

US007489786B2

(12) United States Patent

Marlowe

(54) AUDIO DEVICE INTEGRATION SYSTEM

- (76) Inventor: Ira Marlowe, 6403 Hilltop Ct., Fort Lee, NJ (US) 07024
- (*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 820 days.
- (21) Appl. No.: 10/316,961
- (22) Filed: Dec. 11, 2002

(65) **Prior Publication Data**

US 2003/0215102 A1 Nov. 20, 2003

- (51) Int. Cl.
- *H04B 1/00* (2006.01)
- (52) U.S. Cl. 381/86; 340/825.24; 700/94
- - See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,940,743 A	2/1976	Fitzgerald 340/172.5
4,047,162 A	9/1977	Dorey et al 364/200

(Continued)

FOREIGN PATENT DOCUMENTS

JP 11-2733321 10/1999

(Continued)

(10) Patent No.: US 7,489,786 B2 (45) Date of Patent: Feb. 10, 2009

OTHER PUBLICATIONS

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

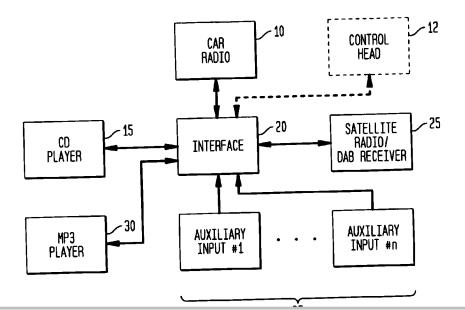
(Continued)

Primary Examiner—Vivian Chin Assistant Examiner—Jason Kurr (74) Attorney, Agent, or Firm—McCarter & English, LLP

(57) ABSTRACT

An audio device integration system is provided. One or more after-market audio devices, such as a CD player, CD changer, MP3 player, satellite receiver, DAB receiver, or the like, is integrated for use with an existing OEM or after-market car stereo system, wherein control commands can be issued at the car stereo and responsive data from the audio device can be displayed on the stereo. Control commands generated at the car stereo are received, processed, converted into a format recognizable by the audio device, and dispatched to the audio device for execution. Information from the audio device, including track, disc, song, station, time, and other information, is received, processed, converted into a format recognizable by the car stereo, and dispatched to the car stereo for display thereon. One or more auxiliary input sources can be integrated with the car stereo, and selected between using the controls of the car stereo. Both an audio device and one or more auxiliary input sources can be integrated together, and a user can select between the device or the one or more auxiliary input sources by issuing selection commands through the car stereo. A docking station is provided for docking a portable audio or video device for integration with the car stereo.

99 Claims, 21 Drawing Sheets



Find authenticated court documents without watermarks at docketalarm.com.

