Video System
1212
System Electronics
1232
Integration Subsystem
1240
Docking Slot
1218
Display
1220
Control Panel
B
1224
Portable Audio / Video Device
1242
External Interface Port
1234
Device Electronics

FIG. 21

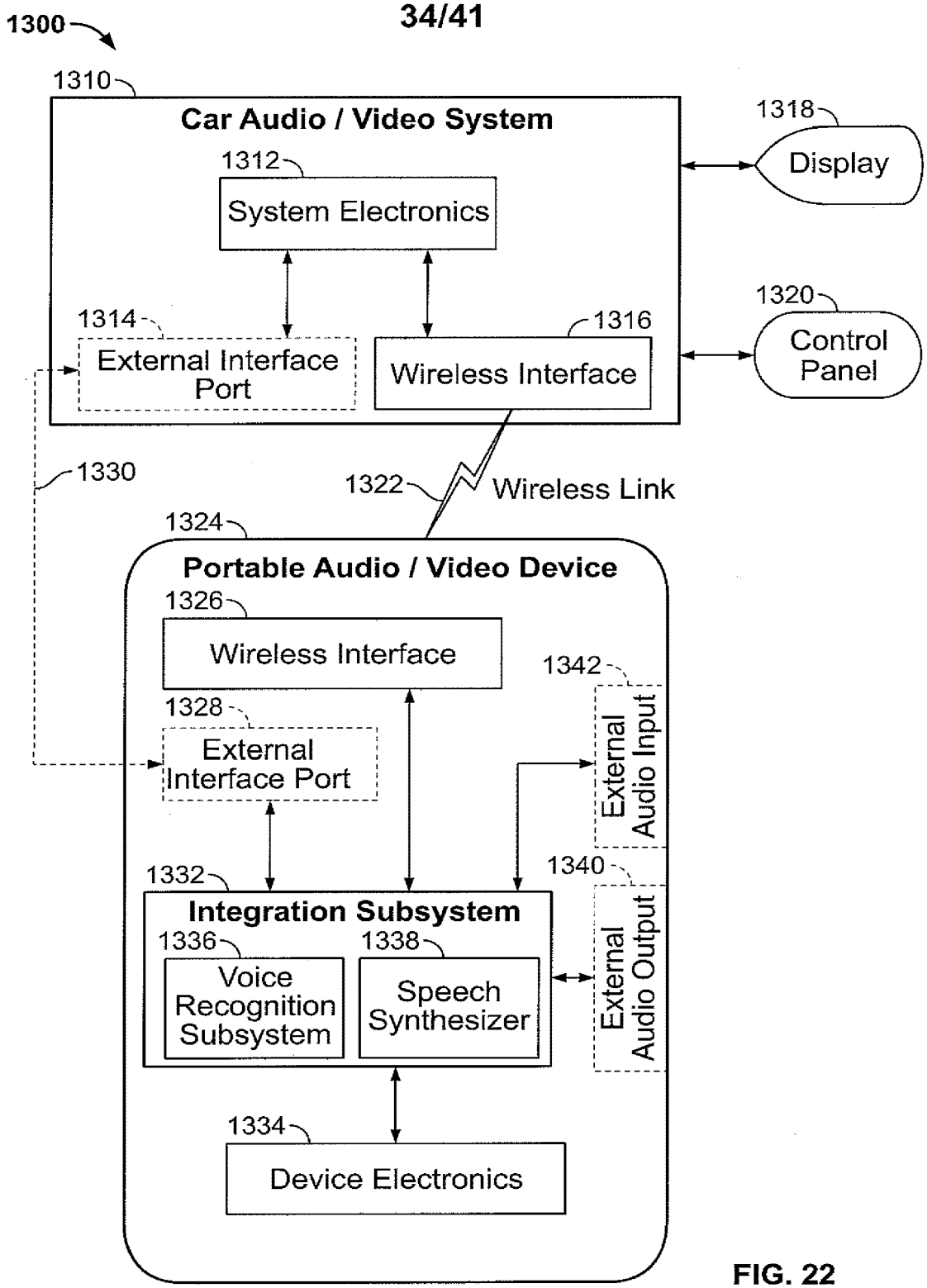
1300
1310
Car Audio / Video System
1312
System Electronics
1314
External Interface Port
1316
Wireless Interface
1318
Display
1320
Control Panel
1330
1322
Wireless Link
1324
Portable Audio / Video Device
1326
Wireless Interface
1328
External Interface Port
1342
External Audio Input
1340
External Audio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

