SOLICITOR

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AO 120 (Rev. 3/04)

TO:	REPORT ON THE
Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK

U.S. PATENT & TRADEMARK OFFICE

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court for the Eastern District of TX, L on the following ☒ Patents or ☐ Trademarks:

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
9:2009cv00047	3/24/2009	for the Eastern District of TX, Lufkin Division

PLAINTIFF	DEFENDANT
AFFINITY LABS OF TEXAS, LLC	APPLE, INC.

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	7,187,947	3/6/2007	Affinity Labs of Texas, LLC
2	7,440,772	10/21/2008	Affinity Labs of Texas, LLC
3	7,486,926	2/3/2009	Affinity Labs of Texas, LLC
4			
5			

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1—Upon initiation of action, mail this copy to Director **Copy 3—Upon termination of action, mail this copy to Director**
Copy 2—Upon filing document adding patent(s), mail this copy to Director **Copy 4—Case file copy**

UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
09/537,812	03/28/2000	Russell W. White	111111.1111

CONFIRMATION NO. 4698

21906
TROP PRUNER & HU, PC
1616 S. VOSS ROAD, SUITE 750
HOUSTON, TX 77057-2631

POA ACCEPTANCE LETTER

OC000000032241051

Date Mailed: 09/25/2008

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 09/17/2008.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

/vvan/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
09/537,812	03/28/2000	Russell W. White	111111.1111

CONFIRMATION NO. 4698

Russell W. White
10904 Doswell Cove
Austin, TX 78739

POWER OF ATTORNEY NOTICE

OC000000032241016

Date Mailed: 09/25/2008

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 09/17/2008.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

/vvan/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

Doc Code:

PTO/SB/80 (01-06)
Approved for use through 12/31/2008. OMB 0651-0035
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(b).

I hereby appoint:

☒ Practitioners associated with the Customer **21906**

OR

☐ Practitioner(s) named below (if more then ten practitioners are to be named, then a customer number must be used):

Name	Registration Number	Name	Registration Number

as attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignment documents attached to this form in accordance with 37 CFR 3.73(b).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(b) to:

☒ The address associated with Customer **21906**

OR

☐ Firm or Individual Name			
Address			
City		State	Zip
Country			
Telephone		Email	

Assignee Name and Address:
Affinity Labs of Texas, LLC
3838 River Place Boulevard
Austin, TX 78730

A copy of this form, together with a statement under 37 CFR 3.73(b) (Form PTO/SB/96 or equivalent) is required to be filed in each application in which this form is used. The statement under 37 CFR 3.73(b) may be completed by one of the practitioners appointed in this form if the appointed practitioner is authorized to act on behalf of the assignee, and must identify the application in which this Power of Attorney is to be filed.

SIGNATURE of Assignee of Record
The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

Signature		Date	9/17/08
Name	**Russell W. White**	Telephone	**512-217-3524**
Title	**Vice-President**		

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 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.

Electronic Acknowledgement Receipt	
EFS ID:	3958627
Application Number:	09537812
International Application Number:	
Confirmation Number:	4698
Title of Invention:	SYSTEM AND METHOD FOR COMMUNICATING SELECTED INFORMATION TO AN ELECTRONIC DEVICE
First Named Inventor/Applicant Name:	Russell W. White
Correspondence Address:	Russell W. White - 10904 Doswell Cove - Austin TX 78739 US 512-301-5518 -
Filer:	Mark J. Rozman/Stephanie Petreas
Filer Authorized By:	Mark J. Rozman
Attorney Docket Number:	111111.1111
Receipt Date:	17-SEP-2008
Filing Date:	28-MAR-2000
Time Stamp:	15:40:01
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	Assignee showing of ownership per 37 CFR 3.73(b).	AFF004USExecuted373.pdf	77118 a8480641b602f32c49dcc89358cda638fa4385de	no	2
Warnings:					
Information:					
2	Power of Attorney	AFFINITYExecutedPOA.pdf	56742 1182cb135ef2f72320ce11d9c1a2f487dfca4853	no	1
Warnings:					
Information:					
		Total Files Size (in bytes):	133860		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

<u>New Applications Under 35 U.S.C. 111</u>
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

<u>National Stage of an International Application under 35 U.S.C. 371</u>
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

<u>New International Application Filed with the USPTO as a Receiving Office</u>
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/96 (01-08)
Approved for use through 06/30/2008. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

STATEMENT UNDER 37 CFR 3.73(b)

Applicant/Patent Owner: **Russell W. White, et al.**

Application No./Patent No.: **7,187,947** Filed/Issue Date: **March 6, 2007**

Entitled: **System And Method For Communicating Selected Information To An Electronic Device**

Affinity Labs of Texas, LLC , a **Limited Liability Company**

(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that it is:

1. ☑ the assignee of the entire right, title, and interest; or

2. ☐ an assignee of less than the entire right, title and interest
(The extent (by percentage) of its ownership interest is _____ %)

in the patent application/patent identified above by virtue of either:

A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel _____ , Frame _____ , or for which a copy thereof is attatched.

OR

B. ☑ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: **Russell W. White, Kevin R. Imes** To: **The Russell White, LLC**
The document was recorded in the United States Patent and Trademark Office at
Reel **016870** , Frame **0639** , or for which a copy thereof is attached.

2. From: **The Russell White, LLC** To: **Affinity Labs, LLC**
The document was recorded in the United States Patent and Trademark Office at
Reel **017472** , Frame **0406** , or for which a copy thereof is attached.

3. From: **Affinity Labs, LLC** To: **The Russell White, LLC**
The document was recorded in the United States Patent and Trademark Office at
Reel **020941** , Frame **0844** , or for which a copy thereof is attached.

☑ Additional documents in the chain of title are listed on a supplemental sheet.

☑ As required by 37 CFR 3.73(b)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (*i.e.*, a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

Signature	9/17/08 Date
Russell W. White Printed or Typed Name	**512-217-3524** Telephone number
Vice-President Title	

STATEMENT UNDER 37 CFR 3.73(b)

Applicant: **Russell W. White**
Patent No.: **7,187,947** Issued: **March 6, 2007**
Entitled: **System And Method For Communicating Selected Information To An Electronic Device**

Affinity Labs of Texas, LLC

THIS SUPPLEMENTAL SHEET LISTS ADDITIONAL DOCUMENTS IN THE CHAIN OF TITLE

4. From: **The Russell White, LLC** To: **Affinity Labs of Texas**
The document was recorded in the United States Patent and Trademark Office at Reel **020963**, Frame **0072**, or for which a copy thereof is attached.

5. From: To:
The document was recorded in the United States Patent and Trademark Office at Reel , Frame , or for which a copy thereof is attached.

UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
09/537,812	03/28/2000	Russell W. White	111111.1111

CONFIRMATION NO. 4698

Russell W. White
10904 Doswell Cove
Austin, TX 78739

IMPROPER CPOA LETTER

OC000000032027762

Date Mailed: 09/12/2008

NOTICE REGARDING POWER OF ATTORNEY

This is in response to the Power of Attorney filed 09/03/2008. The Power of Attorney in this application is not accepted for the reason(s) listed below:

- The Power of Attorney is from an assignee and the Certificate required by 37 CFR 3.73(b) has not been received.

/hgray/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

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SEP 0 3 2008

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:	Russell W. White, et al.	§	Class/Subclass:	455/556.1
Patent No.:	7,187,947	§	Examiner:	Jean Gelin
Issued:	March 6, 2007	§		
For:	System And Method For Communicating Selected Information To An Electronic Device	§	Atty. Dkt. No.:	AFF.004US

POWER OF ATTORNEY BY ASSIGNEE

Under the provisions of 37 C.F.R. § 3.71, the undersigned assignee of record of the entire interest in the above-identified patent/patent application by virtue of an assignment recorded (check as applicable):

☐ Concurrently Herewith
☒ Date Recorded May 19, 2008
Reel 020963 Frame 0072

elects to conduct the prosecution of the application/maintenance of the patent to the exclusion of the inventor(s). The undersigned hereby declares that he has reviewed the above-referenced assignment and hereby declares that, to the best of his knowledge, title is in the Assignee, and further declares that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true. The assignee hereby revokes any previous powers of attorney and appoints the practitioners associated with:

Customer No. 21906

to prosecute the application identified above, and to transact all business in the United States Patent and Trademark Office connected therewith.

The undersigned is authorized to sign this statement on behalf of the Assignee.

Please direct all communications to: **Customer No. 21906**

Please direct all telephone calls to: Mark J. Rozman at (512) 418-9944.

ASSIGNEE
Affinity Labs of Texas, LLC

Date: 9/3/08 BY: _____

Russell W. White
Vice-President
Affinity Labs of Texas, LLC
10904 Doswell Cove
Austin, TX 78739

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.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/537,812	03/06/2007	7187947	111111.1111	4698

7590 02/14/2007

Russell W. White
10904 Doswell Cove
Austin, TX 78739

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Extension under 35 U.S.C. 154 (b)
(application filed after June 7, 1995 but prior to May 29, 2000)

The Patent Term Extension is 0 day(s). Any patent to issue from the above-identified application will include an indication of the 0 day extension on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Extension is the filing date of the most recent CPA.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

Russell W. White, Austin, TX;
Kevin R. Imes, Pflugerville, TX;

DEC 2 8 2006

PTO/SB/08A (08-03)
Approved for use through 07/31/2006. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 4

Complete if Known	
Application Number	09/537,812
Filing Date	03/28/2000
First Named Inventor	Russell W. White
Art Unit	2617
Examiner Name	GELIN, Jean Alland
Attorney Docket Number	111111.1111

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
JG	B1	US- 2005/0096018	05/05/05	White et al.	
	B2	US- 2005/0049002	03/05/05	White et al.	
	B3	US- 2002/0023028	02/21/02	Quarendon et al.	
	B4	US- 6,975,835	12/13/05	Lake et al.	
	B5	US- 6,792,615	09/14/04	Rowe et al.	
	B6	US- 6,792,263	09/14/04	Kite Karen	
	B7	US- 6,788,528	09/07/04	Enners et al.	
	B8	US- 6,772,212	08/03/04	Lau et al.	
	B9	US- 6,741,980	05/25/04	Langseth et al.	
	B10	US- 6,671,715	12/30/03	Langseth et al.	
	B11	US- 6,591,085	07/08/03	Grady, Jeff	
	B12	US- 6,420,975	07/16/02	DeLine et al.	
	B13	US- 6,516,466 02/2003	~~05/28/02~~	~~Polamy, Rany~~ Jackson	
	B14	US- 6,292,440	09/18/01	Lee, San-Hun	
	B15	US- 6,240,297	05/29/01	Jadoul, Marc	
	B16	US- 6,232,539	05/15/01	Looney et al.	
	B17	US- 6,061,306	05/09/00	Buchheim, James	
	B18	US- 5,953,657	09/14/99	Ghisler, Walter	
	B19	US- 5,940,767	08/17/99	Bourgeois et al.	

MR 1-25-7

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]
	B21					
	B22					
	B23					
	B24					
	B25					
	B26					

Examiner Signature	Jean Gelin	Date Considered	1/5/07

*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.

Notice of References Cited	Application/Control No. 09/537,812	Applicant(s)/Patent Under Reexamination White et al.	
	Examiner Rafael Perez-Gutierrez	Art Unit 2686	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-6,587,835 B1	07-2003	Treyz et al.	705/14
	B	US-6587,825			
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

MR 1-23-7

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address, and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

7590 01/12/2007

Russell W. White
10904 Doswell Cove
Austin, TX 78739

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission
I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

Laura H. Andre	(Depositor's name)
19January 2007	(Signature)
	(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/537,812	03/28/2000	Russell W. White	111111.1111	4698

TITLE OF INVENTION: SYSTEM AND METHOD FOR COMMUNICATING SELECTED INFORMATION TO AN ELECTRONIC DEVICE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	$700	$0	$0	$700	04/12/2007

EXAMINER	ART UNIT	CLASS-SUBCLASS
GELIN, JEAN ALLAND	2617	455-414000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 Baker Botts, LLP
2 Roger J. Fulghum
3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE: Affinity Labs, LLC

(B) RESIDENCE: (CITY and STATE OR COUNTRY): Austin, Texas

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☑ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:
- ☑ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**
- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number 50-3797 (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)
- ☑ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.
- ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____ Date 1/19/07

Typed or printed name Russell W. White Registration No. 45,691

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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.

Electronic Patent Application Fee Transmittal

Application Number:	09537812
Filing Date:	28-Mar-2000
Title of Invention:	SYSTEM AND METHOD FOR COMMUNICATING SELECTED INFORMATION TO AN ELECTRONIC DEVICE
First Named Inventor/Applicant Name:	Russell W. White
Filer:	Russell W. White/Laura Andre
Attorney Docket Number:	111111.1111
Filed as Small Entity	

Utility Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Utility Appl issue fee	2501	1	700	700
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
			Total in USD ($)	700

Electronic Acknowledgement Receipt	
EFS ID:	1451978
Application Number:	09537812
International Application Number:	
Confirmation Number:	4698
Title of Invention:	SYSTEM AND METHOD FOR COMMUNICATING SELECTED INFORMATION TO AN ELECTRONIC DEVICE
First Named Inventor/Applicant Name:	Russell W. White
Correspondence Address:	Russell W. White - 10904 Doswell Cove - Austin TX 78739 US 5123275452 -
Filer:	Russell W. White/Laura Andre
Filer Authorized By:	Russell W. White
Attorney Docket Number:	111111.1111
Receipt Date:	19-JAN-2007
Filing Date:	28-MAR-2000
Time Stamp:	16:10:54
Application Type:	Utility

Payment information:

Submitted with Payment	yes
Payment was successfully received in RAM	$700
RAM confirmation Number	394

Deposit Account	503797
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 and 1.17	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	111111-1111_PTOL-85B.pdf	1278658	no	1
Warnings:					
Information:					
2	Fee Worksheet (PTO-06)	fee-info.pdf	8174	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	1286832		

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.

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

NOTICE OF ALLOWANCE AND FEE(S) DUE

7590 01/12/2007

Russell W. White
10904 Doswell Cove
Austin, TX 78739

EXAMINER	
GELIN, JEAN ALLAND	
ART UNIT	PAPER NUMBER
2617	

DATE MAILED: 01/12/2007

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/537,812	03/28/2000	Russell W. White	111111.1111	4698

TITLE OF INVENTION: SYSTEM AND METHOD FOR COMMUNICATING SELECTED INFORMATION TO AN ELECTRONIC DEVICE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	$700	$0	$0	$700	04/12/2007

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PTOL-85 (Rev. 07/06) Approved for use through 04/30/2007.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

7590 01/12/2007

Russell W. White
10904 Doswell Cove
Austin, TX 78739

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/537,812	03/28/2000	Russell W. White	111111.1111	4698

TITLE OF INVENTION: SYSTEM AND METHOD FOR COMMUNICATING SELECTED INFORMATION TO AN ELECTRONIC DEVICE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	$700	$0	$0	$700	04/12/2007

EXAMINER	ART UNIT	CLASS-SUBCLASS
GELIN, JEAN ALLAND	2617	455-414000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____

2 _____

3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

☐ Issue Fee

☐ Publication Fee (No small entity discount permitted)

☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**

☐ A check is enclosed.

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

☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)

☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.

☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/537,812	03/28/2000	Russell W. White	111111.1111	4698

7590 01/12/2007

Russell W. White
10904 Doswell Cove
Austin, TX 78739

EXAMINER	
GELIN, JEAN ALLAND	
ART UNIT	PAPER NUMBER
2617	

DATE MAILED: 01/12/2007

Determination of Patent Term Extension under 35 U.S.C. 154 (b)
(application filed after June 7, 1995 but prior to May 29, 2000)

The Patent Term Extension is 0 day(s). Any patent to issue from the above-identified application will include an indication of the 0 day extension on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Extension is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

PTOL-85 (Rev. 07/06) Approved for use through 04/30/2007.

Notice of Allowability	Application No.	Applicant(s)	
	09/537,812	WHITE ET AL.	
	Examiner	Art Unit	
	Jean A. Gelin	2617	

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

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *12/11/06*.

2. ☒ The allowed claim(s) is/are *40-81, renumbered as 1-42*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date 12/28/06
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

1. This is in response to the Applicant's amendments and arguments filed on December 11, 2006 in which claims 40-81 have been amended. Claims 40-81 are currently pending.

Allowable Subject Matter

2. After a further search and thorough examination of the present application and in view of the applicant's arguments and amendments, claims 40-81, renumbered as 1-42, are found to be in condition of allowance.

3. The following is an examiner's statement of reasons for allowance: the cited prior arts fail to teach the claimed limitations for the reasons set forth in the Applicant's remark filed on 12/11/06 pages 13-15 and the Applicant's amendment.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Yi	US 6,509,716	01/21/2003

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean A. Gelin whose telephone number is (571) 272-7842. The examiner can normally be reached on 9:30 AM to 7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold can be reached on (571) 272-7905. 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.

JEAN GELIN
PRIMARY EXAMINER

J. Gelin Jean Gelin 1/6/07

PTO/SB/08A (08-03)
Approved for use through 07/31/2006. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 4

Complete if Known	
Application Number	09/537,812
Filing Date	03/28/2000
First Named Inventor	Russell W. White
Art Unit	2617
Examiner Name	GELIN, Jean Alland
Attorney Docket Number	111111.1111

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
JG	B1	US- 2005/0096018	05/05/05	White et al.	
	B2	US- 2005/0049002	03/05/05	White et al.	
	B3	US- 2002/0023028	02/21/02	Quarendon et al.	
	B4	US- 6,975,835	12/13/05	Lake et al.	
	B5	US- 6,792,615	09/14/04	Rowe et al.	
	B6	US- 6,792,263	09/14/04	Kite Karen	
	B7	US- 6,788,528	09/07/04	Enners et al.	
	B8	US- 6,772,212	08/03/04	Lau et al.	
	B9	US- 6,741,980	05/25/04	Langseth et al.	
	B10	US- 6,671,715	12/30/03	Langseth et al.	
	B11	US- 6,591,085	07/08/03	Grady, Jeff	
	B12	US- 6,420,975	07/16/02	DeLine et al.	
	B13	US- 6,516,466	05/28/02	Polany, Rany	
	B14	US- 6,292,440	09/18/01	Lee, San-Hun	
	B15	US- 6,240,297	05/29/01	Jadoul, Marc	
	B16	US- 6,232,539	05/15/01	Looney et al.	
	B17	US- 6,061,306	05/09/00	Buchheim, James	
	B18	US- 5,953,657	09/14/99	Ghisler, Walter	
	B19	US- 5,940,767	08/17/99	Bourgeois 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]
	B21					
	B22					
	B23					
	B24					
	B25					
	B26					

Examiner Signature	Jean Gelin	Date Considered	1/5/07

*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.

DEC 28 2006

PTO/SB/08A (08-03)
Approved for use through 07/31/2006. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 2 of 4

Complete if Known	
Application Number	09/537,812
Filing Date	03/28/2000
First Named Inventor	Russell W. White
Art Unit	2617
Examiner Name	GELIN, Jean Alland
Attorney Docket Number	111111.1111

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
J. G	B27	US- 5,870,680	02/09/99	Guerlin et al.	
	B28	US- 5,774,793	06/30/98	Cooper et al.	
	B29	US- 5,587,560	12/24/96	Crooks et al.	
	B30	US- 5,586,090	12/17/96	Otte, William C.	
	B31	US- 5,450,471	09/12/95	Hanawa et al.	
	B32	US- 5,307,326	04/26/94	Osawa, Shoichi	
	B33	US- 4,905,272	02/27/90	Van de Mortel et al.	
	B34	US- 4,807,292	02/21/89	Sorscher, Bernard	
	B35	US-			
	B36	US-			
	B37	US-			
	B38	US-			
	B39	US-			
	B40	US-			
	B41	US-			
	B42	US-			
	B43	US-			
	B44	US-			
	B45	US-			

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3] Number[4] Kind Code[5] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T[6]
	B46					
	B47					
	B48					
	B49					
	B50					
	B51					

Examiner Signature	Jean Gelin	Date Considered	1/5/07

*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.

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Sheet 3 of 4

Complete if Known	
Application Number	09/537,812
Filing Date	03/28/2000
First Named Inventor	Russell W. White
Art Unit	2617
Examiner Name	GELIN, Jean Alland
Attorney Docket Number	111111.1111

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]
J.G	1-B	U.S. Patent No. 60/167,179, filed 11/23/1999	
J.G	2-B	U.S. Patent No. 09/234,259, filed 01/20/1999	
	3-B		
	4-B		
	5-B		
	6-B		
	7-B		
	8-B		
	9-B		
	10-B		

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J.G	11-B	"Philips PSA [128MAX," PC Authority Reviews, 1 May 2003, 1 pg.	
	12-B	"Sony Network Walkman NW-MS70D," PC Authority Reviews, 8 October 2003, 1 pg.	
	13-B	"Targa TMU-401," PC Authority Reviews, 8 October 2003, 1 pg.	
	14-B	"Targa TMU-604," PC Authority Reviews, 8 October 2003, 1 pg.	
	15-B		
	16-B		
	17-B		
	18-B		
	19-B		
	20-B		

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Notice of References Cited	Application/Control No. 09/537,812	Applicant(s)/Patent Under Reexamination WHITE ET AL.	
	Examiner Jean A. Gelin	Art Unit 2617	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-6,509,716	01-2003	Yi, Sang Yong	320/115
	B	US-			
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
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	N					
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Issue Classification	Application/Control No. 09/537,812	Applicant(s)/Patent under Reexamination WHITE ET AL.
	Examiner Jean A. Gelin	Art Unit 2617

ISSUE CLASSIFICATION

ORIGINAL		INTERNATIONAL CLASSIFICATION											
CLASS	SUBCLASS	CLAIMED					NON-CLAIMED						
455	556.1	H	04	Q	7	/20					/		
CROSS REFERENCES													
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)					/					/		
455	66.1	573	557			/					/		
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XXXXXXXXXXXXXXXXXX
(Assistant Examiner) (Date)

(Legal Instruments Examiner) 1/9/07 (Date)

JEAN GELIN
PRIMARY EXAMINER
Jean A. Gelin 1/6/07
(Primary Examiner) (Date)

Total Claims Allowed: 40

O.G. Print Claim(s)	O.G. Print Fig.
1	5A

☐ **Claims renumbered in the same order as presented by applicant** ☐ CPA ☐ T.D. ☐ R.1.47

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
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	5		35	26	65		95		125		155		185
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	7		37	28	67		97		127		157		187
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	30	21	60		90		120		150		180		210

Search Notes	Application/Control No.	Applicant(s)/Patent under Reexamination
	09/537,812	WHITE ET AL.
	Examiner	Art Unit
	Jean A. Gelin	2617

SEARCHED			
Class	Subclass	Date	Examiner
455	66.1 572 571 41.2	1/6/2007	JG
	93 99 557		
379	447 419		
709	228 203 217		
	219		
705	26		

INTERFERENCE SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES (INCLUDING SEARCH STRATEGY)		
	DATE	EXMR
East Search	1/7/2007	JG
Updated Search	1/7/06	J.G

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L2	8	("5870680" "5774793" "5587560" "5586090" "5450471" "5307326" "4905272" "4807292").pn.	US-PGPUB; USPAT	OR	OFF	2007/01/07 15:03
L3	1	("6363240").pn.	US-PGPUB; USPAT	OR	OFF	2007/01/07 15:06
L4	38	cellular same music same (supply charg$3 recharg$3) same battery	US-PGPUB; USPAT	OR	OFF	2007/01/07 15:08
L6	558	"455"/569.1.ccls.	US-PGPUB; USPAT	OR	OFF	2007/01/07 15:08
L8	13	(determin$3 near5 availab$4 near5 (music song "audio file")).clm.	US-PGPUB; USPAT	OR	ON	2007/01/07 15:45
L9	3	((download$3 upload$3) same (cellular radio mobile) same availab$5 same (music song "audio file")).clm.	US-PGPUB; USPAT	OR	ON	2007/01/07 15:47
L10	1	(bluetooth same cellular same radio same (music song)).clm.	US-PGPUB; USPAT	OR	ON	2007/01/07 15:48
L11	23	((audio adj3 file) and (wave adj3 file)).clm.	US-PGPUB; USPAT	OR	ON	2007/01/07 15:49
L12	22	11 and (song music "audio file")	US-PGPUB; USPAT	OR	ON	2007/01/07 15:50

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DATE	December 28, 2006	FAX NO.	(713) 229-2707
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TO	Examiner Jean Alland Gelin U.S. Patent and Trademark Office	FAX NO. VOICE NO.	(571) 273-8300 (571) 272-7842

MESSAGE

Please direct this facsimile to patent examiner Examiner Jean Alland Gelin in Art Unit 2617. This facsimile concerns the following patent application:

Serial No.	09/537,812
Applicant:	Russell W. White, et al.
Filed:	March 28, 2000
Invention:	System and Method for Communicating Selected Information to an Electronic Device

If you do not receive all pages, please call: 713.229.1730 or 713.229.1621 for assistance.

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Signature

12-28-06
Date

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of:	§	
	§	
Russell W.White, et al.	§	
	§	
Serial No.: 09/537,812	§	Group No.: 2617
	§	
Filed: March 28, 2000	§	Examiner: Gelin, Jean Alland
	§	
For: System and Method for Communicating Selected Information to an Electronic Device	§	

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Commissioner for Patents
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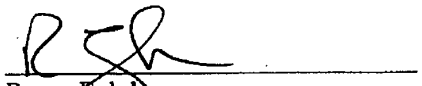
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Applicants respectfully request, pursuant to 37 C.F.R. §§1.56, 1.97 and 1.98, that the art listed on the attached PTO-1449 form be considered and cited in the examination of the above-identified application. Pursuant to 37 C.F.R. §§1.97(g) and (h), no representation is made that these references are material to the patentability of the present application. In accordance with the guidance provided in 1276 Off. Gaz. Pat. Off. 55, copies of the U.S. patents identified in the attached PTO-1449 are not included herewith.

The information disclosure statement submitted herewith is being submitted before the mailing of the earliest of a notice of allowance or a final office action. Applicants hereby authorize and instruct the U.S. Patent and Trademark Office to charge Deposit Account No. 02-0383 (matter 111111.1111) in the amount of $180.00 for the filing of this information disclosure statement. Applicants hereby authorize and instruct the U.S. Patent and Trademark Office to charge Deposit Account No. 02-0383 (matter 111111.1111) of Baker Botts L.L.P. for any additional charges necessary for the filing of this information disclosure statement.

Respectfully submitted,



Roger Fulghum
Registration No. 39,678

Baker Botts L.L.P.
One Shell Plaza
910 Louisiana
Houston, TX 77002-4995
(713) 229-1707

Attorney Docket No.: 111111.1111

Date: December 28, 2006

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Art Unit	2617
Examiner Name	GELIN, Jean Alland
Attorney Docket Number	111111.1111

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
	B1	US- 2005/0096018	05/05/05	White et al.	
	B2	US- 2005/0049002	03/05/05	White et al.	
	B3	US- 2002/0023028	02/21/02	Quarendon et al.	
	B4	US- 6,975,835	12/13/05	Lake et al.	
	B5	US- 6,792,615	09/14/04	Rowe et al.	
	B6	US- 6,792,263	09/14/04	Kite Karen	
	B7	US- 6,788,528	09/07/04	Enners et al.	
	B8	US- 6,772,212	08/03/04	Lau et al.	
	B9	US- 6,741,980	05/25/04	Langseth et al.	
	B10	US- 6,671,715	12/30/03	Langseth et al.	
	B11	US- 6,591,085	07/08/03	Grady, Jeff	
	B12	US- 6,420,975	07/16/02	DeLine et al.	
	B13	US- 6,516,466	05/28/02	Polany, Rany	
	B14	US- 6,292,440	09/18/01	Lee, San-Hun	
	B15	US- 6,240,297	05/29/01	Jadoul, Marc	
	B16	US- 6,232,539	05/15/01	Looney et al.	
	B17	US- 6,061,306	05/09/00	Buchheim, James	
	B18	US- 5,953,657	09/14/99	Ghisler, Walter	
	B19	US- 5,940,767	08/17/99	Bourgeois 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]
	B21					
	B22					
	B23					
	B24					
	B25					
	B26					

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	B27	US- 5,870,680	02/09/99	Guerlin et al.	
	B28	US- 5,774,793	06/30/98	Cooper et al.	
	B29	US- 5,587,560	12/24/96	Crooks et al.	
	B30	US- 5,586,090	12/17/96	Otte, William C.	
	B31	US- 5,450,471	09/12/95	Hanawa et al.	
	B32	US- 5,307,326	04/26/94	Osawa, Shoichi	
	B33	US- 4,905,272	02/27/90	Van de Mortel et al.	
	B34	US- 4,807,292	02/21/89	Sorscher, Bernard	
	B35	US-			
	B36	US-			
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	B46					
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Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
	1-B	U.S. Patent No. 60/167,179, filed 11/23/1999	
	2-B	U.S. Patent No. 09/234,259, filed 01/20/1999	
	3-B		
	4-B		
	5-B		
	6-B		
	7-B		
	8-B		
	9-B		
	10-B		

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.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 3 of 4

Complete if Known	
Application Number	09/537,812
Filing Date	03/28/2000
First Named Inventor	Russell W. White
Art Unit	2617
Examiner Name	GELIN, Jean Alland
Attorney Docket Number	111111.1111

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]
	11-B	"Philips PSA [128MAX," PC Authority Reviews, 1 May 2003, 1 pg.	
	12-B	"Sony Network Walkman NW-MS70D," PC Authority Reviews, 8 October 2003, 1 pg.	
	13-B	"Targa TMU-401," PC Authority Reviews, 8 October 2003, 1 pg.	
	14-B	"Targa TMU-604," PC Authority Reviews, 8 October 2003, 1 pg.	
	15-B		
	16-B		
	17-B		
	18-B		
	19-B		
	20-B		

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DATE	December 11, 2006	FAX NO.	(713) 229-2707
PAGES	17 (including cover)	RETURN TO	Roger Fulghum
TO	Examiner Jean Alland Gelin U.S. Patent and Trademark Office	FAX NO. VOICE NO.	(571) 273-8300 (571) 272-7842

MESSAGE

Please direct this facsimile to patent examiner Examiner Jean Alland Gelin in Art Unit 2617. This facsimile concerns the following patent application:

Serial No.	09/537,812
Applicant:	Russell W. White, et al.
Filed:	March 28, 2000
Invention:	System and Method for Communicating Selected Information to an Electronic Device

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Pursuant to 37 C.F.R. 1.6(d) and 1.8, I hereby certify that I have information and a reasonable basis for belief that this correspondence will be transmitted by facsimile to telephone number (571) 273-8300 on December 11, 2006.

Signature 12-11-06 Date

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of:	§	
	§	
Russell W. White, et al.	§	
	§	
Application No.: 09/537,812	§	Group No. 2617
	§	
Filed: March 28, 2000	§	Examiner: Jean Alland Gelin
	§	
For: System and Method for Communicating Selected Information to an Electronic Device	§	

RESPONSE TO OFFICE ACTION MAILED AUGUST 11, 2006

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

In response to the Office Action mailed August 11, 2006, Applicants submit this response and respectfully request reconsideration of the Examiner's objections and rejections.

Petition for Extension of Time

Applicants petition for a one-month extension of time under 37 C.F.R. § 1.136 up to and including December 11, 2006. Applicants hereby authorize and instruct the U.S. Patent and Trademark Office to charge Deposit Account No. 02-0383 (matter 111111.1111) in the

amount of $60.00 for the one-month extension of time necessary for the filing of this response. Applicants hereby authorize and instruct the U.S. Patent and Trademark Office to charge Deposit Account No. 02-0383 (matter 111111.1111-2C) for any additional charges necessary for the filing of this response.

Amendments to the Claims

A complete list of claims follows, with indicated amendments:

1-39 (Cancelled).

40. (Currently Amended) A cellular communication device comprising:

a cellular communication module configured ~~operable~~ to receive an incoming telephonic communication;

a memory module configured ~~operable~~ to store ~~plural~~ audio ~~formats~~ information ~~of one or more audio files~~ received via a cellular communication network independent of the incoming telephonic communication; ~~and~~

a processor ~~operable to alter a playing of at least one of the audio files in response to the incoming telephonic communication using a player operable to play multiple audio formats~~ communicatively coupled to the memory module and configured to process the audio information and to output a digital representation of the audio information;

a local rechargeable battery configured to provide power to the processor; and

an interface configured to releasably engage with a docking mechanism of a separate sound system such that: (1) a power supply of the separate sound system can recharge the local rechargeable battery via the interface; (2) the digital representation can be communicated to the separate sound system via the interface; and (3) a control signal of the cellular communication device can alter an operational parameter of the separate sound system in response to the incoming telephonic communication.

41. (Currently Amended) The device of Claim 40, wherein the operational parameter is a volume level further comprising the processor operable to stop playing of the audio file in response to the incoming telephonic communication.

42. (Currently Amended) The device of Claim 40 further comprising the processor configured ~~operable~~ to enable a user to alter the processing of the audio information ~~playing of the at least one audio file~~ to answer the incoming telephonic communication.

43. (Currently Amended) The device of Claim 40, ~~further comprising~~ wherein the audio information comprises plural audio files; and wherein the processor is configured ~~operable~~ to enable sequential playing of plural audio files.

44. (Currently Amended) The device of Claim 43, ~~further comprising~~ wherein the processor is configured ~~operable~~ to first play a WAV file and second play an MP3 file.

45. (Currently Amended) The device of Claim ~~43~~ 40, ~~further comprising the processor operable to first play a MP3 file and second play a WAV file~~ wherein the memory is configured as a buffer and the audio information is a wirelessly streamed version of an on-line radio broadcast.

46. (Currently Amended) The device of Claim ~~43~~ 45, wherein the ~~plural audio files include WAV files~~ wirelessly streamed version of the on-line radio broadcast is received via a GSM network.

47. (Currently Amended) The device of Claim 40, wherein the audio information ~~at least one of the audio files~~ includes ~~a~~ streaming audio information ~~formatted file~~.

48. (Currently Amended) The device of Claim 40, further comprising the processor being configured ~~operable~~ to pause ~~playing of the audio file in response to~~ output of the digital representation of the audio information in connection with the incoming telephonic communication.

49. (Currently Amended) The device of Claim 48, further comprising the processor being configured ~~operable~~ to enable ~~listening of a telephone call upon~~ a user ~~answering the incoming telephonic communication~~ to elect to answer and listen to a telephone call in response

to the incoming telephonic communication, wherein the telephone call is not listened to via the separate sound system.

50. (Currently Amended) The device of Claim 40, further comprising the processor being configured to enable a user to elect to answer and listen to a telephone call in response to the incoming telephonic communication, further wherein the interface is configured to allow the user to listen to the telephone call from the separate sound system ~~a Bluetooth communication module operable to communicate an output to a wireless speaker, the output including the playing of the at least one of the audio files or the incoming telephonic communication~~.

51. (Currently Amended) The device of Claim 50, ~~further comprising~~ wherein a PDA comprises the cellular communication module, the processor, the memory module, the local rechargeable battery, and the interface.

52. (Currently Amended) The device of Claim 40, ~~further comprising~~ wherein a cellular telephone comprises the cellular communication module, the processor, the memory module, the local rechargeable battery, and the interface.

53. (Currently Amended) The device of Claim 40, further comprising a WAP browser configured to accept the audio information ~~operable to access a list of downloadable preformatted audio files~~.

54. (Currently Amended) The device of Claim ~~40~~ 52, further comprising the communication module being configured ~~operable~~ to receive an audio file selected via an Internet website accessed external to the cellular communication device.

55. (Currently Amended) The device of Claim 53, further comprising a media player configured ~~operable~~ to play user selected media wirelessly downloaded outside of a web browsing environment.

56. (Currently Amended) A cellular communication device comprising:

a processor configured ~~operable~~ to play plural audio information formats;

a communication module configured ~~operable~~ to receive a wirelessly communicated collection of digital data packets representing a user selected media having a first audio information format;

a display configured to present a user interface that comprises an icon representing a locally stored audio file;

an updateable user interface engine configured to accept an over the air download of an updated user interface file and to utilize the updated user interface file to initiate presentation of a different user interface on the display, wherein the different user interface comprises a new icon representing the user selected media ~~an audio file selected by a user accessing an Internet website accessible external to the cellular communication device and operable to provide the user access to plural audio files via a user login page~~;

a memory operable to store plural audio information formats ~~of audio files~~; and

a Bluetooth communication module communicatively coupled to the processor such that a played audio information format can be communicated ~~operable to communicate an in process playing of at least one of the audio files or a telephonic communication~~ to a wireless speaker.

57. (Previously Presented) The device of Claim 56, further comprising:

output means for providing an audio output;

input means for selecting the audio file; and

browsing means for viewing available preformatted audio and media files.

58. (Previously Presented) The device of Claim 56, further comprising a removable memory device operable to store at least one audio file.

59. (Currently Amended) A method for managing audio outputs for a cellular communication device comprising:

generating a user interface file that can be processed to present a user interface on a cellular device, wherein the user interface comprises an icon linked to a selected audio information source;

initiating an over the air download of the user interface file;

communicating the user interface file to the cellular telephone via a wide area wireless network;

processing the user interface file to present the user interface on the cellular device;

initiating a playing of audio information by selecting the icon ~~an audio file received via a cellular communication~~;

detecting an incoming cellular telephone call; and

altering ~~the~~ playing of the audio information ~~file using a player operable to play multiple audio file formats~~ in connection with a detecting of ~~response to detecting~~ the cellular telephone call.

60. (Previously Presented) The method of Claim 59, further comprising playing a second audio file stored within a memory of the cellular device.

61. (Previously Presented) The method of Claim 60, further comprising:

receiving the second audio file independent of the incoming cellular telephone call;

storing the second audio file within the memory; and

playing the second audio file after detecting the incoming cellular telephone call.

62. (Previously Presented) The method of Claim 59, further comprising playing a second audio file received via a non-wireless communication network.

63. (Currently Amended) The method of Claim 59, further comprising:

enabling access to a streaming media source in response to a selection of the icon ~~link within a user interface of the cellular communication device~~;

detecting selection of the icon ~~streaming media links~~; and

receiving a wirelessly communicated collection of data packets representing a media stream output by the streaming media source ~~the selected streaming media~~.

64. (Currently Amended) The method of Claim 63, further comprising ~~altering~~ playing ~~of the streaming media in response to receiving~~ the wirelessly communicated collection of data packets in order to present the media stream; and

altering the playing in response to receiving the cellular telephone call.

65. (Currently Amended) The method of Claim 63, further comprising ~~enabling access to streaming audio~~ outputting a playing of the wirelessly communicated collection of data packets such that the media stream is presented via an automobile entertainment system.

66. (Currently Amended) The method of Claim 63, ~~further comprising enable access to a broad cast video~~ wherein the media stream comprises a video stream.

67. (Currently Amended) The method of Claim 63, wherein the ~~streaming~~ media stream comprises streaming audio.

68. (Currently Amended) A wireless communication system comprising:

an Internet website provided in association with a cellular communication device configured ~~operable~~ to receive and play ~~an~~ audio information, the Internet website configured to present a user with an application that allows the user to create a user interface for ~~file selected by a user accessing the Internet website external to~~ the cellular communication device;

a wireless communication network configured ~~operable~~ to communicate a launchable interface file to the cellular communication device such that the user interface is presented on a display of the cellular communication device ~~the audio file to the cellular communication device identified through the user logging into the Internet website; and~~

a wireless network element configured to receive a signal indicating that the user has selected an icon on the user interface and to initiate wireless communication of data packets to the cellular communication in response to the signal; and

a digital engine operable to determine availability of the cellular communication device and to communicate the data packets ~~audio file~~ to the cellular communication device.

69. (Currently Amended) The system of Claim 68, further comprising the Internet website being configured ~~operable~~ to present a user login page and to link a particular user to a particular ~~in association with identifying the~~ cellular communication device.

70. (Currently Amended) The system of Claim 69, further comprising the Internet website being configured ~~operable~~ to provide access to downloadable software that can be wirelessly ~~operable to be~~ communicated to the cellular communication device.

71. (Currently Amended) The system of Claim 68, further comprising the cellular communication device, wherein the cellular communication device is configured ~~operable~~ to alter playing of the ~~an~~ audio file in response to receiving a telephone communication communicated via the wireless communication network.

72. (Currently Amended) The system of Claim 68, further comprising the Internet website presenting a link to a selectable preformatted audio file operable to be communicated to an ~~the~~ identified cellular communication device.

73. (Currently Amended) The system of Claim 68 ~~73~~, wherein the user interface includes a list of selectable categories, wherein the list of selectable categories includes ~~preformatted audio files may be categorized within the Internet website by~~ at least two of:

genre;

artist;

most popular;

newest;

most viewed; and

favorites.

74. (Currently Amended) The system of Claim 68, further comprising the digital engine being configured ~~operable~~ to communicate data packets that represent ~~enable access to~~ streaming audio information.

75. (Currently Amended) The system of Claim 74 further comprising the digital engine being configured ~~operable~~ to communicate data packets that represent streaming video information ~~provide links to streaming audio accessible by the cellular communication device~~.

76. (Previously Amended) The system of Claim 69, wherein the audio file may be communicated to the wireless communication device independent of a user being logged into the Internet website.

77. (Currently Amended) The system of Claim 68 ~~69~~, further comprising the user interface being configured ~~digital engine operable~~ to enable access to a WAP enabled Internet website that is communicatively coupled to the digital engine ~~operable to initiate downloading of the audio file via the wireless communication network~~.

78. (Currently Amended) The system of Claim 68, further comprising the digital engine being configured ~~operable~~ to provide access to a broadcast.

79. (Currently Amended) The system of Claim 78, further comprising the digital engine being configured ~~operable~~ to provide access to an on-line video broadcast.

80. (Currently Amended) The system of Claim 78, further comprising the digital engine being configured ~~operable~~ to provide access to an on-line radio broadcast.

81. (Currently Amended) The system of Claim 78, wherein the cellular communication device is configured ~~operable~~ to alter playing of an accessed broadcast in response to an incoming cellular telephone call.

Remarks

A. Section 112 Rejections

The Examiner has rejected claims 40-81 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention. Examiner states the phrase "capable of" renders the scope of the claims as vague and indefinite. Applicants respectfully traverse the 112 rejection and the Examiner's position. To facilitate allowance of all pending claims, however, Applicants have amended claims 40-56, 59, 63-75, and 77-81 to replace the phrase "operable to" in claim language with language describing an actual configuration. In view of the above amendments, Applicants respectfully request that the 112 rejections of these claims be withdrawn.

B. Prior Art Rejections for Anticipation and Obviousness

The Examiner has rejected claims 59, 60, and 62 under 35 U.S.C. § 102(e) in view of PCT Publ. No. WO 99/043136 ("Rydbeck"). The Examiner has also made the following obviousness rejections under 35 U.S.C. § 103(a): claims 68-70 and 72-76 over U.S. Pat. No. 6,247,130 ("Fritsch") in view of Rydbeck; claims 40, 41, 43-46, and 50-55 over Rydbeck in view U.S. Pat. No. 6,721,710 ("Lueck"); claims 42 an 47-49 over Rydbeck in view of Lueck and in further view of Publ. No. 2005/0054379 ("Cao"); claims 56-58 over Rydbeck in view of Lueck and in further view of Fritsch; claim 61 over Rydbeck in view of U.S. Pat. No. 6,496,692 ("Shanahan"); claims 63-67 over Rydbeck in view of Cao; claim 71 over Fritsch in view of Rydbeck; claim 77 over Fritsch in view of certain office notice taken by the Examiner; claims 78-80 over Fritsch in view of U.S. Pat. No. 6,014,569 ("Bottum"); and claim 81 over Fritsch in view of Bottum as applied to Rydbeck.