U.S. PATENT DOCUMENTS

4,068,104	А	1/1978	Werth et al 179/175.3
4,091,455	Α	5/1978	Woods et al
4,234,919	Α	11/1980	Bruce et al 364/200
4,562,533	Α	12/1985	Hodel et al 364/200
4,772,079	Α	9/1988	Douglas et al 312/257
4,817,130	Α	3/1989	Frimmel, Jr 379/88
4,943,978	Α	7/1990	Rice 375/1
RE34,536	Е	2/1994	Frimmel, Jr 379/88
5,339,362	Α	8/1994	Harris 381/86
5,410,675	Α	4/1995	Shreve et al 395/500
5,794,164	A *	8/1998	Beckert et al 455/3.06
5,808,373	Α	9/1998	Hamanishi et al.
5,859,628	Α	1/1999	Ross et al.
6,005,488	Α	12/1999	Symanov et al 340/825.56
6,052,603	Α	4/2000	Kinzalow et al.
6,058,319	Α	5/2000	Sadler
6,157,725	Α	12/2000	Becker 381/86
6,163,079	A *	12/2000	Miyazaki et al 307/10.1
6,175,789	B1 *	1/2001	Beckert et al 701/33
6,278,697	B1	8/2001	Brody et al 370/310
6,295,033	B1 *	9/2001	Chatzipetros et al 343/713
6,330,337	B1	12/2001	Nicholson et al 381/86
6,346,917	B1 *	2/2002	Fuchs et al 343/713
6,374,177	B1 *	4/2002	Lee et al 701/200
6,389,332	B1	5/2002	Hess et al 701/1
6,389,560	B1	5/2002	Chew
6,396,164	B1	5/2002	Barnea et al 307/10.1
6,529,804	B1	3/2003	Draggon et al.
6,591,085	B1 *	7/2003	Grady 455/42
6,608,399	B2 *	8/2003	McConnell et al 307/10.1
6,622,083	B1	9/2003	Knockeart et al.
6,629,197	B1	9/2003	Bhogal et al 711/111
6,648,661	B1	11/2003	Byrne et al.
6,653,948	B1 *	11/2003	Kunimatsu et al 340/995.19
6,993,615	B2 *	1/2006	Falcon 710/303
7,288,918	B2	10/2007	DiStefano
2001/0044664	A1	11/2001	Mueller et al 700/94
2002/0084910	A1*	7/2002	Owens et al 340/825.24
2002/0085730	A1*	7/2002	Holland 381/334
2002/0091863	A1	7/2002	Schug
2002/0133610	A1	9/2002	Hadland
2002/0180767	A1	12/2002	Northway et al.
2002/0197954	Al	12/2002	Schmitt et al.
2003/0007649	A1	1/2003	Riggs 381/86
2003/0026440	A1*	2/2003	Lazzeroni et al 381/86
2003/0053638	A1*	3/2003	Yasuhara 381/86
2003/0086699	A1	5/2003	Benyamin et al 386/96
2003/0156200	A1	8/2003	Romano et al.
2004/0091123	A1	5/2004	Stark et al.
2004/0145457	A1	7/2004	Schofield et al.
2004/0151327	Al	8/2004	Marlowe
2004/0266336	Al	12/2004	Patsiokas et al.
2005/0172001	Al	8/2005	Zaner et al.
2005/0239434	Al	10/2005	Marlowe
2003/0239434	Al	1/2003	Marlowe
2007/0293183		12/2007	Marlowe
2007/0293183	A1	12/200/	WIATIOWC

DOCKE

RM

EQDEICN DATENT DOCUMENTS

FOREIGN PATENT DOCUMENTS		ENT DOCUMENTS	Invoice dated Dec. 17, 2001 from Precision Interface Electronics,
JP KR KR WO WO	2000-286874 1020010035788 1020010059192 WO 2004/053722 WO 2006/094281	10/2000 5/2001 7/2001 6/2004 9/2006	 Inc. for "98-02 Ford/Lincoln/Mercury." Invoice dated Dec. 17, 2001 from Precision Interface Electronics, Inc. for "98-02 Ford/Lincoln/Mercury." Invoice dated May 29, 2002 from Precision Interface Electronics, Inc. for "95-01 GMC/Chev/Pontiac AUX," and "98-02 Ford/Lincoln/Merc AU."
WO	WO 2008/002954	1/2008	Toyota/Avox Interface Rev. Eng., Peripheral Model TIAS, created Feb. 15, 1998 (1 page).
OTHER PUBLICATIONS			GM/Kenwood Translator diagram, created Feb. 4, 1999 (2 pages).

"The New Delphi XM SKYFi Radio Add it to Any Car or Home Audio System," product description from www.xmradio.com (1 page).

Mobile Electronics: News, "Soundgate to Release New GM and BMW Interfaces," Dec. 2, 2002, ME-Mag.com (1 page).

"Welcome to Ventura Technology," from www.venturatechnology. net (2 pages).

"Ventura Technology" product descriptions from www. venturatechnoogy.net (1 page).

"Phatnoise Digital Media Players," product description from www. phatnoise.com (2 pages).

"Automedia," magazine pages from Jun./Jul. 1996 issue (2 pages).

"Automedia," magazine pages from Jan. 1998 issue (2 pages). "Automedia," magazine pages from Feb. 1998 issue (2 pages).

"Automedia," magazine pages from Jul. 1998 issue (2 pages).

"Automedia," magazine pages from Sep. 1998 issue (2 pages). "Automedia," magazine pages from Nov. 1998 issue (12 pages).

"Automedia," magazine pages from Feb. 1999 issue (2 pages).

"Car Stereo Review," magazine pages from Jun. 1998 issue (5 pages).

"Car Stereo Review," magazine pages from Jan. 1999 issue (2 pages).