FIG. 22

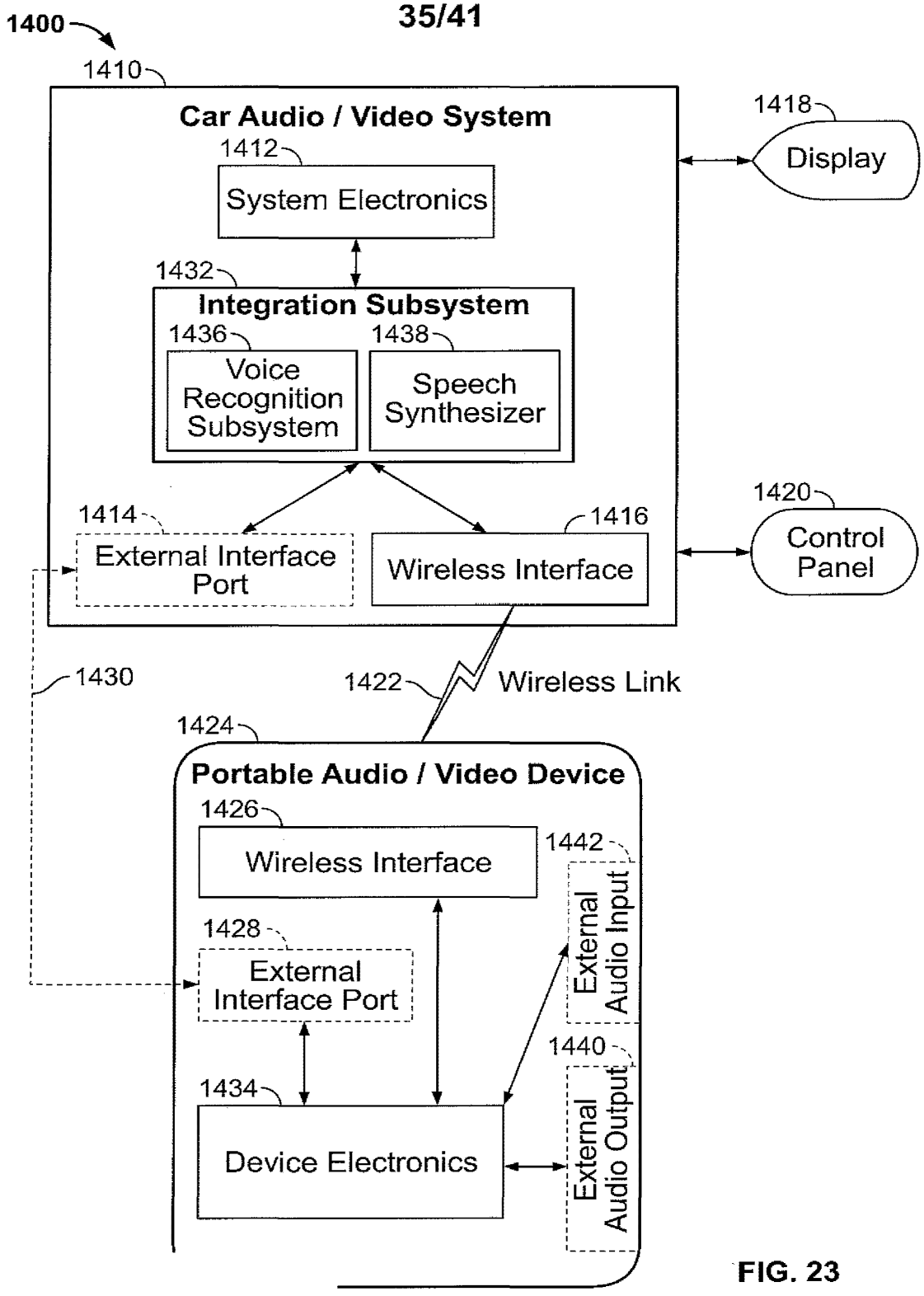
1400
1410
Car Audio / Video System
1412
System Electronics
1432
Integration Subsystem
1436
Voice Recognition Subsystem
1438
Speech Synthesizer
1414
External Interface Port
1416
Wireless Interface
1418
Display
1420
Control Panel
1430
1422
Wireless Link
1424
Portable Audio / Video Device
1426
Wireless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