Applicants respectfully traverse each and every 103 rejection included in the Action. Applicants maintain that the combinations asserted by the Examiner are not taught by the art of record. Moreover, the art of record does not teach each and every limitation of the claims. Applicants have amended claims 40-56, 59, 63-75, and 77-81. The amended claims clearly include several features that are completely missing from the art of record.

1. CLAIMS 40 - 55

Claim 40 is an independent claim. Each of claims 41-55 depends, either directly or indirectly, from claim 40. Claim 40 has been amended to include the following element:

> an interface configured to releasably engage with a docking mechanism of a separate sound system such that: (1) a power supply of the separate sound system can recharge the local rechargeable battery via the interface; (2) the digital representation can be communicated to the separate sound system via the interface; and (3) a control signal of the cellular communication device can alter an operational parameter of the separate sound system in response to the incoming telephonic communication.

This limitation is not shown in Rydbeck or in any of the other prior art cited by the Examiner. As such, Applicants assert that claim 40 is allowable, and cannot be the subject of either an anticipation or obviousness rejection on the basis of the art cited by the Examiner. Claims 41-55 depend from Claim 40, which has been shown to be allowable, and add additional novel limitations. As such, Applicants assert that claims 41-55 are allowable. Applicants respectfully submit that the rejection of claims 40-55 on anticipation or obviousness grounds should be withdrawn, and that these claims should be passed to issuance.

2. CLAIMS 56 - 58

Claim 56 is an independent claim. Each of claims 57 and 58 depends, either directly or indirectly, from claim 56. Claim 56 has been amended to include the following element:

> an updateable user interface engine configured to accept an over the air download of an updated user interface file and to utilize the updated user interface file to initiate presentation of a different user interface on the display, wherein the different user interface comprises a new icon representing the user selected media

This limitation is not shown in Rydbeck or in any of the other prior art cited by the Examiner. As such, Applicants assert that claim 56 is allowable, and cannot be the subject of either an anticipation or obviousness rejection on the basis of the art cited by the Examiner. Claims 57 and 58 depend from Claim 56, which has been shown to be allowable, and add additional novel limitations. As such, Applicants assert that claims 56-58 are allowable. Applicants respectfully submit that the rejection of claims 56-58 on anticipation or obviousness grounds should be withdrawn, and that these claims should be passed to issuance.

3. CLAIMS 59 - 67

Claim 59 is an independent claim. Each of claims 60-67 depends, either directly or indirectly, from claim 59. Claim 59 has been amended to include the following steps:

> generating a user interface file that can be processed to present a user interface on a cellular device, wherein the user interface comprises an icon linked to a selected audio information source;
>
> initiating an over the air download of the user interface file; communicating the user interface file to the cellular telephone via a wide area wireless network;
>
> processing the user interface file to present the user interface on the cellular device"

These steps are not shown in Rydbeck or in any of the other prior art cited by the Examiner. As such, Applicants assert that claim 59 is allowable, and cannot be the subject of either an anticipation or obviousness rejection on the basis of the art cited by the Examiner. Claims 60-67 depend from Claim 59, which has been shown to be allowable, and add additional novel

limitations. As such, Applicants assert that claims 60-67 are allowable. Applicants respectfully submit that the rejection of claims 59-67 on anticipation or obviousness grounds should be withdrawn, and that these claims should be passed to issuance.

4. CLAIMS 68-81

Claim 68 is an independent claim. Each of claims 69-81 depends, either directly or indirectly, from claim 68. Claim 68 has been amended to include the following elements:

> Internet website configured to present a user with an application that allows the user to create a user interface for the cellular communication device;
>
> wireless communication network configured to communicate a launchable interface file to the cellular communication device such that the user interface is presented on a display of the cellular communication device;
>
> a wireless network element configured to receive a signal indicating that the user has selected an icon on the user interface and to initiate wireless communication of data packets to the cellular communication in response to the signal.

These steps are not shown in Rydbeck or in any of the other prior art cited by the Examiner. As such, Applicants assert that claim 68 is allowable, and cannot be the subject of either an anticipation or obviousness rejection on the basis of the art cited by the Examiner. Claims 69-81 depend from Claim 68, which has been shown to be allowable, and add additional novel limitations. As such, Applicants assert that claims 69-81 are allowable. Applicants respectfully submit that the rejection of claims 69-81 on anticipation or obviousness grounds should be withdrawn, and that these claims should be passed to issuance

Conclusion

Applicants respectfully request that the rejection of claims 40-81 be withdrawn and that these claims be passed to issuance.

Respectfully submitted,

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Baker Botts Docket Number: 111111.1111

Date: December 11, 2006

Document code: WFEE

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1,11,16,24

PATENT APPLICATION FEE DETERMINATION RECORD

Effective December 29, 1999

Application or Docket Number: 09/537812

CLAIMS AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA
BASIC FEE		
TOTAL CLAIMS	25 minus 20=	* 5
INDEPENDENT CLAIMS	4 minus 3 =	* 1
MULTIPLE DEPENDENT CLAIM PRESENT		

* If the difference in column 1 is less than zero, enter "0" in column 2

SMALL ENTITY TYPE ☐		OR	OTHER THAN SMALL ENTITY	
RATE	FEE		RATE	FEE
	345.00	OR		690.00
X$ 9=	45	OR	X$18=	
X39=	39	OR	X78=	
+130=		OR	+260=	
TOTAL	429	OR	TOTAL	

CLAIMS AS AMENDED - PART II

AMENDMENT 12/11/00

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	* 42	Minus	** 42	=
Independent	* 4	Minus	*** 4	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				

SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X$ 9=		OR	X$18=	
X39=		OR	X78=	
+130=		OR	+260=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

AMENDMENT

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				

RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X$ 9=		OR	X$18=	
X39=		OR	X78=	
+130=		OR	+260=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

AMENDMENT

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				

RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X$ 9=		OR	X$18=	
X39=		OR	X78=	
+130=		OR	+260=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. 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."
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/537,812	03/28/2000	Russell W. White	111111.1111	4698

7590 08/11/2006

Russell W. White
10904 Doswell Cove
Austin, TX 78739

EXAMINER	
GELIN, JEAN ALLAND	
ART UNIT	**PAPER NUMBER**
2617	

DATE MAILED: 08/11/2006

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

PTO-90C (Rev. 10/03)

Office Action Summary	Application No.	Applicant(s)	
	09/537,812	WHITE ET AL.	
	Examiner	Art Unit	
	Jean A. Gelin	2617	

-- 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 *22 May 2006*.

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

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

Disposition of Claims

4)☒ Claim(s) *40-81* 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) *40-81* 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-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This is in response to the Applicant's arguments and amendments filed on May 22, 2006 in which claims 40, 59, 66, and 76 have been amended. Claims 40-81 are currently pending.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 40-81 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding to claims 40-81, the phrase "capable of" renders the scope of the claim vague and indefinite.

It has been held that the recitation that an element is "capable of" performing a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense.

Claim Rejections - 35 USC § 102

4. 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 –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

5. Claims 59, 60, and 62 are rejected under 35 U.S.C. 102(a) as being anticipated by Rydbeck et al. (WO 99/43136).

Consider claim 59, Rydbeck et al. clearly show and disclose a method for managing audio outputs for a cellular telephone 10 (communication device) (figures 1 and 2) comprising: playing an audio file received via a cellular communication (e.g., playing back music or audio downloaded and received via transceiver 12, 18 from the internet) (abstract, figures 1 and 2, page 2 lines 20-22, page 3 lines 4-6, page 6 lines 3-5 and 10-17, page 7 lines 1-6, and page 7, lines 22-25); detecting an incoming cellular telephone call (i.e., microprocessor automatically detects incoming call in order to mute the music, page 7 lines 6-8); and altering playing of the audio file using a player operable to play multiple audio file formats (i.e., cellular device 10 can receive audio file from different sources such as CD, Internet and so on corresponding to multiple audio format) in response to detecting the cellular telephone call (i.e., by stopping the music the microprocessor alters the audio file, page 7 lines 6-8).

Consider claims 60 and 62, and as applied to claim 59 above, Rydbeck inherently disclose playing a second audio file stored within a memory 54, 56 of the cellular device 10 (figures 1-3) since they disclose that music and audio signals loaded and stored in the memory 54, 56, of the device 10 (abstract, page 2 lines 20-22, and page 6 lines 3-25) and the music or audio signals can be received from a computer or a CD player (i.e., via a non-wireless communication network) (reads on claim 62).

Claim Rejections - 35 USC § 103

6. 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.

7. Claims 68-70 and 72-76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fritsch (U.S. Patent # 6,247,130 B1) in view of Rydbeck et al. (WO 99/43136)

Consider claim 68, Fritsch clearly shows and discloses a wireless communication system (i.e., any wireless Internet access, column 2 line 64 - column 3 line 9) comprising: an Internet website provided in association with a cellular telephone (wireless Internet access communication device) operable to receive and play an audio file (e.g., music) selected by a user accessing the internet website external to the cellular telephone (wireless Internet access communication device) (abstract, figs. 1A-1D, column 1 lines 46-56 and 60-64, and column 2 line 64 - column 3 line 45, i.e., wireless Internet access communication device such PDA or cellular telephone can download music from Internet); a wireless communication network (inherently required to communicate the music to the cellular telephone disclosed in col. 3, lines 1-5) (column 2 line 64 - column 3 line 9) operable to communicate the audio file to the cellular telephone (communication device) identified through a user logging into the Internet website (abstract, figures 1A-1D, column 1 lines 46-56 and 60-64, column 2 line 64 -column 3 line 45, and column 4 lines 13-37); and a server (digital engine) operable

to communicate the audio tile to the cellular telephone (communication device) (communication links or session are established between the server and the PC or any wireless communication device such as cellular telephone, figures 1A-1D, column 1 lines 46-56 and 60-64, column 2 line 64 - column 3 line 45, and column 4 lines 13-37).

Fritsch does not clearly teach a server operable to determine availability of the cellular telephone to send audio file.

However, the preceding limitation is known in the art of communications. Rydbeck teaches receiving audio file to play from a network (i.e., server) via the transceiver of a cellular telephone, when an incoming call is received; the microprocessor automatically stops the playback of the audio file (pages 6-7). Clearly incoming calls have priority over audio file, when the phone is busy or in conversation mode, audio file cannot be received or played. Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to implement the technique of Rydbeck within the system of Rydbeck in order to give priority to incoming calls and user of the cellular telephone would not loss important calls while using the phone as an entertainment to play music.

Consider claim 69, and as applied to claim 68 above, Fritsch in view of Rydbeck teaches all the limitations above. Fritsch further discloses that the Internet website is operable to present a user login page in association with identifying the cellular telephone (communication device) (abstract, figures 1A-1D, column 1 lines 46-56 and 60-64, column 2 line 64 - column 3 line 45, and column 4 lines 13-37).

Consider claim 70, and as applied to claim 69 above, Fritsch in view of Rydbeck teaches all the limitations above. Fritsch further discloses that the Internet website is operable to provide access to downloadable software (e.g., music player) operable to be communicated to the cellular telephone (communication device) (column 3 lines 60-65).

Consider claim 72, and as applied to claim 68 above, Fritsch in view of Rydbeck teaches all the limitations above. Fritsch further discloses that the Internet website presents a link to a selectable preformatted audio file operable to be communicated to the identified cellular telephone (communication device) (figures 1A-1D and column 4 line 57 - column 5 line 20).

Consider claim 73, and as applied to claim 72 above, Fritsch in view of Rydbeck teaches all the limitations above. Fritsch further discloses that the preformatted audio files may be categorized within the Internet website by at least two of: genre, artist, most popular, newest, most viewed, and favorites (figures 1A-1C).

Consider claims 74 and 75, and as applied to claim 68 above, Fritsch in view of Rydbeck teaches all the limitations above. Fritsch further discloses that the server (digital engine) is operable to enable access to streaming audio information and to provide links to streaming audio accessible by the cellular telephone (communication device) (e.g., the server (digital engine) provides a link for accessing a 20-second music clip (streaming audio) by the cellular telephone) (figures 1A-1C and column 4 line 57 - column 5.line 4).

Consider claim 76, and as applied to claim 69 above, Fritsch in view of Rydbeck teaches all the limitations above. Fritsch further discloses that the audio file may be communicated to the cellular telephone (communication device) independent of a user being logged into the internet website (e.g., the audio file (e.g., music) could be delivered to the user in several different ways besides immediate downloading (i.e., whether or not the user is logged into the internet website) (column 3 lines 3-9, column 5 lines 14-37, and col. 5 line 66 – col. 6 line 39).

8. Claims 40, 41, 43-46, and 50-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rydbeck et al. (WO 99/43136) in view of Lueck et al. (U.S. Patent # 6,721,710 B1).

Consider claims 40 and 52, Rydbeck et al. clearly show and disclose a cellular telephone 10 (communication device) (figures 1 and 2) (reads on claim 52) comprising: an RF transceiver 18 (cellular communication module) (figure 2) operable to receive an incoming telephonic communication (abstract, figure 2, page 5 lines 4-6, and page 7 lines 6-8) an entertainment (memory) module 50 (figures 2 and 3) operable to store one or more audio files (e.g., music or audio signals) received via a cellular communication network independent of the incoming telephonic communication (i.e., the music or audio signals are downloaded wirelessly from the internet (not associated with an incoming telephonic communication) (abstract, page 2 line 20 - page 3 line 3, page 6 lines 3-17, and page 7 line 22-25) a microprocessor/control logic 20 (processor) (figure 2) operable to alter a playing of at least one of the audio files (i.e., cellular device 10 can receive

audio file from different sources such as CD, Internet and so on corresponding to multiple audio format) in response to the incoming telephonic communication (i.e., by stopping the music the microprocessor alters the audio file, page 7 lines 6-8).

However, Rydbeck does not specifically disclose that the entertainment (memory) module 50 store plural audio formats of one or more of the audio files. Nonetheless, the feature of a memory module storing plural audio formats of one or more audio files is well known in the art as evidenced by Lueck. In the same field of endeavor, Lueck teaches a portable digital audio player 100 (figure 1) comprising, among other components, a least flash memory 140 (figure 1) to store audio files wherein the audio files may be in different audio formats; the flash memory contains stored program files for decoding each type of audio formats allowing users of the portable communication device to listen to their desired song even though they store in different formats (e.g., M133 and AAC) and (column 2 lines 61-67 and column 3 lines 10-67). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to implement the technique of Lueck within the system of Rydbeck in order that the audio files are stored in the memory as separate files for each song, which may be in different formats; thus increasing the efficiency of the portable communication device, and the allowing users of the communication to play any type of songs they desire without concern of the type of format.

Consider claim 41, and as applied to claim 40 above, Rydbeck et al., as modified by Lueck further disclose that the microprocessor/control logic 20 (processor) (figure 2)

is operable to stop playing of the audio file in response to the incoming telephonic communication (page 7 lines 6-8).

Consider claim 43, and as Applied to claim 40 above, Rydbeck et al. as modified by Lueck et al., inherently disclose that the microprocessor/control logic 20 (processor) (figure 2) is operable to enable sequential playing of plural audio files since they disclose that plural music or audio signals are downloaded and stored in the entertainment (memory) module 50 for subsequent playback (abstract, page 2 line 20 - page 3 line 3, page 6 lines 3- 17, and page 7 line 22-25).

Consider claims 44 and 45, and as applied to claim 43 above, Rydbeck et al. as modified by Lueck et al, disclose the claimed invention except that the processor is operable to first play a WAV tile and second play an M1à3 file (claim 44) and to first play a M23 tile and second play an WAV file (claim 45).

Nonetheless, at the time the invention was made, it would have been obvious to a person of ordinary skill in the m4 to have the processor taught by Rydbeck et al., as modified by Lueck to first play a WAV file and second play an M23 file or vice versa since the processor is capable of playing plural audio formats (processor 1 10 is operable to store and play, respectively, plural audio formats (e.g., M133 and AAC) of one or more audio tiles or songs (Lueck figure 1, column 2 lines 61-67 and column 3 lines 10-12 and 47-51). Applicant has not disclosed that first play a WAV file and second play an M113 file and first play an M133 file and second play an WAV file provides an advantage, is used for a particular function, or solves a stated problem.

One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with the entertainment (memory) module so/processor 1 10 of Rydbeck and Lueck et al. because they are capable of sequentially playing plural audio formats.

Consider claim 46, and as applied to claim 43 above, Rydbeck et al., as modified by Lueck et al., disclose the claimed invention except that the plural audio tiles include WAV files.

Nonetheless, the Examiner takes Official Notice that it is notoriously well known in the art to provide audio or music tiles in the format of WAV. As evidence by Guedalia US Pat. 6,907,112, the audio file is a wave file. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have plural WAV files, as known in the art, in the cellular communication device disclosed by Rydbeck, as modified by Lueck for the purpose of providing an alternative audio format for user's selection.

Consider claim 50, and as applied to claim 40 above, Rydbeck as modified by Lueck further disclose that the cellular telephone 10 (communication device) (figures 1 and 2) inherently comprises a low power RF carrier communication module (not shown) operable to communicate an output to a headset 40 (wireless speaker) (figures 1 and 2), the output including the playing of the at least one of the audio tiles or the incoming telephonic communication (page 3 lines 4-7, page 5 line 19 - page 6 line 8, and page 7 lines 4-8).

However, Rydbeck is modified by Lueck do not specifically disclose that the low power RF carrier communication module is a Bluetooth module. Nonetheless, the Examiner takes Official Notice that it is notoriously well known in the art to use a Bluetooth communication module for short range, low power RF communications between communication devices. The low power RF communication is equivalent to the Bluetooth connection between the headset and the mobile telephone disclosed in Tillgren et al. US Pat. 6,339,706. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a Bluetooth communication module, as known in the art as the low power RF carrier communication module disclosed by Rydbeck, as modified by Lueck, for the purpose of providing standardized short range R.F communication between the headset and the cellular telephone.

Consider claim 51, Rydbeck and Lueck, disclose all the limitations above. Lueck further teaches consumer may access the website via a PC or personal digital assistance (col. 3, lines 1-5).

Consider claim 53, and as applied to claim 40 above, Rydbeck et al., as modified by Lueck et al., further disclose that the cellular telephone 10 (communication device) (figures 1 and 2) is an Internet-enabled cellular telephone operable to access a list of downloadable preformatted music or audio signals files (page 6 lines 10-25).

However, Rydbeck as modified by Lueck et al., do not specifically disclose that the cellular telephone comprises a WA.P browser.

Nonetheless, the Examiner takes Official Notice that it is notoriously well known in the art to use a WAP browser to access the Internet from a cellular telephone. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a WAP browser, as known in the art, in the cellular telephone disclosed by Rydbeck et al., as modified by Lueck et al., for the purpose of providing standardized wireless internet access from the cellular telephone.
Consider claim 54, and as applied to claim 40 above, Rydbeck as modified by Lueck also disclose that the RF transceiver 18 (cellular communication module) (figure 2) is operable to receive music or audio signals files selected via an Internet website (i.e., inherent through the internet-enabled cellular phone 10) external to the cellular telephone 10 (communication device) (page 6 lines 10-25).

Consider claim 55, and as applied to claim 53 above, Rydbeck et al., as modified by Lueck further disclose that the entertainment module 50 (media player) is operable to play user selected media downloaded outside of a web browsing environment (e.g., loaded from a CD player or downloaded from a computer or a digitized audio source) (page 6 lines 3-17).

9. Claims 42 and 47-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rydbeck et 'al. (WO 99/43136) in view of Lueck et al. (U.S. Patent # 6,721,710 B1), as applied to claim 40 above, and further in view of Cao et al. (U.S. Patent Application Publication # 2005/0054379 A1).

Consider claim 42, and as applied to claim 40 above, Rydbeck as modified by Lueck disclose the claimed invention except that the microprocessor/control logic 20 (processor) is operable to enable a user to alter the playing of the at least one audio tile to answer the incoming telephonic communication.

In the same field of endeavor, Cao et al. clearly show and disclose a cordless telephone (communication device) with M133 player capability (abstract) comprising, among other components, a processor (not shown) operable to enable a user to alter the playing of the at least one audio tile (e.g., M1:3 digital audio) to answer an incoming telephonic communication (paragraph 0023). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to enable a user to alter playing of the at least one audio file in response to an incoming telephone call, œs taught by Cao et al., in the cellular telephone 10. (communication device) disclosed by Rydbeck, as modified by Lueck for the purpose of moving manual operational control of the combined telephone/audio player.

Consider claim 47, and as applied to claim 40 above, Rydbeck, as modified by Lueck, disclose the claimed invention except that at least one of the audio files include a streaming audio formatted file.

In the same field of endeavor, Cao et al. clearly show and disclose a cordless telephone (communication device) with MP3 player capability (abstract) wherein at least one of the audio files comprises M173 digital audio bit stream (streaming audio formatted files downloaded from the Internet (abstract and paragraphs 0026 and 0034). Therefore, it would have been obvious to a person of ordinary skill in the art at the time

the invention was made to provide a streaming audio formatted filed, œs taught by Cao et al., in the entertainment (memory) module so disclosed by Rydbeck as modified by Lueck, for the purpose of providing alternative audio formats for user's selection.

Consider claims 48 and 49, and as applied to claim 40 above, Rydbeck, as modified by Lueck et al., disclose the claimed invention except that the microprocessor/control logic 20 (processor) is operable to pause playing of the audio file in response to the incoming telephonic communication (claim 48) and to enable listening of the telephone call upon answering the incoming telephonic communication (claim 49).

In the same field of endeavor, Cao et al. clearly show and disclose a cordless telephone (communication device) with M1à3 player capability (abstract) comprising, among other components, a processor (not shown) operable to pause playing of an audio file (e.g., M23 digital audio) in response an incoming telephonic communication (paragraphs 0023 and 0024) (reads on claim 48) and to enable listening of a telephone call upon answering the incoming telephonic communication (paragraphs 0023 and 0024) (reads on claim 49). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to pause playing the audio file and allow listening of the telephone call, as taught by Cao, in the cellular telephone 10 (communication device) disclosed by Rydbeck as modified by Lueck, for the purpose of avoiding missing telephone calls.

10. Claims 56-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rydbeck (WO 99/43136) in view of Lueck et al. (U.S. Patent # $721,710 B1) and further in view of Fritsch (U.S. Patent # 6,247,130 B1).

Consider claim 56, Rydbeck et al. clearly show and disclose a cellular telephone 10 (communication device) (figures 1 and 2) comprising: an entertainment memory/processor) module 50 (figures 2 and 3) operable to store and play one or more audio files (e.g., music or audio signals) (abstract, page 2 line 20 - page 3 line 3, page 6 lines 3-17, and page 7 line 22-25); an RF transceiver 18 (communication module) (figure 2) operable to receive an audio file (e.g., music or audio signals) selected by a user accessing an Internet website (i.e., inherent through the internet-enabled cellular phone 10) accessible external to the cellular telephone 10 (cellular communication device) and operable to provide the user access to plural audio files (e.g., music or audio signals) (abstract, page 2 line 20 - page 3 line 3, page 6 lines 3-17, and page 7 line 22-25)) and a low power RF carrier communication module (not shown) operable to communicate an in process playing of at least one of the audio tiles (e.g., music or audio signals) or a telephonic communication to a headset 40 (wireless speaker) (figures 1 and 2, page 3 lines 4-7, page 5 line 19 - page 6 line 8, and page 7 lines 4-8).

However, Rydbeck et al. do not specifically disclose that the low power RF carrier communication module is a Bluetooth communication module.

Nonetheless, the Examiner takes Official Notice that it is notoriously well known in the art to use a Bluetooth communication module for short range, low power RF communications between communication devices; the low power RF is equivalent to the

Bluetooth connection between the headset and the mobile telephone disclosed in Tillgren et al. US Pat. 6,339,706. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a Bluetooth communication module, as known in the art, as the low power RF carrier communication module disclosed by Rydbeck et al. for the purpose of providing standardized short range R-F communication between the headset and the cellular telephone.

However, Rydbeck, as modified above, do not specifically disclose that the entertainment (memory/processor) module 50 store and play plural audio formats of audio files. Nonetheless, the feature of a memory and a processor operable to store and play, respectively, plural audio formats of audio tiles is well known in the art as evidenced by Lueck et al., who, in the same field of endeavor, clearly show and disclose a portable digital audio player 100 (figure 1) comprising, among other components, a flash memory 140 and a processor 1 10 (figure 1) operable to store and play, respectively, plural audio formats (e.g., M1)3 and AAC) of one or more audio files or songs (column 2 lines 61-67 and column 3 lines 10-12 and 47-51). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to store and play plural audio formats of one or more audio files, as taught by Lueck et al., in the entertainment (memory/processor) module 50 disclosed by Rydbeck et al. for the purpose of providing alternative audio formats for user's selection. Nonetheless, Rydbeck, as modified by Lueçk et al., do not specifically disclose that the user access to the Internet website is through a user login page.

In the same field of endeavor, Fritsch clearly shows and disclose a system and method for requesting and downloading songs (audio files) from an Internet website via a cellular communication device (abstract and column 2 line 64 - column 3 line 2) herein access to the songs (plural audio files) in the Internet website is provided to the user via a user login page (figures 1A- 1C, column 3 lines 10-19 and 30-32, and column 4 lines 16-30). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide access to the Internet website via a user login page, as taught by Fritsch, in the cellular telephone (communication device) disclosed by Rydbeck, as modified by Lueck, for authentication and security purposes.

Consider claim 57, and as applied to claim 56 above Rydbeck as modified by Lueck and as further modified by Fritsch, further show and disclose: a headset 40 (output means) (figure 1) for providing an audio output (page 5 line 19 -page 6 line 8), input means (keypad 30 and display 32) (figures 1 and 2) for selecting the audio file (page 5 lines 12- 15 and page 7 line 1-6); and browsing means (not shown but inherent since the telephone is Internet-enabled) for viewing available preformatted audio and media tiles (e.g., music or audio signals available for downloading in the Internet) (page 6 lines 1 0- 17).

Consider claim 58, and as applied to claim 56 above, Rydbeck, as modified by Lueck et al. and as further modified by Fritsch, also show and disclose a removable ROM 56(memory device) (figure 2) operable to store at least one audio file (page 6 line 5 - page 7 line 4).

11. Claim 61 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rydbeck et al. (WO 99/43136) in view of Shanahan (U.S. Patent # 6,496,692 B1).

Consider claim 61, and as applied to claim 60 above, Rydbeck further disclose: receiving the second audio file independent of the incoming cellular telephone call (i.e., the music or audio signals titles can be received from a computer through the internet or a CD player (abstract, figures 1 and 2, page 2 lines 20-22, page 3 lines 4-6, page 6 lines 3-25, page 7 lines 1-6, and page 7 lines 22-25); and storing the second audio file within the memory 54, 56 (abstract, figures 1-3, page 2 lines 20-22, and page 6 lines 3-25).

However, Rydbeck et al. do not specifically disclose playing the second audio file after detecting the incoming cellular telephone call. In the same field of endeavor, Shanahan clearly shows and discloses an electronic device operable to play a music file in response to an incoming wireless (cellular) telephone call wherein the music file has been received independent of the incoming wireless (cellular) telephone call (abstract, figures 1 and 5-7, column 2 line 65 - column 3 line 40, column 7 line 60- column 8 line 5, column 8 line 64 - column 9 line 2, and col. 9 line 6 1 – col. 10 line 17). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to, in response to an incoming cellular telephone call as taught by Shanahan, play a music file in the device taught by Rydbeck et al. for the purpose of provide distinctive incoming call alerting.

12. Claims 63-67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rydbeck et al. (WO 99/43136) in view of Cao et al. (U.S. Patent Application Publication #2005/0054379 A1).

Consider claims 63 and 65, and as applied to claim 59 above, Rydbeck et al. clearly show and disclose the claimed invention except enabling access to a streaming media link within a user interface of the cellular telephone 10 (communication device); detecting selection of the streaming media link, and receiving the streaming media link, wherein the streaming media link comprises streaming audio (claim 65).

In the same field of endeavor, Cao et al. clearly show and disclose a method and a cordless telephone (communication device) with M23 player capability (abstract) comprising, among other steps, the steps of enabling access to 'a streaming media link (MP3 audio stream available in the Internet) within a user interface of the cordless telephone (communication device) (abstract, figure 4, and paragraphs 0019, 0026, and 0050-0054)4 detecting selection of the streaming media link and receiving the streaming media link (abstract, figure 4, and paragraphs 0019, 0026, and 0050-0054), wherein the streaming media link comprises streaming audio (i.e., M-.P3 stream audio) (reads on claim 65). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to enable access to a streaming media link, as taught by Cao, in the method disclosed by Rydbeck for the purpose of providing alternative audio formats for user's selection.

Consider claims 64 and 67, and as applied to claims 63 and 65 above, Rydbeck, as modified by Cao, further disclose altering playing of the streaming media in response to detecting the cellular telephone call (page 7 lines 6-8).

Consider claim 66, and as applied to claim 63, Rydbeck, as modified by Cao, also disclose the step enabling access to broadcast video (page 9 line 21 - page 10 line 2).

13. Claim 71 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fritsch (U.S. Patent # 6,247,130 B1) in view of Rydbeck et al. (WO 99/43136).

Consider claim 71, and as applied to claim 68 above, Fritsch clearly shows and discloses the claimed invention except that the cellular communication device is operable to alter playing of the audio file in response to receiving a telephonic communication communicated via the wireless communication network.

In the same field of endeavor, Rydbeck et al. clearly shows and discloses a cellular

telephone 10 (communication device) (figures 1 and 2) operable to play' an audio file received via a cellular communication (e.g., playback music or audio downloaded and received via transceiver 12, 18 from the internet) (abstract, figures 1 and 2, page 2 lines 20-22, page 3 lines 4-6, page 6 lines 3-5 and 10-17, page 7 lines 1-6, and page 7 lines 22-25) and alter playing of the audio file in response to detecting an incoming cellular telephone call (page 7 lines 6-8). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to alter playing of the audio tile in response to an incoming telephone call, as taught by Rydbeck et al., in the

cellular telephone disclosed by Fritsch for the purpose of avoiding missing telephone calls.

14. Claim 77 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fritsch (U.S. Patent # 6,247,130 B1).

Consider claim 77, and as applied to claim 69 above, Fritsch clearly show and disclose the claimed invention except that the Internet website is a WAP enabled Internet website.

Nonetheless, the Examiner takes Official Notice that it is notoriously well known in the art to provide WAP enabled Internet websites for accessing by cellular telephones utilizing WAP browsers. Zilliacus US Pat. 6,915,272 discloses cellular phone with wireless access protocol (WAP) may surf the Internet and order goods and services directly through the WAP-capable phone. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a WAP enabled Internet website, as known in the art, in the system disclosed by Fritsch for the purpose of providing standardized wireless internet access to the cellular telephone.

15. Claims 78-80 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fritsch (U.S. Patent # $247,130 B1) in view of Bottum (U.S. Patent # 6,014,569).

Consider claims 78-80, and as applied to claim 68 above, Fritsch clearly shows and discloses the claimed invention except that the server (digital engine) is operable to provide access to an on-line radio or video broadcast. In the same field of endeavor, Bottum clearly shows and discloses a wireless communication system comprising an audio/video data provider (digital engine) 1 1ù providing access, to a wireless

communication device 150, to on-line audio or video broadcast (figures 1 and 2, column 4 lines 27-48, column 5 line 55 - column 6 line 3, and column 7 lines 58-60). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide access to an online broadcast, as taught by Bottum, in the system disclosed by Fritsch for the purpose of providing a variety of content to the user.

16. Claim 81 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fritsch (U.S. Patent # 6,247,130 B1) in view of Bottum (U.S. Patent # 6,014,569), as applied to claim 78 above, and further in view of Rydbeck et al. 0VO 99/43136).

Consider claim 81, and as applied to claim 78 above, Fritsch, as modified by Bottum, clearly shows and discloses the claimed invention except that the cellular communication device is operable to alter playing of an accessed broadcast in response to an incoming cellular telephone call. In the same field of endeavor, Rydbeck et al. clearly show and disclose a cellular telephone 10 (communication device) (figures 1 and 2) operable to play a radio or TV broadcast received via a cellular communication (abstract, figures 1 and 2, page 2 lines 20-22, page 3 lines 4-6, page 6 lines 3-5 and 10-17, page 7 lines 1-6, page 7 lines 22-25, and page 9 line 21 - page 10 line 2) and alter playing of the broadcast in response to detecting an incoming cellular telephone call (page 7 lines 6-8). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to alter playing of the broadcast in response to an incoming telephone call, as taught by Rydbeck et al., in the cellular

telephone disclosed by Fritsch, as modified by Bottum, for the purpose of avoiding missing telephone calls.

Response to Arguments

17. Applicant's arguments with respect to claims 40-81 have been considered but are moot in view of the new grounds of rejection.

The Applicant argues that the Examiner needs to provide specific references in lieu of making unsupported claims. As per Applicant's request, the Examiner recites in the rejections the references that the Examiner relies upon to write the Official Notice.

The Applicant further argues that the Examiner fails to show any suggestion or motivation to combine the references relied upon in the 103 rejections, and these rejections represent a case of impermissible hindsight.

18. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

19. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case for instance, the Applicant argues that there is no motivation or suggestion within Rydbeck and Lueck to combine such references to disclose the claimed invention. However, all references recited in the rejections above are in the same field of endeavor. Lueck teaches a portable digital audio player 100 (figure 1) comprising, among other components, a least flash memory 140 of fig. 1 (corresponding to the memory module) to store audio files wherein the audio files may be in different audio formats; the flash memory contains stored program files for decoding each type of audio formats allowing users of the portable communication device to listen to their desired song even though they store in different formats (e.g., M133 and AAC) and (column 2 lines 61-67 and column 3 lines 10-67). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to implement the technique of Lueck within the system of Rydbeck in order that the audio files are stored in the memory as separate files for each song, which may be in different formats; thus increasing the efficiency of the portable communication device, and the allowing users of the communication to play any type of songs they desire without concern of the type of format.

The rejections have been rewritten to clarify the Applicant how the Examiner interprets the claimed invention. The prior arts disclose a PC or any wireless communications unit such as PDA, cellular telephone, etc., operable to download audio files via the Internet or wireless station. The wireless communication unit includes a memory operable to store audio files of different formats. It is known that download audio files from a service provider requires log on (corresponding to authentication). The prior art also teaches altering audio files when receiving incoming calls (corresponding to stop audio files when detecting incoming calls. The Applicant's claimed invention is not distinct from the applied references. It appears that the Applicant looked for the exact language of the claims, not for similar language. It is to be noted that the Examiner has the duty to read the claims as broad as possible.

Conclusion

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean A. Gelin whose telephone number is (571) 272-7842. The examiner can normally be reached on 9:30 AM to 7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nick Corsaro can be reached on (571) 272-7876. 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.

JGelin
July 29, 2006

JEAN GELIN
PRIMARY EXAMINER

Notice of References Cited	Application/Control No. 09/537,812	Applicant(s)/Patent Under Reexamination WHITE ET AL.	
	Examiner Jean A. Gelin	Art Unit 2617	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-6,907,112	06-2005	Guedalia et al.	379/88.17
*	B	US-6,339,706	01-2002	Tillgren et al.	455/419
*	C	US-6,915,272	07-2005	Zilliacus et al.	705/26
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

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UserID:	JGelin
Computer:	WS05029
Date:	7/29/06
Time:	8:53 PM

	Type	Hits	Search Text
1	BRS	14	determin$3 near5 available near5 "audio file"
2	BRS	130	available near5 "audio file"
3	BRS	0	cellular near5 available near5 "audio file"
4	BRS	20	cellular near5 "audio file"
5	BRS	27	(telephone cellular) near5 (music song "audio file") near5 (available availability)
6	BRS	0	("2522846").URPN.
7	BRS	0	("2522846").URPN.
8	BRS	3	("2633769").URPN.
9	BRS	5	("3594941").URPN.
10	BRS	8	("4973285").URPN.
11	BRS	19	cellular same available same "audio file"
12	BRS	14	determin$3 near5 availab$4 near5 "audio file"
13	BRS	136	determin$3 near5 availab$4 near5 cellular
14	BRS	109	cellular same "audio file"
15	BRS	0	S35 and S36
16	BRS	28	S36 and availab$4 near5 cellular
17	BRS	86	determin$3 near5 availab$4 near5 (music song "audio file")
18	BRS	5	determin$3 near5 availab$4 near5 (music song "audio file") same (cellular telephone)
19	BRS	7	(send$3 transmit$4) near5 availab$4 near5 (music song "audio file") same (cellular telephone)
20	BRS	13	(download$3 upload$3) near5 availab$4 near5 (music song "audio file") same (cellular telephone)
21	BRS	22	(download$3 upload$3) near5 availab$4 near5 (music song "audio file") same (communication)
22	BRS	273	(download$3 upload$3) same availab$5 same (music song "audio file") same (cellular telephone radio)
23	BRS	38	(download$3 upload$3) same availab$5 same (music song "audio file") same based same (cellular telephone radio)

	Type	Hits	Search Text
24	BRS	30	determin$3 near5 available near5 cellular near5 communication
25	BRS	1508	(download$3 upload$3) same availab$5 same (music song "audio file")
26	BRS	3630	(download$3 upload$3) near3 (music song "audio file")
27	BRS	5764	(download$3 upload$3) same availab$5 same (communication)
28	BRS	290	S48 and S49
29	BRS	0	S35 and S50
30	BRS	15	(communication bandwidth) near7 available near7 "audio file"
31	BRS	2755	(send$3 transmit$4 download$3 upload$3) same availab$5 same (music song "audio file")
32	BRS	48	S39 and S53
33	BRS	0	determin$3 same "available communication" same "audio file"
34	BRS	0	"available communication" same "audio file"
35	BRS	1	"available communication" same "audio file"
36	BRS	8	determin$3 same "available communication" and "audio file"
37	BRS	971	(download$3 upload$3) same availab$5 same (communication) same (automatic$5 detect$3)
38	BRS	51	S53 and S59
39	BRS	25	"available communication" and S50
40	BRS	769	455/453.ccls.
41	BRS	7	S49 and S62
42	BRS	0	S50 and S62
43	BRS	0	S62 and availab$4 near5 (music song "audio file")
44	BRS	22	S62 and (music song "audio file")
45	BRS	29	determin$3 near5 availability near5 cellular
46	BRS	4	S67 and (music song "audio file")
47	BRS	12	(download$3 upload$3) near5 availability near5 (music song "audio file")
48	BRS	201	(download$3 upload$3) near5 availab$6 near5 (music song "audio file")
49	BRS	201	S53 and S70

	Type	Hits	Search Text
50	BRS	1	S59 and S71
51	BRS	0	(download$3 upload$3) near8 upon near8 availability near8 (music song "audio file")
52	BRS	3	(download$3 upload$3) same availab$5 same (communication) same (automatic$5 detect$3) same "audio file"
53	BRS	1	"6721710".pn.
54	BRS	39	bluetooth same cellular same radio same (music song)
55	BRS	50	455/41.2.ccls. and 455/557.ccls.
56	BRS	306	(headset headphone) near3 bluetooth
57	BRS	1	S77 and S78
58	BRS	11	455/41.2.ccls. and 455/557.ccls. and (headset headphone)
59	BRS	8	455/41.2.ccls. and 455/557.ccls. and (headset headphone) and bluetooth
60	BRS	140	"455"/$.ccls. and S78
61	BRS	96545	song music "audio file"
62	BRS	32	S82 and S88
63	BRS	6498777	((headset headphone) near3 bluetooth)@pd<"20000328"
64	BRS	306	((headset headphone) near3 bluetooth)@pd<"2000"
65	BRS	7790407	((headset headphone) near3 bluetooth)@pd<"20040328"
66	BRS	19245708	@ad<"20000328" @rlad<"20000328"
67	BRS	4	((headset headphone) near3 bluetooth) and S93
68	BRS	13	wap near5 internet near5 website
69	BRS	0	S94 and S95
70	BRS	154	wap near5 internet and S93
71	BRS	11	(download$3 upload$3) same availab$5 same (music song "audio file") and S97
72	BRS	441	((audio adj3 file) and (wave adj3 file))
73	BRS	152	S93 and S99
74	BRS	3	(download$3 upload$3) same availab$5 same (music song "audio file") and S100

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s):	Russell W. White et al.		
Title:	System and Method for Communicating Selected Information to an Electronic Device		
App. No.:	09/537,812	Filed:	03/28/2000
Examiner:	Willie J. DANIEL, JR.	Group Art Unit:	2617
Atty. Dkt. No.:	111111.1111	Confirmation No.:	4698

MS AMENDMENT
COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, VA 22313-1450

REPLY TO NON-FINAL OFFICE ACTION

Dear Commissioner:

In response to the Non-Final Office Action dated November 21, 2005, Applicants respectfully request reconsideration of the rejections in light of the following amendments and accompanying remarks:

Amendments to the claims begin at page 2.

CERTIFICATE OF TRANSMISSION/MAILING
I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to the Commissioner for Patents on 05/22/2006.

Laura H. Andre
Typed or Printed Name

Signature

CLAIM AMENDMENTS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Canceled)
2. (Canceled)
3. (Canceled)
4. (Canceled)
5. (Canceled)
6. (Canceled)
7. (Canceled)
8. (Canceled)
9. (Canceled)
10. (Canceled)
11. (Canceled)
12. (Canceled)
13. (Canceled)
14. (Canceled)
15. (Canceled)
16. (Canceled)
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27. (Canceled)
28. (Canceled)
29. (Canceled)
30. (Canceled)
31. (Canceled)
32. (Canceled)
33. (Canceled)
34. (Canceled)
35. (Canceled)
36. (Canceled)
37. (Canceled)
38. (Canceled)
39. (Canceled)

40. (Currently Amended)A cellular communication device comprising:

a cellular communication module operable to receive an incoming telephonic communication;

a memory module operable to store plural audio formats of one or more audio files received via a cellular communication network independent of the incoming telephonic communication; and

a processor operable to alter a playing of at least one of the audio files in response to the incoming telephonic communication using a player operable to play multiple audio file formats.

41. (Previously presented) The device of Claim 40, further comprising the processor operable to stop playing of the audio file in response to the incoming telephonic communication.

42. (Previously presented) The device of Claim 40 further comprising the processor operable to enable a user to alter the playing of the at least one audio file to answer the incoming telephonic communication.

43. (Previously presented) The device of Claim 40, further comprising the processor operable to enable sequential playing of plural audio files.

44. (Previously presented) The device of Claim 43, further comprising the processor operable to first play a WAV file and second play an MP3 file.

45. (Previously presented) The device of Claim 43, further comprising the processor operable to first play a MP3 file and second play a WAV file.

46. (Previously presented) The device of Claim 43, wherein the plural audio files include WAV files.

47. (Previously presented) The device of Claim 40, wherein at least one of the audio files includes a streaming audio formatted file.

48. (Previously presented) The device of Claim 40, further comprising the processor operable to pause playing of the audio file in response to the incoming telephonic communication.

49. (Previously presented) The device of Claim 48, further comprising the processor operable to enable listening of a telephone call upon a user answering the incoming telephonic communication.

50. (Previously presented) The device of Claim 40, further comprising a Bluetooth communication module operable to communicate an output to a wireless speaker, the output including the playing of the at least one of the audio files or the incoming telephonic communication.

51. (Previously presented) The device of Claim 50, further comprising a PDA.

52. (Previously presented) The device of Claim 40, further comprising a cellular telephone.

53. (Previously presented) The device of Claim 40, further comprising a WAP browser operable to access a list of downloadable preformatted audio files.

54. (Previously presented) The device of Claim 40, further comprising the communication module operable to receive an audio file selected via an Internet website accessed external to the cellular communication device.

55. (Previously presented) The device of Claim 53, further comprising a media player operable to play user selected media downloaded outside of a web browsing environment.

56. (Previously presented) A cellular communication device comprising:
a processor operable to play plural audio formats;

a communication module operable to receive an audio file selected by a user accessing an Internet website accessible external to the cellular communication device and operable to provide the user access to plural audio files via a user login page;

a memory operable to store plural formats of audio files; and

a Bluetooth communication module operable to communicate an in process playing of at least one of the audio files or a telephonic communication to a wireless speaker.