"Car Stereo Review," magazine pages from Apr. 1999 issue (3 pages). "Car Audio and Electronics," magazine pages from Dec. 1998 issue

(2 pages) "Car Audio and Electronics," magazine pages from Apr. 1999 issue (2 pages).

'Car Audio and Electronics," magazine pages from Jun. 1999 issue (2 pages).

"Carsound," magazine pages from May/Jun. 1999 issue (2 pages). "Mobile Electronics Retailer," magazine pages from Aug. 1997 issue (4 pages).

"Mobile Electronics Retailer," magazine pages from Jul. 1999 issue (7 pages)

"Mobile Electronics Retailer," magazine pages from Aug. 2000 issue (2 pages).

"Cesmobile," magazine pages from Jan. 1999 issue (3 pages).

"The 12 Volt News," magazine pages from Mar. 2002 issue (2 pages). "P.I.E. Millennium Price Guide Make the Precision Decision," Pre-

cision Interface Electronics, Inc. (6 pages). "PIE 1999 Price Guide," Precision Interface Electronics, Inc. (4

pages).

"Design & Engineering Showcase Award," award presented to Precision Interface Electronics, Inc. for DPX Technology Digital Protocol Converter FRDN/PC-KNW, 2000 International CES

"Design & Engineering Showcase Award," award presented to Precision Interface Electronics, Inc. for DPX Technology Digital Proto-col Converter GM9/PC-KNW, 2000 International CES.

Invoice dated Jan. 28, 1998 from Precision Interface Electronics, Inc. for "Ford FCU-Sanyo Protocol," and "Ford RCU Sanyo Protocol."

Invoice dated Jan. 29, 1999 from Precision Interface Electronics, Inc. for "Ford NCU-Sanyo Protocol."

Invoice dated Apr. 26, 1999 from Precision Interface Electronics, Inc. for "9 Pin GM-Kenwood Protocol," and "10 Pin GM-Kenwood Protocol."

Invoice dated Apr. 27, 1999 from Precision Interface Electronics, Inc. for "9 Pin GM-Kenwood Protocol."

Invoice dated May 27, 1999 from Precision Interface Electronics, Inc. for "10 Pin GM-Kenwood Protocol," and "9 Pin GM-Kenwood Protocol."

Invoice dated Mar. 20, 2000 from Precision Interface Electronics, Inc. for "98-2000 Pre-Wired VW 6 DIS."

Invoice dated Mar. 20, 2000 from Precision Interface Electronics, Inc. for "98-2000 Pre-Wired VW 8 DIS," and "1998-2000 Audi to Pan 8 PC."

Ford/Audiovox Translator diagram, created Dec. 29, 1997 (2 pages).

"SoundGate, Ventura Announce Sophisticated OEM-Integration Interfaces," article from The 12 Volt News, Dec. 2002 (1 page).

"XMDirect Smart Digital Adapter," product description (3 pages). "Breaking Protocol A Look at BlitzSafe's New DMX Protocol Converter Technology," Nov. 1998 printout from http://www.blitzsafe.

com/blitz_news/news101998/body_news101998.html (2 pages). "PIE Virtual Catalog," printout from http://web.archive.org/web/ 19981205005802/http://www.pie.net/sec12sb1.htm (2 pages). "The UniLink Project," printout from website (2 pages).

"CD Changer Interfaces," printout from http://web.archive.org/web/ 19991012021952/soundgate.com/cd-inter.html (1 page).

"Digital Obsessions A Spotlight on Audio Gadgetry," ZDNet Music:

The PhatNoise Car Audio System, printout from http://web.archive. org/web/20000817164605/music.gamespot.com/features/ phatnoise/ (3 pages).

"Bypassing and Switching With the CD4053 CMOS Analog MUX," printout from website (4 pages).

"Device Profile: Phatnoise PhatBox Car MP3 Player," Nov. 1, 2000, printout from http://techupdate.zdnet.com/techupdate/stories/main/ 0,14179,2649276,00.html (4 pages).

"The EZ Protoboard," printout from http://web.archive.org/web/ 20010613095105/http:/www.ajusd.org/~edward/ezproto/ (2 pages). "TDIClub Forums: Reverse Engineering CD Changer Progress," Apr. 3, 2001, printout from website (3 pages)

"TDIClub Forums: Reverse Engineering CD Changer Progress Reports," Apr. 5, 2001, printout from website (8 pages).