FIG. 23

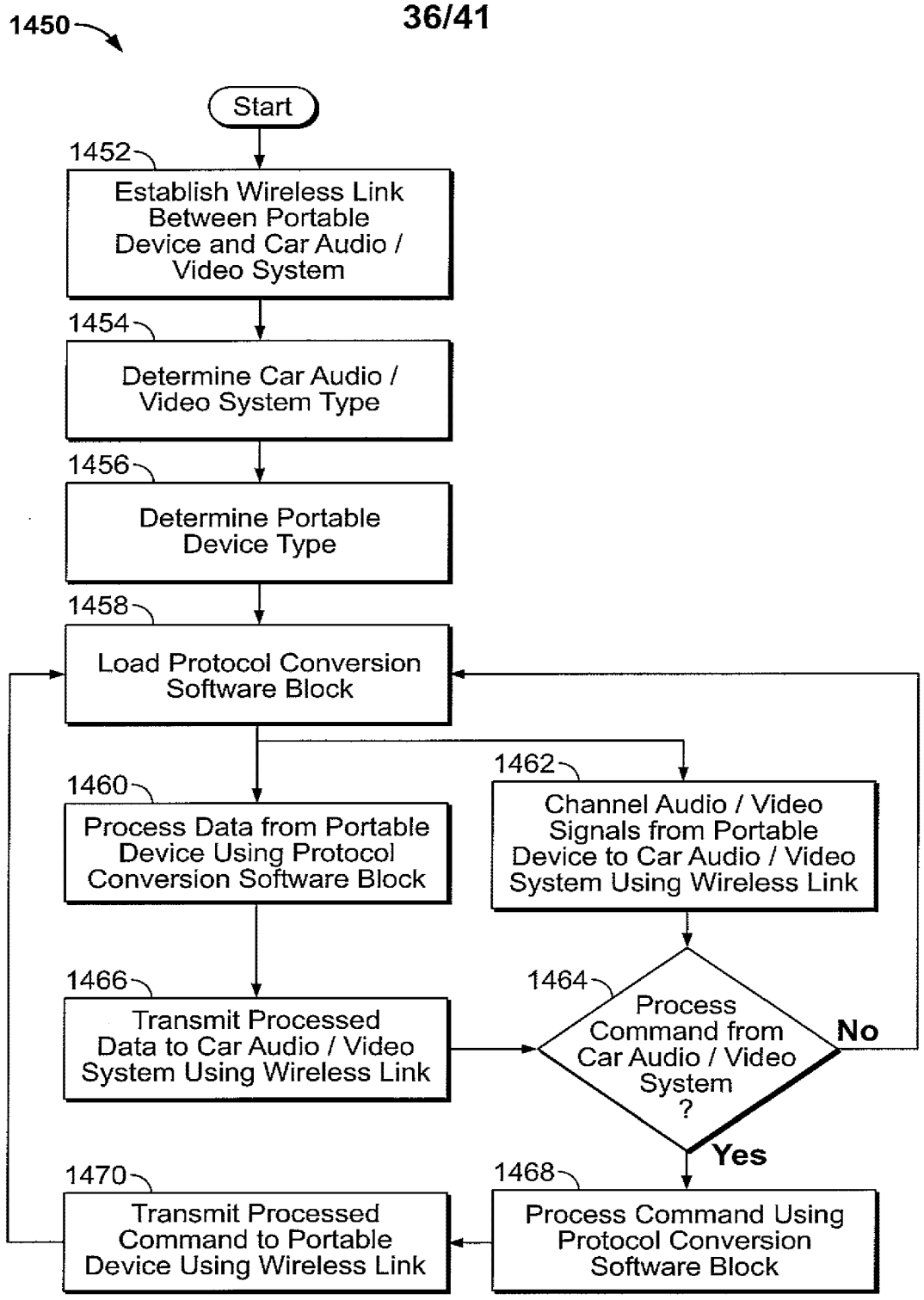
1450
Start
1452
Establish Wireless Link Between Portable Device and Car Audio / Video System
1454
Determine Car Audio / Video System Type
1456
Determine Portable Device Type
1458
Load Protocol Conversion Software Block
1460
Process Data from Portable Device Using Protocol Conversion Software Block
1462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