57. (Previously presented) The device of Claim 56, further comprising:

output means for providing an audio output;

input means for selecting the audio file; and

browsing means for viewing available preformatted audio and media files.

58. (Previously presented) The device of Claim 56, further comprising a removable memory device operable to store at least one audio file.

59. (Presently amended) A method for managing audio outputs for a cellular communication device comprising:

playing an audio file received via a cellular communication;

detecting an incoming cellular telephone call; and

altering playing of the audio file using a player operable to play multiple audio file formats in response to detecting the cellular telephone call.

60. (Previously presented) The method of Claim 59, further comprising playing a second audio file stored within a memory of the cellular device.

61. (Previously presented) The method of Claim 60, further comprising:

receiving the second audio file independent of the incoming cellular telephone call;

storing the second audio file within the memory; and

playing the second audio file after detecting the incoming cellular telephone call.

62. (Previously presented) The method of Claim 59, further comprising playing a second audio file received via a non-wireless communication network.

63. (Currently amended) The method of Claim 59, further comprising:

enabling access to a streaming media link within a user interface of the cellular communication device;

detecting selection of the streaming media links; and

receiving the selected streaming media.

64. (Previously presented) The method of Claim 63, further comprising altering playing of the streaming media in response to receiving the cellular telephone call.

65. (Previously presented) The method of Claim 63, further comprising enabling access to streaming audio.

66. (Currently amended) The method of Claim 63, further comprising enabling access to ~~a~~ broadcast video.

67. (Previously presented) The method of Claim 64, wherein the streaming media comprises streaming audio.

68. (Previously presented) A wireless communication system comprising:

an Internet website provided in association with a cellular communication device operable to receive and play an audio file selected by a user accessing the Internet website external to the cellular communication device;

a wireless communication network operable to communicate the audio file to the cellular communication device identified through a user logging into the Internet website; and

a digital engine operable to determine availability of the cellular communication device and to communicate the audio file to the cellular communication device.

69. (Previously presented) The system of Claim 68, further comprising the Internet website operable to present a user login page in association with identifying the cellular communication device.

70. (Previously presented) The system of Claim 69, further comprising the Internet website operable to provide access to downloadable software operable to be communicated to the cellular communication device.

71. (Previously presented) The system of Claim 68, further comprising the cellular communication device operable to alter playing of the audio file in response to receiving a telephone communication communicated via the wireless communication network.

72. (Previously presented) The system of Claim 68, further comprising the Internet website presenting a link to a selectable preformatted audio file operable to be communicated to the identified cellular communication device.

73. (Previously presented) The system of Claim 72, wherein the preformatted audio files may be categorized within the Internet website by at least two of:

genre;

artist;

most popular;

newest;
most viewed; and
favorites.

74. (Previously presented) The system of Claim 68, further comprising the digital engine operable to enable access to streaming audio information.

75. (Previously presented) The system of Claim 74, further comprising the digital engine operable to provide links to streaming audio accessible by the cellular communication device.

76. (Currently amended) The system of Claim 69, ~~further comprising the digital engine operable to communication the audio file to the~~ wherein the audio file may be communicated to the wireless communication device independent of a user being logged into the Internet website.

77. (Currently amended) The system of Claim 69, further comprising the digital engine operable to enable access to a WAP enabled Internet website operable to initiate downloading of the audio file via the ~~cellular~~ wireless communication network.

78. (Previously presented) The system of Claim 68, further comprising the digital engine operable to provide access to a broadcast.

79. (Previously presented) The system of Claim 78, further comprising the digital engine operable to provide access to an on-line video broadcast.

80. (Previously presented) The system of Claim 78, further comprising the digital engine operable to provide access to an on-line radio broadcast.

81. (Previously presented) The system of Claim 78, wherein the cellular communication device is operable to alter playing of an accessed broadcast in response to an incoming cellular telephone call.

REMARKS

Claim Objections

Claims 63, 66, 76, and 77 have been amended to overcome the informalities objections.

Continued Examination

Claims 40-81 are now pending in the present application. Claims 59, 63, 66, 76, and 77 have been amended. Applicants have provided arguments to rebut the Examiner's rejections and respectfully request allowance of all claims.

Objection to Reliance on Official Notice and Inherency

Applicants object to Examiner taking official notice (pages 10, 11, 15 and 20 of the action) and claiming inherency (pages 3 and 8 of the action). If Examiner intends to maintain a rejection that relied on claims of Official Notice and Inherency, Applicants request that Examiner provide specific references in lieu of making unsupported claims. MPEP 2144.03. Moreover, as it relates to claims of inherency, Applicants request that Examiner prove that the allegedly inherent characteristics are truly inherent.

Objection to All 103 Rejections For Failure to Provide Any Suggestion or Motivation to Combine

As discussed below, Examiner made several 103 rejections based on multiple references. Applicants have reviewed each of those rejections and cannot find any attempt on the Examiner's part to show a motivation to combine the relied upon references. Applicants point out that such a showing is required to support each and every 103 rejection. Because the Examiner has failed to show any suggestion or motivation to combine the references relied upon in the 103 rejections, each of the 103 rejections represents a case of impermissible hindsight and must be withdrawn.

Claim Rejections – 35 USC § 102

Claims 59, 60, and 62 stand rejected under 35 USC § 102(a) over PCT Publ. No. WO 99/43136 ("Rydbeck"). Claims 68-70 and 72-76 stand rejected under 35 USC § 102(e) over U.S. Patent No. 6,247,130 ("Fritsch"). Applicants respectfully traverse these rejections.

Claims 59, 60, and 62 were rejected under 35 USC § 102(a)

In order for a 102(a) rejection to be proper, each and every element must be present within the cited reference. Claim 59, as amended, discloses in addition to other limitations, "altering playing of the audio file using a player operable to play multiple audio file formats in response to detecting the cellular telephone call". Rydbeck fails to disclose the limitation as claimed. Rydbeck discloses storing audio files within a memory for outputting audio files via a headset (see Abstract). Rydbeck is silent about specific audio file formats and also fails to disclose outputting one or more audio files based on a specific file format using a player operable to play multiple file formats. As such, given the limitations presented in amended Claim 59, which are not found within Rydbeck, Rydbeck cannot anticipate Claim 59.

Additionally, Claims 60 and 62 depend from Claim 59. Therefore, Applicants respectfully submit that the above arguments presented with respect to Claim 59 apply equally to Claims 60 and 62. Applicants respectfully request the withdrawal of the 102(a).

Claims 68-70 and 72-76 were rejected under 35 USC § 102(e)

In order for a 102(e) rejection to be proper, each and every element must be present within the cited reference. Fritsch fails to disclose each and every element of Independent Claim 68. Claim 68 recites, in addition to other limitations, a system that includes "an Internet website provided in association with a cellular communication device operable to receive and play an audio file selected by a user accessing the Internet website external to the cellular communication device" and "a digital engine operable to determine availability of the cellular communication device and to communicate the audio file to the cellular communication device."

Fritsch fails to disclose the above limitations. Fritch only discloses a website to manage distribution of audio content using a unique key (see description of FIG. 4A) and is limited to delivery to a desktop or other tangible medium such as CD delivered in the mail to a subscriber (see description of FIG. 1D). Further, Fritsch fails to disclose a digital engine operable to determine an association made between a user logging in and a user's cellular communication device. Moreover Fritsch fails to determine the availability of the cellular communication device to communicate the audio file(s) to the user's cellular communication device. These limitations are not present in Fritsch. Therefore, Fritsch fails to provide a system for presenting an Internet website associated with cellular communication devices for communicating audio files upon determining an availability of the cellular communication device in association with a user login. As such, the limitations of Claim 68 are not present with Fritsch.

Claims 69-70, 72-76 depend from Claim 68. Therefore, Applicants respectfully submit that the above arguments presented with respect to Claim 68 apply equally to these claims and respectfully requests the withdrawal of the 102(e) rejection.

Rejections under 35 U.S.C. § 103

In order to establish a prima facie case of obviousness, the Examiner must show that three criteria are met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. M.P.E.P. 2143. Applicants respectfully submit that a prima facie case of obviousness has not been met and traverse each and every 103 rejection.

Claims 40, 41, 43-46, and 50-55 were rejected under 35 USC § 103(a)

Claims 40, 41, 43-46, and 50-55 were rejected under 35 USC § 103(a) over Rydbeck in view of U.S. Patent No. 6,721,710 ("Lueck"). Applicants respectfully traverse this rejection.

As indicated above, the Examiner has failed to show any suggestion or motivation to combine the references. Each 103 rejection represents a case of impermissible hindsight.

Moreover, as described more fully below, the combination of the Rydbeck, Lueck and Cao references does not disclose all the limitations of the claims.

As recited above, Independent Claim 40 has been amended to obviate the above rejection. Claim 40 includes, in addition to other limitations, " a memory module operable to store plural audio formats of one or more audio files" and "a processor operable to alter a playing of at least one of the audio files in response to the incoming telephonic communication use a player operable to play multiple audio formats."

Rydbeck and Lueck, either alone or when combined, fail to provide the limitations of amended Claim 40. Moreover, there is no motivation or suggestion within Rydbeck and Lueck to combine such references to disclose the invention of Claim 40. Lueck provides a method for converting audio formats to a single audio format prior to playing the audio format in an effort to allow for fast-forwarding through and retrieving blocks of data (see abstract). Additionally, as discussed above, Rydbeck fails to provide an audio player or processor operable to play plural audio formats. As such, Rydbeck and Lueck fail to disclose or suggest the necessary limitations to make obvious Claim 40.

Claims 41-55 depend from amended Claim 40. Therefore, Applicants respectfully submit that the arguments presented with respect to Claim 40 apply equally to these claims and respectfully request the withdrawal of the 103 rejection.

Claims 56-58 were rejected under 35 USC § 103(a)

Claims 56-58 were rejected under 35 USC § 103(a) over Rydbeck in view of Lueck, and in further view of Fritsch.

In order to establish a prima facie case of obviousness, the Examiner must show that three criteria are met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. M.P.E.P. 2143. Applicant respectfully submits that a prima facie case of obviousness has not been met, at least because the combination of the Rydbeck in view of Lueck, and in further view of Fritsch references do not disclose all the limitations of the claims.

Rydbeck is drawn towards a cellular telephone operable to output music (see Abstract). Rydbeck fails to disclose playing an audio file stored locally on a cellular telephone and communicating it via a BlueTooth communication module. Rydbeck further fails to disclose receiving a cellular telephone communication and communicating the cellular telephone communication using the same Bluetooth communication module. Further, Rydbeck does not suggest using Bluetooth communication to communicate a playing of an audio file and a telephonic communication and using the same BlueTooth communication module to a speaker Bluetooth enabled speaker. Additionally, it is not obvious, nor has the Examiner presented, how the communication device of Rydbeck may be modified to accomplish such a task. As such, Rydbeck fails to provide the elements to make obvious the limitations presented in Claim 56.

Additionally, Lueck likewise fails to disclose the limitations as presented in Claim 56. Lueck temporarily stores audio files having multiple audio formats only to convert multiple audio formats to a single audio format prior to playing the converted audio file using a processor (see Col 5 line 48 to Col 6 line 17). Lueck creates an alternative file format for efficient scanning of audio content by a processor (see Abstract).

Claim 56 discloses a memory that stores multiple audio files having multiple audio file formats to be played using a single processor operable to play plural audio formats. As such, Lueck teaches away from the limitations of Claims 56 and therefore does not provide the necessary elements or limitations that may be used to make obvious Claim 56.

Finally, Fritsch fails to disclose an Internet website accessible external to a cellular communication device that provides a user accessing the login page using a login associated with the cellular communication device as recited in Claim 56. Fritsch discloses a website that allows for accessing of songs to select music that may be delivered via a tangible medium to a desktop computer or through the mail. For example, a user may "...get those delivered immediately via digital delivery over the internet to her PC; additionally, all other orders of finished product entered into the shopping list will be shipped to her home by mail, such as a private courier, for example." (See Fritch Col 5, line 67 – Col 6 line 13). Fritsch fails to teach or suggest providing an "Internet website external to the cellular communication device and operable to provide the user access to plural audio files via a user login" wherein the communication module is further

operable to "receive an audio file selected by a user". The only mechanism provided by Fritch is to receive the audio file from the requesting PC or through the mail. As such, Fritch when combined with Rydbeck, or Lueck fails to make obvious Claim 56.

Claims 57-58 depend from amended Claim 56. Therefore, Applicants respectfully submit that the arguments presented with respect to Claim 56 apply equally to these claims and respectfully requests the withdrawal of their rejection.

Claim 81 was rejected under 35 USC § 103(a) over Fritsch in view of Bottum, and further in view of Rydbeck.

Claim 81 depends from Claim 78, which has been shown to be allowable. Therefore, Applicants respectfully submit that claim 81 is allowable. Furthermore, there is no suggestion or motivation to combine the cited references.

Claim 61 was rejected under 35 USC § 103(a) over U.S. Pat. No. 6,496,692 ("Shanahan")

Claim 61 depends from Claim 59, which has been shown to be allowable. Therefore, Applicants respectfully submit that claim 61 is allowable. Furthermore, there is no suggestion or motivation to combine Shanahan with the other relied upon references.

Claims 63-67 were rejected under 35 USC § 103(a) over Rydbeck in view of Cao

Claims 63-67 depend from Claim 59, which has been shown to be allowable. Therefore, Applicants respectfully submit that claims 63-67 are allowable. Furthermore, there is no suggestion or motivation to combine the cited references.

Claim 71 was rejected under 35 USC § 103(a) over Fritsch in view of Rydbeck

Claim 71 depends from Claim 68, which has been shown to be allowable. Therefore, Applicants respectfully submit that claim 71 is allowable. Furthermore, there is no suggestion or motivation to combine the cited references.

Claim 77 was rejected under 35 USC § 103(a) over Fritsch

Claim 77 depends indirectly from Claim 68, which has been shown to be allowable. Therefore, Applicants respectfully submit that claim 77 is allowable. Furthermore, there is no suggestion or motivation to combine the cited references.

Claims 78-80 were rejected under 35 USC § 103(a) over Fritsch in view of U.S. Pat. No. 6,014,569 ("Bottum")

Claims 78-80 depend directly or indirectly from Claim 68, which has been shown to be allowable. Therefore, Applicants respectfully submit that claims 78-80 are allowable. Furthermore, there is no suggestion or motivation to combine the cited references.

CONCLUSION

Applicants respectfully submit that the present application is now in condition for allowance. Accordingly, the Examiner is requested to issue a Notice of Allowance for all pending claims. If, for any reason, the Office is unable to allow the Application on the next Office Action, and believes a telephone interview would be helpful, the Examiner is respectfully requested to contact the undersigned attorney or agent. The Commissioner is hereby authorized to charge any fees, which may be required, or credit any overpayment, to Deposit Account Number 50-3797.

Respectfully submitted,

5/22/06
Date

Russell W. White; Reg. No. 45,691
Attorney for Applicants
(512) 439-7100 (phone)
(512) 439-7199 (fax)

PTO/SB/22 (12-04)
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PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a) **FY 2005** *(Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).)*	Docket Number (Optional) 111111.1111
Application Number 09/537,812	Filed 03/28/2000
For System and Method for Communicating Selected Information to an Electronic Device	
Art Unit 2617	Examiner Willie J. DANIEL, JR.

This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above identified application.

The requested extension and fee are as follows (check time period desired and enter the appropriate fee below):

	Fee	Small Entity Fee	
☐ One month (37 CFR 1.17(a)(1))	$120	$60	$
☐ Two months (37 CFR 1.17(a)(2))	$450	$225	$
☒ Three months (37 CFR 1.17(a)(3))	$1020	$510	$ 510
☐ Four months (37 CFR 1.17(a)(4))	$1590	$795	$
☐ Five months (37 CFR 1.17(a)(5))	$2160	$1080	$

☐ Applicant claims small entity status. See 37 CFR 1.27.

05/23/2006 STEUMEL1 00000070 503797 09537812
01 FC:2253 510.00 DA

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

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

☐ The Director has already been authorized to charge fees in this application to a Deposit Account.

☒ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number 50-3797. I have enclosed a duplicate copy of this sheet.

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.

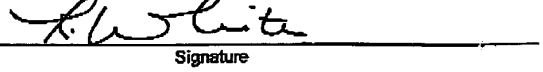
I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed (Form PTO/SB/96).

☒ attorney or agent of record. Registration Number 45,691

☐ attorney or agent under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34 _____



Signature

5/22/06
Date

Russell W. White
Typed or printed name

(512) 439-7100
Telephone Number

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.

☒ Total of 3 forms are submitted.

This collection of information is required by 37 CFR 1.136(a). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 6 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: **Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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Intellectual Property Law

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Austin, TX - 78730
Phone: 512-439-7100
Fax: 512-439-7199
www.larsonnewman.com

FACSIMILE COVER SHEET

DATE: 05/22/2006

TO: Willie J. DANIEL, JR. FAX NO.: **571-273-8300**
USPTO Group Art 2617

FROM: Russell W. White /WAndre
Reg. No. 45,691

RE: REPLY TO NON-FINAL OFFICE ACTION

U.S. APP NO.:	09/537,812
FILING DATE:	03/28/2000
APPLICANT(S):	Russell W. White et al.
ATTY DKT NO.:	111111.1111
TITLE:	System and Method for Communicating Selected Information to an Electronic Device
NO. OF PAGES (INCL. COVER SHEET):	18

Attached please find:

☒ PTO/SB/21 Transmittal Form (1 pg.)

☒ Reply to Non-Final Office Action (15 pgs.)

☒ PTO/SB/122 Petition for Extension of Time (37 CFR 1.17(a)(3); 1 pg.))

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TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Total Number of Pages in This Submission: 17

Application Number	09/537,812
Filing Date	03/28/2000
First Named Inventor	Russell W. White
Art Unit	2815
Examiner Name	Willie J. DANIEL, JR.
Attorney Docket Number	111111.1111

ENCLOSURES (Check all that apply)

- ☐ Fee Transmittal Form
  - ☐ Fee Attached
- ☒ Amendment/Reply
  - ☐ After Final
  - ☐ Affidavits/declaration(s)
- ☒ Extension of Time Request
- ☐ Express Abandonment Request
- ☐ Information Disclosure Statement
- ☐ Certified Copy of Priority Document(s)
- ☐ Reply to Missing Parts/ Incomplete Application
  - ☐ Reply to Missing Parts under 37 CFR 1.52 or 1.53
- ☐ Drawing(s)
- ☐ Licensing-related Papers
- ☐ Petition
- ☐ Petition to Convert to a Provisional Application
- ☐ Power of Attorney, Revocation
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- ☐ Terminal Disclaimer
- ☐ Request for Refund
- ☐ CD, Number of CD(s) _____
  - ☐ Landscape Table on CD
- ☐ After Allowance Communication to TC
- ☐ Appeal Communication to Board of Appeals and Interferences
- ☐ Appeal Communication to TC (Appeal Notice, Brief, Reply Brief)
- ☐ Proprietary Information
- ☐ Status Letter
- ☐ Other Enclosure(s) (please identify below):

Remarks

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

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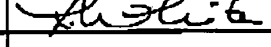
Signature			
Printed name	Russell W. White		
Date	5/22/06	Reg. No.	45,691

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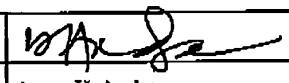
Signature			
Typed or printed name	Laura H. Andre	Date	05/22/2006

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PATENT APPLICATION FEE DETERMINATION RECORD
Effective October 1, 2003

Application or Docket Number: 09/537812

CLAIMS AS FILED - PART I

	(Column 1)	(Column 2)
TOTAL CLAIMS		
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	minus 20=	*
INDEPENDENT CLAIMS	minus 3 =	*
MULTIPLE DEPENDENT CLAIM PRESENT		☐

SMALL ENTITY TYPE ☐		OR	OTHER THAN SMALL ENTITY	
RATE	FEE		RATE	FEE
BASIC FEE	375.00	OR	BASIC FEE	750.00
X$ 9=		OR	X$18=	
X43=		OR	X86=	
+140=		OR	+280=	
TOTAL		OR	TOTAL	

* If the difference in column 1 is less than zero, enter "0" in column 2

9/1/04 CLAIMS AS AMENDED - PART II

AMENDMENT A

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	* 20	Minus	** 25	=
Independent	* 3	Minus	*** 4	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X$ 9=		OR	X$18=	
X43=		OR	X86=	
+140=		OR	+280=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

6/2/05

AMENDMENT B

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	* 42	Minus	** 25	= 16
Independent	* 4	Minus	*** 4	= 0
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X$ 9=		OR	X$18=	900.00
X43=		OR	X86=	
+140=		OR	+280=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

5-22-06

AMENDMENT C

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	* 41	Minus	** 212	=
Independent	* 4	Minus	*** 4	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X$ 9=		OR	X$18=	
X43=		OR	X86=	
+140=		OR	+280=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. 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.

TOLER
LARSON
& ABEL LLP

FACSIMILE COVER SHEET

DATE: **December 7, 2005**

TO: **Examiner** FAX NO.: **571-273-8300**
PEREZ-GUTIERREZ, Rafael
USPTO GPAU 2686

FROM: **Russell W. White** /mwhite
Reg. No. 45,691

RE: CHANGE OF CORRESPONDENCE ADDRESS

U.S. APP NO.:	**09/537,812**
FILING DATE:	**03/28/2000**
APPLICANT(S):	**Russell W. White et al.**
ATTY DKT NO.:	**111111.1111**
TITLE:	**SYSTEM AND METHOD FOR COMMUNICATING SELECTED INFORMATION TO AN ELECTRONIC DEVICE**

NO. OF PAGES (INCL. COVER SHEET): **3**

MESSAGE:

Attached please find:

☒ PTO/SB/21 Transmittal Form (1 pg.)

☒ PTO/SB/122 Change of Correspondence (1 pg.)

5000 Plaza On The Lake
Suite 265
AUSTIN, TEXAS 78746

Tel: (512) 327-5515
Fax: (512) 327-5452

PTO/SB/21 (09-04)
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TRANSMITTAL FORM

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Total Number of Pages in This Submission: 2

Application Number	09/537,612
Filing Date	03/28/2000
First Named Inventor	Russell W. White
Art Unit	2686
Examiner Name	PEREZ-GUTIERREZ, Rafael
Attorney Docket Number	111111.1111

ENCLOSURES *(Check all that apply)*

- ☐ Fee Transmittal Form
  - ☐ Fee Attached
- ☐ Amendment/Reply
  - ☐ After Final
  - ☐ Affidavits/declaration(s)
- ☐ Extension of Time Request
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- ☐ CD, Number of CD(s) _____
  - ☐ Landscape Table on CD
- ☐ After Allowance Communication to TC
- ☐ Appeal Communication to Board of Appeals and Interferences
- ☐ Appeal Communication to TC (Appeal Notice, Brief, Reply Brief)
- ☐ Proprietary Information
- ☐ Status Letter
- ☐ Other Enclosure(s) (please identify below):

Remarks

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name			
Signature			
Printed name	Russell W. White		
Date	12/7/05	Reg. No.	45,691

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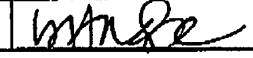
Signature	Laura H. Andre		
Typed or printed name		Date	12/7/2005

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and1.14. This collection is estimated to 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, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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PTO/SB/122 (09-03)
Approved for use through 11/30/2005. OMB 0651-0035
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CHANGE OF CORRESPONDENCE ADDRESS
Application

Address to:
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Application Number	09/537,812
Filing Date	03/28/2000
First Named Inventor	Russell W. White
Art Unit	2686
Examiner Name	PEREZ-GUTIERREZ, Rafael
Attorney Docket Number	111111.1111

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☑ Firm or Individual Name	Russell W. White				
Address	10904 Doswell Cove				
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I am the:

☐ Applicant/Inventor

☐ Assignee of record of the entire interest.
Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96).

☑ Attorney or Agent of record. Registration Number 45,691

☐ Registered practitioner named in the application transmittal letter in an application without an executed oath or declaration. See 37 CFR 1.33(a)(1). Registration Number_____.

Typed or Printed Name	Russell W. White
Signature	R. W. White
Date	12/7/05
Telephone	(512) 301-5518

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

☑ *Total of 2 forms are submitted.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/537,812	03/28/2000	Russell W. White	111111.1111	4698

7590 11/21/2005

Russell W White
10704 Redmond
Austin, TX 78739

EXAMINER	
PEREZ GUTIERREZ, RAFAEL	
ART UNIT	**PAPER NUMBER**
2686	

DATE MAILED: 11/21/2005

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

Office Action Summary	Application No.	Applicant(s)	
	09/537,812	White et al.	
	Examiner	Art Unit	
	Rafael Perez-Gutierrez	2686	

-- 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 *05 May 2005 and 02 June 2005*.

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) *40-81* 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) *40-81* 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-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office Action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 2, 2005 has been entered. **Claims 40-81** are now pending in the present application.

Claim Objections

2. **Claims 63, 66, 76, and 77** are objected to because of the following informalities:

a) On **line 4** of **claim 63**, replace "links" with --link-- after "media";

b) On **line 1** of **claim 66**, delete "a" before "broadcast";

c) On **lines 1 and 2** of **claim 76**, delete "further comprising the digital engine operable to communication the audio file to the" before "wherein"; and

d) On **line 3** of **claim 77**, replace "cellular" with --wireless-- after "the" in order to provide proper antecedent basis.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. 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 --
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the Applicant for a patent.
>
> (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.

4. **Claims 59, 60, and 62** are rejected under 35 U.S.C. 102(a) as being anticipated by **Rydbeck et al. (WO 99/43136)**.

Consider **claim 59**, Rydbeck et al. clearly show and disclose a method for managing audio outputs for a cellular telephone 10 (communication device) (figures 1 and 2) comprising:

playing an audio file received via a cellular communication (e.g., playing back music or audio downloaded and received via transceiver 12, 18 from the Internet) (abstract, figures 1 and 2, page 2 lines 20-22, page 3 lines 4-6, page 6 lines 3-5 and 10-17, page 7 lines 1-6, and page 7 lines 22-25);

detecting an incoming cellular telephone call (page 7 lines 6-8);

altering playing of the audio file in response to detecting the cellular telephone call (page 7 lines 6-8).

Consider **claims 60 and 62**, and **as applied to claim 59 above**, Rydbeck et al. inherently disclose playing a second audio file stored within a memory 54, 56 of the cellular device 10

(figures 1-3) since they disclose that music and audio signals are loaded and stored in the memory 54, 56, of the device 10 (abstract, page 2 lines 20-22, and page 6 lines 3-25) and the music or audio signals can be received from a computer or a CD player (i.e., via a non-wireless communication network) (reads on **claim 62**).

5. **Claims 68-70 and 72-76** are rejected under 35 U.S.C. 102(e) as being anticipated by **Fritsch (U.S. Patent # 6,247,130 B1)**.

Consider **claim 68**, Fritsch clearly shows and discloses a wireless communication system (column 2 line 64 - column 3 line 9) comprising:

an Internet website provided in association with a cellular telephone (communication device) operable to receive and play an audio file (e.g., music) selected by a user accessing the Internet website external to the cellular telephone (communication device) (abstract, figures 1A-1D, column 1 lines 46-56 and 60-64, and column 2 line 64 - column 3 line 45);

a wireless communication network (inherently required to communicate the music to the cellular telephone) (column 2 line 64 - column 3 line 9) operable to communicate the audio file to the cellular telephone (communication device) identified through a user logging into the Internet website (abstract, figures 1A-1D, column 1 lines 46-56 and 60-64, column 2 line 64 - column 3 line 45, and column 4 lines 13-37); and

a server (digital engine) operable to determine availability (online status) of the cellular telephone (communication device) and to communicate the audio file to the cellular telephone (communication device) (abstract, figures 1A-1D, column 1 lines 46-56 and 60-64, column 2 line

64 - column 3 line 45, and column 4 lines 13-37).

Consider **claim 69**, and **as applied to claim 68 above**, Fritsch further shows and discloses that the Internet website is operable to present a user login page in association with identifying the cellular telephone (communication device) (abstract, figures 1A-1D, column 1 lines 46-56 and 60-64, column 2 line 64 - column 3 line 45, and column 4 lines 13-37).

Consider **claim 70**, and **as applied to claim 69 above**, Fritsch also shows and discloses that the Internet website is operable to provide access to downloadable software (e.g., music player) operable to be communicated to the cellular telephone (communication device) (column 3 lines 60-65).

Consider **claim 72**, and **as applied to claim 68 above**, Fritsch further shows and discloses that the Internet website presents a link to a selectable preformatted audio file operable to be communicated to the identified cellular telephone (communication device) (figures 1A-1D and column 4 line 57 - column 5 line 20).

Consider **claim 73**, and **as applied to claim 72 above**, Fritsch also shows and discloses that the preformatted audio files may be categorized within the Internet website by at least two of: genre, artist, most popular, newest, most viewed, and favorites (figures 1A-1C).

Consider **claims 74 and 75**, and **as applied to claim 68 above**, Fritsch further shows and discloses that the server (digital engine) is operable to enable access to streaming audio information and to provide links to streaming audio accessible by the cellular telephone (communication device) (e.g., the server (digital engine) provides a link for accessing a 20-second music clip (streaming audio) by the cellular telephone) (figures 1A-1C and column 4 line

57 - column 5 line 4).

Consider **claim 76**, and **as applied to claim 69 above**, Fritsch also shows and discloses that the audio file may be communicated to the cellular telephone (communication device) independent of a user being logged into the Internet website (e.g., the audio file (e.g., music) could be delivered to the user in several different ways besides immediate downloading (i.e., whether or not the user is logged into the Internet website) (column 3 lines 3-9, column 5 lines 14-37, and column 5 line 66 - column 6 line 39).

Claim Rejections - 35 USC § 103

6. 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.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the Examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the Examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. **Claims 40, 41, 43-46, and 50-55** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Rydbeck et al. (WO 99/43136)** in view of **Lueck et al. (U.S. Patent # 6,721,710 B1)**.

Consider **claims 40 and 52**, Rydbeck et al. clearly show and disclose a cellular telephone 10 (communication device) (figures 1 and 2) (reads on **claim 52**) comprising:

an RF transceiver 18 (cellular communication module) (figure 2) operable to receive an incoming telephonic communication (abstract, figure 2, page 5 lines 4-6, and page 7 lines 6-8);

an entertainment (memory) module 50 (figures 2 and 3) operable to store one or more audio files (e.g., music or audio signals) received via a cellular communication network independent of the incoming telephonic communication (i.e., the music or audio signals are downloaded wirelessly from the Internet (not associated with an incoming telephonic communication)) (abstract, page 2 line 20 - page 3 line 3, page 6 lines 3-17, and page 7 line 22-25);

a microprocessor/control logic 20 (processor) (figure 2) operable to alter a playing of at

least one of the audio files in response to the incoming telephonic communication (page 7 lines 6-8).

However, Rydbeck et al. do not specifically disclose that the entertainment (memory) module 50 store plural audio formats of one or more of the audio files.

Nonetheless, the feature of a memory module storing plural audio formats of one or more audio files is well known in the art as evidenced by Lueck et al., who, in the same field of endeavor, clearly show and disclose a portable digital audio player 100 (figure 1) comprising, among other components, a flash memory 140 (figure 1) operable to store plural audio formats (e.g., MP3 and AAC) of one or more audio files or songs (column 2 lines 61-67 and column 3 lines 10-12 and 47-51).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to store plural audio formats of one or more audio files, as taught by Lueck et al., in the entertainment (memory) module 50 disclosed by Rydbeck et al. for the purpose of providing alternative audio formats for user's selection.

Consider **claim 41**, and **as applied to claim 40 above**, Rydbeck et al., as modified by Lueck et al., further disclose that the microprocessor/control logic 20 (processor) (figure 2) is operable to stop playing of the audio file in response to the incoming telephonic communication (page 7 lines 6-8).

Consider **claim 43**, and **as applied to claim 40 above**, Rydbeck et al., as modified by Lueck et al., inherently disclose that the microprocessor/control logic 20 (processor) (figure 2) is operable to enable sequential playing of plural audio files since they disclose that plural music or

audio signals are downloaded and stored in the entertainment (memory) module 50 for subsequent playback (abstract, page 2 line 20 - page 3 line 3, page 6 lines 3-17, and page 7 line 22-25).

Consider **claims 44 and 45**, and **as applied to claim 43 above**, Rydbeck et al., as modified by Lueck et al., disclose the claimed invention except that the processor is operable to first play a WAV file and second play an MP3 file (claim 44) and to first play a MP3 file and second play an WAV file (claim 45).

Nonetheless, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have the processor taught by Rydbeck et al., as modified by Lueck et al., to first play a WAV file and second play an MP3 file or viceversa since the processor is capable of playing plural audio formats (processor 110 is operable to store and play, respectively, plural audio formats (e.g., MP3 and AAC) of one or more audio files or songs (Lueck et al.; figure 1, column 2 lines 61-67 and column 3 lines 10-12 and 47-51). Applicant has not disclosed that first play a WAV file and second play an MP3 file and first play an MP3 file and second play an WAV file provides an advantage, is used for a particular function, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with the entertainment (memory) module 50/processor 110 of Rydbeck et al. and Lueck et al. because they are capable of sequentially playing plural audio formats.

Consider **claim 46**, and **as applied to claim 43 above**, Rydbeck et al., as modified by Lueck et al., disclose the claimed invention except that the plural audio files include WAV files.

Nonetheless, the Examiner takes Official Notice that it is notoriously well known in the art to provide audio or music files in the format of WAV.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have plural WAV files, as known in the art, in the cellular communication device disclosed by Rydbeck et al., as modified by Lueck et al., for the purpose of providing an alternative audio format for user's selection.

Consider **claim 50**, and **as applied to claim 40 above**, Rydbeck et al., as modified by Lueck et al., further disclose that the cellular telephone 10 (communication device) (figures 1 and 2) inherently comprises a low power RF carrier communication module (not shown) operable to communicate an output to a headset 40 (wireless speaker) (figures 1 and 2), the output including the playing of the at least one of the audio files or the incoming telephonic communication (page 3 lines 4-7, page 5 line 19 - page 6 line 8, and page 7 lines 4-8).

However, Rydbeck et al., as modified by Lueck et al., do not specifically disclose that the low power RF carrier communication module is a Bluetooth module.

Nonetheless, the Examiner takes Official Notice that it is notoriously well known in the art to use a Bluetooth communication module for short range, low power RF communications between communication devices.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a Bluetooth communication module, as known in the art, as the low power RF carrier communication module disclosed by Rydbeck et al., as modified by Lueck et al., for the purpose of providing standardized short range RF communication between the

headset and the cellular telephone.

Consider **claim 51**, and **as applied to claim 50 above**, Rydbeck et al., as modified by Lueck et al., disclose the claimed invention except that it comprises a PDA.

Nonetheless, the Examiner takes Official Notice that it is notoriously well known in the art to have a cellular communication device comprising a PDA in order to provide additional handheld computing capabilities to a user.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have a PDA, as known in the art, in the cellular communication device disclosed by Rydbeck et al., as modified by Lueck et al., for the purpose of providing additional handheld computing capabilities to the user.

Consider **claim 53**, and **as applied to claim 40 above**, Rydbeck et al., as modified by Lueck et al., further disclose that the cellular telephone 10 (communication device) (figures 1 and 2) is an Internet-enabled cellular telephone operable to access a list of downloadable preformatted music or audio signals (files) (page 6 lines 10-25).

However, Rydbeck et al., as modified by Lueck et al., do not specifically disclose that the cellular telephone comprises a WAP browser.

Nonetheless, the Examiner takes Official Notice that it is notoriously well known in the art to use a WAP browser to access the Internet from a cellular telephone.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a WAP browser, as known in the art, in the cellular telephone disclosed by Rydbeck et al., as modified by Lueck et al., for the purpose of providing

standardized wireless Internet access from the cellular telephone.

Consider **claim 54**, and **as applied to claim 40 above**, Rydbeck et al., as modified by Lueck et al., also disclose that the RF transceiver 18 (cellular communication module) (figure 2) is operable to receive music or audio signals (files) selected via an Internet website (i.e., inherent through the Internet-enabled cellular phone 10) external to the cellular telephone 10 (communication device) (page 6 lines 10-25).

Consider **claim 55**, and **as applied to claim 53 above**, Rydbeck et al., as modified by Lueck et al., further disclose that the entertainment module 50 (media player) is operable to play user selected media downloaded outside of a web browsing environment (e.g., loaded from a CD player or downloaded from a computer or a digitized audio source) (page 6 lines 3-17).

8. **Claims 42 and 47-49** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Rydbeck et al. (WO 99/43136)** in view of **Lueck et al. (U.S. Patent # 6,721,710 B1), as applied to claim 40 above**, and further in view of **Cao et al. (U.S. Patent Application Publication # 2005/0054379 A1)**.

Consider **claim 42**, and **as applied to claim 40 above**, Rydbeck et al., as modified by Lueck et al., disclose the claimed invention except that the microprocessor/control logic 20 (processor) is operable to enable a user to alter the playing of the at least one audio file to answer the incoming telephonic communication.

In the same field of endeavor, Cao et al. clearly show and disclose a cordless telephone (communication device) with MP3 player capability (abstract) comprising, among other

components, a processor (not shown) operable to enable a user to alter the playing of the at least one audio file (e.g., MP3 digital audio) to answer an incoming telephonic communication (paragraph 0023).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to enable a user to alter playing of the at least one audio file in response to an incoming telephone call, as taught by Cao et al., in the cellular telephone 10 (communication device) disclosed by Rydbeck et al., as modified by Lueck et al., for the purpose of providing manual operational control of the combined telephone/audio player.

Consider **claim 47**, and **as applied to claim 40 above**, Rydbeck et al., as modified by Lueck et al., disclose the claimed invention except that at least one of the audio files include a streaming audio formatted file.

In the same field of endeavor, Cao et al. clearly show and disclose a cordless telephone (communication device) with MP3 player capability (abstract) wherein at least one of the audio files comprises MP3 digital audio bit stream (streaming audio formatted file) downloaded from the Internet (abstract and paragraphs 0026 and 0034).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a streaming audio formatted filed, as taught by Cao et al., in the entertainment (memory) module 50 disclosed by Rydbeck et al., as modified by Lueck et al., for the purpose of providing alternative audio formats for user's selection.

Consider **claims 48 and 49**, and **as applied to claim 40 above**, Rydbeck et al., as modified by Lueck et al., disclose the claimed invention except that the microprocessor/control

logic 20 (processor) is operable to pause playing of the audio file in response to the incoming telephonic communication (claim 48) and to enable listening of the telephone call upon answering the incoming telephonic communication (claim 49).

In the same field of endeavor, Cao et al. clearly show and disclose a cordless telephone (communication device) with MP3 player capability (abstract) comprising, among other components, a processor (not shown) operable to pause playing of an audio file (e.g., MP3 digital audio) in response an incoming telephonic communication (paragraphs 0023 and 0024) (reads on **claim 48**) and to enable listening of a telephone call upon answering the incoming telephonic communication (paragraphs 0023 and 0024) (reads on **claim 49**).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to pause playing the audio file and allow listening of the telephone call, as taught by Cao et al., in the cellular telephone 10 (communication device) disclosed by Rydbeck et al., as modified by Lueck et al., for the purpose of avoiding missing telephone calls.

9. **Claims 56-58** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Rydbeck et al. (WO 99/43136)** in view of **Lueck et al. (U.S. Patent # 6,721,710 B1)** and further in view of **Fritsch (U.S. Patent # 6,247,130 B1)**.

Consider **claim 56**, Rydbeck et al. clearly show and disclose a cellular telephone 10 (communication device) (figures 1 and 2) comprising:

an entertainment (memory/processor) module 50 (figures 2 and 3) operable to store and play one or more audio files (e.g., music or audio signals) (abstract, page 2 line 20 - page 3 line

3, page 6 lines 3-17, and page 7 line 22-25);

an RF transceiver 18 (communication module) (figure 2) operable to receive an audio file (e.g., music or audio signals) selected by a user accessing an Internet website (i.e., inherent through the Internet-enabled cellular phone 10) accessible external to the cellular telephone 10 (cellular communication device) and operable to provide the user access to plural audio files (e.g., music or audio signals) (abstract, page 2 line 20 - page 3 line 3, page 6 lines 3-17, and page 7 line 22-25); and

a low power RF carrier communication module (not shown) operable to communicate an in process playing of at least one of the audio files (e.g., music or audio signals) or a telephonic communication to a headset 40 (wireless speaker) (figures 1 and 2, page 3 lines 4-7, page 5 line 19 - page 6 line 8, and page 7 lines 4-8).

However, Rydbeck et al. do not specifically disclose that the low power RF carrier communication module is a Bluetooth communication module.

Nonetheless, the Examiner takes Official Notice that it is notoriously well known in the art to use a Bluetooth communication module for short range, low power RF communications between communication devices.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a Bluetooth communication module, as known in the art, as the low power RF carrier communication module disclosed by Rydbeck et al. for the purpose of providing standardized short range RF communication between the headset and the cellular telephone.

However, Rydbeck et al., as modified above, do not specifically disclose that the entertainment (memory/processor) module 50 store and play plural audio formats of audio files.

Nonetheless, the feature of a memory and a processor operable to store and play, respectively, plural audio formats of audio files is well known in the art as evidenced by Lueck et al., who, in the same field of endeavor, clearly show and disclose a portable digital audio player 100 (figure 1) comprising, among other components, a flash memory 140 and a processor 110 (figure 1) operable to store and play, respectively, plural audio formats (e.g., MP3 and AAC) of one or more audio files or songs (column 2 lines 61-67 and column 3 lines 10-12 and 47-51).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to store and play plural audio formats of one or more audio files, as taught by Lueck et al., in the entertainment (memory/processor) module 50 disclosed by Rydbeck et al. for the purpose of providing alternative audio formats for user's selection.

Nonetheless, Rydbeck et al., as modified by Lueck et al., do not specifically disclose that the user access to the Internet website is through a user login page.

In the same field of endeavor, Fritsch clearly shows and disclose a system and method for requesting and downloading songs (audio files) from an Internet website via a cellular communication device (abstract and column 2 line 64 - column 3 line 2) wherein access to the songs (plural audio files) in the Internet website is provided to the user via a user login page (figures 1A-1C, column 3 lines 10-19 and 30-32, and column 4 lines 16-30).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide access to the Internet website via a user login page, as taught

by Fritsch, in the cellular telephone (communication device) disclosed by Rydbeck et al., as modified by Lueck et al., for authentication and security purposes.

Consider **claim 57**, and **as applied to claim 56 above**, Rydbeck et al., as modified by Lueck et al. and as further modified by Fritsch, further show and disclose:

a headset 40 (output means) (figure 1) for providing an audio output (page 5 line 19 - page 6 line 8);

input means (keypad 30 and display 32) (figures 1 and 2) for selecting the audio file (page 5 lines 12-15 and page 7 line 1-6); and

browsing means (not shown but inherent since the telephone is Internet-enabled) for viewing available preformatted audio and media files (e.g., music or audio signals available for downloading in the Internet) (page 6 lines 10-17).

Consider **claim 58**, and **as applied to claim 56 above**, Rydbeck et al., as modified by Lueck et al. and as further modified by Fritsch, also show and disclose a removable ROM 56 (memory device) (figure 2) operable to store at least one audio file (page 6 line 5 - page 7 line 4)

10. **Claim 61** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Rydbeck et al. (WO 99/43136)** in view of **Shanahan (U.S. Patent # 6,496,692 B1)**.

Consider **claim 61**, and **as applied to claim 60 above**, Rydbeck et al. further disclose:

receiving the second audio file independent of the incoming cellular telephone call (i.e., the music or audio signals (files) can be received from a computer through the Internet or a CD player (abstract, figures 1 and 2, page 2 lines 20-22, page 3 lines 4-6, page 6 lines 3-25, page 7

lines 1-6, and page 7 lines 22-25); and

storing the second audio file within the memory 54, 56 (abstract, figures 1-3, page 2 lines 20-22, and page 6 lines 3-25).