"Multi Technology Equipment-Home of the Neo MP3 Player," http://web.archive.org/web/20010413222617/ printout from ssiamerica.com/products/neo35/ (1 page).

"TDIClub Forums: Reverse Engineering CD Changer Protocol Update," Apr. 18, 2001, printout from website (3 pages).

"The Car CD Changer Interface Page," printout from website (10 pages).

"SourceForge.net: Project Info-GNUlink," printout from http:// sourceforge.net/projects/gnunilink/ (3 pages)

"EZ Protoboard News," printout from website (3 pages). "GNUnilink—For All Your AUX-IN Needs . . . ," printout from

http://gnunilink.sourceforge.net/ (4 pages). "VWCDPIC News," printout from http://web.archive.org/web/ 20020701101541/http://www.ajusd.org/~edward/vwcdpic/ (8

pages). "VWCDPIC News," printout from http://web.archive.org/web/ 20021009014959/http:/www.ajusd.org/~edward/vwcdpic/ (10)pages).

"Neo Car Jukebox MP3 Player," printout from website (3 pages).

"Blitz Safe Offers XM Cables for Radios," printout from website http://www.twice.com/article/CA190041.html?text=blitz+safe (2pages).

"Integration Products May Impact Satellite Radio," printout from http://www.twice.com/article/CA website 200541. html?text=blitz+safe (3 pages).

"OEM Integration Poised for Strong Growth," printout from website http://www.twice.com/article/CA 200523.html?text=blitz+safe (3 pages).

Gilroy, Amy, "Blitz Safe Bows New SkyLink," This Week in Consumer Electronics (TWICE), Nov. 24, 2003.

Gilroy, Amy, "XM Exceeds Forecasts," This Week in Consumer Electronics (TWICE), Nov. 24, 2003.

http://www.blitzsafe.com/blitz_news/ "BlitzSafe News." news031124/body_news031124.html, Nov. 24, 2003

"XM Satellite Radio Introduces XM Direct," http://www.blitzsafe. com/blitz_news/news031117/body_news031117.html, Nov. 17, 2003

"Digital Audio Radio," http://www.blitzsafe.com/blitz_news/ news052003a/body_news052003a.html, 2003.

"BlitzSafe Winner of 2003 Autosound Grand Prix Accessories Supplier of the Year," Audiovideo Magazine, Mar. 3, 2003.

"BlitzSafe Releases World's First XM Satellite Radio, Auxillary and CD Interfaces for Landrover 'Freelander 2003'," http://www. blitzsafe.com/blitz_news/news092002b/body_news09002b.html, Sep. 16, 2002.

DOCKE.

"BlitzSafe Releases World's First XM Satellite Radio, Auxiliary and CD Interfaces for Lexus," http://www/blitzsafe.com/blitz_news/ news092002a/body_news092002a.html, Sep. 14, 2002

Pohlmann, et al. "Satellite Radio A to Z," http://www.blitzsafe.com/ blitz_news/news072002a/body_news072002a.html, 2002.

"BlitzSafe Launches XM and Six Interfaces for the 'Mini Cooper'," http://www.blitzsafe.com/blitz_news/news062002a/

body_news062002a.html, Jun. 25, 2002.

"Digital Connect," Mobile Electronics, May 2002.

Solomon, Brett, "Selling 12V: OEM Integration," Dealerscope, May 2002

"XM Xtra:," Mobile Entertainment, Apr./May 2002.

"Blitzsafe Introduces New Line of XM Digital Connect Cables," The 12 Volt News, Feb. 20, 2002.

"XM Radio Losses Mount As Do Subscribers," http://www.blitzsafe. com/blitz_news/news012002d/body_news012002d.html, Jan. 24, 2002.

"Blitzsafe Expects 3 Mil. XM Subscribers Within Three Years," http://www.blitzsafe.com/blitz_news/news012002c/

body_news012002c.html., Jan. 2002.

"XM Signs Over 30,000 Subscribers in First 8 Weeks," XM Radio, Jan. 7, 2002.

BlitzSafe Unveils the First DVD Interface, Automedia, Feb. 1999.

"MBALP V.2A2 CD Changer Converter Mercedes Benz Model for 1997 and 1996," http://www.blitzsafe.com/blitz_news/pr02111996/ body_pr02111996.html, Jun. 11, 1996.