FIG. 24

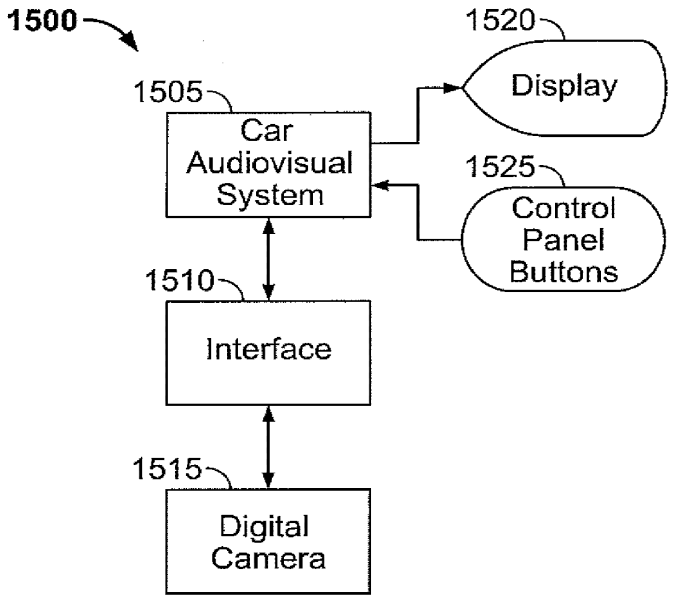
1500
1520
Display
1505
Car Audiovisual System
1525
Control Panel Buttons
1510
Interface
1515
Digital Camera

FIG. 25A

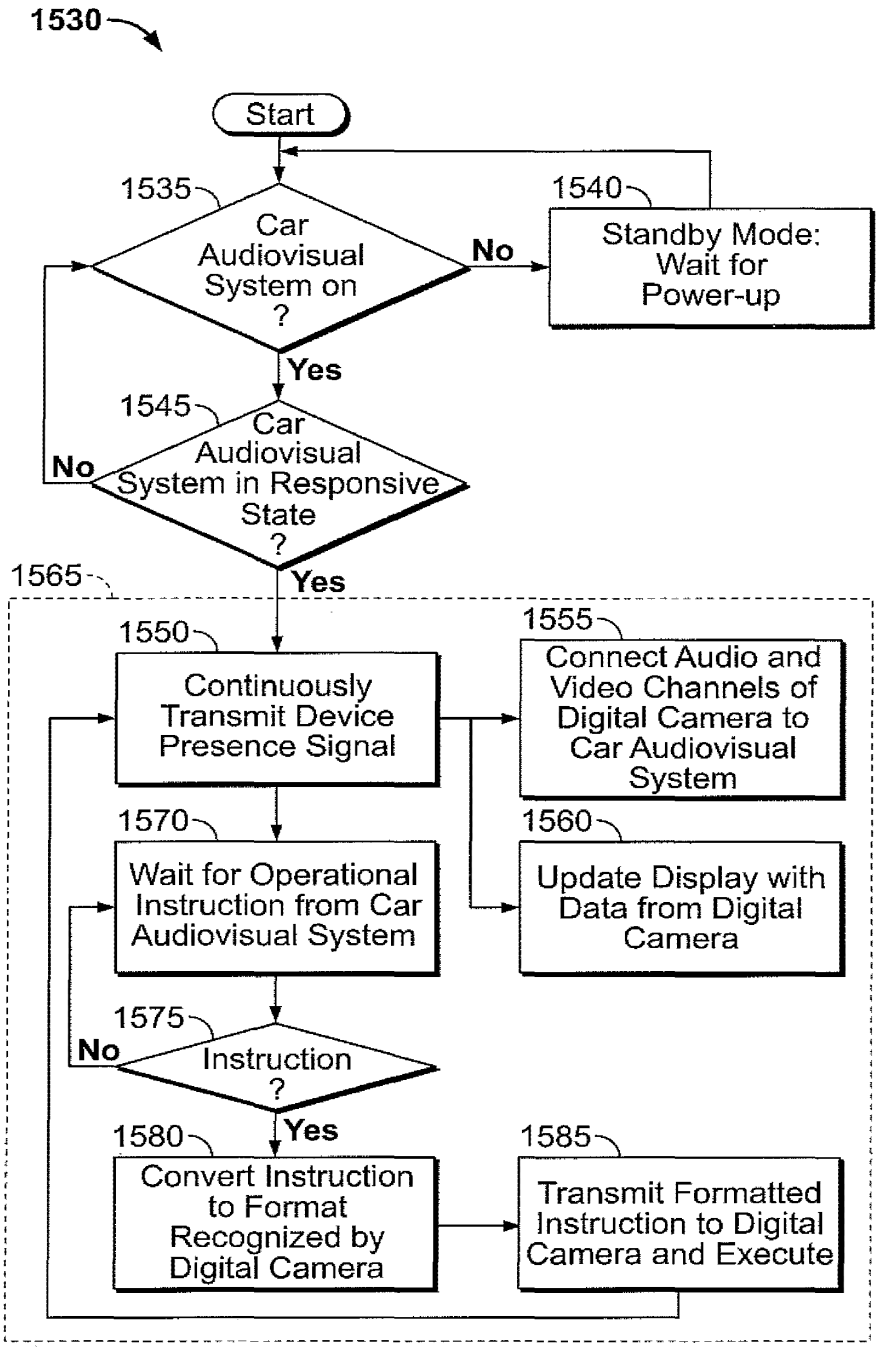
1530
Start
1535
Car Audiovisual System on ?
No
1540
Standby Mode: Wait for Power-up
Yes
1545
Car Audiovisual System in Responsive State ?
No
Yes
1565
1550
Continuously Transmit Device Presence Signal
1555
Connect Audio and Video Channels of Digital Camera to Car Audiovisual System
1570
Wait for Operational Instruction from Car Audiovisual System
1560
Update Display with Data from Digital Camera
1575
Instruction ?
No
Yes
1580
Convert Instruction to Format Recognized by Digital Camera
1585
Transmit Formatted Instruction to Digital Camera and Execute