However, Rydbeck et al. do not specifically disclose playing the second audio file after detecting the incoming cellular telephone call.

In the same field of endeavor, Shanahan clearly shows and discloses an electronic device operable to play a music file in response to an incoming wireless (cellular) telephone call wherein the music file has been received independent of the incoming wireless (cellular) telephone call (abstract, figures 1 and 5-7, column 2 line 65 - column 3 line 40, column 7 line 60 - column 8 line 5, column 8 line 64 - column 9 line 2, and column 9 line 61 - column 10 line 17).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to, in response to an incoming cellular telephone call as taught by Shanahan, play a music file in the device taught by Rydbeck et al. for the purpose of provide distinctive incoming call alerting.

11. **Claims 63-67** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Rydbeck et al. (WO 99/43136)** in view of **Cao et al. (U.S. Patent Application Publication # 2005/0054379 A1)**.

Consider **claims 63 and 65**, and **as applied to claim 59 above**, Rydbeck et al. clearly show and disclose the claimed invention except enabling access to a streaming media link within a user interface of the cellular telephone 10 (communication device); detecting selection of the

streaming media link; and receiving the streaming media link, wherein the streaming media link comprises streaming audio (claim 65).

In the same field of endeavor, Cao et al. clearly show and disclose a method and a cordless telephone (communication device) with MP3 player capability (abstract) comprising, among other steps, the steps of: enabling access to a streaming media link (MP3 audio stream available in the Internet) within a user interface of the cordless telephone (communication device) (abstract, figure 4, and paragraphs 0019, 0026, and 0050-0054); detecting selection of the streaming media link and receiving the streaming media link (abstract, figure 4, and paragraphs 0019, 0026, and 0050-0054), wherein the streaming media link comprises streaming audio (i.e., MP3 stream audio) (reads on **claim 65**).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to enable access to a streaming media link, as taught by Cao et al., in the method disclosed by Rydbeck et al. for the purpose of providing alternative audio formats for user's selection.

Consider **claims 64 and 67**, and **as applied to claims 63 and 65 above**, Rydbeck et al., as modified by Cao et al., further disclose altering playing of the streaming media in response to detecting the cellular telephone call (page 7 lines 6-8).

Consider **claim 66**, and **as applied to claim 63**, Rydbeck et al., as modified by Cao et al., also disclose the step enabling access to broadcast video (page 9 line 21 - page 10 line 2).

12. **Claim 71** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Fritsch (U.S.**

Patent # 6,247,130 B1) in view of **Rydbeck et al. (WO 99/43136)**.

Consider **claim 71**, and **as applied to claim 68 above**, Fritsch clearly shows and discloses the claimed invention except that the cellular communication device is operable to alter playing of the audio file in response to receiving a telephonic communication communicated via the wireless communication network.

In the same field of endeavor, Rydbeck et al. clearly show and disclose a cellular telephone 10 (communication device) (figures 1 and 2) operable to play an audio file received via a cellular communication (e.g., playback music or audio downloaded and received via transceiver 12, 18 from the Internet) (abstract, figures 1 and 2, page 2 lines 20-22, page 3 lines 4-6, page 6 lines 3-5 and 10-17, page 7 lines 1-6, and page 7 lines 22-25) and alter playing of the audio file in response to detecting an incoming cellular telephone call (page 7 lines 6-8).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to alter playing of the audio file in response to an incoming telephone call, as taught by Rydbeck et al., in the cellular telephone disclosed by Fritsch for the purpose of avoiding missing telephone calls.

13. **Claim 77** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Fritsch (U.S. Patent # 6,247,130 B1)**.

Consider **claim 77**, and **as applied to claim 69 above**, Fritsch clearly show and disclose the claimed invention except that the Internet website is a WAP enabled Internet website.

Nonetheless, the Examiner takes Official Notice that it is notoriously well known in the

art to provide WAP enabled Internet websites for accessing by cellular telephones utilizing WAP browsers.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a WAP enabled Internet website, as known in the art, in the system disclosed by Fritsch for the purpose of providing standardized wireless Internet access to the cellular telephone.

14. **Claims 78-80** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Fritsch (U.S. Patent # 6,247,130 B1)** in view of **Bottum (U.S. Patent # 6,014,569)**.

Consider **claims 78-80**, and **as applied to claim 68 above**, Fritsch clearly shows and discloses the claimed invention except that the server (digital engine) is operable to provide access to an on-line radio or video broadcast.

In the same field of endeavor, Bottum clearly shows and discloses a wireless communication system comprising an audio/video data provider (digital engine) 110 providing access, to a wireless communication device 150, to on-line audio or video broadcast (figures 1 and 2, column 4 lines 27-48, column 5 line 55 - column 6 line 3, and column 7 lines 58-60).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide access to an online broadcast, as taught by Bottum, in the system disclosed by Fritsch for the purpose of providing a variety of content to the user.

15. **Claim 81** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Fritsch (U.S.**

Patent # 6,247,130 B1) in view of **Bottum (U.S. Patent # 6,014,569), as applied to claim 78 above**, and further in view of **Rydbeck et al. (WO 99/43136)**.

Consider **claim 81**, and **as applied to claim 78 above**, Fritsch, as modified by Bottum, clearly shows and discloses the claimed invention except that the cellular communication device is operable to alter playing of an accessed broadcast in response to an incoming cellular telephone call.

In the same field of endeavor, Rydbeck et al. clearly show and disclose a cellular telephone 10 (communication device) (figures 1 and 2) operable to play a radio or TV broadcast received via a cellular communication (abstract, figures 1 and 2, page 2 lines 20-22, page 3 lines 4-6, page 6 lines 3-5 and 10-17, page 7 lines 1-6, page 7 lines 22-25, and page 9 line 21 - page 10 line 2) and alter playing of the broadcast in response to detecting an incoming cellular telephone call (page 7 lines 6-8).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to alter playing of the broadcast in response to an incoming telephone call, as taught by Rydbeck et al., in the cellular telephone disclosed by Fritsch, as modified by Bottum, for the purpose of avoiding missing telephone calls.

Response to Arguments

16. Applicant's arguments with respect to **claims 40-81** have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure.

Valentine et al. (WO 98/19480) disclose a method and apparatus for downloading tones to mobile terminals;

Emiko (JP 10-173737) discloses personal equipment;

Ito (EP 0 898 378) discloses a wireless information communication method and device;

Kim (KR 1999-024210 and WO 00/38340) discloses an apparatus and method for storing and playing back of digital audio data on wireless mobile terminal;

Kurakake (U.S. Patent # 5,900,564) discloses a music data processing apparatus with communication interface and graphic user interface;

Kim (KR 1999-0033726) discloses a voice-reproducible portable phone;

Jackson (U.S. Patent # 6,516,466 B1) discloses a method and apparatus for portable digital entertainment system;

Aarnio (U.S. Patent Application Publication # 2004/0078274 A1) discloses an on-line subscription system and method; and

Yukie et al. (U.S. Patent # 6,956,833 B1) disclose a method, system and devices for wireless data storage on a server and data retrieval.

18. Any response to this Office Action should be **faxed to** (571) 273-8300 **or mailed to**:

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If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Marsha D. Banks-Harold can be reached on (571) 272-7905. 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) or 703-305-3028.

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Rafael Perez-Gutierrez
R.P.G./rpg

RAFAEL PEREZ-GUTIERREZ
PRIMARY EXAMINER

November 15, 2005

Notice of References Cited	Application/Control No. 09/537,812	Applicant(s)/Patent Under Reexamination White et al.	
	Examiner Rafael Perez-Gutierrez	Art Unit 2686	Page 1 of 1

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*	A	US-5,900,564	05-1999	Kurakake	84/477 R
*	B	US-6,516,466 B1	02-2003	Jackson	455/3.01
*	C	US-6,721,710 B1	04-2004	Lueck et al.	369/59.21
*	D	US-2004/0078274 A1	04-2004	Aarnio	705/26
*	E	US-2005/0054379 A1	03-2005	Cao et al.	455/556.1
*	F	US-6,956,833 B1	10-2005	Yukie et al.	370/352
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N	98/19480	05-1998	WIPO	Valentine et al.	H04Q 7/22
	O	10-173737	06-1998	Japan	Emiko	H04M 1/00
	P	0 898 378	02-1999	Europe	Ito	H04B 1/20
	Q	1999-024210	03-1999	Korea	Kim	H04L 12/58
	R	1999-0033726	05-1999	Korea	Kim	H04B 1/40
	S	99/43136	08-1999	WIPO	Rydbeck et al.	H04M 1/72
	T	00/38340	06-2000	WIPO	Kim	H04B 1/40

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
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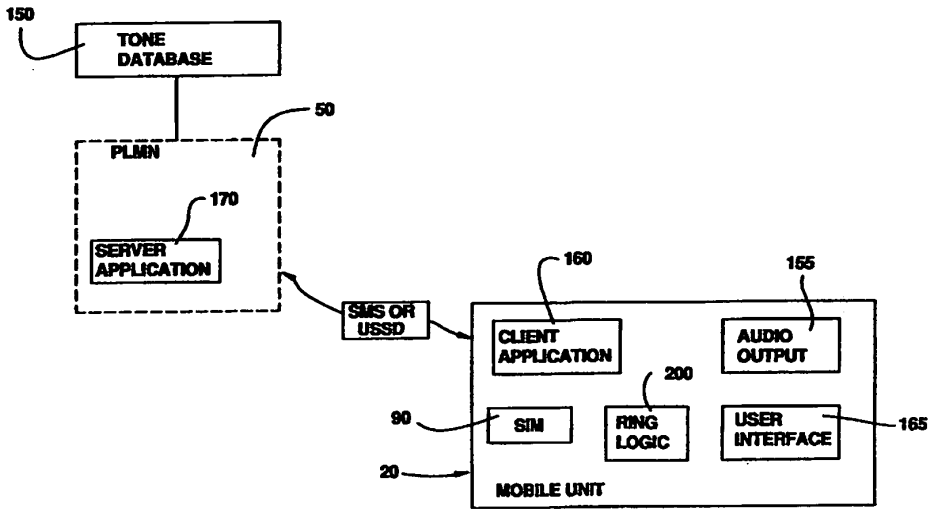

(57) Abstract

A method and apparatus for downloading tone data from a public land mobile network (50) to a mobile telephone unit (20) are disclosed. A mobile telephone unit (20) includes means (160) enabling the user to request downloading of tone data to the mobile telephone unit (20) from a public land mobile network (50) via a connectionless communications link such as the USSD or SMS. The downloaded tone data is uniquely associated with a selected telephone number within the mobile telephone unit (20) such that a call to the mobile unit (20) involving the telephone number initiates audio play back of the tone data.

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METHOD AND APPARATUS FOR DOWNLOADING TONES TO MOBILE TERMINALS

BACKGROUND OF THE INVENTION

Technical Field of the Invention

The present invention relates to personal communication systems, and more particularly, to the downloading of tone data to a mobile terminal to enable the playing of the tones in association with a particular telephone number.

Description of Related Art

The ever expanding list of services available via personal communication services (PCS) systems have provided PCS users with the ability to select a number of services from their mobile telephone unit in addition to the standard telephone communication services. A number of these services require the user to view some type of graphical or alphanumeric display upon the mobile telephone unit. Having to view the display can in some cases be inconvenient, for example, if the user happens to be driving, if the telephone is located in the user's pocket or briefcase, or if the user is involved in activity precluding the use of their hands. Thus, it would be beneficial to enable the user to know who is calling without having to check the calling number display.

In other cases using existing PCS technologies, the user may have more than one telephone number associated with a particular mobile telephone unit, for example, a personal telephone number and a business telephone number. The user can benefit by knowing whether the personal or business number has been called by the use of an indicator that does not require the user to look at the phone. This will enable the user to answer the mobile telephone unit differently based upon whether the business number or

personal number was called. Thus, a mobile telephone unit providing the user with the option to select and download new tones to be used for different call scenarios would provide an ease of use and flexibility that would greatly benefit the user.

SUMMARY OF THE INVENTION

The present invention overcomes the foregoing and other problems with a method and apparatus for downloading tone data between a public land mobile network (PLMN) and a mobile unit. A mobile unit includes a client application for requesting the downloading of tone data from a PLMN through a connection-less communications link. Requests from the client application are received by a server application located within the public land mobile network. The server application is normally associated with the mobile switching center (MSC). The server application provides access to a tone data base wherein a user may select a tone for downloading through the mobile unit's user interface.

Once a tone is selected, the tone data associated with the tone is downloaded to the mobile unit via the connection-less user interface. The interface preferably comprises either short message service (SMS) messages or unstructured supplemental services data (USSD) messages which are useful for downloading unstructured user designated data. The downloaded tone data is then uniquely associated with a selected called or calling party telephone number, or group of numbers, such that when a call to the mobile unit involves the selected telephone number, an audio play back of the tone data is initiated.

BRIEF DESCRIPTION OF THE DRAWINGS

A more complete understanding of the method and apparatus of the present invention may be obtained by

reference to the following Detailed Description when taken in conjunction with the accompanying Drawings wherein:

FIGURE 1 is a block diagram illustrating the communication of a short message service (SMS) messages between a SMS operator and a mobile station;

FIGURE 2 is a block diagram illustrating the communication of an unstructured supplemental services data (USSD) messages between a USSD external node user and a mobile station;

FIGURE 3 is a block diagram illustrating the components necessary for downloading of tones between a PLMN and mobile unit; and

FIGURE 4 is a block diagram illustrating the manner through which a user interactively downloads tones to a subscriber identity module (SIM) card.

DETAILED DESCRIPTION OF THE DRAWINGS

Telecommunication services are normally performed in a structured way. For example, specific predefined data, formats, and signal names are used to set up a speech connection, to perform handovers, and to authenticate mobile subscriber information when providing telecommunication service to a mobile subscriber. With the introduction of the global system for mobile communications (GSM) and the personal communications systems (PCS), a number of new and advanced supplementary services are being provided to mobile subscribers. Since these supplementary services utilize user specified data, there are no structured ways to communicate this data between the public land mobile network (PLMN) and a mobile station. As a result, a number of unstructured business protocols have been developed for the GSM or PCS environments. As the transmission of tone data between a PLMN and a mobile unit falls under the category of transmitting unstructured user data, the transfer would be controlled by one of these protocols.

Once such protocol is unstructured supplementary service data (USSD) which has been introduced to enable user interaction between PLMN applications and a mobile station in a transparent way through a mobile telecommunication network. The communication is transparent because no review or manipulation of the contents of the message is performed during the transportation period.

One type of user specified information that may be transmitted between a PLMN and a mobile telephone unit is tone data, which then may be associated with called or calling numbers in a manner designated by the user. Reference is now made to FIGURE 1, where a block diagram generally illustrates the communication of a short message service (SMS) message between an SMS operator 10 and mobile station 20. The SMS operator 10 sends data to the short message service center (SMS-C) 30 to be transmitted to the mobile station 20. The SMC-C 30 encapsulates the entered data into a packet message, such as signaling system number 7 (SS 7) signals or X.25 protocol packets, and routes the message to a short message service-gateway mobile switch center (SMS-GMSC) 40 within a PLMN 50 serving the mobile station 20. The SMS-GMSC 40 interrogates a home location register (HLR) 60 associated with the mobile unit 20 for routing information (i.e., an identification where the mobile station 20 is currently located) and subsequently routes the message to a mobile switching center (MSC) 70 serving the mobile station's current location. The mobile station 20 is paged and a connection is set up between the mobile station and the PLMN 50.

If the mobile station 20 is already busy, the connection setup is not performed because the network already knows the mobile station 20 is accessible. If the connection has been successful and thereby the mobile station 20 authenticated, the MSC 70 encapsulates the tone data into an SMS message 80 and delivers the SMS message

to the mobile station 20 over one of the control data channels. The control data channel such as a stand alone dedicated control channel (SDCCH) is used instead of a traffic channel (TCH) to allow connection-less data communication. After receiving the SMS message 80 encapsulating the tone data, the mobile station acts merely as a buffer and passes the data to the attached subscriber identity module (SIM) card 90. The SIM card 90 then stores the received data into an internal buffer or memory register. Lastly, if the delivery has been successful, a successful delivery report is sent back from the MS 20 to the serving MSC 70, and subsequently from the serving MSC 70 to the SMS-C 30. Otherwise, a failure report is generated.

With respect to a mobile originated SMS message (MO-SMS), a user at a mobile station 20 can initiate an SMS signal to request downloading of data, such as tone data. The mobile station 20 makes a request to the mobile switching center (MSC) 70 to transmit tone data to the mobile station 20. The MSC 70 encapsulates the request into a packet message, and routes the message to a short message service gateway mobile switch center (SMS-GMSC) 40 within a PLMN 50 serving the mobile station 20. The SMS-GMSC 40 retrieves the requested data and subsequently routes a message to the MSC 70 serving the mobile station's current location. The mobile station 20 is then paged and a connection is set up between the mobile station and the PLMN 50. The MSC 70 encapsulates the tone data into an SMS message 80 and delivers the SMS message to the mobile station 20 over one of the control data channels. The data is then stored within the SIM card 90 as previously described.

FIGURE 2 is a block diagram illustrating the communication of a USSD message between a USSD external node user 100 and a mobile station 20. USSD messages are utilized by the mobile telecommunications network to transport user defined data to a mobile station 20 or an

application module within a mobile station. Therefore, instead of storing and receiving character data into a SIM card, the received data is either manipulated by the feature application modules within the receiving mobile station to provide special subscriber feature functions, or it is displayed on a display unit for user interactions.

The external node user 100 transmits the USSD message encapsulating the tone data to the HLR 60 within the serving PLMN 50. The HLR 60 is associated within a number of different MSC's within the same PLMN 50. As the mobile station 20 travels from one MSC's area to another, the HLR receives location update signals into record of the mobile station's current location. Whenever a USSD signal is received by the HLR, the HLR ascertains a current location of the mobile station 20. The USSD handler 110 within the HLR 60 thereafter transparently forwards the USSD signal to the appropriate MSC 70 currently serving the mobile station 20. The USSD handler 120 within the serving MSC 70 receives the transmitted message and transports the USSD message 130 to the mobile station 20 over a connection-less communications link. The USSD handler 140 within the mobile station 20 then receives the transmitted USSD message 130, extracts encapsulated tone data, and forwards the extracted data to the appropriate application module.

Referring now to FIGURE 3 where a block diagram illustrates the components necessary for downloading tones requested by a subscriber (user). The subscriber requests access to a tone database 150 containing a variety of predetermined data packages representing a particular tone or group of tones to be played by the audio output 155 of the mobile unit 20 in response to a particular calling or called number. The client application 160 within the mobile unit 20 initiates a request for access to the tone database in response to inputs by the user through the user interface 165. The client application 160 actuates

a serving application 170 located with the PLMN. The serving application 170 may be located with the MSC/VLR, the HLR, or some other external node. The serving application 170 connects the user with the database 150 using either the SMS or USSD protocols discussed earlier. The user then selects desired tones in a manner which will be more fully described with respect to FIGURE 4.

The tone data associated with the tone selected from the tone database 150 is downloaded to the client application 160 as a digitally coded tone pattern using either the USSD or SMS protocols described previously with respect to FIGURES 1 and 2. The above-described manner of downloading a tone from the tone database 150 is utilized with respect to menu driven options solely using SMS or USSD messages. Optionally, an audio menu may be provided to the user such that an actual connection is generated between the mobile station 20 and the tone database 150. In this case, an audio version of the tones would be played for the user and the client application 160 would record the tone and convert it to a digital format for storage in the SIM card 90.

In the case of a transmission using a SMS message, the serving MSC 70 receives the transmitted tone signal from the SMS-GSMC 40 and then transmits an SMS message encapsulating the tone data to the mobile unit station 20 over a connection-less communication link such as SDCCH. The client application 160 within the mobile unit 20 acts as a buffer for the SMS message and passes the tone data from the message to the SIM card 90. The user may then, through client application 160, associate the tone within the SIM card 90 with a particular calling or called telephone number.

If a USSD message is used for downloading, the tone data is routed to the mobile station 20 by a USSD handler 120 within the serving MSC 70 as a USSD message encapsulating the tone data over a connection-less communication link such as SDCCH. USSD handler 140 within

the mobile station receives the transmitted USSD message and forwards the message to the client application 160 for extraction of the tone data. The extracted tone data is then stored within the SIM card 90. Through the client application 160, the user may then uniquely associate the tone with a particular calling or called telephone number.

Once the tone data is downloaded into the SIM card 90 of the mobile unit 20 and associated with a particular telephone number, the receipt of an incoming call actuates ring logic 200 within the mobile terminal 20. The ring logic 200 checks for the presence of tone pattern associated with the number called or the number of the party calling. If such an association is found, the tone data is played by the audio output 155 to provide an audio indicator to the user of who is calling or which of the user's numbers is being called.

Referring now to FIGURE 4, there is illustrated the procedure by which a user may download a particular tone pattern from the tone database 150. Once the mobile unit 20 has interconnected with the tone database 150, the mobile unit user is presented at step 260 with a variety of menus enabling the selection of tones by the user. The menus may break the tones down in a variety of manners such as alphabetically, by music type, by novelty items, etc. Once a particular tone is selected, the user may play a sample tone at step 270 to preview what the tone sounds like. When a desired tone or tone pattern is found, the user may instruct the application 160 to download the tones at step 280. Otherwise, a user may return to previous menus at step 300.

Although an embodiment of the method and apparatus of the present invention has been illustrated in the accompanying Drawings and described in the foregoing Detailed Description, it will be understood that the invention is not limited to the embodiment disclosed, but is capable of numerous rearrangements, modifications and substitutions without departing from the spirit of the

invention as set forth and defined by the following claims.

WHAT IS CLAIMED IS:

1. A mobile station, comprising:

a receiver for receiving tone data over connection-less communications link from a public land mobile network;

a register for storing the tone data; and

means for requesting downloading of the tone data to the register from the public land mobile network over the connection-less communications link and for associating a telephone number with the tone data such that call connections involving the telephone number initiates audio playback of the tone data.

2. The mobile station of Claim 1 wherein the register comprises a subscriber identity module card attachable to the mobile station.

3. The mobile station of Claim 1 wherein the connection-less communications link comprises short message service messages.

4. The mobile station of Claim 1 wherein the connection-less communications link comprises unstructured supplementary service data messages.

5. The mobile station of Claim 1 wherein the telephone number comprises a telephone number of a calling party.

6. The mobile station of Claim 1 wherein the telephone number comprises a telephone number of a called party.

7. The mobile station of Claim 1 further including control logic for determining if an incoming call involves the telephone number and initiating audio playback of the

tone data for incoming calls involving the telephone number.

8. A system for downloading tone data to a mobile station, comprising:

a public land mobile network serving said mobile station, said public land mobile network includes a first application module responsive to a request from the mobile unit for downloading tone data to the mobile station of a connection-less communications link; and

said mobile station comprising:

a register for storing tone data;

a receiver for receiving tone data from the public land mobile network over the connection-less communications link; and

means for requesting downloading of the tone data to the register from the public land mobile network over the connection-less communications link and for associating a telephone number with the tone data such that call connections involving the telephone number initiate audio playback of the tone data.

9. The mobile station of Claim 8 wherein the register comprises a subscriber identity module card attachable to the mobile station.

10. The mobile station of Claim 8 wherein the connection-less communications link comprises short message service messages.

11. The mobile station of Claim 8 wherein the connection-less communications link comprises unstructured supplementary service data messages.

12. The mobile station of Claim 8 wherein the telephone number comprises a telephone number of a calling party.

13. The mobile station of Claim 8 wherein the telephone number comprises a telephone number of a called party.

14. The mobile station of Claim 8 further including control logic for determining if an incoming call involves the telephone number and initiating audio playback of the tone data for incoming calls involving the telephone number.

15. A method for downloading tone data, comprising the steps of:

accessing a public land mobile network using a communications link from a mobile unit;

requesting access to tone data located within the public land mobile network from a client application within the mobile unit;

downloading the requested tone data to a SIM card within the mobile unit through a connection-less communications link; and

associating the downloaded tone data with a selected telephone number.

16. The method of Claim 15 further including the steps of playing an audio rendition of the tone data in response to receipt by the mobile unit of a call involving the selected telephone number.

17. The mobile station of Claim 15 wherein the connection-less communications link comprises short message service messages.

18. The mobile station of Claim 15 wherein the connection-less communications link comprises unstructured supplementary service data messages.

19. The mobile station of Claim 15 wherein the telephone number comprises a telephone number of a calling party.

20. The mobile station of Claim 15 wherein the telephone number comprises a telephone number of a called party.

21. The mobile station of Claim 15 wherein the requested access provides audio playback of the tone data.

22. The mobile station of Claim 15 wherein the requested access provides a text selection of the tone data.

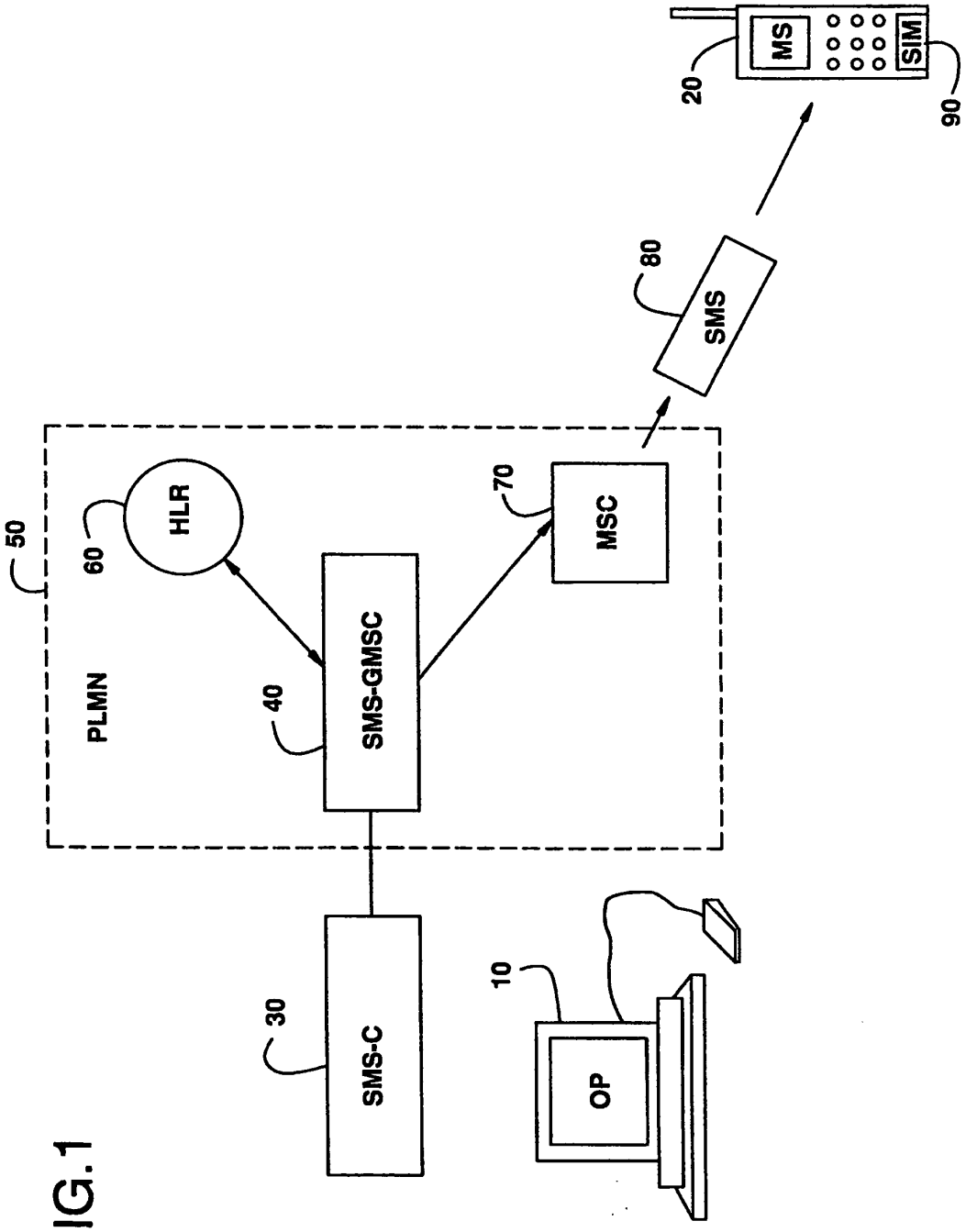


FIG.1

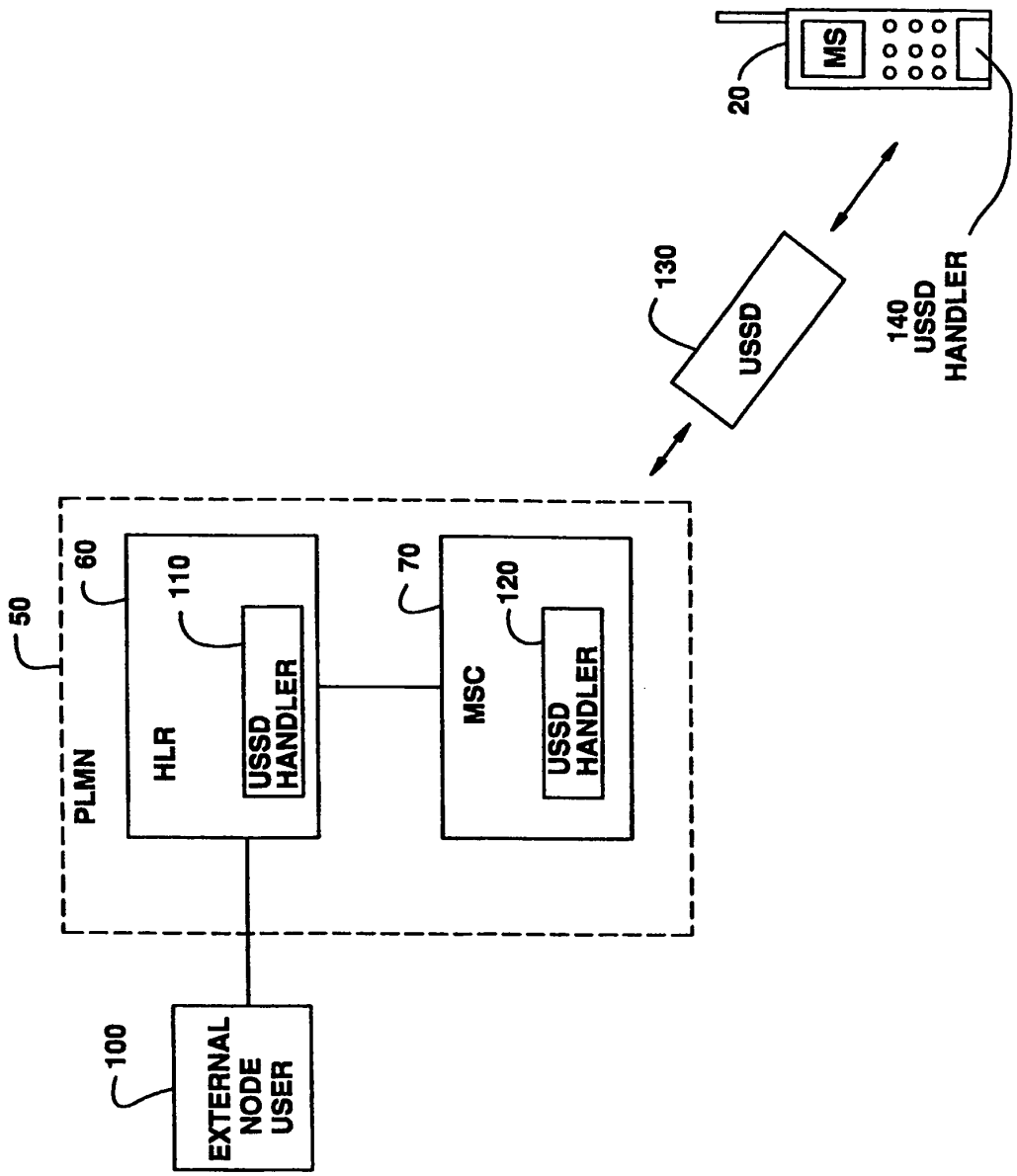

MS
20
130
USSD
140
USSD
HANDLER
50
PLMN
60
HLR
110
USSD
HANDLER
70
MSC
120
USSD
HANDLER
100
EXTERNAL
NODE
USER

FIG.2

FIG.3

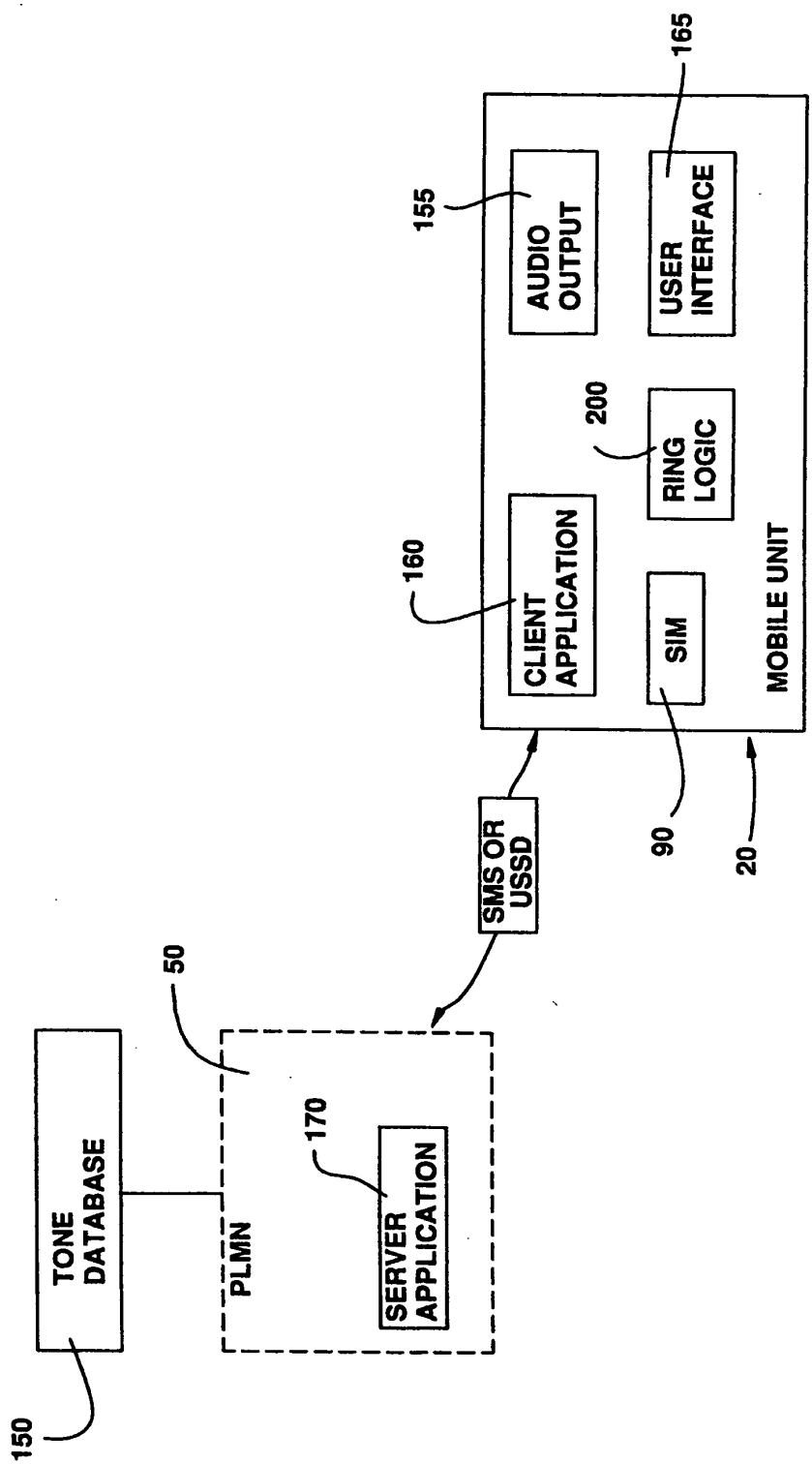
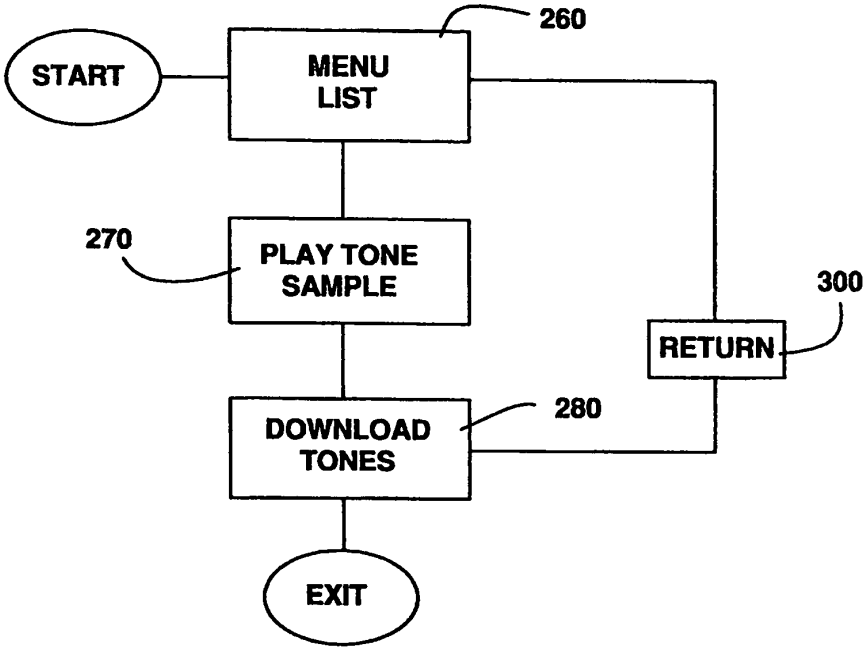

165
155
AUDIO OUTPUT
USER INTERFACE
200
RING LOGIC
160
CLIENT APPLICATION
SIM
MOBILE UNIT
SMS OR USSD
90
20
50
170
SERVER APPLICATION
PLMN
TONE DATABASE
150

FIG.4


START
MENU LIST
260
270
PLAY TONE SAMPLE
300
RETURN
DOWNLOAD TONES
280
EXIT

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Ｈ０４Ｑ　7/38		Ｈ０４Ｈ　1/08		
Ｈ０４Ｈ　1/08		Ｈ０４Ｍ　11/08		
Ｈ０４Ｍ　11/08		Ｈ０４Ｂ　7/26	１０９Ｌ	

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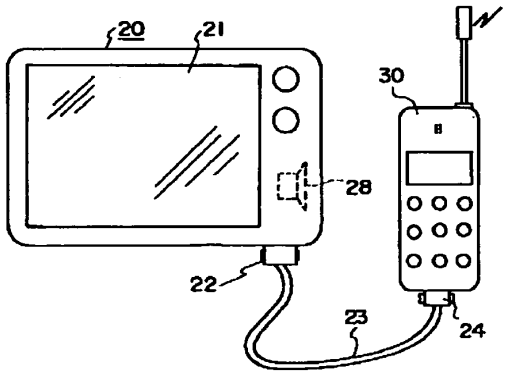
(54)【発明の名称】　個人用機器

(57)【要約】

【課題】本発明は多種多様な着信音のなかから所望の音を利用者が選択することができ、選択された着信音に容易に変更可能な個人用機器を提供することを目的とする。

【解決手段】個人用情報端末装置２０は、センターサーバに格納された多種多様な着信音のなかから利用者が所望の音を選択するための選択手段と、この選択手段により選択された着信音の曲データを、ネットワークを介してセンターサーバからダウンロードするための通信装置（ここでは携帯電話機）３０と、この通信装置３０から得られた曲データを記憶する曲データメモリと、この曲データメモリに記憶された曲データに従い、着信音を発音する発音回路とを有している。



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【特許請求の範囲】

【請求項1】　センターサーバに格納された複数の着信音のなかから利用者が所望の音を選択するための選択手段と、

この選択手段により選択された着信音の曲データを、通信網を介して前記センターサーバから得るための通信手段と、

この通信手段から得られた曲データに従って着信音を発音する発音手段と、を具備することを特徴とする個人用機器。

【請求項2】　前記通信手段から得られた曲データを恒久的に記憶する曲データ記憶手段をさらに具備することを特徴とする請求項1に記載の個人用機器。

【請求項3】　本体装置に対して着脱自在に取り付けられ、着信音の曲データが記録された曲データ記憶媒体を備えたオルゴールチップと、

本体装置に設けられ、前記オルゴールチップの曲データ記憶媒体から曲データを読み出すとともに当該曲データに従って着信音を発音する発音手段と、を具備することを特徴とする個人用機器。

【請求項4】　本体装置に対して着脱自在に取り付けられ、着信音の曲データが記録された曲データ記憶媒体と、当該曲データ記憶媒体から曲データを読み出すとともに当該曲データに従って着信音を発音する発音手段と、を備えたオルゴールチップを具備することを特徴とする個人用機器。

【請求項5】　前記着信音の曲データは、少なくとも音の高低及び強弱及び長短のいずれかを定めるデータであることを特徴とする請求項1又は2又は3又は4のいずれかに記載の個人用機器。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】本発明は、個人用情報端末（PDA：Personal Digital Assistance ）あるいは携帯電話機など、主に携帯して使用することが可能な個人用機器に関する。

【0002】

【従来の技術】従来から知られているこの種の個人用機器においては、当該機器の使用者に対する電子メールの着信通知、あるいはページャー呼出しの着信通知等を可聴音によって通知する、いわゆる着信通知機能を有している。当該機能は、より広義には振動（バイブレーション）による着信通知機能を含んでいる。

【0003】この種の個人用機器を例えば屋外にて使用するような場合において、特に、同一機種の個人用機器の所有者が周囲に大勢いるような状況では、いずれの所有者の機器においても同一の着信音が鳴音することになる。したがって着信の際には何れの機器が鳴音しているのか判別し難い。そこで従来の個人用機器では、複数種の着信音を予め組み込んでおき、その中から着信音の種

2

類を選択することによって着信音を変更できるようにしている。

【0004】

【発明が解決しようとする課題】上述したような従来の個人用機器には、次のような問題点がある。すなわち、利用者が選択可能な着信音の種類は、その機種の仕様等に応じて予め組み込まれたものに限定されてしまう。このため、状況あるいは嗜好に応じた多種多様な着信音を使用したいという利用者からの要望に応じることができないという問題点がある。

【0005】したがって本発明は、多種多様な着信音のなかから所望の音を利用者が選択することができ、選択された着信音に容易に変更可能な個人用機器を提供することを目的とする。

【0006】

【課題を解決するための手段】上記課題を解決し、目的を達成するために本発明の個人用機器は、以下のような手段を備えている。

（1）本発明の個人用機器は、センターサーバに格納された複数の着信音のなかから利用者が所望の音を選択するための選択手段と、この選択手段により選択された着信音の曲データを、通信網を介して前記センターサーバから得るための通信手段と、この通信手段から得られた曲データに従って着信音を発音する発音手段と、を具備することを特徴とする。

【0007】この構成によれば、選択手段により選択された利用者の好みの着信音の曲データを、センターサーバから通信手段を介して得ることができる。そして得られた曲データに従って発音手段により着信音の発音が行われる。すなわち、センターサーバから取得可能な多種多様の着信音を選択して容易に変更することが可能となる。なお、通信手段から得られた曲データを一時的に記憶する例えば揮発性メモリーを備えることが望ましい。

（2）本発明の個人用機器は、上記（1）に記載の装置であって、且つ前記通信手段から得られた曲データを恒久的に記憶する曲データ記憶手段をさらに具備することを特徴とする。

【0008】この構成によれば、センターサーバーからダウンロードされた曲データを恒久的に記憶することができるので、同一の着信音を何度も発音する場合に、センターサーバーから曲データをその都度得る必要がない。