"CD Changer Converter-Porsche Model Year 1996," http://www. blitzsafe.com/blitz_news/pr02071996/body_pr02071996.html. Feb. 7, 1996

"CD Changer Converter-Mercedes Benz 1996 MY," http://www. blitzsafe.com/blitz_news/pr08231995/body_pr08231995.html, Aug. 23, 1995.

Office Action dated Aug. 8, 2006, from co-pending U.S. Appl. No. 10/732,909 (29 pages).

Interview Summary dated Dec. 15, 2006, from co-pending U.S. Appl. No. 10/732,909 (3 pages)

Interview Summary dated Jan. 3, 2007, from co-pending U.S. Appl. No. 10/732,909 (3 pages).

Office Action dated Apr. 20, 2007, from co-pending U.S. Appl. No. 10/732,909 (20 pages).

Office Action dated Oct. 3, 2007, from co-pending U.S. Appl. No. 10/732,909 (28 pages).

Interview Summary dated Oct. 26, 2007, from co-pending U.S. Appl. No. 10/732,909 (3 pages).

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).

International Search Report of the International Searching Authority mailed Sep. 24, 2007, issued in connection with International Patent Appln. No. PCT/US06/008043 (4 pages).

Written Opinion of the International Searching Authority mailed Sep. 24, 2007, issued in connection with International Patent Appln. No. PCT/US06/008043 (5 pages).

International Preliminary Report on Patentability issued Oct. 16, 2007, issued in connection with International Patent Appln. No. PCT/US06/008043 (1 page).

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).

Written Opinion, mailed by the Australian Patent Office on Aug. 28, 2007, in connection with Singapore App. No. 200601303-1 (6 pages).

International Search Report of the International Searching Authority mailed Sep. 25, 2008, issued in connection with International Patenrt Appl. No. PCT/US07/72182 (3 pages).

Written Opinion of the International Searching Authority mailed Sep. 25, 2008, issued in connection with International Patent Appl. No. PCT/US07/72182 (7 pages).

Office Action dated Jul. 9, 2008, from co-pending U.S. Appl. No. 10/732,909 (33 pages).

* cited by examiner

Find authenticated court documents without watermarks at docketalarm.com.

А

R

Μ

Α

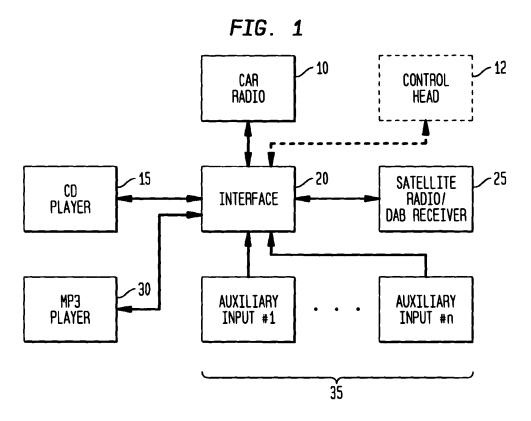
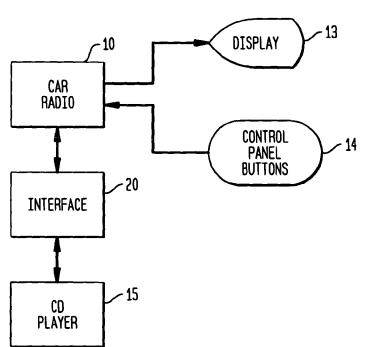


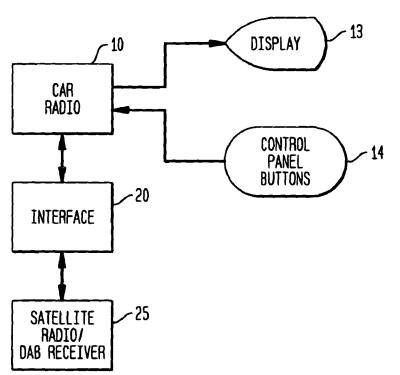
FIG. 2A



Find authenticated court documents without watermarks at docketalarm.com.

FIG. 2B CAR RADIO CAR RADIO CONTROL PANEL BUTTONS 14 BUTTONS 14





DOCKET ALARM Find authenticated court documents without watermarks at <u>docketalarm.com</u>.

DOCKET A L A R M



Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.