FIG. 25B

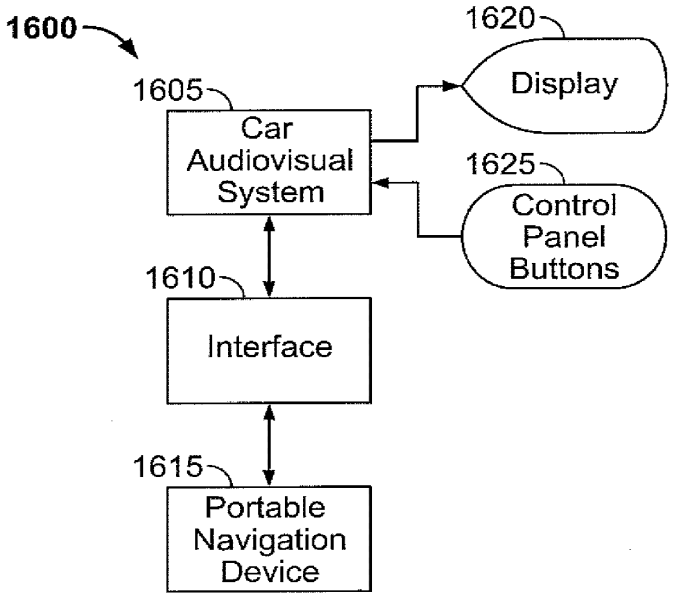
1600
1620
Display
1605
Car Audiovisual System
1625
Control Panel Buttons
1610
Interface
1615
Portable Navigation Device