（3）本発明の個人用機器は、本体装置に対して着脱自在に取り付けられ、着信音の曲データが記録された曲データ記憶媒体を備えたオルゴールチップと、本体装置に設けられ、前記オルゴールチップの曲データ記憶媒体から曲データを読み出すとともに当該曲データに従って着信音を発音する発音手段と、を具備することを特徴とする。

【0009】この構成によれば、異なる着信音の曲デー

タが記録された曲データ記憶媒体を備えた多種多様のオルゴールチップが提供されることにより、利用者は好みのオルゴールチップを用意することができる。オルゴールチップは本体に対して容易に着脱可能であるので、好みの着信音を電池交換と同程度の手軽さで使い分けることができる。

（４）本発明の個人用機器は、本体装置に対して着脱自在に取り付けられ、着信音の曲データが記録された曲データ記憶媒体と、当該曲データ記憶媒体から曲データを読み出すとともに当該曲データに従って着信音を発音する発音手段と、を備えたオルゴールチップを具備することを特徴とする。

【００１０】この構成によれば、異なる着信音の曲データが記録された曲データ記憶媒体と、この曲データに従って異なる音色で着信音を発音す発音手段とを備えた多種多様のオルゴールチップが提供されることにより、利用者は好みのオルゴールチップを用意することができる。オルゴールチップは本体に対して容易に着脱可能であるので、好みの着信音を電池交換と同程度の手軽さで使い分けることができる。

【００１１】

【発明の実施の形態】以下、図面を参照しながら本発明の個人用機器の実施形態を説明する。

（第１実施形態）図１は、本発明の第１実施形態に係る個人用機器の外観を示す図である。本実施形態の個人用機器は、上述した個人用情報端末（ＰＤＡ：Personal Digital Assistance ）２０と携帯電話機３０とがコネクタ２２、２４及びケーブル２３を介して接続されて構成されている。個人用情報端末２０は、ペンタッチスクリーン２１を有しており、このスクリーン２１を介して高機能で操作性の高いユーザーインターフェースが実現される。

【００１２】この個人用情報端末２０には、個人情報を効率良く管理するための機能、いわゆるＰＩＭ機能が搭載されている。当該ＰＩＭ機能は、タスク・スケジュール管理、簡単な顧客データベース、そして電子メールといった種々の機能から成る。特に本実施形態の装置２０は、電子メール機能において、新たなメールの着信通知を可聴音によって通知するための着信通知機能を有している。そのために、着信音を鳴音させるためのスピーカ２８を内蔵している。

【００１３】図２は、本発明の第１実施形態に係る個人用機器の概略構成を示すブロック図である。個人用情報端末装置２０は、センターサーバ５０に格納された多種多様な着信音のなかから利用者が所望の音を選択するための選択手段（不図示）と、この選択手段により選択された着信音の曲データを、ネットワーク（ここでは移動体電話網、携帯電話網）を介してセンターサーバ５０からダウンロードするための通信装置（ここでは携帯電話機）３０と、この通信装置３０から得られた曲データを一時的に記憶する例えば揮発性メモリからなる曲データメモリ２５と、この曲データメモリ２５に記憶された曲データに従い、着信音を発音する発音回路２９とを有している。ＣＰＵ２６は装置全体の動作を司る。なお、センターサーバ５０から得られた曲データを恒久的に記憶する曲データ記憶手段を備えても良い。この場合は、同一の着信音を何度も発音する場合に、センターサーバ５０から曲データをその都度得る必要がないという利点がある。

【００１４】上記選択手段は、ＣＰＵ２６により実行可能なソフトウェアにより実現され、これによりペンタッチスクリーン２１を介してセンターサーバ５０上において選択可能な多種多様の着信音の一覧（好みのメロディー、）を表示することができる。ここでの表示を見ながら利用者は当該スクリーン２１を操作して所望の着信音を選択することができる。

【００１５】センターサーバ５０から通信装置３０を介してダウンロードされる曲データは、着信音を構成する各音の少なくとも高低及び強弱及び長短のいずれかを定めるものである。ただし、着信音の質、種類を比較的簡素なものとする場合は、例えば音の高低（ピッチ）のみを曲データとし、これによりデータ量の削減を図っても良い。

【００１６】以上のように構成された本実施形態によれば、選択手段により選択された利用者の好みの着信音の曲データが、センターサーバ５０から通信装置３０を介してダウンロードされて曲データメモリ２５に記憶保持される。そして発音回路２０により曲データメモリ２５に記憶されている曲データが読み出され、当該データに従って着信音の発音が行われる。すなわち、センターサーバ５０からダウンロード可能な限り多種多様の着信音を選択して容易に変更することが可能となる。

【００１７】このため、利用者が選択可能な着信音の種類が、その機種の仕様等に応じて予め組み込まれたものに限定されることがなく、状況あるいは嗜好に応じた多種多様の着信音を使用したいという利用者からの要望に応じることができる。

【００１８】したがって、多種多様な着信音のなかから所望の音を利用者が選択することができ、選択された着信音に容易に変更可能な個人用機器を提供できる。なお、個人情報端末装置２０は上記した構成に限定されない。例えば図３に示すように、通信装置３０を具備しない代わりに、サーバー４０に対してコネクタ２２、２４及びケーブル２３を介して直結する構成とし、このサーバー４０から有線で曲データを転送するようにしても良い。

【００１９】（第２実施形態）図４は、本発明の第２実施形態に係る個人用機器の外観を示す図である。同図に示すように、本実施形態の個人用機器は、ペンタッチスクリーン１１を有し、第１実施形態のものと同様のユー

5

ザーインターフェース及び当該インターフェースを利用するＰＩＭ機能を有する個人情報端末装置１０により構成されている。

【００２０】本実施形態の個人情報端末装置１０は、第１実施形態とは異なり、センターサーバ等から着信音の曲データをダウンロードするための通信装置を具備しない。その代わりに、当該個人情報端末装置１０に対し自在に着脱可能であって、スピーカ１５を内蔵した着信信号発音部（オルゴールチップ）１２を備えている。

【００２１】図５は、個人情報端末装置１０の概略構成を示すブロック図である。同図に示すように個人情報端末装置１０は、曲データ記憶媒体である曲データＲＯＭ１３と、スピーカを含む発音回路１５とからなるオルゴールチップ１２が、メイン基盤１４に対し着脱自在に接続される構成となっている。

【００２２】このように構成された本実施形態によれば、異なる着信音、すなわち異なる曲データに従って異なる音色の着信音を発音可能な多種多様のオルゴールチップ１２を容易に提供でき、利用者は好みのオルゴールチップ１２を選択することができる。オルゴールチップ１２は本体に対して容易に着脱可能であるので、好みの着信音を電池交換と同程度の手軽さで使い分けることができる。例えば、子供が寝ている夜間にはソフトな着信音を使用し、屋外に出る場合は強力な音のものに差し替えるといった利用法が実現される。

【００２３】なお、上記オルゴールチップ１２内の発音回路１５は、メイン基盤１４を含む本体装置側に設けられていても良い。この場合は、着信音の音色等が発音回路１５に限定されるが、オルゴールチップ１２のコストを軽減できる。

【００２４】かくして第２実施形態によれば、第１実施形態と同様に、利用者が選択可能な着信音の種類が、その機種の仕様等に応じて予め組み込まれたものに限定されることがなく、状況あるいは嗜好に応じた多種多様の着信音を使用したいという利用者からの要望に応じ得る。

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【００２５】したがって、多種多様な着信音のなかから所望の音を利用者が選択することができ、選択された着信音に容易に変更可能な個人用機器を提供できる。なお、本発明は上述した実施形態に限定されず、種々変形して実施可能である。

【００２６】

【発明の効果】以上説明したように本発明によれば、多種多様な着信音のなかから所望の音を利用者が選択することができ、選択された着信音に容易に変更可能な個人用機器を提供できる。

【図面の簡単な説明】

【図１】本発明の第１実施形態に係る個人用機器の外観を示す図。

【図２】本発明の第１実施形態に係る個人用機器の概略構成を示すブロック図。

【図３】本発明の第１実施形態に係る個人用機器の他の構成例の外観を示す図。

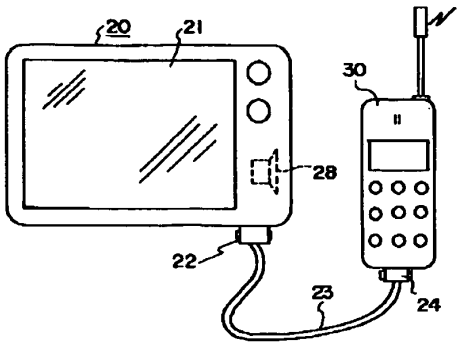
【図４】本発明の第２実施形態に係る個人用機器の外観を示す図。

【図５】本発明の第２実施形態に係る個人用機器の概略構成を示すブロック図。

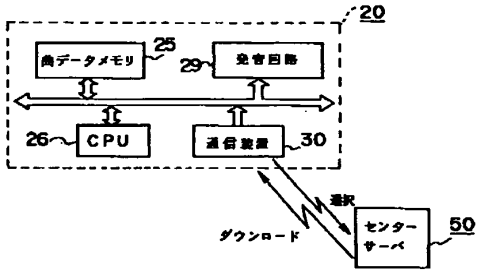
【符号の説明】

１０、２０…個人情報端末装置
１１、２１…ペンタッチスクリーン
１２…オルゴールチップ
１３…曲データＲＯＭ
１４…メイン基盤
１５…発音回路（スピーカ）
２２、２４…コネクタ
２３…ケーブル
２５…曲データメモリ
２６…ＣＰＵ
２９…発音回路
３０…通信装置（携帯電話機）
５０…センターサーバ

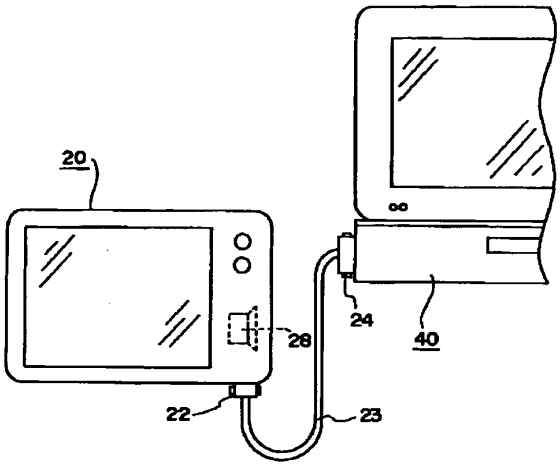
【図１】



【図２】



【図3】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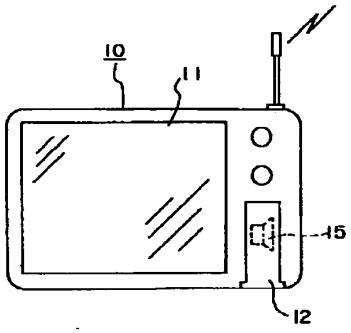
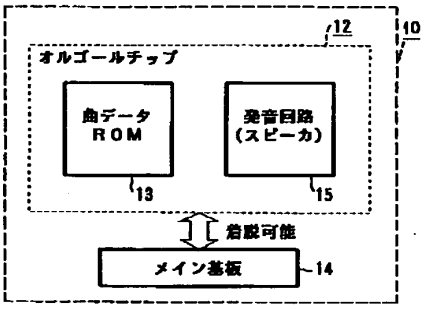
23

【図4】

【図4】


10
11
15
12

【図5】


12
10
オルゴールチップ
曲データ
ROM
発音回路
(スピーカ)
13
15
着脱可能
メイン基板
14

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(54) Wireless information communication method and device

(57) A wireless acoustic transmission device for realizing an acoustic offering service having superior convenience.

There provides wireless transmission means (5) for transmitting the service request signal to request the desired acoustic signal, wireless receiving means (5) for receiving the transmission signal containing the acoustic signal to be transmitted in response to the service request signal, demodulation/decoding means (5 and 6) for restoring the acoustic signal applying the demodulation and/or decoding processing to the receiving signal transmitted from the wireless receiving means, and electro-acoustic transforming means (6) for transforming the acoustic signal restored by the demodulation/decoding means to the radio waves and for outputting. Accordingly, the desire acoustic signal can be easily obtained without having the recording medium on which the acoustic signal is recorded, and the acoustic offering service having superior convenience can be realized.

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Description

[0001] This invention relates to a wireless information communication method and device, and more particularly, is applicable to such as an acoustic receiving device for receiving music data via wireless circuit.

[0002] In recent years, people frequently listen to music and other information on the move. For example, a compact radio equipment and a headphone stereo device equipped with a cassette tape, a mini disc or a compact disc have come into widespread use in recent years and the users can listen to the radio broadcasting or music in the commuter train carrying these equipments with them. Also, it is being widely practiced that the user listens to radio broadcasting using the car radio equipment while he is driving the car, or he listens to music by playing back the music recorded on the recording medium such as cassette tape, mini disc or compact disc, using the car audio device.

[0003] However, in the conventional information acquisition method on the move, its usability is not sufficient for the user. For example, in the case of radio broadcasting,since this is the broadcasting for the general public, it cannot reflect the personal taste of information and music, and this causes the inconvenience since the user has to listen to the talk or music that he does not want to hear. Moreover, in the method to reproduce the music from the recording medium, the personal taste can be reflected to the contents listening, such as music, however, it is necessary to purchase or edit the recording medium, and it causes problems because it becomes necessary to have more time, expense and the storage place, and if the recording medium is produced or purchased, it becomes obsolete or the user gets tired of hearing the same music repeatedly.

[0004] As a method to solve such problems, a method for offering information and music service using the wireless telephone such as PHS (personal handyphone system, that is simplified portable telephone system) has been proposed in the Japanese Patent Application No. 207433/1996, and according to this method, weak points described above can be completely solved and the information offering service reflecting personal tastes can be realized without the recording medium.

[0005] However, the wireless telephone circuit of PHS has the reproduction frequency band narrower than the music reproduction method using the recording medium such as ordinary compact disc and mini disc, and furthermore, its communication conditions are not necessarily satisfactory. Accordingly, the music offering method using the wireless telephone circuit has inferior sound quality as compared with the method by the reproduction from the recording medium and the high speed transmission rate cannot be obtained steadily due to various disturbances such as fading. The Japanese Patent Application No. 207433/1996 has dealt with this point by switching the frequency characteristics or switching the signal output system from stereo to monophonic. However, this only changes the sound quality and the contents of service, and it is still insufficient in operability from the user's point of view.

[0006] The various features of the different aspects of the invention set out below may be freely combined.

[0007] According to this invention, a wireless acoustic receiving device comprises: wireless transmission means for transmitting a service request signal to request the desired acoustic signal; wireless receiving means for receiving a transmission signal containing the acoustic signal to be transmitted responding to the service request signal; demodulation/decoding means for applying the demodulation and/or decoding processing to the receiving signal transmitted from the wireless receiving means; and electro-acoustic transform means for transforming the acoustic signal restored by the demodulation/decoding means to a sound wave to be output.

[0008] Further, a vehicle-loaded acoustic device, comprises: wireless transmission means for transmitting a service request signal to request the desired acoustic signal; wireless receiving means for receiving transmission signal containing the acoustic signal to be transmitted responding to the service request signal; demodulation/decoding means for restoring the acoustic signal by applying the demodulation and/or decoding processing to the receiving signal transmitted from the wireless receiving means; and electro-acoustic transform means having at least two or more electro-acoustic transform elements, for transforming the acoustic signal restored by the demodulation/decoding means to a sound wave to be output in stereo sound.

[0009] Further, a portable acoustic output device, comprises: wireless transmission means for transmitting a service request signal to request the desired acoustic signal; wireless receiving means for receiving a transmission signal containing the acoustic signal to be transmitted responding to the service request signal; demodulation/decoding means for restoring the acoustic signal upon applying the demodulation and/or decoding processing to the receiving signal transmitted from the wireless receiving means; electro-acoustic transform means having at least two or more electro-acoustic transform elements, for transforming the acoustic signal restored by the demodulation/decoding means to a sound wave to be output in stereo sound; and a battery for driving.

[0010] Further, a wireless information retransmission device, comprises: wireless transmission means for transmitting a service request signal to request the desired acoustic signal; wireless receiving means for receiving a transmission signal containing the acoustic signal to be transmitted responding to the service request signal; demodulation/decoding means for restoring the acoustic signal by applying the demodulation and/or decoding processing to the receiving signal transmitted from the wireless receiving means; re-mod-

ulation means for re-modulating and transmitting the acoustic signal transmitted from the demodulation/decoding means; and retransmission means for retransmitting the output signal of the re-modulation means.

[0011] Further, a portable acoustic output communication device, comprises: wireless transmission means for transmitting a service request signal to request the desired acoustic signal; wireless receiving means for receiving a transmission signal containing the acoustic signal to be transmitted responding to the service request signal; demodulation/decoding means for restoring the acoustic signal by applying the demodulation and/or decoding processing to the receiving signal sent out from the wireless receiving means; electro-acoustic transform means having at least two or more human body-attachable type electro-acoustic transform elements, for transforming the acoustic signal restored by the demodulation/decoding means to a sound wave and outputting in stereo sound; and a battery for driving. While a telephone call is in progress, the vibrations of a part of human body or the voice of a sender is detected by the electro-acoustic transform element of the electro-acoustic transform means to form audio signal and the audio signal is transmitted via the wireless transmission means, and the audio signal from the other party of the call is received by the wireless receiving means to be output this from the electro-acoustic transform element of the electro-acoustic transform means, so that both the sound receiving and the telephone call can be conducted.

[0012] Further, an automobile comprises: wireless transmission means for transmitting a service request signal to request the desired acoustic signal; wireless receiving means for receiving a transmission signal containing the acoustic signal to be transmitted responding to the service request signal; demodulation/decoding means for restoring the acoustic signal by applying the demodulation and/or decoding processing to the receiving signal sent out from the wireless receiving means; and electro-acoustic transform means having at least two or more electro-acoustic transform elements, for transforming the acoustic signal restored by the demodulation/decoding means to a sound wave and outputting it in stereo sound.

[0013] Further, an information transmission device comprises: information source coding means for information source coding the input signal; feature extracting means for extracting the feature information of the input signal; quantization means for vector quantizing the output data of the information source coding means using the feature information extracted by the feature extracting means; modulation means for modulating the output signal of the quantization means; wireless transmission means for transmitting the output signal of the modulation means to a terminal device; wireless receiving means for receiving the output signal from the terminal device; and demodulation means for applying the demodulation and/or decoding processing to the receiving signal sent out from the wireless receiving means. The contents of the input signal are changed based on the contents of output signal of the demodulation/decoding means.

[0014] Further, a wireless acoustic receiving method, comprises the steps of: transmitting a service request signal for requesting the desired acoustic signal; receiving a transmission signal containing the desired acoustic signal to be transmitted responding to the service request signal; restoring the acoustic signal by applying the demodulation and/or decoding processing to the received signal; and outputting the restored acoustic signal upon transforming to a sound wave.

[0015] Further, a wireless acoustic receiving method, comprises the steps of: separating main information and sub information from the receiving signal; restoring feature information from the sub information; and restoring the main information using the restored feature information, and by information source decoding the restoration result, restoring the acoustic signal from the receiving signal.

[0016] Further, a wireless acoustic receiving method, comprises the steps of: transmitting a service request signal to request the desired acoustic signal; receiving a transmission signal containing the acoustic signal to be transmitted responding to the service request signal; restoring the acoustic signal by applying the demodulation and/or decoding processing to the receiving signal received; retransmitting the restored acoustic signal upon re-modulating; and receiving the retransmitted acoustic signal to be demodulated and transforming the acoustic signal to a sound wave to be output.

[0017] Further, a wireless information retransmission method, comprises the steps of: transmitting a service request signal to request the desired acoustic signal; receiving a transmission signal containing the acoustic signal to be transmitted responding to the service request signal; restoring the acoustic signal by applying the demodulation and/or decoding processing to the receiving signal received; and retransmitting the restored acoustic signal upon re-modulating.

[0018] Further, a portable acoustic output communication method, comprises the steps of: transmitting a service request signal to request the desired acoustic signal; receiving transmission signal containing the acoustic signal to be transmitted responding to the service request signal; restoring the acoustic signal by applying the demodulation and/or decoding processing to the receiving signal received; transforming the restored acoustic signal to a sound wave using the predetermined electro-acoustic transform element and outputting this; and during a telephone conversation, detecting the vibration of a part of human body or the voice of a sender by the electro-acoustic transform element to form the audio signal to be output, and receiving audio signal from the other party to output this from the electro-acoustic transform element.

[0019] Further, an information transmission method,

comprises the steps of: information source coding the input signal, and extracting the feature information of the input signal; conducting the vector quantization onto the output data based on the information source coding in utilizing the feature information; modulating an output signal based on the vector quantization, and transmitting it to a terminal device; receiving transmission signal from the terminal device; and restoring the data transmitted from the terminal device after applying the demodulation and/or decoding processing to the receiving signal received, and changing the contents of the input signal based on the contents of the data.

[0020] Further, a music transmission method, comprises the steps of: receiving a request signal from the terminal device; if the request signal is the first type signal, transmitting musics in the order predetermined at the transmitting end; and if the request signal is the second type signal, transmitting an optional music upon selecting from among the predetermined music group.

[0021] Further, a music transmission method, comprises the steps of: receiving a request signal from the terminal device; if the request signal is the first type signal, transmitting musics in the order predetermined at the transmitting end; and if the request signal is the second type signal, transmitting music determined at the terminal device side.

[0022] Further, a music transmission device, comprises: receiving means for receiving a request signal from the terminal device; and music information transmission means which transmits musics in the order predetermined if the request signal is the first type signal, and transmits the music after selecting an optional music from among the prescribed music group if the request signal is the second type signal.

[0023] Further, a music transmission device, comprises: receiving means for receiving a request signal from the terminal device; and music information transmission means which transmits the music in the predetermined order if the request signal is the first type signal, and if the request signal is the second type signal, transmits the music determined at the terminal device side.

[0024] Further, a music receiving device, comprises: transmission means for transmitting the first request signal which requests the music transmission without specifying music or the second request signal which requests the music transmission specifying music; and receiving means for receiving the music signal transmitted responding to the first or the second request signal.

[0025] Further, a music receiving device, comprises: transmission means for transmitting a request signal to request the music transmission; receiving means for receiving the music signal responding to the request signal; extracting means for extracting the add-on information transmitted with the music signal from the output signal of the receiving means; and display means for selectively displaying the add-on information of the first type and the add-on information of the second type from among the add-on information.

[0026] Further, an information selecting method, comprising the step of: displaying the information on which a virtual cursor is positioned by moving the virtual cursor on the two-dimensional information table in response to the input operation; and when the confirmation command is entered, selecting the information on which the virtual cursor is positioned.

[0027] Further, a character input method, comprising the steps of: displaying the character on which a virtual cursor is position by moving the virtual cursor on the two-dimensional information table in response to the input operation; and when the confirmation command is entered, selecting the character on which the virtual cursor is positioned.

[0028] Further, the data construction for specifying music data, characterized by: having at least one or more units data pairing the music name with the music code added to the music; and arranging the unit data in the desired order, and based on that order, the time sharing order of the music is specified.

[0029] Furthermore, a music specification method in utilizing the communication circuit, comprises the steps of: transmitting material information for specifying music via the predetermined communication circuit; receiving the music list matching to the material information via the communication circuit; and specifying the desired music from among the music list and transmitting the information showing the specified music via the communication circuit.

[0030] The nature, principle and utility of the invention will become more apparent from the following detailed description given by way of non-imitative example, with reference to the accompanying drawings in which like parts are designated by like reference numerals or characters, and in which:

Fig. 1 is a block diagram showing the construction of a music offering service system according to the present invention;

Fig. 2 is a block diagram showing the construction of an acoustic receiver device;

Fig. 3 is a sketch explaining the usage pattern of an acoustic receiver device;

Fig. 4 is a block diagram showing the construction of the receiver/transmitter unit of the acoustic receiver device;

Fig. 5 is a block diagram showing the construction of the acoustic input/output unit of an acoustic receiver device;

Fig. 6 is a block diagram showing the construction of the PHS base station;

Fig. 7 is a block diagram showing the construction of the data decoding block of a data processing circuit;

Fig. 8 is a schematic diagram showing a menu screen for the music offering service;

Fig. 9 is a schematic diagram showing a music names display screen when receiving the music of-

fering service;
Fig. 10 is a schematic diagram showing a music words display screen when receiving the music offering service;
Figs. 11A and 11B are schematic diagrams showing a display screen and a virtual character table of the program mode;
Fig. 12 is a schematic diagram showing a display screen when the music list is displayed in the program mode;
Fig. 13 is a schematic diagram showing the music name of the music specified in the program mode;
Fig. 14 is a flow chart showing the procedure in the case of specifying music in the program mode;
Fig. 15 is a flow chart showing the procedure in the case of receiving the music offering service;
Fig. 16 is a perspective view of the external construction of an acoustic receiver device;
Fig. 17 is a schematic diagram explaining the operation of a rotary push type operation key;
Fig. 18 is a schematic diagram showing the system construction of the receiving end according to the second embodiment;
Fig. 19 is a block diagram showing the construction of an acoustic receiver device according to the second embodiment;
Fig. 20 is a sketch showing the usage pattern of an acoustic receiver according to the third embodiment;
Fig. 21 is a block diagram showing the construction of the acoustic receiver according to the third embodiment;
Fig. 22 is a block diagram showing the construction of the wireless earphone according to the third embodiment; and
Figs. 23A and 23B are schematic diagram showing the operation keys according to other embodiment.

[0031] Preferred embodiments of this invention will be described with reference to the accompanying drawings:

(1) The First Embodiment

(1-1) Construction of Music Offering Service System

[0032] In Fig. 1, 1 generally shows a music offering service system according to the present invention, and this system is roughly comprised of a service center 2, a PHS base station 3 and an acoustic receiver device 4. The service center 2 is the source of dispatching the music signal to offer and transmits music signal of the music that the user having the acoustic receiver device desires to the PHS base station 3. The PHS base station 3 is a base station device of PHS (personal handyphone system, i.e., simple portable telephone system) and it transmits music signal supplied from the service center via the PHS wireless circuit.

[0033] The acoustic receiver device 4 is a device in which the construction for receiving the music offering service is added to the PHS telephone terminal device, and receiving the music signal transmitted from the PHS base station 3, outputs this to the electro-acoustic transform means. Thus, the user having the acoustic receiver device 4 can receive and hear the music signal offered by the service center 2 and can hear the desired music without the recording medium such as mini disc and compact disc.

[0034] In this connection, in the case of receiving the music offering service, firstly, a service request signal showing such as music type is transmitted to the PHS base station 3 via the PHS wireless circuit. Receiving this, the PHS base station transmits this service request signal to the service center 2. Thus, the service center 2 can grasp the music which the user wants to hear based on this service request signal and after reproducing the music signal of that music, can transmit this.

(1-2) General Construction of Acoustic Receiver Device

[0035] In Fig. 2, 4 generally shows an acoustic receiver device according to the present invention, and this is roughly comprised of a receiver/transmitter unit 5, an acoustic input/output unit 6, a display unit 7, a memory unit 8, an operation unit 9 and a control unit 10.

[0036] The receiver/transmitter unit 5 is a wireless receiver/ transmitter unit fully compliant with the standard of PHS and this is a circuit block which transmits and receives audio signal for conversation between the PHS base station 3 via the PHS wireless circuit, or receives the music signal transmitted from the PHS base station 3 via the PHS wireless circuit as the music offering service.

[0037] The acoustic input/output unit 6 is an input/output interface of the audio signal and music signal to the receiver/transmitter unit 5, and as well as collecting the audio signal for telephone call by a microphone and outputting the audio signal from the other party by a speaker, outputs the music signal received as the music offering service via the stereo-capable speaker or earphone.

[0038] The display unit 7 is comprised of such as a liquid crystal display, and as well as displaying various kinds of data such as the telephone numbers of the telephone call partner and his own, the name of the other party, or the wave receiving condition and the battery condition when the acoustic receiver device 4 is utilized as a telephone terminal, displays data such as the title and words of the music (this data is transmitted from the service center 2 with the music signal) when receiving the music offering service.

[0039] Moreover, the memory unit 8 is comprised of a memory and memorizes various data required for the telephone terminal such as the telephone numbers registered as abbreviated dials and the name and the telephone number of the other party registered as the telephone directory list, or the telephone number of his own

station, and various kinds of data such as the music code and the music order required for receiving the music offering service are memorized. Furthermore, the operation unit 9 is comprised of such as numeric keys and other operation keys. The operation command from the user (specifically, the operation command when making a call or receiving a call and the operation command when receiving the music offering service) to this acoustic receiver device 4 can be entered via the numeric keys and the other operation keys.

[0040] The control unit 10 is a control block for controlling the overall operation of this acoustic receiving device 4 and adapted to control the operation of each unit supplying the control data to each unit via a data bus 11. Moreover, the control unit 10 memorizes various kinds of data in the memory unit 8 via the data bus 11 or reads out various data from the memory unit 8, or receives the control data showing the operation command entered from the operation unit 9 via the data bus 11 and conducts the operation control based on this.

[0041] At this point, the actual usage pattern of the acoustic receiver 4 having the construction described above will be shown in Fig. 3. In this example shown in Fig. 3, since the acoustic receiver 4 is driven by a battery, the acoustic receiver 4 can be used by the user taking it on the road. In this case, the user, upon fixing the acoustic receiver 4 to his belt using a carrying case, listens to the music signal received by using a stereo-capable earphone 13 as the electro-acoustic transform means for music signal output described above. Thus, the user 12 can hear the desired music with the sense of near-empty handed even moving on the road.

[0042] In this example, the operation unit 9 is not only provided in the main body but also the operation unit 9 is placed on the cable of the earphone 13 (i.e., on the cable to connect the electro-acoustic transform means and the acoustic receiver 4) as a remote operator 14. With this arrangement, the user 12 can conduct the operation on hand when receiving the music offering service and can receive the music offering service without operating the operation unit 9 provided in the main body of the acoustic receiver device 4. In this connection, in the remote operator 14, not only the operation unit 9 but also the display unit are provided integrated as in the case of display unit 7 provided in the main body, and thus, the user can see information regarding the acoustic signal to be received as will be described later by operating the remote operator 14 without seeing the display unit 7 of the main body.

(1-3) Construction of Receiver/Transmitter unit

[0043] Then, in this chapter the receiver/transmitter unit 5 described above will be explained more specifically. As shown in Fig. 4, the receiver/transmitter unit 5 comprises a wireless transmitter 5A and a wireless receiver 5B and conducts the data transmission and reception by means of these wireless transmitter 5A and wireless receiver 5B via the PHS wireless circuit.

[0044] In this receiver/transmitter unit 5, for example, during telephone conversation, audio signal S1 entered by a microphone 20 of the acoustic input/output unit 6 is received via the audio signal processing circuit 21. In this case, the microphone 20 is comprised of electro-acoustic transform elements and transforms the collected sound waves of the user 12 to an electrical audio signal S1 by conducting the electro-acoustic transform processing. Moreover, the audio signal processing circuit 21 conducts the prescribed coding processing based on the coding system of Adaptive Differential Pulse Code Modulation (ADPC) to the inputted audio signal S1 and outputs the resulting coded audio data S2 to the receiver/transmitter unit 5.

[0045] The receiver/transmitter unit 5 supplies this coded audio data S2 to the time division multiple circuit 22. The PHS wireless circuit adopts the Time Division Multiple Access/Time Division Duplex system (TDMA/TDD system) and conducts the transmission and reception alternatively at the timing of time slot allocated to its own station in advance. Accordingly, the time division multiplexing circuit 22 is provided in this receiver/transmitter unit 5, and as well as storing the transmission data in the transmission slot assigned to its own station by this time division multiplexing circuit 22, the receiver/transmitter unit 5 can take out the receiving data from the receiving slot assigned to own station.

[0046] The time division multiplexing circuit 22, storing the coded audio data to be supplied from the audio signal processing circuit 21 in the transmission slot assigned to its own station, forms a transmission burst data S3 and outputs this to the modulation circuit 23. The modulation circuit 23 forms a transmission signal S4 of the base band by applying the modulation processing of such as Quadrature Phase Shift Keying (QPSK) modulation and outputs this to a mixer circuit 24. In this connection, since the transmission burst data S3 is a burst signal, this transmission signal S4 is also burst signal.

[0047] The mixer circuit 24 frequency converts the transmission signal S4 of 1.9 GHz to transmission signal S6 by multiplying the local signal S5 to be supplied from the frequency synthesizer 25 by the transmission signal S4 and outputs that transmission signal S6 to a RF filter 26. In this connection, the frequency synthesizer 25 forms the local signal S5 with the desired frequency based on the oscillation output S7 sent out from a temperature compensated crystal oscillator (TCXO) 27. Thus, in the mixer circuit 24, the transmission signal S6 having the desired frequency can be formed using the local signal S5 of the desired frequency.

[0048] The transmission signal S6 sent out from the mixer circuit 24, after unnecessary elements in the transmission signal S6 are eliminated by the RF filter, is amplified to the predetermined electric power by the RF amplifier 28 and supplied to an antenna 30 via an antenna multicoupler 29. Thus, the transmission signal S6 corresponding to the audio signal S1 is transmitted from

the antenna 30.

[0049] On the other hand, the receiving signal S8 of 1.9 GHz received by the antenna 30, after being separated from the transmission signal S6 by the antenna multicoupler 29, is amplified by the RF amplifier 31 and entered into the RF filter 32. As it is clear from the description heretofore explained, the antenna multicoupler 29 is a circuit to separate transmission signal S6 and receiving signal S8, and providing this antenna multicoupler 29, one antenna 30 can be used commonly for transmitting and receiving.

[0050] The RF filter 32 eliminates unnecessary elements contained in the receiving signal S8 and outputs this to a mixer circuit 33 of the later stage. The mixer circuit 33, multiplying the local signal S9 supplied from the frequency synthesizer 25 by the receiving signal S8, frequency converts the receiving signal S8 to the first intermediate frequency signal S10 of such as 243.95 MHz or 248.45 MHz and outputs this first intermediate frequency signal S10 to the first IF filter 34. In this case, since unnecessary elements contained in the receiving signal S8 are eliminated by the RF filter 32, the occurrence of mixed modulation distortion can be prevented when the frequency conversion processing is conducted at the mixer circuit 33.

[0051] The first IF filter 34, after eliminating unnecessary elements contained in this first intermediate frequency signal S10, outputs this first intermediate frequency signal S10 to the amplifier 35. The amplifier 35 amplifies the first intermediate frequency signal S10 to the predetermined power and outputs this to the mixer circuit 36. The mixer circuit 36, multiplying the first intermediate frequency signal S10 by the local signal S11 having the predetermined frequency supplied from the local oscillator 37, frequency converts the first frequency signal S10 to the second intermediate frequency signal S12 having such as 10.7 MHz and transmits this to the second IF filter 38.

[0052] Thus formed second intermediate frequency signal S12, after its unnecessary elements are eliminated by the second IF filter 38, is amplified to the predetermined power by the amplifier 39 and supplied to a demodulation circuit 40. The demodulation circuit 40, by applying the demodulation processing (e.g., QPSK demodulation processing) corresponding to the transmitting end to the second intermediate frequency signal S12, restores receiving burst data S13 from the second intermediate frequency signal S12 and outputs this to the time division multiplexing circuit 22.

[0053] The time division multiplexing circuit 22 takes out coded audio data S14 from the receiving burst data S13 and outputs this to the audio signal processing circuit 21. The audio signal processing circuit 21, applying the decoding processing corresponding to the ADPCM coding system to the coded audio data S14 to be entered, restores audio signal S15 from this coded audio data S14 and outputs this to a speaker 41.

[0054] The speaker 41 is comprised of electro-acoustic transform elements, and by applying the electro-acoustic transform processing to the input audio signal S15, converts the audio signal S15 to the sound wave and outputs it. Thus, the voice of the other party in talking can be heard via the speaker 41.

[0055] On the other hand, in the case of transmitting the data other than audio data (e.g., control data), inputting the data entered to the data input terminal 42 of the acoustic input/output unit 6 to the data processing circuit 43, applies the prescribed coding processing and inputs the resulting coded data S17 to the time division multiplexing circuit 22 of the receiver/transmitter unit 5. The time division multiplexing circuit 22 forms transmission burst data S3 by storing the coded data S17 in the transmission slot allocated to its own station in the same manner as the coded audio data S2 described above, and outputs this to the modulation circuit 23. Thus, the data other than the audio data can be transmitted as well.

[0056] Furthermore, in the case where the data other than the audio (e.g., music data according to music offering service) is received, the time division multiplexing circuit 22 takes out coded data S18 from the receiving burst data S13 in the same manner as in the case described above and outputs that coded data S18 to the data processing circuit 43. The data processing circuit 43, applying the predetermined decoding processing corresponding to the transmitting end to the coded data S18, restores the data received and outputs this via the data output terminal 44. With this arrangement, the data other than the audio can be also received and transmitted.

(1-4) Construction of Acoustic Input/Output Unit

[0057] In this chapter, the construction of the acoustic input/output unit 6 will be explained more specifically. As shown in Fig. 5, in the acoustic input/output unit 6, service request signal S20 sent out from the control unit 10 can be entered into the data processing circuit 43 via a data input terminal 42. As described above, this service request signal S20, after being coding processed, is transmitted to the PHS base station 3 via the receiver/transmitter unit 5. Thus, the desire to receive the music offering service can be transmitted to the service center 2, that is the music sending source, via the PHS base station 3.

[0058] The music signal transmitted by the service center 2 in response to this service request signal S20 (this music signal contains add-on information added to the music signal) is received by the receiver/transmitter unit 5 and entered into the data processing circuit 43 as the coded data S18. The data processing circuit 43, by applying the predetermined decoding processing to this coded data S18, restores the receiving packet data S21 comprised of music data and outputs this to the received packet processing unit 45 via a data output terminal 44.

[0059] The received packet processing unit 45 separates the add-on information such as the title and words

of the music from the receiving packet data S21 and outputs these to the display unit 7 via the data bus 11 described above as image or character data S22. Thus, in this acoustic receiver device 4, add-on information to be added to the music signal can be displayed on the display unit 7. Also, the received packet processing unit 45 separates the music data S23 from the received packet data S21 and outputs this to the acoustic output unit 46.

[0060] The acoustic output unit 46 takes out the stereophonic right side music signal S24R and the left side music signal S24L from the audio data S23 and outputs these to the right side electro-acoustic transform element 47R and the left side electro-acoustic transform element 47L of the earphone 13 connected to the output terminal 48 respectively. Thus, the user 12 can listen to the stereophonic music via the earphone 13. In this connection, as the earphone 13 connected to the output terminal 48, the high-fidelity earphone having high frequency characteristics is used and thus, the music of high sound quality can be heard and the appreciative values of music can be increased.

(1-5) Construction of PHS Base Station

[0061] In this chapter, the construction of the PHS base station 3 for transmitting the music signal will be described. However, only the circuit block for transmitting music signal will be explained in this chapter. As shown in Fig. 6, the PHS base station 3 comprises a transmission data processing unit 50, a receiver/transmitter unit 51, an antenna 52 and a received data processing unit 53. In this connection, it is not necessarily needed that the transmission data processing unit 50 and the receiving data processing unit 53 are loaded on the PHS base station, but in some cases they are loaded on the service center 2 which is the source of sending the music signal. And when they are loaded in the service center 2, the transmission data processing unit 50 and the received data processing unit 53 are connected to the PBS base station via the cable circuit.

[0062] The music signal transmitted from the service center 2, after being digitalized via the analog-to-digital conversion circuit (not shown in figure), entered into the transmission data processing unit 50 as a music data S30 through the data input terminal 54. In this connection, this music data S30 contains not only the music itself but also add-on information added to that music (such as the title and words of the music). In the transmission data processing unit 50, this music data is input into a discrete cosine transform circuit (DCT) and a feature information extracting circuit 56.

[0063] The discrete cosine transform circuit 55 is a circuit for coding the information source, and applying the discrete cosine transform to the input audio data S30, transmits the resulting transformed audio data S31 to an interleave circuit 57 and a feature information extracting circuit 56. In this connection, the discrete cosine transform is the processing in which the input data is shown by the multiplication of multiple base vectors having different frequency elements prepared in advance and coefficient (generally this is referred to as DCT coefficient) and the processing for outputting that coefficient as the transformed data and thus, this is the processing to decrease the volume of data of input data.

[0064] The feature information extracting circuit 56 extracts characteristics of the signal from both audio data S30 and transformed audio data S31 or either one of audio data S30 or transformed audio data S31, and outputs that feature information S32 to a weight function forming circuit 58. In this connection, feature means the characteristic of signal all its own, such as frequency element and signal wave pattern.

[0065] The weight function forming circuit 58 forms a weight function S33 based on the input feature information S32 and outputs this to a vector quantization circuit 59 to be described later. The weight function S33 is not the data itself to be transmitted but since it is the data showing the characteristic of that data, it is called as sub-information.

[0066] On the other hand, the interleave circuit 57 sorts the data order of the transformed audio data S31 to be entered in the predetermined order, and outputs the resulting transformed audio data S34 to the vector quantization circuit 59. Thus sorting the data order, when burst error occurs due to deterioration of the transmission path, error can be corrected by dispersing this, even in the case where the transmission path is deteriorated, data can be transmitted efficiently. Moreover, the transformed audio data S34 output from the interleave circuit 57 is the data itself to be transmitted, this is called as main information in contrast to the weight function S33 that is called as sub-information.

[0067] The vector quantization circuit 59 applies vector quantization to the input weight function S33 and transformed audio data S34 in utilizing the code book prepared inside in advance, and outputs the resulting quantization data S35 to a coding circuit 60. In this connection, the vector quantization detects the optimal typical vector representing the input data from among the typical vectors prepared as the code book and quantizes codes showing that typical vector, and can decrease the data volume of input data tremendously.

[0068] The coding circuit 60 applies the coding processing for error correction to the input quantization data S35 and outputs the resultant transmission data S36 to the receiver/transmitter unit 51. In the vector quantization circuit 59, since in the case of quantizing the transformed audio data S34, the quantization processing is conducted in utilizing the feature information shown by the weight function S33, the weight function S33 plays very important role in quantizing the transformed audio data S34 efficiently. Accordingly, the weight function S33 must show certainly the feature of the input data and also the weight function S33 must be transmitted without fail. Accordingly, in the coding circuit 60, stronger error correcting processing is applied to the

data part of the weight function S33 (sub-information) than the data part of the transformed audio data S34 (main information).

[0069] The receiver/transmitter unit 51 has the construction similar to that of the receiver/transmitter unit 5 of the acoustic receiver device 4, and after applying the predetermined transform processing such as by the QPSK transform to the transmission data S36 entered, applies the frequency conversion processing and forms transmission signal S37 and transmits this via an antenna 52. With this arrangement, music signal transmitted from the service center 2 is transmitted via the PHS wireless circuit.

[0070] On the other hand, the transmission signal S6 on which the service request signal S20 transmitted from the acoustic receiver device 4 is piled is received by the antenna 52 and entered into the receiver/transmitter unit 51 as a received signal S38. The receiver/transmitter unit 51, after taking out the intermediate signal by applying the frequency conversion to the received signal S38, applies the demodulation processing to that intermediate frequency signal and restores the received data S39 and outputs this to the received data processing unit 53.

[0071] The receiving data processing unit 53 restores the service request signal S20 by applying the predetermined decoding processing to the received data S39, and outputs this to the service center 2 as a control signal S40. Thus, the service center 2 can be notified that the acoustic receiver device 4 is requesting the music offering service. The decoding processing to be conducted in the receiving data processing unit 53 is the decoding processing with respect to the coding processing conducted in the data processing circuit 43 of the acoustic receiver device 4.