FIG. 26A

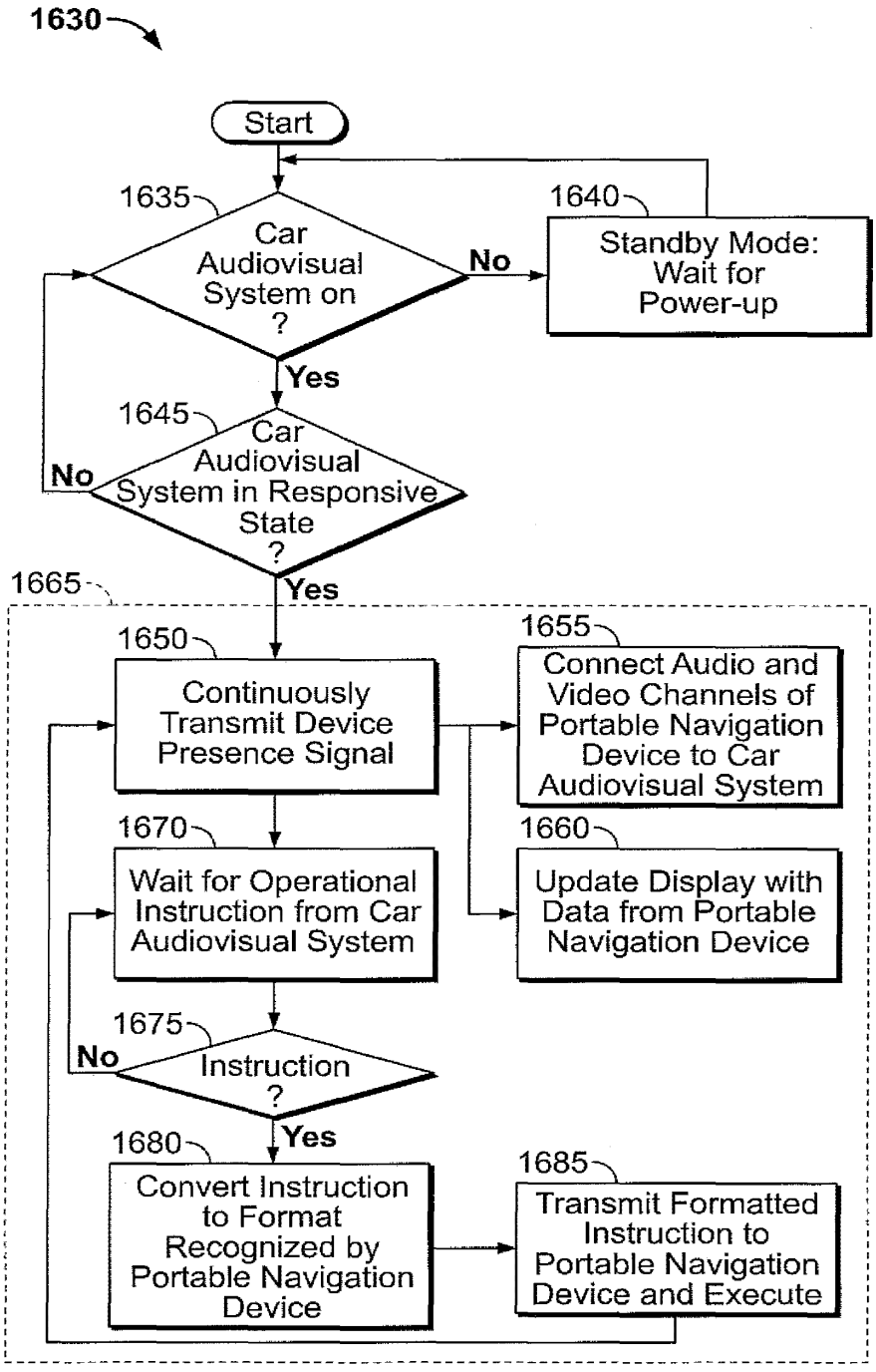
1630
Start
1635
Car Audiovisual System on ?
No
1640
Standby Mode: Wait for Power-up
Yes
1645
Car Audiovisual System in Responsive State ?
No
Yes
1665
1650
Continuously Transmit Device Presence Signal
1655
Connect Audio and Video Channels of Portable Navigation Device to Car Audiovisual System
1670
Wait for Operational Instruction from Car Audiovisual System
1660
Update Display with Data from Portable Navigation Device
1675
Instruction ?
No
Yes
1680
Convert Instruction to Format Recognized by Portable Navigation Device
1685
Transmit Formatted Instruction to Portable Navigation Device and Execute