(1-6) Construction of Data Processing Circuit of Acoustic Receiver Device

[0072] In this chapter the data processing circuit 43 of the acoustic receiver device 4 described above will be described The data processing circuit 43 described above comprises a data decoding block 62 as shown in Fig. 7, and the music data transmitted from the PHS base station is decoding processed by this data decoding block 62.

[0073] In this data decoding block 62, firstly the coded data S18 transmitted from the time division multiplexing circuit 22 of the receiver/transmitter unit 5 is entered into the decoding circuit 63. This decoding circuit 63, after applying the error correction processing to the input coded data S18, corrects errors contained in the data, separates the main information data S50 and the sub-information data S61 and outputs the extracted main information data S50 and sub-information data 51 to a deinterleave circuit 64 and a feature information restoring circuit 65 respectively.

[0074] The deinterleave circuit 64 returns the data order sorted at the interleave circuit 57 of the transmitting end to the former order and outputs the resulting main information data S52 to an information restoring circuit 66. On the other hand, the feature information restoring circuit 65 restores feature information S53 from the input sub-information data S51 and outputs this to the information restoring circuit 66.

[0075] The information restoring circuit 66, conducting the decoding processing of the main information data S52 using the input feature information S53, restores the decoding data S54 corresponding to the transformed data S31 (i.e., DCT transformed data) from the main information data S52 and outputs this to a discrete cosine inverse transform circuit (IDCT) 67. The discrete cosine inverse transform circuit 67 is a circuit for decoding the information source, and restores the music data S21 corresponding to the music data S30 at the transmitting end by applying the discrete cosine inverse transform processing to the input decoding data S54 and outputs this to the receiving packet processing unit 45 as described above.

[0076] Accordingly, in the acoustic offering service system 1, since the discrete cosine transform processing and the vector quantization processing are applied to the music data S30 at the transmitting end, and at the receiving end, by conducting the reversed processing, the transmitted music data S21 is restored and the transmitted music data S21 can be efficiently and certainly restored even in the case where the circuit condition changes. Also, the discrete cosine transform processing and the vector quantization processing are applied to the music data S30 when transmitting, the volume of data to be transmitted can be decreased and the data can be transmitted efficiently.

(1-7) Operation and Display when Receiving Music Offering Service

[0077] Then next, in this chapter the operation in the case of receiving the music offering service in utilizing the acoustic receiver device 4 and display examples of the display unit 7 at that time will be explained. At first, when the predetermined operation is conducted by using the operation unit 9 of the acoustic receiver device 4, as shown in Fig. 8, a menu screen of music offering service is displayed on the display unit 7. The data of this menu screen are memorized in the memory unit 8 in advance, and by reading out that data and supplying to the display unit 7, the menu screen as shown in Fig. 8 is displayed.

[0078] A total of ten modes is prepared on this menu screen, and item names and item numbers showing these modes are displayed respectively. The modes from the first to the third, i.e., "the latest best-ten (J-POP)", "the latest best-ten (rock)", and "the latest best-ten (Enka)" are the modes with which the user can hear 10 tunes determined as the latest hit musics in each genre in the order from the lowest rank or the top rank.

[0079] Furthermore, the modes from the fourth to the sixth, i.e., "random pickup (1990s)", "random pickup (1980s)" and "random pickup (1960s - 1970s)" are modes with which the user can hear the music selected randomly from musics in each era. Moreover, the modes from the seventh to the ninth, i.e., "jazz random", "classic random" and "reggae random" are modes with which the user can hear the music randomly selected from musics of each genre.

[0080] In this connection, in the 4th to 6th and 7th to 9th modes, the user does not select the music but the service center 2 selects the music. More specifically, the service center 2 selects an optional music from the music group classified per each field using such as random numbers and offers that music. In that case, the service center 2 memorizes the musics that the user heard in the past fixed time period (such as from the morning of that day to the present, or from the morning of the day before to the present) and selects an optional music from the music group excluding these musics. Thus, the same music that the user heard once can be prevented from being selected immediately and with the lapse of time that music can be selected again. The reason of this arrangement is to offer the service matching to the psychology of the user, i.e., he does not want to hear the same music continuously.

[0081] Lastly, the tenth mode, i.e., "program mode" is the mode with which the user can hear the selected music by informing the selected music to the service center 2. In the case of this mode, the user can specify and hear only one music or he can specify and hear the plural number of musics in order.

[0082] Accordingly, when starting the music offering service by specifying the desired mode from these menu screens, the user enters the desired mode item number using the numeric key of the operation unit 9. With this operation, a service request signal S20 corresponding to the desired mode is transmitted to the service center 2. Thus, the service center 2 can grasp the user desired mode and can start the music offering service of the user desired mode. In the case of "program mode", since the selection of music becomes necessary, the service request signal S20 would not be transmitted only by entering the item number but when the music selection processing to be described later is completed, the service request signal S20 is transmitted.

[0083] Furthermore, as described above, since the music service mode can be roughly divided into the mode to transmit musics determined at the service center side in due order (the first to the third mode), the mode to transmit the music upon selecting randomly from the music group prepared in the service center side (the fourth to the ninth mode) and the mode that the service center transmits the music specified by the user side (the tenth mode), the service request signal S20 can be roughly classified under 3 types.

[0084] At this point, when the music offering service is actually started, the display screen as shown in Fig. 9 is shown on the display unit 7 of the acoustic receiver device 4. More specifically, as shown in Fig. 9, the music title display screen is displayed as the normal mode. In this case, "Highway ○×△" displayed on the upper part of the display unit 7 shows the title of the music presently running and "Deep △ × □" displayed under this shows the name of singer or the name of composer of that music. In this connection, if the musical composition is the classic music, the name of composer is displayed with the name of singer. This is because the user has stronger desire for finding the name of composer in addition for finding the name of player.

[0085] Moreover, the musical note " ♪ " displayed before and after the title of a music is a mark showing that the screen presently displayed is the music title display screen. Since such musical code is to be displayed, the user can easily find that the screen presently displayed is the music title display screen.

[0086] "17 xx" displayed on the lower part of "next" in the center of the display unit 7 shows the title of a music to be played next, and its adjacent "Moritaka○○" shows the name of singer or the name of player of the next music. This music title display can be cancelled by setting the display cancellation. Since in the case of random mode (the first mode to the ninth mode) what is going to be played next is not known is one of pleasures, this processing is conducted in order to realize the operating pattern reflecting such user psychology.

[0087] Furthermore, the sub-menu is displayed on the lowest stage of the display unit 7. "0 → menu" displayed in this sub-menu shows that when "0" is entered from the numeric key the display is switched to the menu screen for mode setting shown in Fig. 8. Moreover, "1 → next music" shows that when "1" is entered from the numeric key, the music presently being played is stopped and the next music will be started. Moreover, "2 → words" shows that when "2" is entered from the numeric key, the music name display screen is switched to the music word display screen to be explained in the following.

[0088] In this connection, the title of music and the name of singer to be displayed on this music name display screen, or the data of music title and singer's name are extracted from the add-on information transmitted with the music data from the service center 2. Moreover, as shown in the sub-menu, when "1" is entered, the service request signal S20 to request the starting of the next music performance is transmitted. Thus, the service center 2 stops the output of the music data presently running and starts the output of the next music data. This is not shown in the sub-menu, but if the call complete key is pressed in the middle of receiving the music offering service, the PHS wireless circuit is cut off and the music offering service automatically stops.

[0089] At this point, as shown in the sub-menu, when "2" is entered from the numeric key, the words display screen shown in Fig. 10 is displayed on the display unit 7. In this case, a book mark shown on the upper part of

the screen shows that the screen presently displayed is the words display screen. Since such book mark is to be displayed, the user can easily know that the screen presently displayed is the words display screen.

[0090] Furthermore, words of the music presently running is displayed on the adjacent or lower part of this book mark. The display form of this music word display (such as color, hatching or flashing) is changed according to the music in progress, and thus, the user can easily know to what extent the music has been progressed so far.

[0091] Furthermore, the sub-menu is displayed on the lower part of this word display similar to that of the music title display screen. "0 → music title display" in the sub-menu shows that when "0" is entered from the numeric key, returns to the music title display screen shown in Fig. 9. And "1 → next music" shows that when "1" is entered from the numeric key, the music presenting running is stopped and the next music will be started.

[0092] On the other hand, on the menu screen shown in Fig 8, if the item number "0" showing "program mode" is entered, the program mode screen as shown in Fig. 11A is displayed on the display unit 7. Arrow marks and numbers displayed on the right side of this screen show that when "5" is entered from the numeric key, a virtual cursor moves upward on the virtual character table, and similarly, if "0" is entered, the virtual cursor moves downward, if "7" is entered, the virtual cursor moves toward the left direction and if "9" is entered, the virtual cursor moves toward the right direction.

[0093] More specifically, as shown in Fig. 11B, the virtual character table TB is constructed by a fifty phonetic words table on which virtual characters of fifty phonetic words are arranged two-dimensionally according to "あいうえお (a i u e o)" (Japanese alphabetical order) and when "5" is entered, the virtual cursor K moved from the "お (o)" stage toward the "あ (a)" stage, while "0" is entered, the virtual cursor K moves from the "あ (a)" stage toward the "お (o)" stage, and when "7" is entered, the virtual cursor K moves from the "あ (a)" line toward the "ん (n)" line, and when "9" is entered, the virtual cursor K moves from the "ん (n)" line toward the "あ (a)" line.

[0094] In that case, the Kana character on which the virtual cursor K is positioned is displayed on the lower part of the display screen. For example, if the virtual cursor K is positioned on the Kana character "か (ka)", the Kana character "か (ka)" is selected, and as shown in Fig. IIA, the Kana character "か (ka)" is displayed on the lower part of the display screen. Accordingly, if the numeric key of "5", "10", "7" or "9" is operated, the desired Kana character can be displayed in the acoustic receiver device 4.

[0095] Furthermore, on the display screen under this program mode, "press → #" is displayed on the lower part of the screen. This display means that if "#" is entered from the numeric key, the determined instruction is entered and the Kana character presently being displayed can be confirmed and entered.

[0096] On the display screen of this program mode, in the case of specifying the user desired music, firstly, the user enters the first letter of the title name of the desired music by operating the numeric key. For example, as shown in Figs. 11A and 11B, if the user desires the music having the title name starting with "か (ka)", enters Kana letter "か (ka)". If the initial letter can be entered, then entering "#", that Kana letter is confirmed and the service request signal S20 to request the music name list in which the music title names having the initial letter "か (ka)" are transmitted from the acoustic receiver device 4. Thus, the service center 2 transmits the music name list on which the music title names having "か (ka)" as the first letter are listed to the acoustic receiver device 4 responding to the service request signal S20.

[0097] When this music name list is received, the music name list as shown in Fig. 12 is displayed on the display unit 7. As shown in this Fig. 12, when the music name list is received, each music name received as the music name list is displayed vertically in due order. In this case, only arrow marks and "5" and "0" are displayed on the right side screen that is different from the case described a little while ago. This means that the cursor "**" to be displayed in front of the title name can be moved upward and downward using the "5" or "0" numeric key. When the cursor "**" is moved to the bottom of the screen with the "0" key, and if the music name list still continues downward, the music name list is shifted upward and scroll displayed. And contrary to this, when the cursor "**" moves to the uppermost of the screen using the "5" key, if the music name list still continues upward, the music name list is shifted downward and scroll displayed, and thus, even in the case where the number of music names listed is too large to be displayed on the display screen, all lists can be displayed. Under this condition, since the music name lists received are only displayed, the cursor "**" is in a flashing state showing that the music specification has not been conducted.

[0098] At this point, in the case where the user specifies the desired music, the user displays the cursor "**" on the title name of the music that he wants to hear by operating the numeric key "5" or "0". Then, entering the "**" by pressing the "**" key, the music on which the cursor "**" is positioned is confirmed. With this arrangement, the cursor "**" is changed from the flashing display to the continuous display showing that the music has been determined. Further, the determination of the music can be expressed by not only displaying "**" key but also changing the display form of the music title itself by means of reversion, etc.

[0099] When the music is determined, the service request signal S20 showing that the music has been confirmed to the service center 2 via the PHS wireless circuit. The service center 2 can grasp the user desired music by this service request signal S20 and transmits the music code to define that music to the acoustic receiver device 4 through the PHS wireless circuit. In this

connection, this music code is a code added to all musics kept by the service center 2 in advance in order that these codes vary from music to music.

[0100] In the case of program mode, by repeating such operations, the user desired musics are specified one by one, and the music codes specifying that musics are obtained one by one. Then, these music codes obtained are memorized in the memory unit 8 as one file as shown in Fig. 13. In this case, "Favl" on the first line is a file name and this is specified by the user optionally, or automatically added so that this is different from the file name formed previously in the acoustic receiving device 4. Moreover, "Title of 1 = Highway O×Δ" on the second line shows that the title of the music specified as the first music is "Highway O×Δ", and "Code_of_1 = 225920" on the third line shows the music code of the first music is "225920". Thus pairing the music name with the music code, these are memorized according to the order of musical performances specified. Thus, referring to the music name file, the music name and music code specified by the user can be grasped, and simultaneously, the performance order can be grasped.

[0101] The music name list thus formed by obtaining the music codes is displayed actually on the display unit 7 when the predetermined operation is conducted from the operation unit 9, and thus, the user can confirm visually whether the music specified is fit or not by himself.

[0102] Thus, in the case of receiving the music service of the program mode, after forming the music name file, the fixed operation is conducted and music codes are successively read out according to the order of that music name file and the service request signal S20 to which that music code is added is transmitted. Thus, the music signal specified by the user can be transmitted from the service center 2 and the music offering service of the program mode can be started.

(1-8) Control Procedure of Control Unit regarding Music Offering Service

[0103] The control procedure of the music offering service described above is conducted by the operation control of the control unit 10, however, in this chapter the control procedure will be explained using flow charts in due order.

[0104] Firstly, in the case of specifying the music, the music is specified according to the operating procedure shown in Fig. 14. More specifically, at the step SP2 entered from the step SP1, the control unit 10 judges whether the operation to select the program mode has been conducted or not while the menu screen is displayed. As a result, if the operation other than the program mode is conducted, the control unit 10, after transmitting the service request signal S20 showing that mode, proceeds to the step SP3 and terminates the processing.

[0105] On the other hand, when the program mode is specified, the control unit 10 proceeds to the step SP4 and accepts the first letter input for the music specification. At the step SP4, if the first letter input for the music specification is conducted, the control unit 10, by requesting the music name list consisting of letters having the first letter of each title name, obtains the music name list from the service center 2 and displays that music name list on the display unit 7.

[0106] Then, at the step SP5, the control unit 10 judges whether the confirmation operation is conducted to the optional music in that music name list or not, and if the music confirmation operation is conducted, proceeds to the step SP6 and transmits the service request signal S20 showing the music conformation and at the following step SP7 receives the music codes transmitted from the service center 2. On the other hand, if the music confirmation operation has not been conducted, the control unit 10 returns to the step SP4 and accepts again the first letter input of the music specification.

[0107] When the control unit 10 obtains music codes, proceeds to the step SP8, and judges whether the user desired musics have been all specified or not by judging whether the operation of music specification would be continuously conducted or not. As a result, if the operation of music specification is continuously conducted, the control unit 10 returns to the step SP4 and repeats the processing and when the music specification is finished, it proceeds to the step SP9.

[0108] At the step SP9, the control unit 10 stores all music names and music codes specified by the processings described above in the order specified in the music name file and memorizes the music name file in the memory unit 8. When this processing is done, the control unit 10 proceeds to the step SP3 and terminates the processing for music specification.

[0109] On the other hand, as the procedure in the case of receiving the music offering service becomes as shown in Fig. 15. More specifically, at the step SP11 entered from the step SP10, the control unit 10 accepts the numeric key input for selecting the mode during the menu screen is displayed. Then, at the following step SP2, the control unit 10 judges whether the program mode is specified or the random mode is specified by determining the type of the input numeric key. As a result, if the program mode is specified, the control unit 10 proceeds to the step SP13 and if the random mode is specified, proceeds to the step SP18.

[0110] At the step SP13, the control unit 10 reads out the title of music from the music name file stored in the memory unit 8 by the music specification and displays this on the display unit 7. Then, at the step SP14, the control unit 10 reads out the music code of the music displayed from the music name file and transmits this to the service center 2. At the following step SP15, the control unit 10 receives the music data transmitted from the service center 2 responding to that music code transmitted and outputs this via the earphone 13. Thus, the user can hear the music specified through the earphone

13.

[0111] When the music data for a piece of music has been received, the control unit 10 proceeds to the following step SP16 and judges whether the next music exists in the music name file or not, and if the next music exists, returning to the step SP13, repeats the processing, and if the next music does not exist, proceeding to the step SP17, terminates the processing.

[0112] On the other hand, in the case where the control unit 10 has been proceeded to the step SP18 because the random mode was specified, the control unit 10 transmits the service request signal S20 corresponding to the random mode specified (the random mode in this case are first to ninth modes shown in Fig. 8) to the service center 2. At the following step SP19, the control unit 10 receives the music data transmitted from the service center responding to that service request signal S20 and outputs this via the earphone 13. Thus, the user can hear the music corresponding to the user specified music offering mode through the earphone 13.

[0113] At the next step SP20, the control unit 10 judges whether the music offering service stop has been specified or not by judging whether the telephone call stop key is pressed or not. As a result, if the music offering service stop has not been specified, returning to the step SP19, the control unit 10 repeats the processing, and if the stoppage is specified, the control unit 10, proceeding to the step SP21, stops to receive the music offering service and terminates the processing. In addition, the telephone call stop key is pressed so as to stop to receive the service in the program mode similarly, which is not shown in Fig. 15.

(1-9) Operation Unit Provided in the Main Unit of Acoustic Receiver Device

[0114] Lastly in this chapter, the operation unit 9 provided in the main unit of the acoustic receiver device 4 will be described with referring to Fig. 16. The PHS base station 3 and an antenna 30 for wireless communicating are loaded on the top of the main unit case 4A in which each electric circuit of the acoustic receiver device 4 is stored. Also in front of the main unit case 4A the display unit 7 and a in front of the main unit case 4A the display unit 7 and a speaker 41 of the acoustic input/output unit 6 are provided. Furthermore, a telephone call key 9A, a telephone call end key 9B and numeric key 9C are provided on the lower part of the display unit 7. In this connection, the numeric key 9C is comprised of ten numeric keys "0" to "9", and two special keys, "*" key and "#" key.

[0115] Furthermore, a flipper 4B is attached to the main unit case 4A rotation free on the lower part of the main unit case 4A. This flipper 4B is so arranged that this flipper just covers over the telephone call key 9A, the telephone call end key 9B and the numeric key 9C. And thus, erroneous pressing of operation keys can be prevented when the acoustic receiver device 4 is putting in the bag or pocket. Moreover, a microphone 20 of the acoustic input/output unit 6 is provided on the front-end of this flipper 4B, and by opening this flipper 4B, the microphone 20 exactly reaches to the user's mouth when the user is making a call and the user's voice can be picked up easily.

[0116] Furthermore, a rotary-press type operator forming the operation unit 9, i.e., a jog dial 9D is provided on the side of the main unit case 4A. As shown in Fig. 17, this jog dial 9D is attached to the main unit 4A so that it is rotatable in the direction shown by an arrow "a" or "b". When rotating this jog dial 9D, the user can hear and feel it click and thus, the user can easily know that the dial is rotated in which direction and how much.

[0117] When this jog dial 9D is rotation operated, the jog dial 9D generates pulse corresponding to that rotation angle (since this pulse corresponds to the rotation angle, this shows the direction of rotation and the rotation rate). By detecting the pulse generated by this jog dial, the control unit 10 can detect in which direction and how much the jog dial 9D is rotation operated. And the control unit 10 moves the cursor displayed on the display unit 7 upward and downward for the amount corresponding to the rotation direction and the rotation rate detected. Thus, in this acoustic receiver device 4, the cursor can be easily moved not pushing the key "5" or "0" as described above.

[0118] Furthermore, the jog dial can be push operated in the direction shown by an arrow "c" (i.e., almost vertically with respect to the main unit 4A). And when the jog dial 9D is push operated, generates a switch signal showing that the push operation is conducted. The control unit 10, by detecting this switch signal, can detect the push operation of the jog dial 9D, and when the control unit 10 detects the push operation, confirms the item on which the cursor is displayed. Thus, in the acoustic receiver device 4, the item on which the cursor is placed can be confirmed without pressing the "#" key. And accordingly, by providing such jog dial 9D, although the number of parts is increased, the operability and marketability of the acoustic receiver device 4 can be improved.

[0119] In this connection, the remote operator 14 placed on the cable of the earphone 13 is also equipped with a display unit 7, telephone call key 9A, telephone call end key 9B, the numeric key 9C and the jog dial 9D, and the same operation as that of the above can be conducted if the remote operator 14 is used.

(1-10) Operation and Effects

[0120] According to the foregoing construction, in the case of receiving the music offering service by the music offering service system 1, firstly, the service request signal S20 is transmitted from the acoustic receiver device 4 to the service center 2 via the PHS wireless circuit. In this case, the music service to be offered can be roughly divided into the random mode, i.e., the service center 2 side determines music, and the program mode, i.e., the

user determines music. When the user desires the random mode, the service request signal S20 showing the user's intention is transmitted to the service center 2. The service center 2 selects the music from the music group and transmits that music data responding to the service request signal S20, or selecting the music in due order from the music group registered as the latest best ten, transmits that music data. Thus, the acoustic receiver device 4 receives the music data transmitted via the PHS wireless circuit and outputs this to the earphone 13. Accordingly, the user can hear the desired music via the earphone 13.

[0121] On the other hand, if the user desires the program mode, firstly, by entering the first letter of the music he desires, requests the music name list to the service center 2. The service center 2 transmits the music name list consisting of title names having the specified letter as the first letter. The acoustic receiver unit 4 displays that music name list on the display unit 7 and makes the user to select the music he desires from it. And when the user determines the music he wants, transmits the service request signal S20 showing the music determination and receives the music codes from the service center 2. By repeating this operation thereafter, the music name file consisting of the user desired music title names and music codes is formed. Then, the acoustic receiver device 4, by reading out the music codes from the music name file in due order and transmitting to the service center 2, makes the user-desired music data to be transmitted to the service center 2. Hence, receiving the music data and by outputting this from the earphone 12, the user can hear the user-desired music.

[0122] Accordingly, since in this music offering service system 1, the user-desired music data is transmitted via the PHS wireless circuit and received at the acoustic receiver device 1 and transmitted, the user can hear the music he wants on the move without having the recording medium such as a cassette tape and compact disc., that is so-called music-on-demand service can be realized in the mobile communications and can offer great convenience to the user.

[0123] Furthermore, the music offering service system 1, in the case of transmitting the music data, applying the discrete cosine transform processing and the vector quantization processing to the music data, transmits this. Thus, if it transmits the music data upon applying the discrete cosine transform processing and the vector quantization processing, the music data can be received correctly at the receiving end even when the circuit condition changes. Accordingly, it becomes unnecessary to switch the frequency characteristic according to the circuit condition, or to switch the signal output system from stereo to mono and the music offering service can be offered securely.

[0124] According to the foregoing construction, since the user-desired music data is applied the predetermined modulation/coding processing and transmitted, and the receiving end receives that music data and after applying the predetermined demodulation/decoding processing, outputs the music data via the predetermined output means, the user can hear the desired music on the move without having the recording medium, and the music offering service having further improved convenience can be realized.

(2) The Second Embodiment

[0125] The first embodiment described above has dealt with the case of receiving the music offering service by the user carrying the acoustic receiver device 4. However, in this second embodiment, the case of receiving the music offering service by combining the acoustic receiver device and the vehicle loaded acoustic equipment will be explained.

[0126] In Fig. 18, 70 generally shows an acoustic receiver device according to the second embodiment, and also in the case of this embodiment, music data transmitted from the PHS base station 3 is received at the acoustic receiver device 70. However, this acoustic receiver device 70 does not transmit the music data received from the earphone 13 as the first embodiment but it transmits the music data via the vehicle loaded acoustic equipment provided in the car.

[0127] As the recent vehicle loaded acoustic equipment, the equipment in which such as the navigation device and the television receiver set are combined, not the equipment for just receiving the radio broadcast as before has been proposed. As shown in Fig. 18, such vehicle loaded acoustic equipment roughly comprises a display unit 71 for displaying the map and route for navigation, or images of the television broadcasting received and various menus; an acoustic equipment main unit 72 in which a navigation device consisting of the present position locating means and the map database means and a receiver unit of the television receiver, or a music reproduction unit for reproducing the music from the recording medium such as the mini disc and compact disc, and a radio receiver of the AM/FM radio broadcast; and stereo-capable speakers 73R and 73L for outputting sounds of the radio broadcast received and the reproduced music.

[0128] The acoustic receiver device 70 according to the second embodiment applies FM modulation (frequency modulation) to the music data received via the PHS wireless circuit and transmits this in the weak electro-magnetic wave (hereinafter referred to as radio wave) of the FM broadcasting frequency band (normally 76 MHz to 90 MHz). The radio receiver of the vehicle loaded acoustic equipment receives the FM signal transmitted in the weak radio wave, and restoring the music data from the FM signal received, outputs this via speakers 73R and 73L. Thus, the user can hear the music that he wants to listen in stereo sounds via the speakers 73R, 73L of the vehicle-loaded acoustic equipment already loaded in the automobile.

[0129] Thus, the acoustic receiver device 70 accord-

ing to the second embodiment transmits the music data received via the PHS wireless circuit after retransforming the music signal to the FM signal of the weak radio wave, and this is received by the radio receiver of the vehicle loaded acoustic equipment and music is transmitted. Thus, in utilizing the existing vehicle loaded acoustic equipment, the high quality music can be transmitted with high power output.

[0130] In this connection, according to the second embodiment, the control data transmitted in the infrared ray can be received at the acoustic receiver device 70, and thus, the operation of the acoustic receiver device 70 and the vehicle loaded acoustic equipment can be controlled by using the remote controller 74.

[0131] Furthermore, according to the second embodiment, when displaying images of the television broadcasting received, the image of the television broadcasting and the information regarding the music data to be received such as the music name and the menu screen when receiving the music offering service described in the first embodiment can be displayed simultaneously or upon being switched on the display unit 71. Similarly, when displaying the route screen for navigation, the route screen and the information concerning the music data to be received can be displayed on the display unit 71 simultaneously or after being switched. Thus, in this second embodiment, the display unit 71 already provided as a vehicle loaded acoustic equipment can be used in the music offering service.

[0132] Moreover, in the acoustic receiver device 70 according to the second embodiment, various electric circuits of the receiver/transmitter unit can be driven by the battery as in the case of the first embodiment and if it is detached from the dashboard, it can be used as a normal PHS communication terminal device.

[0133] At this point, the construction of the acoustic receiver device 70 according to the second embodiment will be shown in Fig. 19. In Fig. 19, in which the corresponding parts of Fig. 2 are designated the same reference numerals, 70 generally shows an acoustic receiver device according to the second embodiment, and in the case of this acoustic receiver device, a weak radio wave generation/modulation unit 75, an antenna for weak radio wave 76, an infrared ray receiving unit 77 and an infrared ray receiving processing unit 78 are newly provided in addition to the case of the acoustic receiver device 4 according to the first embodiment.

[0134] The infrared ray receiving unit 77 receives the infrared ray to be transmitted from the remote controller 74 and generates an radio electric signal S60 corresponding to the light quantity of the infrared ray or the number of optical pulse. The infrared ray receiving processing unit 78, analyzing the radio signal S60, detects the control data S61 transmitted from the remote controller 74 and outputs this to the control unit 10 via the data bus 11.

[0135] The control unit 10 controls the operation of each unit of the acoustic receiver device 70 corresponding to the control data S61 and thus, the operation of the acoustic receiver device 70 can be controlled by using the remote controller 74. For example, in the case where the control data to start the music offering service with the prescribed mode is transmitted from the remote controller 74, the control unit 10 controls the operation of the receiver/transmitter unit 5 responding to that control data and transmits service request signal S20 via the receiver/ transmitter unit 5. With this arrangement, the service center 2 sends out the music data by the user desired mode responding to this service request signal S20. The acoustic receiver device 70 receives the signal transmitted via the PHS wireless circuit by the receiver/ transmitter unit 5, and by decoding processing that music data received at the acoustic input/output unit 6, restores the music data (S24R, S24L) transmitted from the service center 2 and sends this out to the weak radio wave generation/modulation unit 75.

[0136] The weak radio wave generation/modulation unit 75, after forming the transmission signal by applying the FM modulation to the supplied music data (S24R, S24L), converts the transmission signal to the frequency band of FM radio broadcasting and transmits this from the antenna 76 using weak radio wave. Thus, if this weak radio wave is received by the radio receiver of the vehicle loaded acoustic equipment, the music data received by the acoustic receiver device 70 can be transmitted via the vehicle loaded acoustic equipment.

[0137] Furthermore, the control unit 10 also transmits add-on information S62 such as music names and music words transmitted with the music data and the menu screen data S63 to be displayed on the display unit 7 through the weak radio wave generation/modulation unit 75, and if these are received by the vehicle loaded acoustic equipment, the data connected with the music offering service such as music names and music words or menu screen can be displayed on the display unit 71 of the vehicle loaded acoustic equipment.

[0138] Furthermore, since the control unit 10 transmits the control data S64 connected with the vehicle loaded acoustic equipment received via the infrared ray receiving unit 77 and the infrared ray receiving processing unit 78 through the weak radio generation modulation unit 75, the operation of the vehicle loaded acoustic equipment can be controlled by using the remote controller 74.

[0139] According to the foregoing construction, since the music data received are RM modulated again and transmitted using the weak radio wave, the music data received at the acoustic receiver device 70 can be transmitted via the existing vehicle loaded acoustic equipment with high quality and high output power, the convenience in the case of receiving the music offering service can be further improved

(3) The Third Embodiment

[0140] The first embodiment described above has

dealt with the case of transmitting the music data received at the acoustic receiver device 4 via the cable connected earphone 13. However, in this third embodiment, we will explain the case where the music data can be heard by using the wireless type earphone.

[0141] As shown in Fig. 20, in this third embodiment, the music data received at the acoustic receiver device 80 is re-modulated and transmitted using the weak radio wave, and by receiving this at the communication unit 81A of the wireless type earphone 81, the audio data is transmitted via the electro-acoustic transform element of the earphone 81. Thus, in this third embodiment, the acoustic receiver device 80 and the earphone 81 can be used separately, and if the acoustic receiver device 4 is kept in a bag not attaching to the body as in the case of the first embodiment, the music data can be easily heard.

[0142] Moreover, according to the first embodiment, it is possible that the acoustic receiver device 4 can be put in the bag. However, since it is cable connected, it can be separated only for the cable length of the earphone 13. Moreover, in the case of the first embodiment, if the user walks around carrying the acoustic receiver device 4 with him, it is possible that the cable of the earphone 13 hangs on his hand and becomes an obstacle. However, if the acoustic receiver device 80 and the earphone 81 are wireless connected as in the case of the third embodiment, they can be separated freely within the range as long as radio wave reaches and since the earphone 13 is wireless connected, there is no chance that the cable of the earphone 13 becomes an obstacle as in the case of the first embodiment, and greater flexibility can be obtained.

[0143] Furthermore, according to the third embodiment, a remote operator 81B is provided at midpoint of the cable of the earphone 81, and the control data entered from this remote operator 81B can be transmitted via the communication unit 81A. Thus, the control data when receiving the music offering service can be entered by the user on hand without operating the operation unit 9 provided in the main unit of the acoustic receiver device 80. This remote operator 81B has the construction similar to that of the remote operator 14 described in the first embodiment, and has a display facility and an operational input facility. Needless to say, the communication unit 81A and the remote operator 81B can be formed integratedly.

[0144] At this point, the construction of the acoustic receiver device 80 according to the third embodiment will be shown in Fig. 21. In Fig. 21, in which the corresponding parts of Fig. 2 are given the same reference numerals, 80 generally shows the acoustic receiver device according to the third embodiment, and a weak radio wave receiver/transmitter unit 82 and an antenna for weak radio wave 83 are newly provided in this acoustic receiver device in addition to the acoustic receiver device 4 according to the first embodiment.

[0145] In this acoustic receiver device 80, the transmission signal transmitted from the communication unit 81A of the wireless type earphone 81 is received by the antenna 83, and the resultant receiving signal S70 is supplied into the weak radio wave receiver/transmitter unit 82. The weak radio wave receiver/transmitter unit 82, by applying the predetermined demodulation processing to this receiving signal S70, restores the control data S71 generated by the remote operator 81B from the receiving signal S70 and transmits this to the control unit 10 via the data bus 11.

[0146] If this control data S71 is the control data to receive the music offering service, the control unit 10 transmits the service request signal S20 for receiving the music offering service corresponding to the control data S71 to the service center 2 using the receiver/transmitter unit 5 via the PHS wireless circuit. Upon receiving this, the service center 2 transmits the desired music data in response to the service request signal S20 via the PBS wireless circuit.

[0147] In the acoustic receiver device 80, the signal transmitted via the PHS wireless circuit is received by the receiver/transmitter unit 5, and by decoding processing the music data received at the acoustic input/output unit 6, the music data (S24R, S24L) transmitted from the service center 2 is restored and transmitted to the weak radio wave receiver/transmitter unit 82.

[0148] The weak radio wave receiver/transmitter unit 82, after forming the transmission signal by applying the predetermined modulation processing to the music data (S24R, S24L) supplied, transforms the transmission signal to such a signal of approximately several hundreds MHz and transmits this using the weak radio wave from the antenna 83. Thus, if this weak radio wave is received by the communication unit 81A of the earphone 81 and the music data is demodulated and the music data is transmitted via the electro-acoustic transform element of the earphone 81, the music data received by the acoustic receiver device 80 can be easily heard by the wireless earphone 81.

[0149] Furthermore, the weak radio wave receiver/transmitter unit 82 also transmits the data regarding the music data to be received such as music names and music words or the data of menu screen using the weak radio wave. Accordingly, if these are received by the wireless type earphone 81 and displayed on the remote operator 81B, the user can easily confirm the music names and music words without seeing the display unit 7 provided in the main unit of the acoustic receiver device 80.

[0150] At this point, the construction of the wireless type earphone 81 will be shown in Fig. 22. As shown in this Fig. 22, the wireless type earphone 81 is roughly comprised of a communication unit 81A, a remote operator 81B, an antenna 81C and electro-acoustic transform elements 81R, 81L. In the wireless type earphone 81, the weak radio wave transmitted from the weak radio wave receiver/transmitter unit 82 of the acoustic receiver device 80 is received by the antenna 81C and the

resultant receiving signal S72 is supplied to the communication unit 81A. The communication unit 81A, applying the predetermined demodulation processing, restores stereophonic music signals S73R and S73L from the receiving signal S72 and outputs this to the electro-acoustic transform elements 81R and 81L. Thus, if the user puts these electro-acoustic transform elements 81R, 81L to his ear, he can hear music via the electro-acoustic transform elements 81R and 81L.

[0151] On the other hand, the control data S74 entered by the user operating the remote operator 81B is supplied to the communication unit 81A. The communication unit 81A, after forming the transmission signal applying the predetermined modulation processing to this control data 74, transforms the transmission signal to signal of approximately several hundreds MHz and transmits this from the antenna 81C using the weak radio wave. Then, upon receiving this weak radio wave, if the control data S71 is restored, the operation corresponding to the user's instruction can be conducted based on this control data S71.

[0152] According to the construction described above, since the music data received is re-modulated and transmitted using the weak radio wave, the music data received by the acoustic receiver device 80 can be heard by the wireless type earphone 81, the convenience in the case of receiving the music offering service can be further improved.

(4) Other Embodiments

[0153] The first and the third embodiment described above have dealt with the case of using the earphone as the sound output means for outputting the music data received. However, the present invention is not only limited to this, but also if the sound output means which covers the user's ear, i.e., a headphone would be used, the same effect as those of the above can be obtained.

[0154] Furthermore, the second embodiment described above has dealt with the case of setting the frequency of weak radio wave over which the music data is piled to approximately 76 MHz to 90 MHz. However, the present invention is not only limited to this but also other frequency can be used, provided that the frequency is the frequency within the range receivable by the radio receiver loaded as the vehicle loaded acoustic equipment.

[0155] Furthermore, the third embodiment described above has dealt with the case of setting the frequency of weak radio wave over which the music data is piled to approximately several hundreds MHz. However, the present invention is not only limited to this but also any frequency can be used, provided that the frequency is over several tens MHz and lower than 1 GHz. If the frequency is set within this range the communication using the weak radio wave can be easily conducted.

[0156] Moreover, the first and the third embodiments described above have dealt with the case of transmitting the received audio data via the earphone 13 or 81. However, the present invention is not only limited to this but also the earphone which is the electro-acoustic transform element can be used as the microphone and audio signal for telephone call may be entered via the earphone. In general, the electro-acoustic transform element forming the earphone can be converted to the electric signal by picking up vibrations of the voice wave inversely. More specifically, the voice wave generated at the human vocal cord reaches into ear generally passing through such as bones, however, if the vibrations of voice wave are received by the earphone, audio signal can be formed by the earphone. And if this audio signal is entered to the acoustic input/output unit 6 of the acoustic receiver device 4 or 80 via the cable or the wireless circuit as in the case of the first or the third embodiment, the earphone can be used as a microphone and when using the acoustic receiver device 4 or 80 as the telephone terminal, the user can make a call without carrying the mike and great flexibility can be obtained. In this case, the transmission of the audio signal to output to the earphone and the audio signal entered from the earphone may be conducted by semi-duplex communications, however, if the audio signal is transmitted by full duplex communications by time sharing transmission, the responsiveness of the telephone conversation is improved and this is more effective.

[0157] Furthermore, the first embodiment described above has dealt with the case of applying the discrete cosine transform to the music data in the data processing unit 40 when transmitting the music data from the PHS base station 3. However, the present invention is not only limited to this but also such as high speed Fourier transform (FFT) and the other processing can be applied. In this connection, in the case of conducting the high speed Fourier transform processing at the transmitting end, the inverse high speed Fourier transform (IFFT) may be conducted at the data decoding block 62 of the receiving end in place of the discrete cosine transform.

[0158] Furthermore, the first embodiment described above has dealt with the case of memorizing data of the menu screen in the memory unit 8. However, the present invention is not only limited to this but also if the data of this menu screen may be transmitted from the service center 2 side via the PHS wireless circuit, the same effect as those of the above can be obtained.

[0159] Furthermore, the first embodiment described above has dealt with the case of classifying the music to be offered in the random mode into nine categories as shown in Fig. 10, i.e., "the latest best ten (J-POP)", "the latest best-ten (Rock)", "the latest best-ten (Enka)", "random pickup (1990s)", "random pickup (1980s)", "random pickup (1960-1970s)", "jazz random", "classic random" and "reggae random" However, the present invention is not only limited to this but also the music can be classified into more precise categories according to era and genre. In short, as the classification of the music

group, any other classifications other than the classification shown in Fig. 10 can be used.

[0160] Moreover, the first embodiment described above has dealt with the case of forming a virtual character table TB with fifty Japanese phonetic characters and thus enabling the Japanese kana characters input. However, the present invention is not only limited to this but also the virtual character table may be formed with the other characters enabling to input other characters.

[0161] Furthermore, the first embodiment described above has dealt with the case of enabling the virtual cursor K movable up and down and right and left directions by using "5", "0", "7" and "9" keys since the virtual character table TB extending toward two-dimensional direction is used. However, the present invention is not only limited to this but also by making the virtual cursor movable only up and down or left and right by using "5" and "0" keys or "7" and "7" keys and the virtual cursor may be moved only from "A" to "Z" direction or from "Z" to "A" direction in the case of using the virtual character table on which characters are arranged one dimensionally such as alphabet.

[0162] Furthermore, the first embodiment described above has dealt with the case of receiving the music code by outputting the service request signal S20 showing the music confirmation after the user selecting the desired music from the music name list and confirming the music when specifying the music by the program mode. However, the present invention is not only limited to this but also the music code can be transmitted with the music name when transmitting the music name list from the service center 2. With this arrangement, the processings of steps P6 and P7 of the flow chart shown in Fig. 14 can be omitted and the processing can be further simplified.

[0163] Furthermore, the first embodiment described above has dealt with the case of showing the music words display screen by displaying a book mark as well as showing the music name display screen by displaying a music code mark. However, the present invention is not only limited to this but also the music name display screen or the music word display screen can be indicated by displaying the character such as "music name" and "music word".

[0164] Moreover, the first embodiment described above has dealt with the case of obtaining the music signal of the user specified music after memorizing the music name file showing the music specified by the program mode in the memory unit 8, and reading out the music code showing the user specified music from the music name file and by informing this to the service center 2. However, the present invention is not only limited to this but also a timer for specifying the time when the music code is read out from the music name file memorized in advance may be provided and when the time registered in this timer comes, the music code may be read out and reported to the service center 2. If the user registers the desired time on the timer in advance, he can automatically receive the music signal and can hear the desired music when that time comes.

[0165] Furthermore, the first embodiment described above has dealt with the case of instructing the music offering service stop by using the telephone call end key at the time when receiving the music offering service in the random mode. However, the present invention is not only limited to this but also the music offering service stop can be allocated to such as the numeric key.

[0166] Furthermore, the first embodiment described above has dealt with the case of providing a rotary push type operation key, i.e., jog dial 9D and moving a cursor. However, the present invention is not only limited to this but also the cursor can be moved by providing the other kind operation key. For example, as shown in Fig. 23A, providing a rotary push type operation key 90 which can be push operated in a direction almost perpendicular to the main unit 4A, and the cursor travel may be conducted. In this case, the operation key 90 can rotate up and down for an angle $\pm \alpha$ and when the user releases his finger from the rotating condition, it returns to the original position according to its spring tension. When this operation key 90 is rotated for the angle $+\alpha$ or $-\alpha$ by the user, of two switches one switch corresponding to the direction of rotation is put ON condition. The control unit 10 detects the direction of rotation of the operation key 90 by detecting the switch condition and simultaneously detects the time during which the switch is on condition, and moves the cursor displayed on the display unit 7 for the amount corresponding to the direction and duration of the rotation detected upward and downward. Thus, the cursor can be easily moved without pushing the numeric key as in the case of the first embodiment. Furthermore, this operation key 90 can be push operated in the direction shown by an arrow "c". When this operation key 90 is push operated, a switch signal showing the push operation has been done is generated. The control unit 10 can detect the push operation of the operation key 90 by detecting this switch signal, and when the control unit detects the push operation, confirms the item on which the cursor is displayed. Thus, the item on which the cursor is placed can be easily confirmed without pushing the "#" key as in the case of the embodiment described above.

[0167] Furthermore, the present invention is not only limited to the above but also, as shown in Fig. 23B, the cursor travel can be conducted by providing a 3-piece switch type operation key 91. In this case, the operation key 91 is comprised of vertically arranged three switches 91A to 91C. The control unit 10 can detect the switch condition of these three switches 91A to 91C, and as well as moving the cursor corresponding to the detection result, conducts the confirmation of the item on which the cursor is positioned. More specifically, when the first switch 91A is push operated, the control unit 10 measures the time during which the first switch 91A is pushed and moves the cursor upward for the amount corresponding to that time. Also, when the third switch 91C

is push operated, the control unit 10 measures the time during which the third switch is pushed and moves the cursor downward for the amount corresponding to that time. With this arrangement, the cursor can be easily moved without pushing the numeric key as in the case of the embodiment described above. Furthermore, when the second switch 91B is push operated, the control unit 10 detects the push condition of the second switch 91B and confirms the item on which the cursor is positioned. Thus, the item on which the cursor is positioned can be easily confirmed without pressing the "#" key as in the case of the embodiment described above. Accordingly, if the rotary push type operation key 90 or a 3-piece switch type operation key 91 is provided, the operability and productivity of the acoustic receiver device can be also improved.