FIG. 26B

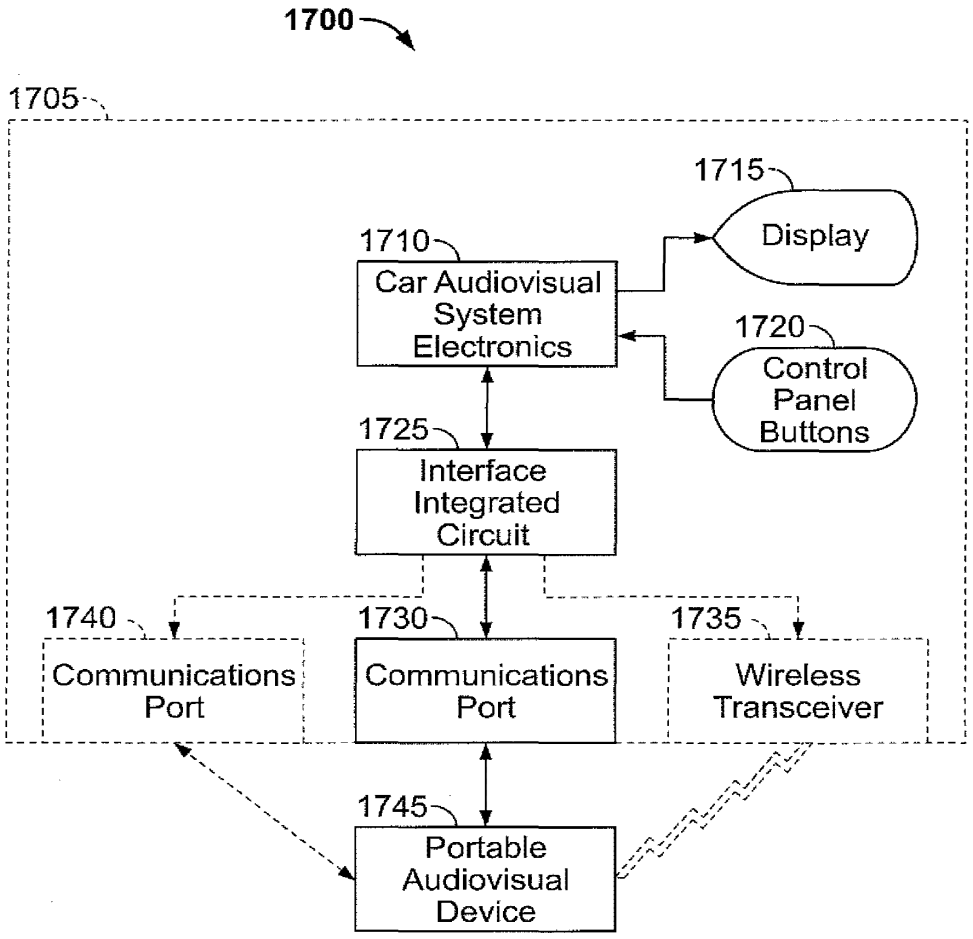
1700
1705
1715
Display
1710
Car Audiovisual System Electronics
1720
Control Panel Buttons
1725
Interface Integrated Circuit
1740
Communications Port
1730
Communications Port
1735
Wireless Transceiver
1745
Portable Audiovisual Device

FIG.27

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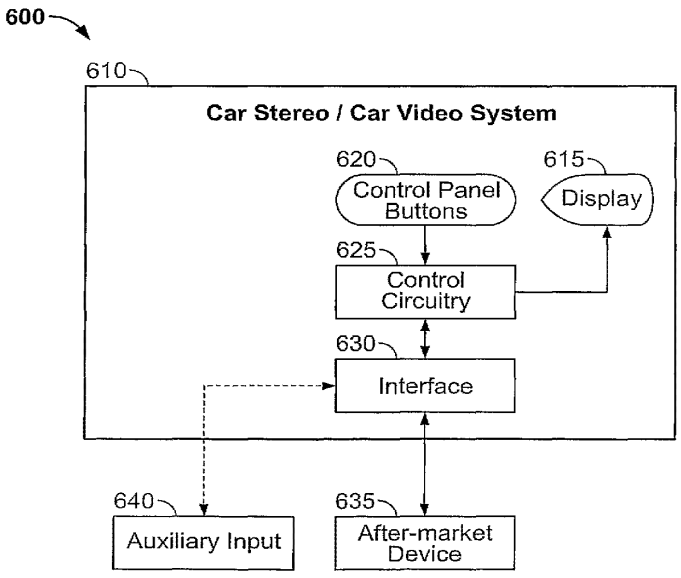
(54) Title: MULTIMEDIA DEVICE INTEGRATION SYSTEM



(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
```