[0168] Furthermore, the embodiment described above has dealt with the case of conducting the music offering service to the user by transmitting the music signal from the service center 2. However, the present invention is not only limited to this but also other information, such as news, stock information, or weather forecast can be transmitted from the service center 2. In short, if the acoustic signal for offering information such as music and sound would be transmitted from the service center, the same effect as those of the above can be obtained.

[0169] Moreover, the embodiment described above has dealt with the case of transmitting music signal via the PHS wireless circuit. However, the present invention is not only limited to this but if the music signal would be transmitted via the wireless circuit of the other wireless communication system such as the portable telephone system and car telephone system, the same effect as those of the above can be obtained.

[0170] Furthermore, the embodiment described above has dealt with the case of providing 2 electro-acoustic transform elements for outputting the acoustic signal received and outputting the stereo sound. However, the present invention is not only limited to this but providing at least two or more electro-acoustic transform elements and outputting the acoustic signal, the same effect as those of the above can be obtained.

[0171] Furthermore, the embodiment described above has dealt with the case of transmitting the service request signal via the wireless transmission unit 5A and receiving the music signal responding to this at the wireless receiving unit 5B, and after modulation processing that received signal at the demodulation circuit 40, restoring the music signal by decoding processing at the data processing circuit 43 and outputting this via the earphone 13. However, the present invention is not only limited to this but if the wireless transmission means for transmitting the service request signal to request the desired acoustic signal, the wireless receiving means for receiving the transmission signal containing the acoustic signal to be transmitted responding to the service request signal, the demodulation decoding means for applying the demodulation and/or decoding processing to the receiving signal to be transmitted from the wireless receiving means, and the electro-acoustic transforming means for transforming the acoustic signal restored by the demodulation decoding means to the music wave and transmitting this would be provided, the user desired acoustic signal can be easily obtained not having the recording medium in which the acoustic signal is recorded as in the case of the embodiment described above.

[0172] According to the present invention as described above, since the service request signal is transmitted and the acoustic signal transmitted responding to this is received and transmitted, the user desired acoustic signal can be easily obtained without having the recording medium in which acoustic signal is recorded. Moreover, since the predetermined modulation and/or coding processing is applied to the acoustic signal at the transmitting end and this is demodulated and/or decoding processed at the receiving end, the acoustic signal having high quality can be constantly obtained even if the circuit condition changes. Thus, upon further improving the convenience, acoustic signal can be offered.

[0173] Furthermore, since the acoustic signal received is re-modulated and retransmitted, it becomes unnecessary to connect the element for outputting the sound signal and the device for receiving the sound signal by the cable, the usability can be improved.

[0174] Moreover, since the electro-acoustic transform element for transmitting the acoustic signal received is used as the element for forming the audio signal when the telephone call is in progress, one element can be used commonly and the usability can be improved.

[0175] Furthermore, since the contents of the input signal to be transmitted are changed based on the contents of the data transmitted from the terminal device, the input signal desired by the terminal device can be easily transmitted.

[0176] Furthermore, since when the request signal is the first type signal, musics are transmitted in the order predetermined by the transmitting end and when the request signal is the second type signal, an optional music is selected and transmitted from among the prescribed music group, the desired music can be offered according to the type of request signal.

[0177] Moreover, since the musics are transmitted in the order predetermined by the transmitting end when the request signal is the first type signal and when the request is the second type signal, the music determined by the terminal device side is transmitted, the desired music can be provided according to the request signal.

[0178] Moreover, by receiving the music signal corresponding to the request signal, extracting the add-on information transmitted with the music signal from the receiving signal received and selectively displaying the first type add-on information and the second type add-on information out of add-on information, the add-on information transmitted with the music signal can be se-

lectively confirmed, and the usability can be improved.

[0179] Furthermore, since the information on which the virtual cursor is positioned is displayed by the virtual cursor moving on the two-dimensional virtual information table according to the input operation and the information on which the virtual cursor is positioned is selected when the confirmation instruction is put in, the desired information can be easily selected.

[0180] Furthermore, since the virtual cursor moves on the two-dimensional character table according to the input operation the letter on which the cursor is position is displayed and when the confirmation is put in, the letter on which the virtual cursor is positioned is selected and entered, the desired characters can be easily entered.

[0181] Moreover, since the unit data pairing the music name with the music code added to the music are arranged in the desired order and the time sharing order of the musics is determined according to that order, music names and music codes are easily obtained and simultaneously the order of musics can be easily grasped.

[0182] Moreover, since the material information for music specification is transmitted via the predetermined communication circuit, the music list regarding the material information is received via the communication circuit, the desire music is specified from among the music list, and the information showing the music specified is transmitted via the communication circuit, the music existing in the other party side can be easily specified via the communication circuit.

[0183] While there has been described in connection with the preferred embodiments of the invention, it will be obvious to those skilled in the art that various changes and modifications may be aimed, therefore, to cover in the appended claims all such changes and modifications as fall within the true spirit and scope of the invention.

Claims

1. A wireless acoustic receiving device, comprising:

   wireless transmission means for transmitting a service request signal to request a desired acoustic signal;
   wireless receiving means for receiving a transmission signal containing the acoustic signal to be transmitted responding to the service request signal;
   demodulation/decoding means for applying demodulation and/or decoding processing to the receiving signal transmitted from the wireless receiving means; and
   electro-acoustic transform means for transforming the acoustic signal restored by the demodulation/decoding means to a sound wave to be output.

2. The wireless acoustic receiving device according to claim 1, wherein the electro-acoustic transform means is formed of at least two electro-acoustic transform elements and outputs the acoustic signal in stereo sound.

3. The wireless acoustic receiving device according to claim 1 or 2, wherein the demodulation/decoding means comprises:

   decoding means for separating main information and sub information from the receiving signal;
   feature information restoring means for restoring feature information from the sub information;
   information restoring means for conducting the restoration processing of the main information using the feature information restored by the feature information restoring means; and
   information source decoding means for restoring the acoustic signal upon decoding output signal of the information restoring means.

4. The wireless acoustic receiving device according to claim 3, wherein the demodulation/decoding means further comprises deinterleave means for returning the data order of the main information to the initial state.

5. The wireless acoustic receiving device according to claim 3 or 4, wherein the information source decoding means restores the acoustic signal by conducting either:

   discrete cosine inverse transform processing on the output signal; or
   inverse high-velocity Fourier transform processing on the output signal.

6. A vehicle-loadable acoustic device, comprising:

   wireless transmission means for transmitting a service request signal to request a desired acoustic signal;
   wireless receiving means for receiving transmission signal containing the acoustic signal to be transmitted responding to the service request signal;
   demodulation/decoding means for restoring the acoustic signal by applying demodulation and/or decoding processing to the receiving signal transmitted from the wireless receiving means; and
   electro-acoustic transform means, preferably having at least two electro-acoustic transform elements, for transforming the acoustic signal restored by the demodulation/decoding means

to a sound wave to be output in stereo sound.

7. The vehicle-loadable acoustic device according to claim 6 or 7, further comprising remote control means in which control data for operation control is entered through the remote control means which optionally transmits the control data via infrared ray.

8. The vehicle-loadable acoustic device according to claim 7, further comprising display means for displaying the information concerning the acoustic signal to be received.

9. The vehicle-loadable acoustic device according to claim 8, further comprising television broadcasting receiving means in which the information concerning the acoustic signal to be received and images of television broadcasting received at the television broadcasting receiving means are simultaneously, or upon switching these, displayed on the display means.

10. The vehicle-loadable acoustic device according to claim 8 or 9, further comprising present position locating means in which the information concerning the acoustic signal to be received and the information concerning the present position locating means are simultaneously, or upon switching these, displayed on the display means.

11. The vehicle-loadable acoustic device according to any one of claims 6 to 10, wherein the wireless transmission means, the wireless receiving means and the demodulation/decoding means are equipped with removable components and they can be used as communication equipment after they are removed.

12. A portable acoustic output device, comprising:

wireless transmission means for transmitting a service request signal to request a desired acoustic signal;
wireless receiving means for receiving a transmission signal containing the acoustic signal to be transmitted responding to the service request signal;
demodulation/decoding means for restoring the acoustic signal by applying demodulation and/or decoding processing to the receiving signal transmitted from the wireless receiving means;
electro-acoustic transform means, preferably having at least two electro-acoustic transform elements, for transforming the acoustic signal restored by the demodulation/decoding means to a sound wave to be output in stereo sound; and
a battery for driving.

13. The portable acoustic output device according to claim 12, wherein the electro-acoustic transform element possessed by the electro-acoustic transform means is human body attachable.

14. The portable acoustic output device according to claim 12 or 13, further comprising operating means for inputting control data in the case of receiving the acoustic signal.

15. The portable acoustic output device according to claim 14, wherein the operating means comprises one or more of:

operation keys for inputting the control data regarding telephone communications;
rotary push type operation keys;
moving round push type operation keys; or
a plurality of pushing switches.

16. The portable acoustic output device according to claim 14 or 15, wherein the electro-acoustic transform means is connected to the main case in which the wireless transmission means, the wireless receiving means and the demodulation/decoding means are stored via cable, and the operating means is placed on the cable.

17. The portable acoustic output device according to any one of claims 14 to 16, further comprising display means for displaying information regarding the acoustic signal to be received and/or information regarding telephone conversation.

18. The portable acoustic output device according to claim 17, wherein the electro-acoustic transform means is cable connected to the main unit case in which the wireless transmission means, the wireless receiving means and the demodulation/decoding means are stored, and the display means is placed on the cable.

19. The portable acoustic output device according to claim 18, wherein the display means is formed integrally with the operating means.

20. The portable acoustic output device according to claim 18 or 19, comprising:

weak information transmission means for transmitting the acoustic signal restored by the demodulation/decoding means;
weak information receiving means for receiving the acoustic signal transmitted by the weak information transmission means and for supplying to the electro-acoustic transform means;

and wherein
the acoustic signal is supplied to the electro-acoustic transform means via non-cable connection.

21. The portable acoustic output device according to claim 20, wherein the weak information transmission means transmits the acoustic signal using an electromagnetic wave.

22. The portable acoustic output device according to claim 21, wherein the electromagnetic wave is in the frequency band over 10 MHz and below 1 GHz.

23. The portable acoustic output device according to claim 21 or 22, wherein the weak information receiving means transmits control data input from the predetermined operation means in utilizing the electromagnetic wave, and the weak information transmission means receives the control data transmitted from the weak information receiving means and outputs to the predetermined control means.

24. A wireless information retransmission device, comprising:

wireless transmission means for transmitting a service request signal to request a desired acoustic signal;
wireless receiving means for receiving a transmission signal containing the acoustic signal to be transmitted responding to the service request signal;
demodulation/decoding means for restoring the acoustic signal by applying demodulation and/or decoding processing to the receiving signal transmitted from the wireless receiving means;
re-modulation means for re-modulating and transmitting the acoustic signal transmitted from the demodulation/decoding means; and
retransmission means for retransmitting the output signal of the re-modulation means.

25. The wireless information retransmission device according to claim 24, wherein the re-modulation means conducts the frequency modulation to the acoustic signal.

26. The wireless information retransmission device according to claim 24 or 25, wherein the retransmission means transmits the output signal using an electromagnetic wave with the frequency band over 10 MHz and below 1 GHz.

27. A portable acoustic output communication device, comprising:

wireless transmission means for transmitting a service request signal to request a desired acoustic signal;
wireless receiving means for receiving a transmission signal containing the acoustic signal to be transmitted responding to the service request signal;
demodulation/decoding means for restoring the acoustic signal by applying demodulation and/or decoding processing to the receiving signal sent out from the wireless receiving means;
electro-acoustic transform means, preferably having at least two human body-attachable type electro-acoustic transform elements, for transforming the acoustic signal restored by the demodulation/decoding means to a sound wave and outputting in stereo sound; and
a battery for driving; and wherein
while a telephone call is in progress, the vibrations of a part of human body or the voice of a sender is detected by the electro-acoustic transform element of the electro-acoustic transform means to form audio signal and the audio signal is transmitted via the wireless transmission means, and the audio signal from the other party of the call is received by the wireless receiving means to be output this from the electro-acoustic transform element of the electro-acoustic transform means, so that both the sound receiving and the telephone call can be conducted.

28. The portable acoustic output communication device according to claim 27, wherein while a telephone conversation is in progress, the audio signal to be supplied to the electro-acoustic transform element and the audio signal to be supplied to the wireless transmission means from the electro-acoustic transform elements are time division transmitted.

29. An automobile comprising:

wireless transmission means for transmitting a service request signal to request a desired acoustic signal;
wireless receiving means for receiving a transmission signal containing the acoustic signal to be transmitted responding to the service request signal;
demodulation/decoding means for restoring the acoustic signal by applying the demodulation and/or decoding processing to the receiving signal sent out from the wireless receiving means; and
electro-acoustic transform means, preferably having at least two or more electro-acoustic transform elements, for transforming the

acoustic signal restored by the demodulation/decoding means to a sound wave and outputting it in stereo sound.

30. The automobile according to claim 29, further comprising display means and the present location locating means, wherein the information regarding the acoustic signal to be received and the information concerning the present position locating means are simultaneously, or upon switching them, displayed on the display means.

31. An information transmission device comprising:

information source coding means for information source coding the input signal;
feature extracting means for extracting the feature information of the input signal;
quantization means for vector quantizing the output data of the information source coding means using the feature information extracted by the feature extracting means;
modulation means for modulating the output signal of the quantization means;
wireless transmission means for transmitting the output signal of the modulation means to a terminal device;
wireless receiving means for receiving the output signal from the terminal device; and
demodulation means for applying demodulation and/or decoding processing to the receiving signal sent out from the wireless receiving means; and wherein
the contents of the input signal are changed based on the contents of output signal of the demodulation/decoding means.

32. The information transmission device according to claim 31, comprising:

interleave means for sorting the output data sent out from the information source coding means; and
weight function forming means for forming a weight function from the feature information extracted by the feature information extracting means.

33. The information transmission device according to claim 31 or 32, wherein the information source coding means conducts either:

discrete cosine transform processing to the input signal; or
high velocity Fourier transform processing to the input signal.

34. A wireless acoustic receiving method, comprising the steps of:

transmitting a service request signal for requesting a desired acoustic signal;
receiving a transmission signal containing the desired acoustic signal to be transmitted responding to the service request signal;
restoring the acoustic signal by applying the demodulation and/or decoding processing to the received signal; and
outputting the restored acoustic signal upon transforming to a sound wave.

35. The wireless acoustic receiving method according to claim 34, further comprising the step of displaying the information regarding the acoustic signal received.

36. A wireless acoustic receiving method, comprising the steps of:

separating main information and sub information from the receiving signal;
restoring feature information from the sub information; and
restoring the main information using the restored feature information, and by information source decoding the restoration result, restoring the acoustic signal from the receiving signal.

37. The wireless acoustic receiving method according to claim 36, wherein either:

discrete cosine inverse transform processing is conducted as the information source decoding; or
inverse high velocity Fourier transform processing is conducted as the information source decoding.

38. A wireless acoustic receiving method, comprising the steps of:

transmitting a service request signal to request a desired acoustic signal;
receiving a transmission signal containing the acoustic signal to be transmitted responding to the service request signal;
restoring the acoustic signal by applying the demodulation and/or decoding processing to the receiving signal received;
retransmitting the restored acoustic signal upon re-modulating; and
receiving the retransmitted acoustic signal to be demodulated and transforming the acoustic signal to a sound wave to be output.

39. The wireless acoustic receiving method according to claim 38, wherein frequency modulation is conducted to the acoustic signal as the re-modulation.

40. A wireless information retransmission method, comprising the steps of:

transmitting a service request signal to request the desired acoustic signal;
receiving a transmission signal containing the acoustic signal to be transmitted responding to the service request signal;
restoring the acoustic signal by applying the demodulation and/or decoding processing to the receiving signal received; and
retransmitting the restored acoustic signal upon re-modulating.

41. The wireless information retransmission method according to claim 40, wherein frequency modulation is conducted to the acoustic signal as the re-modulation.

42. A portable acoustic output communication method, comprising the steps of:

transmitting a service request signal to request a desired acoustic signal;
receiving transmission signal containing the acoustic signal to be transmitted responding to the service request signal;
restoring the acoustic signal by applying the demodulation and/or decoding processing to the receiving signal received;
transforming the restored acoustic signal to a sound wave using the predetermined electro-acoustic transform element and cutputting this; and
during a telephone conversation, detecting the vibration of a part of human body or the voice of a sender by the electro-acoustic transform element to form the audio signal to be output, and receiving audio signal from the other party to output this from the electro-acoustic transform element.

43. The portable acoustic output communication method according to claim 42, wherein the output of the audio signal by the electro-acoustic element and the formation of the audio signal are conducted using the time division system.

44. An information transmission method, comprising the steps of:

information source coding the input signal, and extracting the feature information of the input signal;
conducting the vector quantization onto the output data based on the information source coding in utilizing the feature information;
modulating an output signal based on the vector quantization, and transmitting it to a terminal device; receiving transmission signal from the terminal device; and
restoring the data transmitted from the terminal device after applying the demodulation and/or decoding processing to the receiving signal received, and changing the contents of the input signal based on the contents of the data.

45. The information transmission method according to claim 44, wherein either:

discrete cosine transform processing is conducted on the input signal as the information source coding; or
high velocity Fourier transform processing is conducted on the input signal as the information source coding.

46. A music transmission method, comprising the steps of:

receiving a request signal from the terminal device; if the request signal is the first type signal, transmitting musics in the order predetermined at the transmitting end; and
if the request signal is a second type of signal, transmitting an optional music upon selecting from among the predetermined music group.

47. The music transmission method according to claim 46, wherein if the request signal is a third type of signal, the music determined at the terminal device side is transmitted.

48. The music transmission method according to claim 46 or 47, wherein the music group comprises either:

the music group excluding musics transmitted in the past; or
the music group excluding musics transmitted within a fixed time period in the past.

49. A music transmission method, comprising the steps of:

receiving a request signal from the terminal device;
if the request signal is the first type signal, transmitting musics in the order predetermined at the transmitting end; and
if the request signal is the second type signal, transmitting music determined at the terminal device side.

50. A music transmission device, comprising:

receiving means for receiving a request signal from the terminal device; and
music information transmission means which transmits musics in a predetermined order if the request signal is the first type signal, and transmits the music after selecting an optional music from among the prescribed music group if the request signal is the second type signal.

51. The music transmission device according to claim 50, wherein the music group comprises either:

the music group excluding musics transmitted in the past; or
the music group excluding musics transmitted within a fixed time period in the past.

52. A music transmission device, comprising:

receiving means for receiving a request signal from a terminal device; and
music information transmission means which transmits music in a predetermined order if the request signal is the first type signal, and if the request signal is the second type signal, transmits the music determined at the terminal device side.

53. A music receiving device, comprising:

transmission means for transmitting the first request signal which requests a music transmission without specifying music or the second request signal which requests the music transmission specifying music; and
receiving means for receiving the music signal transmitted responding to the first or the second request signal.

54. A music receiving device, comprising:

transmission means for transmitting a request signal to request a music transmission;
receiving means for receiving the music signal responding to the request signal;
extracting means for extracting the add-on information transmitted with the music signal from the output signal of the receiving means; and
display means for selectively displaying the add-on information of the first type and the add-on information of the second type from among the add-on information.

55. The music receiving device according to claim 54, wherein the first type add-on information is the titles of musics and the second type add-on information is words of the music.

56. The music receiving device according to claim 54 or 55, wherein in the case of displaying the first or the second type add-on information, the display means displays different codes or characters according to the types of add-on information.

57. An information selecting method, comprising the step of:

displaying the information on which a virtual cursor is positioned by moving the virtual cursor on the two-dimensional information table in response to the input operation; and
when the confirmation command is entered, selecting the information on which the virtual cursor is positioned.

58. A character input method, comprising the steps of:

displaying the character on which a virtual cursor is position by moving the virtual cursor on the two-dimensional information table in response to the input operation; and
when the confirmation command is entered, selecting the character on which the virtual cursor is positioned.

59. The character input method according to claim 53, wherein the characters are Japanese Kana (phonetic words) characters and the character table is comprised of around fifty phonetic words.

60. The data construction for specifying music data, characterized by:

having at least one or more units of data pairing the music name with the music code added to the music; and
arranging the unit data in the desired order, and based on that order, the time sharing order of the music is specified.

61. A music specification method in utilizing the communication circuit, comprising the steps of:

transmitting material information for specifying music via the predetermined communication circuit; receiving the music list matching to the material information via the communication circuit; and
specifying the desired music from among the music list and transmitting the information showing the specified music via the communication circuit.

62. The music specification method in utilizing the communication circuit according to claim 61, wherein the information showing the music specified is memorized in the predetermined memory means, and the information showing the specified music is transmitted when the desired time comes.

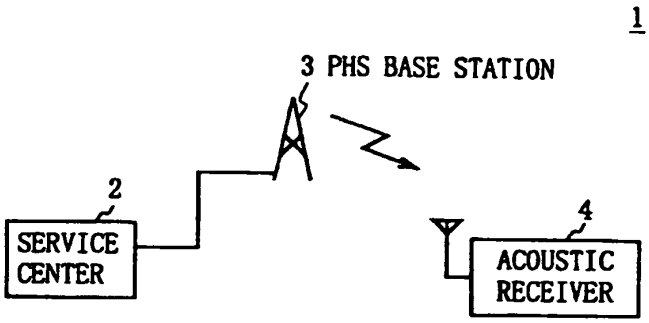

FIG. 1

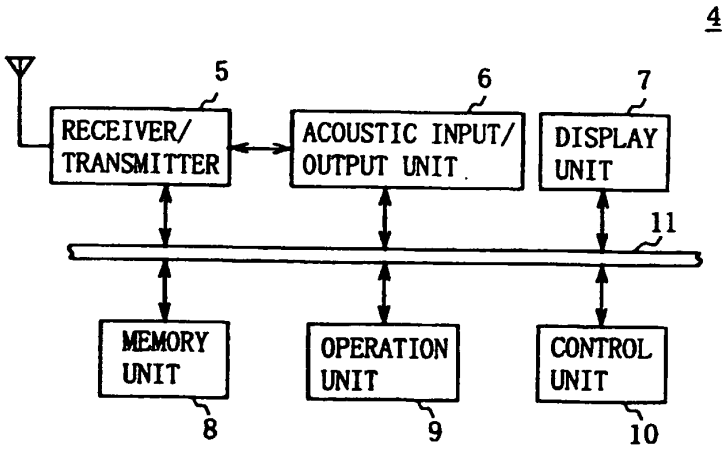

FIG .2

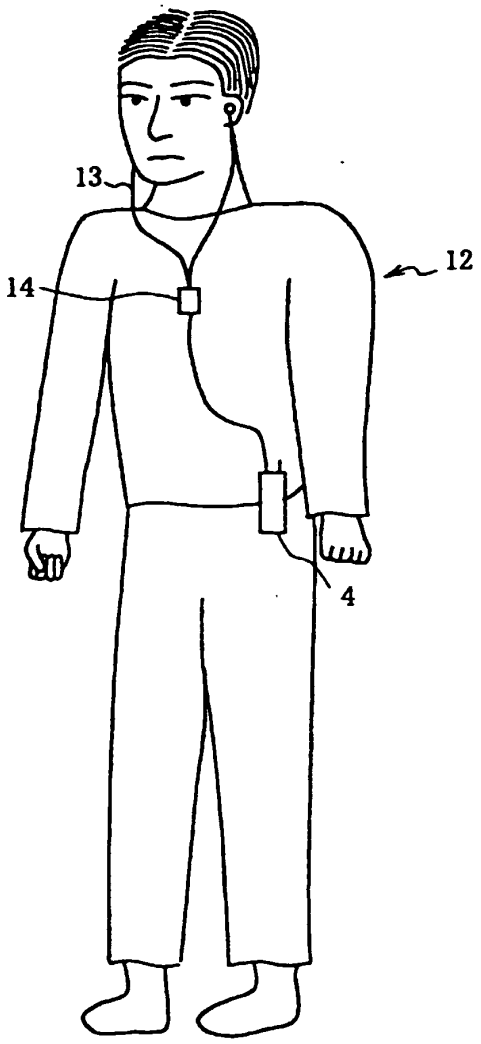

FIG. 3

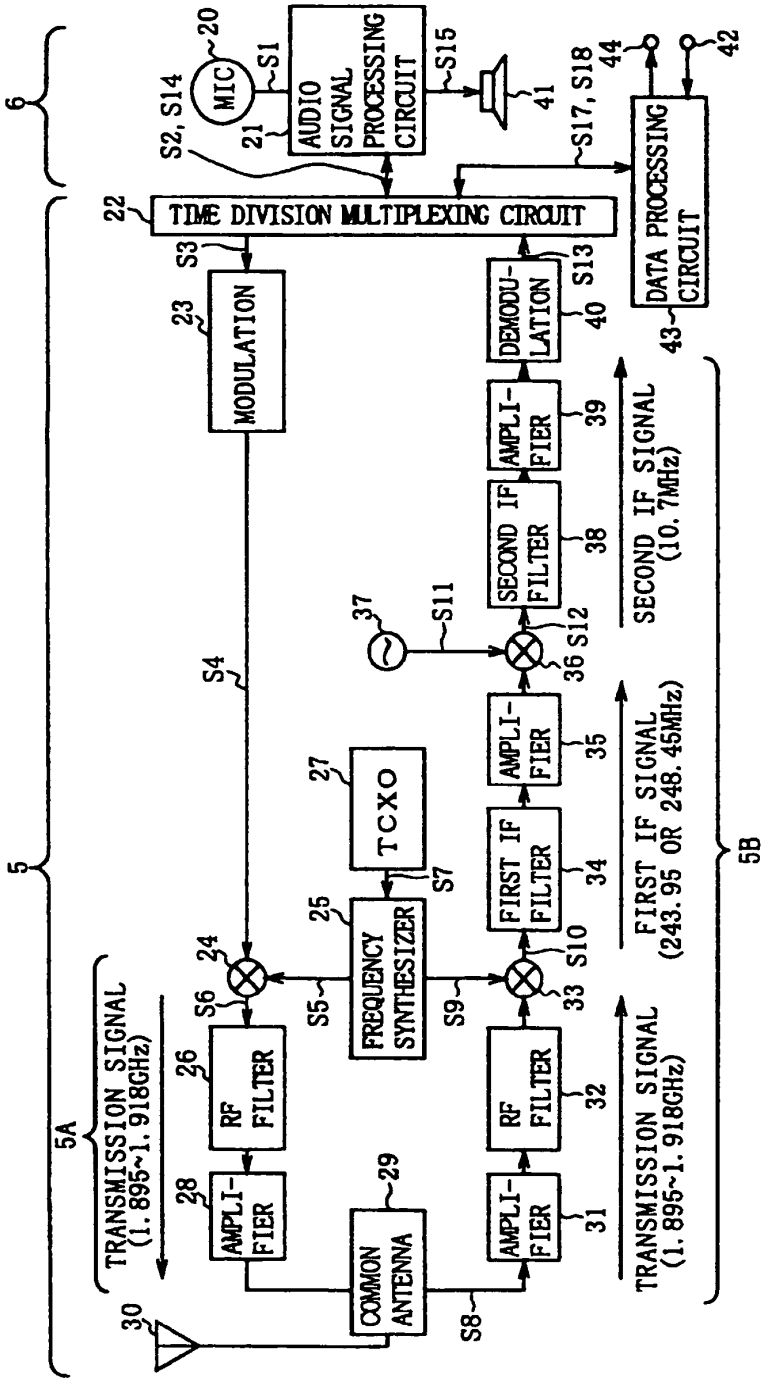

FIG. 4

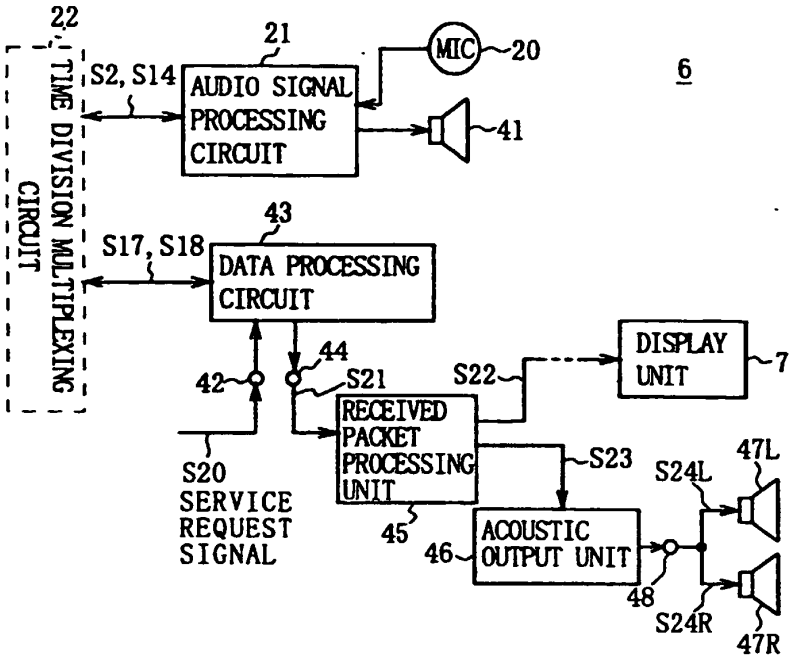

FIG. 5

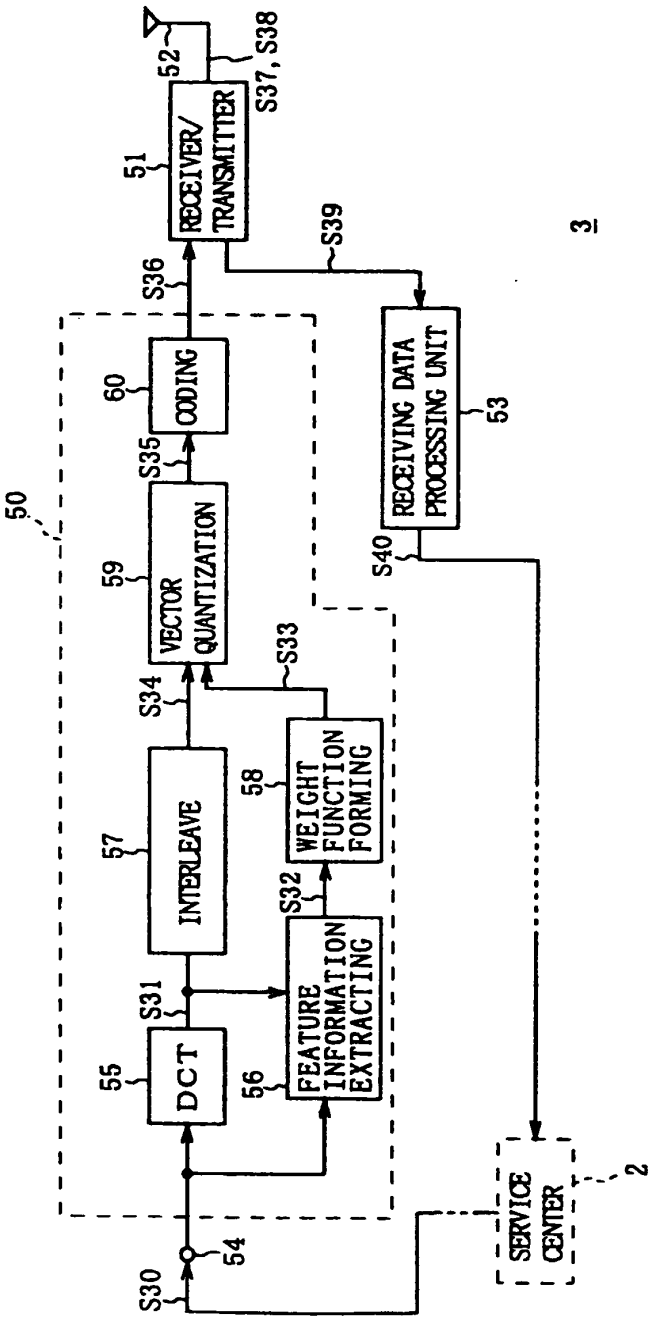

FIG. 6

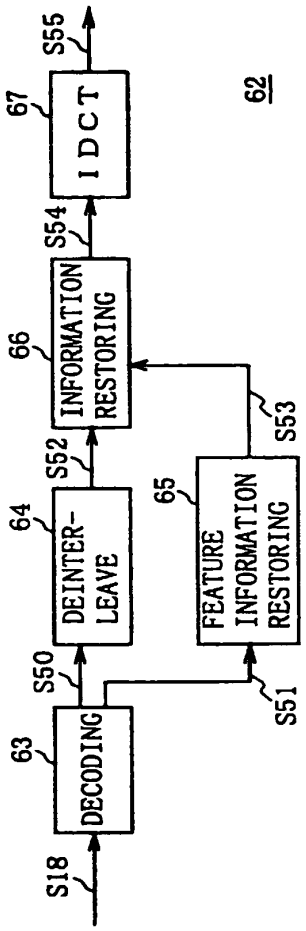

FIG. 7

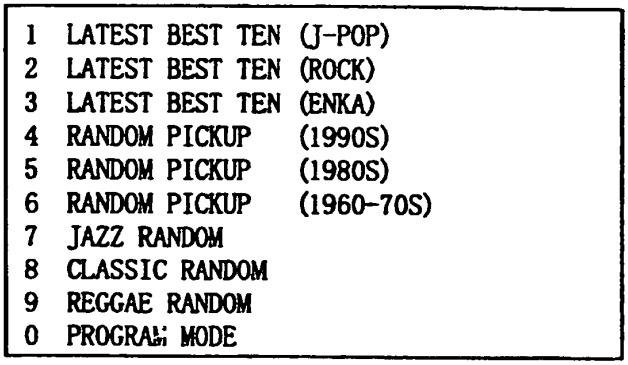

FIG. 8

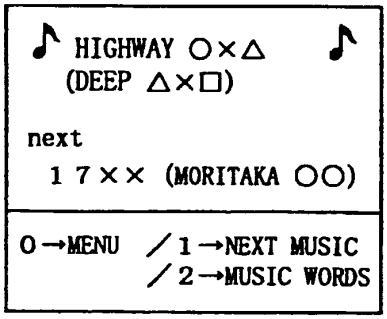

FIG. 9

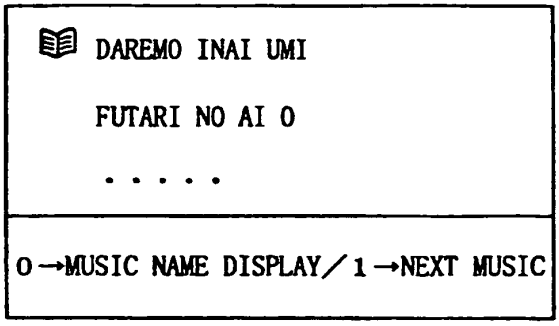

FIG. 10

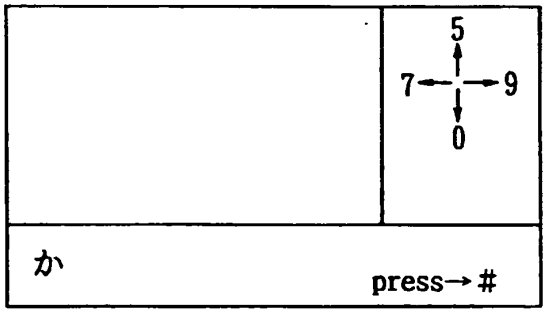

FIG. 11A

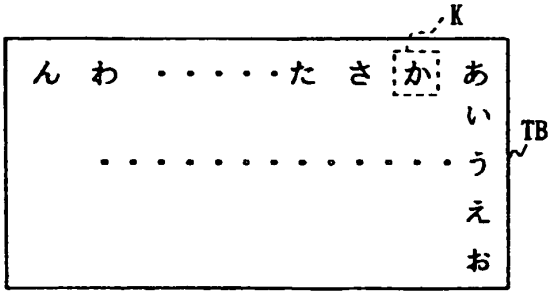

FIG. 11B

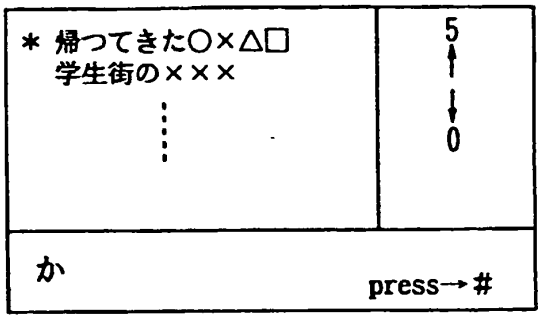

FIG. 12

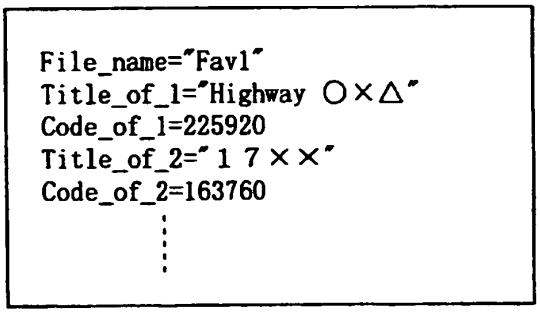

FIG. 13

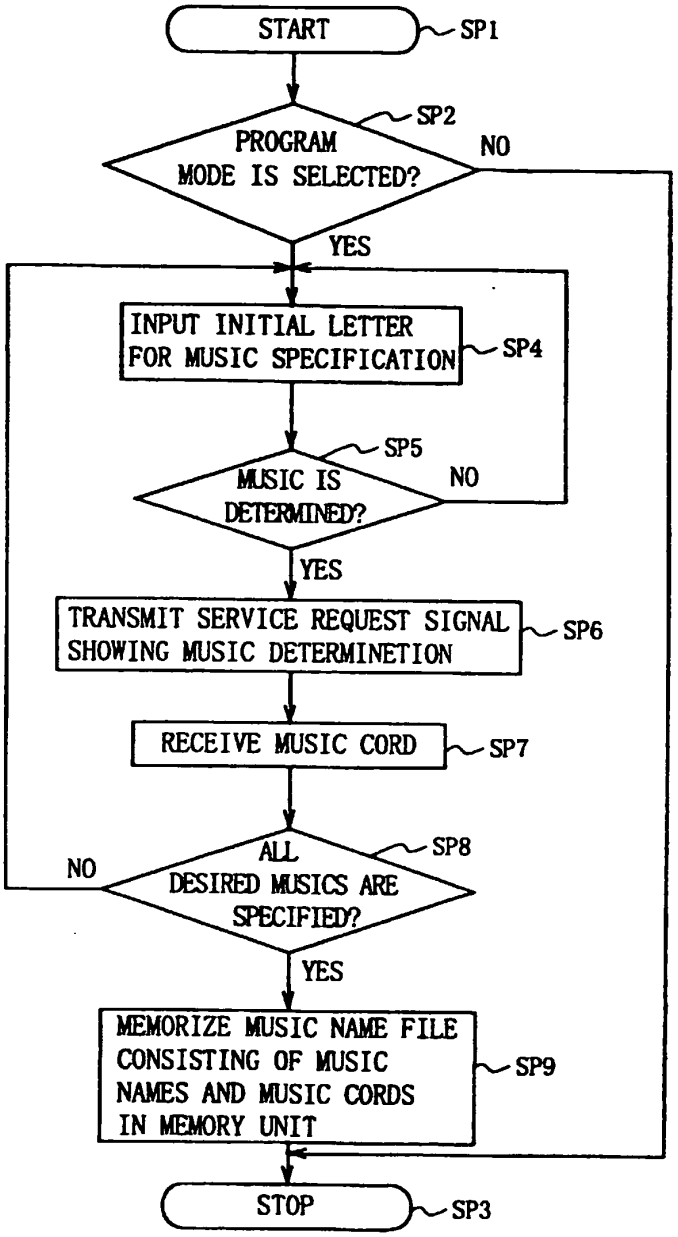

FIG. 14

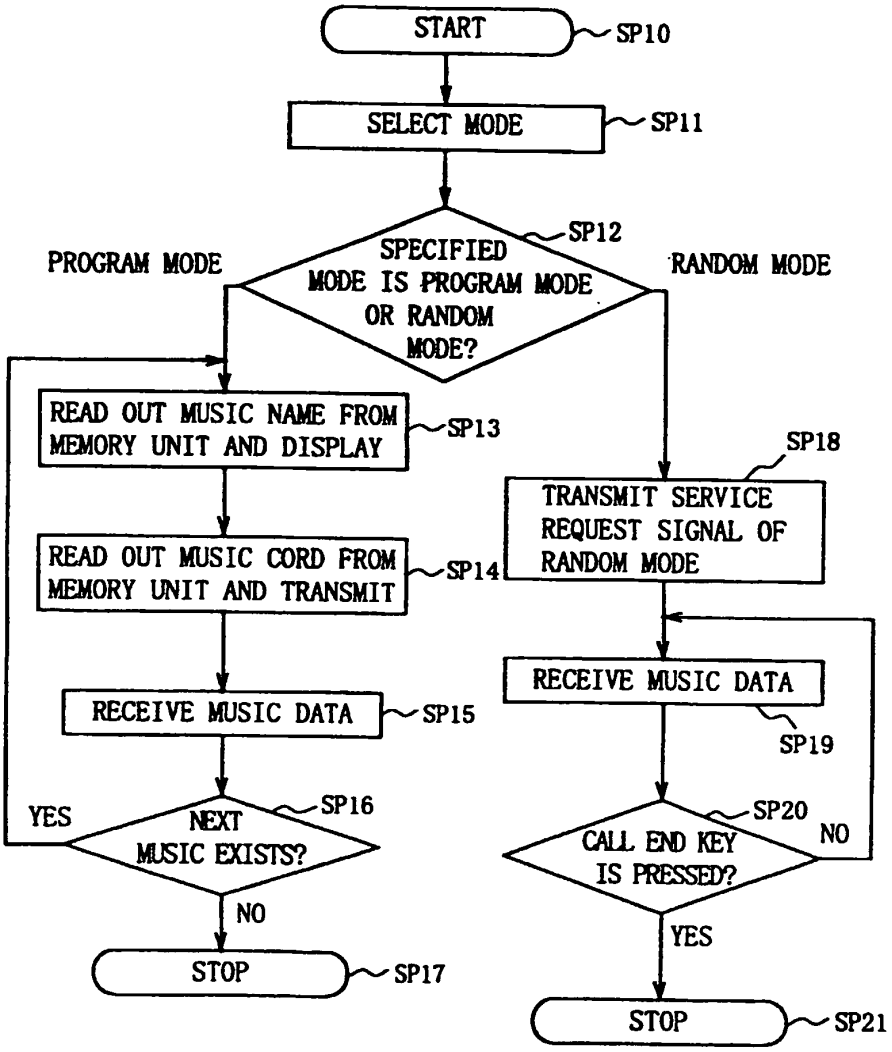

FIG. 15

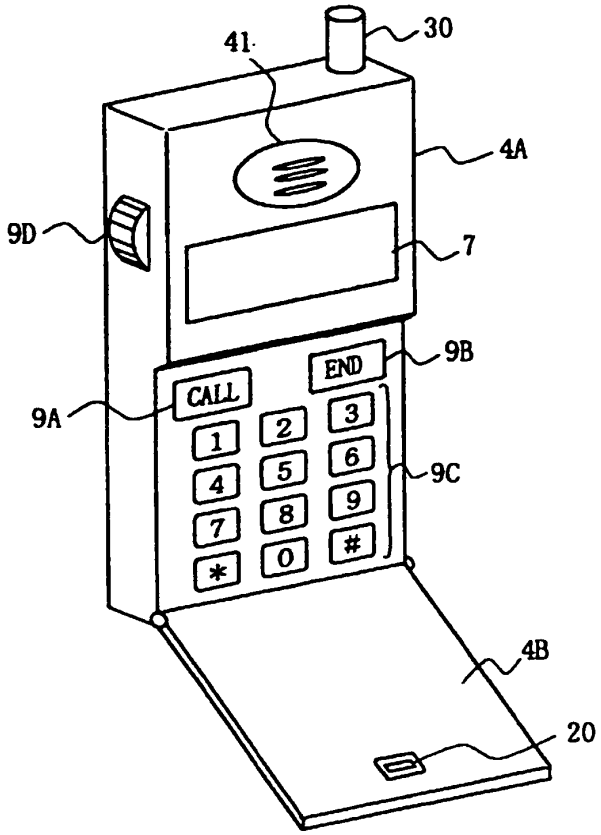

FIG. 16

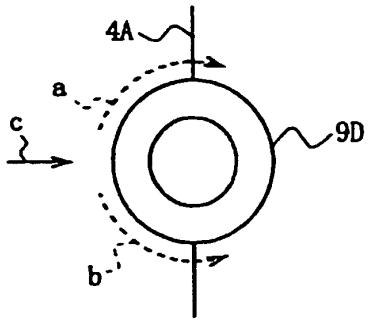

FIG. 17

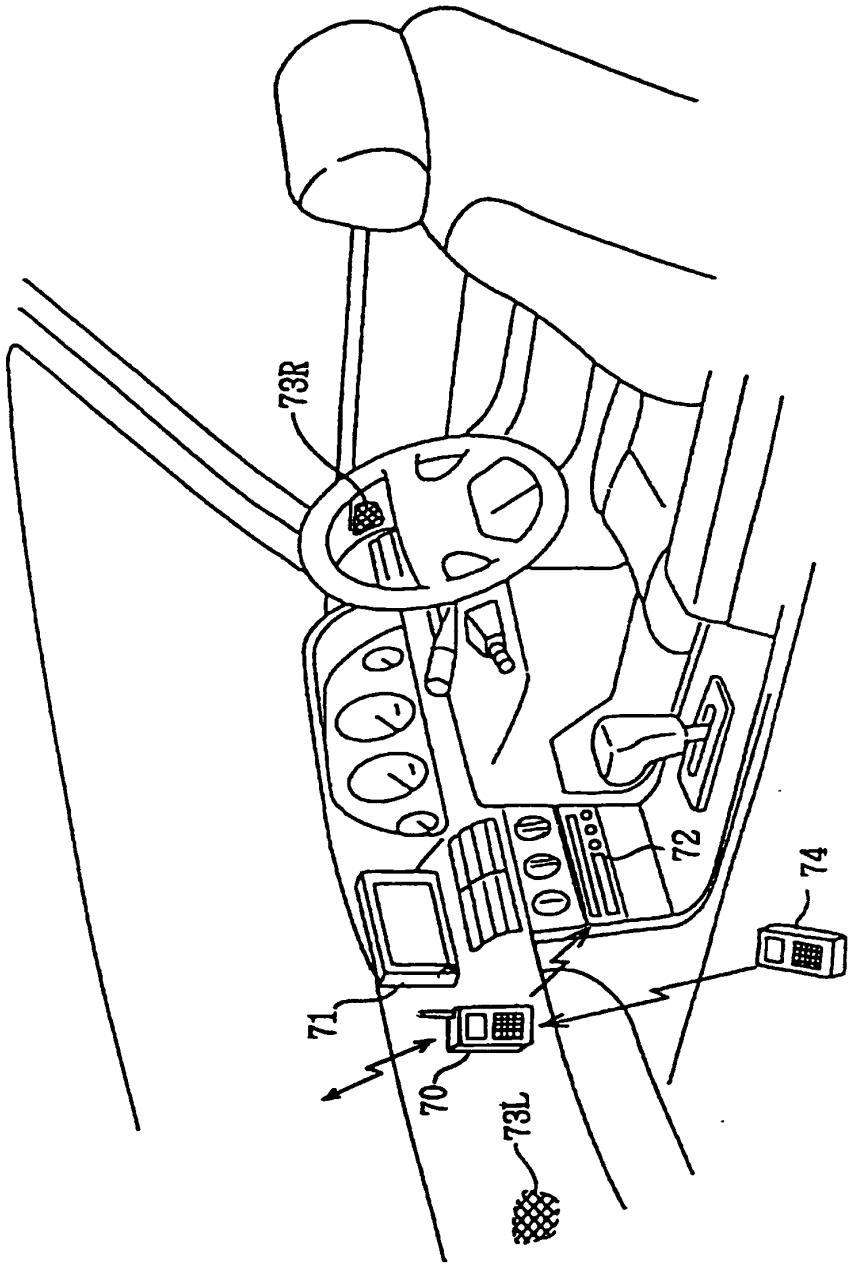

FIG. 18

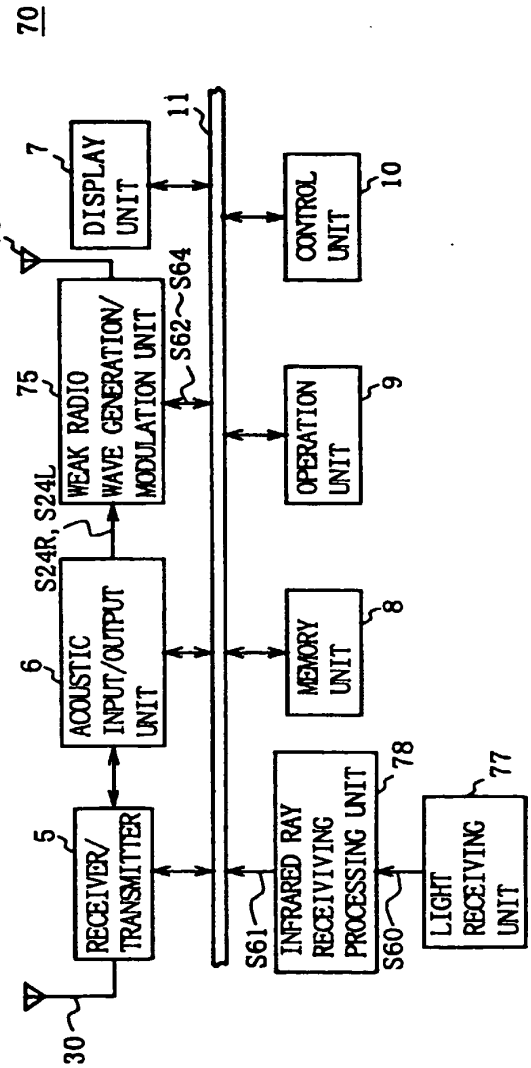

FIG. 19

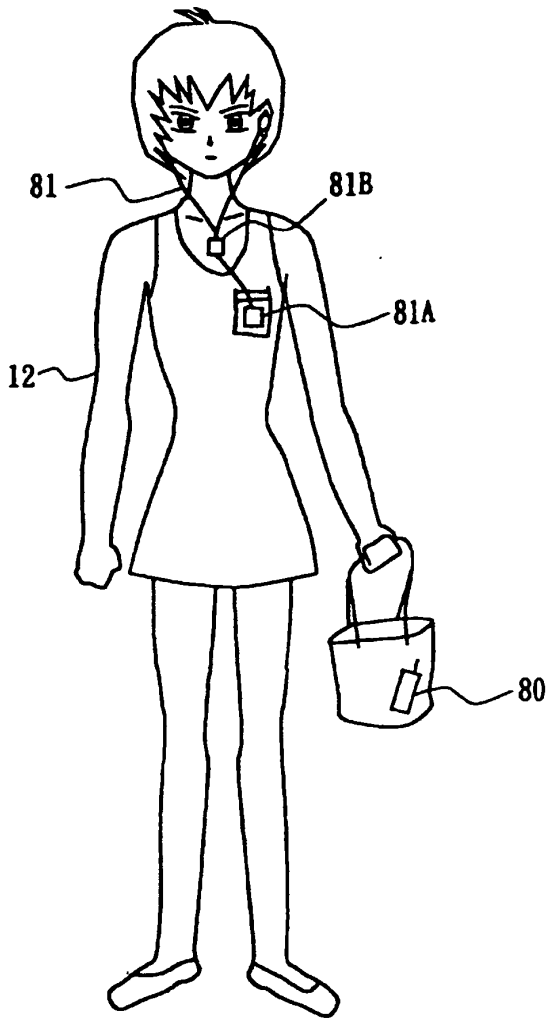

FIG. 20

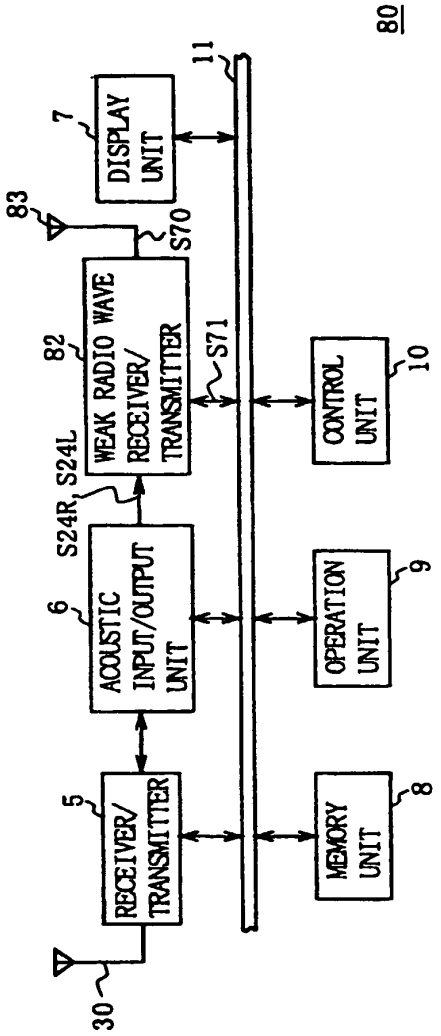

FIG. 21

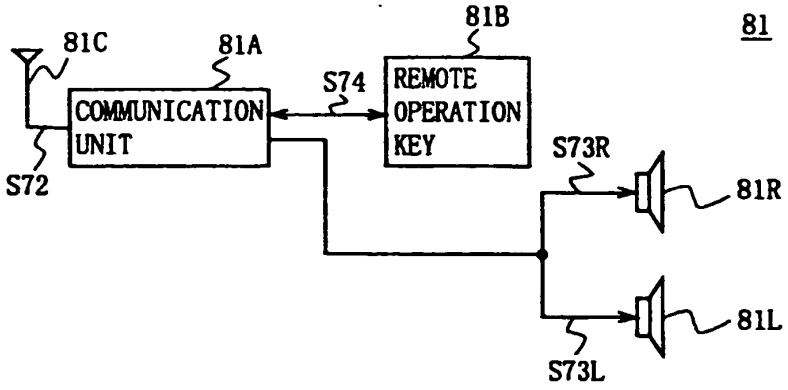

FIG. 22

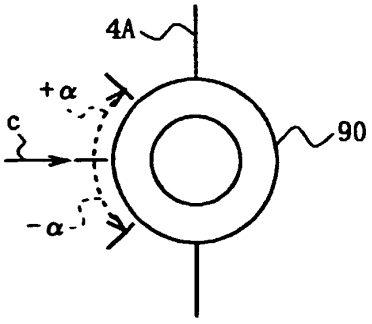

FIG. 23A

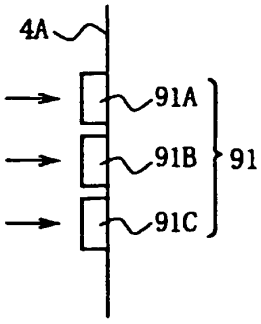

FIG. 23B

(19)대한민국특허청(KR)
(12) 공개특허공보(A)

(51) Int. Cl. 6
H04L 12/58 (조기공개)

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(21) 출원번호 특1998-056960
(22) 출원일자 1998년12월22일

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심사청구 : 있음

(54) 휴대형 무선전화기에 디지털 오디오 데이터를 저장하고 재생하는 기능을 갖도록 하는 장치와 그 방법

요약

본 발명은 휴대형 무선전화기와 오디오 기기의 융합설계 기술에 관한 것으로 통신기기와 오디오 기기를 별도로 소지하고 운용하는 것에 따른 사용자의 불편을 해소시키며, 유선 또는 무선 전화 기능을 이용하여 언제 어디서나 디지털 오디오 데이터를 수신하고 재생 할 수 있도록 하였다. 본 발명 장치는 휴대형 무선전화기의 기능에 디지털 오디오 데이터를 저장하고 재생하는 장치로서의 기능을 동시에 갖도록 하였으므로, 두 기능 중 한가지 기능을 선택하거나 또는 무선 전화 기능을 기본으로하고 디지털 오디오 데이터를 저장하고 재생하는 기능을 선택적으로 사용할 수 있는 장치이다.

본 발명 장치의 주요 구성 부분으로는, 휴대형 무선전화기 장치와 디지털 오디오 데이터의 저장용 메모리와 이 메모리로부터 데이터를 읽어와 사용자가 들을 수 있는 오디오 신호로 바꾸어 주는 디코더(Decoder)와 무선전화 송수신 제어 및 오디오 데이터의 저장과 재생을 조작하는 사용자 제어장치 및 키이 패드(Key pad)와 오디오 제어 및 표시장치로 구성된다.

본 발명 장치는 휴대형 무선전화 송수신을 기본 기능으로 사용하는 한편, 본 발명장치를 인터넷 망과 접속이 가능한 PC에 연결하여 인터넷상에서 제공하는 디지털 오디오 데이터를 수신하거나, 유무선 공중통신망에 연결된 오디오 데이터 서비스 센터로부터 원하는 디지털 오디오 데이터를 유무선 공중통신망을 통해 수신하여, 본 발명장치내의 메모리에 저장하여 두었다가 사용자가 필요시 디코더를 이용하여 원래의 신호로 재생하여 들을 수 있도록 한 것이다. 디지털 오디오 데이터는 음악, 교육용 오디오 프로그램, 낭독물 등을 디지털 데이터로 변환한 것이며 디코더에 의하여 변환 이전의 오디오 신호로 바뀌게 된다.

대표도

도1

명세서

도면의 간단한 설명

도 1은 휴대형 무선전화기능과 디지털 오디오 데이터의 저장 및 재생기능 장치도

발명의 상세한 설명

발명의 목적

발명이 속하는 기술 및 그 분야 종래기술

본 발명은 휴대형 무선전화기와 오디오 기기의 융합설계 기술에 관한 것이다. 종래에 통신기기와 오디오 기기의 동시 휴대가 필요할 때에는, 휴대형 무선전화기와 카세트 녹음/재생기 또는 CD 재생기 또는 MP3 Player와 같은 오디오 기기를 동시에 소지하고 운용해야 하는 사용자의 불편이 있었다.

기존의 휴대형 무선전화기는 데이터 송수신 기능과 음성 신호처리 기능, 키이 패드에 의한 제어기능 등으로 구성되고 동작된다. 기존의 휴대용 오디오 기기는 재생장치를 기본으로 하고 데이터 저장이나 녹음 장치가 부가되어 구성된다. 종래에는 이러한 휴대형 무선전화기와 휴대용 오디오 기기의 두 가지 기능을 동시에 제공하는 장치가 없었다.

여기서, 휴대형 무선전화기란, 공중 통신을 위하여 기지국과 무선으로 음성 또는 데이터를 송수신 할 수 있도록 제작된 여러 가지 형태의 휴대형 통신단말기로서 셀룰러폰, PCS폰, IMT-2000단말기, GSM단말기, 휴대폰, 핸드폰, 이동전화기를 포함한다

발명이 이루고자하는 기술적 과제

본 발명은 휴대형 무선전화기와 오디오 기기의 융합을 통하여 통신기기와 오디오 기기의 분리에 따른 사용자의 불편을 해소시킨다.

본 발명은 오디오 신호를 디지털 오디오 데이터로 변환한 것을 메모리에 저장하고 재생하는 방식을 휴대형 무선전화기 기능에 추가시킨 것이다.

또한, 본 발명장치를 이용하여 인터넷상에서 제공하는 디지털 오디오 데이터를 PC를 통하여 수신하는 방법을 사용하거나, 본 발명장치를 이용하여 무선 또는 유선 공중 전화 망을 이용해 디지털 오디오 데이터를 요청하여 데이터를 수신하는 방법을 사용하거나, 또는 본 발명장치를 이용하여 디지털 오디오 데이터 제공 센터에서 송신한 디지털 오디오 데이터를 수신하는 방법을 사용하여 휴대형 무선전화기에 데이터를 저장하며, 필요시 이것을 재생하여 원래의 오디오 신호를 청취함으로써, 요구에 의한 오디오 서비스 (Audio On Demand) 또는 요구에 의한 음악 서비스(Music On Demand) 기능을 갖도록 하여 휴대가 간편하고 정지상태에서는 물론이고 이동중에도 디지털 오디오 데이터의 획득 및 재생을 용이하게 하는 복합 단말을 구성하고자 한다.

즉, 본 발명 장치는 휴대형 무선전화기로서의 기능을 기본 기능으로 사용하면서, 원하는 디지털 오디오 데이터를 수신하여 저장해 두었다가 필요시 재생할 수 있도록 한 것이다.

발명의 구성 및 작용

본 발명 장치는 휴대형 무선전화기에 디지털 오디오 데이터를 저장하고 재생하는 기능을 추가하여 무선 전화 기능을 기본으로 사용하면서 디지털 오디오 데이터를 저장하고 재생하는 기능을 선택적으로 사용할 수 있는 장치이다.

이 장치는 디지털 오디오 데이터 저장용 메모리와 오디오 디코더, 오디오 제어 및 표시장치, 오디오 출력 장치를 휴대형 무선 전화기에 추가한 것이다. 디지털 오디오 데이터 저장용 메모리는 휴대 전화기에 고정시키거나 착탈식이 가능한 형태로 구성한다.

디지털 오디오 데이터를 저장하는 방법으로서는, 첫째로 본 발명 장치를 인터넷 망과 접속이 가능한 PC(13)에 연결하여 인터넷상에서 제공하는 디지털 오디오 데이터를 수신하거나, 둘째로 유선 및 무선 공중통신망에 연결된 오디오 데이터 서비스 센터로부터 원하는 디지털 오디오 데이터를 유무선 공중통신망을 통해 수신한다.

수신된 디지털 오디오 데이터는 본 발명 장치내의 메모리에 저장하여 두었다가 사용자가 필요시에 사용자 키이 패드를 조작하여 오디오 디코더(Decoder)에서 원래의 신호로 재생하여 오디오 신호를 들을 수 있도록 한 것이다.

실시의 예로 디지털 오디오 데이터의 수신 및 저장 방법들은 다음과 같다. 첫째로 본 발명장치에는 유선 공중통신망(12)에 접속하여 사용자 키이패드(17)의 조작에 의하여 유선 공중통신망에서 모뎀블럭(16)으로 디지털 오디오 데이터 신호가 입력된 후, 프로세서 블록(15)의 처리에 의하여 데이터가 오디오 메모리(19)에 저장된다.

둘째 방법으로 본 발명장치에는 유선 공중전화망 또는 인터넷 망에 연결된 PC(13)를 매개체로 하여 사용자 키이패드(17)의 조작과 함께 PC 명령에 의하여 디지털 오디오 데이터 신호가 모뎀블럭(16)으로 입력된 후, 프로세서 블럭(15)의 처리에 의하여 데이터가 오디오 메모리(19)에 저장된다.

셋째로 휴대형 무선전화기가 연결된 기지국을 통하여 이 기지국과 유무선망을 통하여 연결된 오디오 데이터 제공 센터에게, 사용자 키이패드(17)를 조작하여, 디지털 오디오 데이터를 요청하여 데이터를 수신하거나, 디지털 오디오 데이터 제공 센터에서 송신한 디지털 오디오 데이터를 수신하여 오디오 데이터 메모리(19)에 데이터를 저장한다.

넷째로 디지털 오디오 데이터가 저장된 착탈식 메모리를 본 발명 장치내의 메모리 접속점에 연결한다.

이와 같이 저장된 데이터는 필요시 키이 패드(17) 조작에 의해 오디오 제어장치(21)와 오디오 디코더(20)를 동작시켜 디지털 오디오 신호를 재생하여 오디오 출력장치(18)로 원래의 오디오 신호를 청취함으로써, 요구에 의한 오디오 서비스 (Audio On Demand) 또는 요구에 의한 음악 서비스(Music On Demand) 기능을 갖도록 한다.

디지털 오디오 데이터의 저장과 재생부(300)는 다시 디지털 오디오 데이터의 저장용 메모리(19)와, 이 메모리로부터 데이터를 읽어와

사용자가 들을 수 있는 오디오 신호로 바꾸어 주는 디코더(Decoder)(20)와, 오디오 저장 및 재생 동작중 무선전화 송수신을 하게 되는 경우에 무선전화로 절환 할 수 있는 기능을 포함한 송수신 제어와 함께 디지털 오디오 데이터의 저장과 재생을 제어하고 상태를 외부로 표시해 주는 오디오 제어 및 표시장치(21)로 구성된다. 프로세서 블록(15)과 사용자 제어장치 및 키이 패드(17), 오디오 출력장치(18)는 휴대형 무선전화 장치부와 공통으로 사용된다. 디지털 오디오 데이터 저장용 메모리(19)의 실시 예로는 플래시(Flash) 메모리가 있고 구성은 고정 메모리 또는 착탈식 메모리 또는 고정과 착탈식 복합 메모리 형태가 가능하며, 이 메모리로부터 데이터를 읽어와 사용자가 들을 수 있는 오디오 신호로 바꾸어 주는 디코더(Decoder)(20)의 실시 예는 MP3(MPEG-1 Layer 3)디코더 혹은 AAC (MPEG-2 Advanced Audio Coding)디코더 혹은 MP3과 AAC 모두를 디코딩 할수 있는 디코더가 있다. 오디오 제어 및 표시장치(21)의 실시 예는 LCD(액정 표시판)에 키이 패드로 조작되는 현 상태와 디지털 오디오 데이터의 선택 메뉴를 디스플레이(Display)하는 것이며 선택된 디지털 오디오 데이터가 오디오 디코더를 거쳐 오디오 출력장치(18)로 출력되게 한다.

디지털 오디오 데이터는 음악, 외국어 회화를 포함한 교육용 오디오 프로그램, 낭독물 등을 디지털 데이터로 변환한 것이며 디코더에 의하여 변환 이전의 오디오 신호로 바뀌게 된다.

발명의 효과

휴대형 무선전화기와 오디오를 저장 및 재생하는 기능을 통합시킴으로써 통신기기와 오디오 기기의 분리에 따른 사용자의 불편을 해소하였다

본 발명 장치를 인터넷 망과 접속이 가능한 PC에 연결하여 인터넷상의 디지털 오디오 데이터를 수신하거나, 유무선 공중 통신망에 연결된 오디오 데이터 서비스 센터로부터 원하는 디지털 오디오 데이터를 유무선 공중 통신망을 통해 수신하여, 본 발명 장치내의 메모리에 저장하여 두었다가 사용자가 필요시 원래의 오디오 신호로 재생할 수 있도록 하였으므로, 데이터 획득과 저장, 재생이 편리하다.

통신기기와 오디오 기기를 통합시켜, 언제 어디서나 오디오 프로그램 데이터를 수신하여 이용 할 수 있도록 하는, 요구에 의한 오디오 서비스(Audio On Demand) 또는 요구에 의한 음악 서비스(Music On Demand)를 무선 공중 통신망 가입자에게 가능하게 하여 간편성과 서비스 확장기능을 높였다..

(57) 청구의 범위

청구항1

디지털 오디오 데이터를 저장하여 이 데이터를 재생할 목적으로 휴대형 무선전화기내에 첫째로 MP3(MPEG-1 Layer 3) 혹은 AAC (MPEG-2 Advanced Audio Coding) 인코더로 압축된 디지털 오디오 데이터를 저장하기 위한 고정 혹은 착탈식 메모리(19)와, 둘째로 상기 메모리에 저장된 디지털 오디오 데이터를 읽어내어 압축 이전의 오디오 신호로 바꾸어 주는 MP-3 혹은 AAC 디코더(20)가 추가된 휴대형 무선전화기 및 오디오 플레이어의 복합 장치.

청구항2

제 1 항에서 기술된 메모리(19)와 디코더(20)에 부가하여, 인터넷상의 디지털 오디오 데이터를 수신하여 메모리에 저장하는 PC 접속장치와, 무선 또는 유선 공중 전화(또는 데이터)망을 이용해 디지털 오디오 데이터를 수신하여 메모리에 저장하는 공중망 접속장치.

청구항3

제 2 항에서 기술된 PC 접속장치를, 인터넷 망과 접속이 가능한 PC에 연결하여, 인터넷상에서 제공하는 디지털 오디오 데이터를 수신하며, 이 데이터를 제 1 항에서 구성한 메모리에 저장하고, 제 1 항에서 구성한 디코더를 이용하여 저장된 디지털 오디오 데이터로부터 압축 이전의 오디오 신호를 제 1 항에서 구성한 복합 장치에서 재생하는 방법.

청구항4

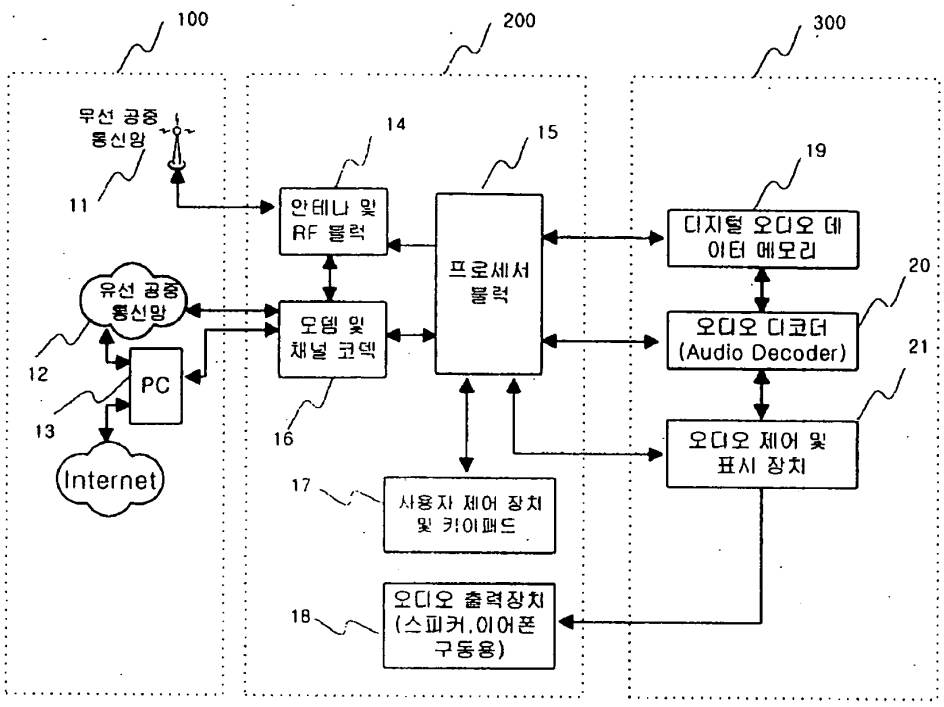
제 1 항에서 기술된 장치를 이용하여 무선 또는 유선 공중 전화(또는 데이터) 망을 통하여, 디지털 오디오 데이터를 요청하거나 또는 송신된 디지털 오디오 데이터를 수신하여, 제 1 항에서 구성한 메모리에 저장하거나, 제 1 항에서 구성한 디코더를 이용하여 저장된 디지털 오디오 데이터로부터 압축 이전의 오디오 신호를 제 1 항에서 구성한 복합 장치에서 재생하는 방법.

청구항5

제 1 항에서의 복합 장치는 휴대형 무선전화기능을 하는 안테나 및 RF블럭(Block)(14)과, 모뎀 및 채널 코덱 블럭(16)과, 신호 처리 및 제어 기능의 프로세서 블럭(15)과 함께, 디지털 오디오 데이터를 저장하기 위한 고정 또는 착탈식 메모리(19)와, 메모리 내의 디지털 오디오 데이터를 읽어내어 압축 이전의 오디오 신호 재생하는 디코더(Decoder)(20)와, 인터넷상의 디지털 오디오 데이터를 수신하여 메모리에 저장하는 PC 접속장치와, 무선 또는 유선 공중 전화(또는 데이터)망을 이용해 디지털 오디오 데이터를 수신하여 메모리에 저장하는 공중망 접속장치와, 사용자가 전화송수신이나 디지털 오디오 데이터의 저장과 재생 명령을 할 때 사용하는 사용자 제어 장치 및 키이 패드(17)와, 키이 패드 명령에 의한 전화 송수신 및 오디오의 제어기능을 하고 명령 상태를 표시해 주는 오디오 제어 및 표시 장치(21)와 무선 전화의 송수신 오디오 신호와 디코더의 출력 신호를 들을 수 있도록 처리하는 오디오 출력장치(18)로 구성된다.

도면

도면1


100
200
300
무선 공중 통신망
11
안테나 및 RF 블럭
14
15
프로세서 블럭
19
디지털 오디오 데이터 메모리
20
오디오 디코더 (Audio Decoder)
21
오디오 제어 및 표시 장치
유선 공중 통신망
12
PC
13
Internet
오뎀 및 채널 코덱
16
17
사용자 제어 장치 및 키이패드
18
오디오 출력장치 (스피커,이어폰 구동용)

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요약

본 발명은, 사용자가 재생을 요청하면 기 저장되어 있는 해당 디지탈 오디오 데이타를 재생하고, 호 요구신호가 검출되면 상대방과 음성통화를 수행하도록 하는 음성재생이 가능한 휴대폰에 관한 것으로서, 적외선신호 형태로 입력되는 오디오데이타를 수신하는 적외선신호 수신부(10); 상기 수신되는 적외선 신호를 복원하는 복호부(20); 상기 복원되는 데이타를 저장하는 플레쉬 메모리(33); 상기 저장된 데이타를 재생가능한 오디오데이타로 디코딩하는 엠팩 디코더(40); 입력되는 음성신호를 일정레벨로 증폭하는 증폭기(100); 상기 증폭된 음성신호를 디지탈데이타로 변환하는 A/D 변환기(101); 상기 변환된 디지탈데이타를 직렬데이타로 변환출력하는 직병렬 변환기(110); 이동통신망을 통해 무선으로 데이타를 송수신하는 데이타 송수신부(70); 직렬데이타를 병렬데이타로 변환하는 직병렬 변환기(80); 하나의 데이타 입력을 선택 출력하는 절환스위치(60); 상기 선택출력되는 데이타를 아날로그 신호로 변환하는 D/A 변환기(50); 상기 변환된 아날로그 신호를 전력증폭하는 구동증폭기(51); 사용자의 입력을 수신하는 키패드(31); 및 상기 구성요소의 동작을 제어하는 제어부(30); 를 포함하여 구성되어 휴대폰에 오디오 재생기능을 구현함으로써, 사용자가 오디오 청취중에 휴대폰의 벨소리를 신경써야 하는 불편함과 착신되는 호를 받지 못하게 되는 등의 문제점을 제거한 매우 유용한 발명인 것이다.

대표도

도1

명세서

도면의 간단한 설명

도 1 은 본 발명에 따른 음성재생이 가능한 휴대폰의 일 실시예의 구성을 도시한 것이고,

도 2 의 도 2는 도 1 의 데이타 송수신부의 구성을 상세히 도시한 구성도이다.

*도면의 주요부분에 대한 부호의 설명

HP.: 휴대폰Mic : 마이크

1 : 안테나 10 : 적외선신호 수신부

20 : 복호부30 : 제어부

31 : 키 패드33 : 플레쉬 메모리

40 : 엠팩(MPEG) 디코더50 : D/A 변환기

51 : 구동증폭기60 : 절환스위치

70 : 데이타 송수신부71 : 데이타 송신부

71a : 확산기71b, 72b : 기저대역 필터

71c : 송신부72 : 데이타 수신부

72a : 검파부72c : 역확산기

73 : pn 부호 동기획득/추적부74 : pn 부호 발생기

80, 110 : 직병렬 변환기100 : 증폭기

101 : A/D 변환기

발명의 상세한 설명

발명의 목적

발명이 속하는 기술 및 그 분야의 종래기술

본 발명은 음성재생이 가능한 휴대폰에 관한 것으로서, 더욱 상세하게는 디지탈 오디오데이타를 수신저장한 뒤, 사용자가 재생을 요청하면 해당 디지탈 오디오데이타를 재생하고, 이동통신망을 통한 호(Call)요구 신호가 검출되면 오디오 청취중에 호출신호(RING)를 전달하여 사용자가 즉시 착신요구를 지각하도록 하여, 상대방과 음성통화를 수행하도록 함으로써, 사용자가 음성을 재생하여 이어폰 등을 통해 청취중이라도 항상 휴대폰의 벨소리를 신경써야 하는 불편함 없이, 그 즉시 음성통화를 이룰수 있도록 하는 음성재생이 가능한 휴대폰에 관한 것이다.

종래에는, 이동통신 단말기(이하, '휴대폰'이라 함)를 휴대한자가 보행중이거나 이동 중에 음악감상 또는 어학공부 등을 하기 위해서, 별도의 소형 헤드폰 카세트 등을 함께 휴대하여 이어폰 등을 통해 재생되는 오디오를 청취하였다.

그러나, 이어폰 등을 통해 오디오를 청취하는 경우에는 이어폰 등의 오디오 소리외의 외부소리는 음이 하게 가청되지 않으며, 따라서 사용자는 음악감상 중에 휴대폰의 벨소리를 인식하기 위해 항상 휴대폰의 벨소리를 신경써야 하였고, 이에 따라 음악감상이나 어학공부에 몰두할 수 없었으며, 높은 출력음으로 음악감상이나 어학공부를 하는 경우에는 벨소리를 전혀 인식하지 못해 중요한 호를 수신하지 못하는 문제점이 있었을 뿐만 아니라, 두가지 장치를 각각 휴대하는 것이 매우 번거롭고 불편한 문제점이 있었다.

발명이 이루고자하는 기술적 과제

따라서, 본 발명은 상기와 같은 문제점을 해소시키기 위해서 창작된 것으로서, 휴대폰에 오디오 재생기능을 내장시켜 휴대를 간편하게 하고, 오디오 재생중에 호가 요구되면 이를 사용자가 자동으로 인식할 수 있도록 함으로써, 호의 착신여부에 주의를 집중하지 않고 자유롭게, 재생되는 오디오를 청취할 수 있도록 하는 음성재생이 가능한 휴대폰을 제공하는 데 그 목적이 있는 것이다.

발명의 구성 및 작용

상기와 같은 목적을 달성하기 위한 본 발명에 따른 음성재생이 가능한 휴대폰은, 디지탈 오디오데이타를 수신하는 데이타수신수단; 상기 수신된 디지탈 오디오데이타를 저장하는 저장수단; 사용자의 재생요청에 따라 해당 디지탈 오디오데이타를 상기 저장수단으로 부터 독출하는 독출하여 해독출력하는 해독수단; 음성통화 신호를 무선으로 송수신하는 무선 송수신수단; 이동통신의 호(Call)요구 및 종료신호를 검출하는 호상태 검출수단; 상기 호상태 검출수단의 호요구 신호 검출시, 디지탈 오디오데이타의 독출위치를 기억하는 기억수단; 상기 호상태 검출수단의 호요구 및 종료신호 검출에 따라, 상기 해독수단의 출력 데이타 및 상기 무선 송수신수단의 수신 음성데이타 중 하나를 선택출력하는 절환수단; 상기 절환수단에 의해 선택출력되는 디지탈데이타를 변환종폭하여 스피커로 출력하는 음성출력수단; 및 상기 호상태 검출수단의 호종료 신호 검출시, 상기 기억된 디지탈 오디오데이타의 독출위치 부터 독출해독 재개되도록 하는 제어수단; 을 포함하여 구성되는 것에 그 특징이 있는 것이다.

상기와 같이 구성된 음성재생이 가능한 휴대폰에서는, 먼저 상기 저장수단이 사용자의 선택에 의해 외부 컴퓨터 등에서 상기 데이타 수신수단을 통해 수신되는 디지탈 오디오데이타를 미리 저장한 뒤, 이를 휴대하고 다니는 도중 사용자가 재생을 요청하면, 상기 해독수단은 상기 저장수단의 해당 디

지탈 오디오데이타를 독출하여 해당 압축포맷으로 부터 이를 해독하여 원래의 오디오데이타로 복원한 뒤, 상기 음성 출력수단으로 전송하여 이에 의해 변환중폭되어 스피커 등으로 출력되어 가청되도록 한다.

상기와 같은 디지탈 오디오데이타의 재생에 의한 청취중에, 상기 호상태 검출수단이 이동통신의 호요구 신호를 검출하게 되면, 상기 기억수단은 재생되고 있는 디지탈 오디오데이타의 상기 저장수단으로 부터의 현재 독출위치를 기억하고, 상기 절환수단은 상기 호상태 검출수단의 호요구 신호 검출에 따라, 상기 무선 송수신수단으로 부터 수신되는 신호를 선택하여 상기 음성 출력수단으로 출력하게 된다. 상기 음성 출력수단은 상기 선택출력되는 신호를 변환중폭하여 스피커 등으로 출력함으로써, 오디오를 청취하고 있던 사용자는 호출신호(RING)를 인식하게 되고, 이에 응답하여 호성립이 된 후에는 입력되는 사용자의 음성신호는 상기 무선 송수신수단을 통해 호를 요구한 송신측으로 송신됨으로써, 음성통화가 이루어지게 된다.

음성통화가 종료되어 상기 호상태 검출수단이 호종료 신호를 검출하게 되면, 상기 제어수단은 상기 해독수단으로 하여금 상기 기억된 디지탈 오디오데이타의 독출위치 부터 상기 저장수단의 디지탈 오디오데이타를 독출하여 음성재생이 재개되도록 한다.

이하, 본 발명에 따른 음성재생이 가능한 휴대폰의 일실시예의 구성 및 동작에 대해, 첨부된 도면에 의거하여 상세히 설명한다.

도 1 은 본 발명에 따른 음성재생이 가능한 휴대폰의 일실시예를 도시한 것으로서, 개인용컴퓨터(PC)의 IRDA(Infrared Data) 포트로 부터 적외선신호 형태로 입력되는 압축 디지탈 오디오데이타를 수신하는 적외선신호 수신부(10); 상기 수신되는 적외선 신호를 압축 디지탈 오디오데이타로 복원하는 복호부(20); 상기 복원되는 압축 디지탈 오디오데이타를 저장하는 플레쉬 메모리(33); 상기 저장된 디지탈 오디오데이타를 재생가능한 오디오데이타로 디코딩하는 멤팩(MPEG) 디코더(40); 마이크(Mic)를 통해 입력되는 음성신호를 일정레벨로 증폭하는 증폭기(100); 상기 증폭된 음성신호를 디지탈데이타로 변환하는 A/D 변환기(101); 상기 변환된 디지탈데이타를 직렬데이타로 변환출력하는 직병렬 변환기(110); 이동통신망을 통해 무선으로 데이타를 수신하는 데이타 수신부(72)와 상기 변환출력되는 병렬데이타를 무선으로 송신하는 데이타 송신부(71) 등을 포함하여 구성되는 데이타 송수신부(70); 상기 무선수신되어 복조된 직렬데이타를 병렬데이타로 변환하는 직병렬 변환기(80); 상기 디코딩되는 오디오데이타와, 상기 복조되어 변환되는 디지탈데이타 중 하나의 데이타 입력을 선택출력하는 절환스위치(60); 상기 절환스위치(60)에 의해 선택출력되는 디지탈 데이타를 아날로그 신호로 변환하는 D/A 변환기(50); 상기 변환된 아날로그 신호를 전력증폭하여 헤드폰(HP) 등으로 출력하는 구동증폭기(51); 사용자의 입력을 수신하는 키 패드(31); 및 호(Call) 요구 및 응답 또는 상기 키 패드(31)를 통한 사용자의 키선택에 따라 상기 구성요소의 동작을 제어하는 제어부(30);를 포함하여 구성되어 있다.

도 2 는 도 1의 데이타 송수신부(70)의 구성을 상세히 도시한 구성도로서, 정(punctula) pn 부호 및 이와 위상이 상이한(early, late) pn 부호를 발생시키는 pn 부호 발생기(74); 다수의 CDMA 기지국으로 부터 수신되는 파일럿 신호에, 상기 pn 부호 발생기(61)에서 발생출력되는 정 pn 부호를 확산시켜 그 확산값에 따라 상기 pn 부호 발생기(74)에서 발생되는 pn 부호의 위상 또는 코드를 변경하여 정 pn 부호의 동기를 획득하고, 정 pn 부호의 전후 위상(early, late)의 pn 부호를 이용하여 동기획득된 pn 부호의 위상을 추적하는 pn 부호 동기획득/추적부(73)와; 송신 데이타를 I(In-Phase) 위상과 Q(Quadrature) 위상신호로 변조하여 상기 pn 부호 동기획득/추적부(73)에 의해 동기되어 있는 pn 부호를 이용하여 확산시키는 확산기(71a); 상기 확산기(71a)로 부터 확산된 신호대역만을 통과시키는 기저대역 필터(71b); 대역통과된 신호를 I, Q 채널의 반송파에 실어서 송신하는 송신부(71c); 수신되는 신호를 I, Q 채널별로 동기검파하는 검파부(72a); 동기검파된 신호중 기저대역 신호만을 통과시키는 기저대역 필터(72b); 및 상기 기저대역 pn 부호 동기획득/추적부(73)로 부터 동기획득되어 있는 pn 부호와, 각 채널에 할당된 왈쉬부호 중 목적채널에 해당하는 왈쉬부호를 역확산시키는 역확산기(72c);를 포함하여 구성되어 있다.

상기와 같이 구성되는 본 발명에 따른 음성재생이 가능한 휴대폰에서는, 먼저 사용자가 음악, 또는 외국어와 같이 이동중 청취하고자 하는 특정 포맷으로 압축된 오디오데이타를 개인용컴퓨터(PC)의 적외선(IRDA) 포트를 통해 본 발명에 따른 휴대폰으로 송신하게 되는데, 이 신호는 상기 적외선신호 수신부(10)에 의해 수신되어, 상기 복호부(20)에서 원래의 압축 오디오데이타, 즉 엠펙오디오 또는 웨이브 포맷 오디오데이타로 복원된다. 상기 제어부(30)는 상기 복원되는 디지탈 오디오데이타를 전원이 나가도 그 저장정보가 손실되지 않는 상기 플레쉬 메모리(33)에 저장하게 되는데, 상기와 같이 저장되는 디지탈 오디오데이타 중 음악데이타의 경우에는 한 곡당 용량이 3~4Mbyte(오디오음질이 저하된 경우에는 약 400~800kbyte 정도가 된다)로 상기 플레쉬 메모리(33)의 용량에 따라 많은 곡을 저장할 수 있게 된다.

상기와 같이 곡이 저장된 상태에서, 사용자는 본 발명에 따른 휴대폰을 휴대하고 이동하게 되는데, 이

때 상기 키 패드(31)를 통해 재생을 원하는 곡을 선택입력하게 되면, 상기 제어부(30)는 상기 절환스위치(60)를 제어하여 상기 엠펙 디코더(40)의 출력이 선택되도록 하는 한편, 상기 선택입력된 곡에 해당하는 압축포맷의 디지탈 오디오데이타를 상기 플레쉬 메모리(33)로 부터 독출하여 이를 상기 엠펙 디코더(40)로 송신한다. 상기 압축포맷의 디지탈 오디오데이타를 수신한 상기 엠펙 디코더(40)는 엠펙오디오 포맷을 복호하여 원래 오디오 음의 디지탈데이타로 출력하여 상기 D/A 변환기(50)로 송신하고, 상기 제어부(30)의 제어에 의해 이미 변환요청된 상기 D/A 변환기(50)는 상기 디코딩되는 디지탈 음악데이타를 아날로그신호로 변환하며, 상기 구동증폭기(51)는 상기 변환되는 아날로그신호를 전력증폭하여 헤드폰(HP)을 통하여 출력함으로써, 사용자가 선택한 곡의 청취가 이루어지게 된다.

한편, 상기 pn 부호 동기획득/추적부(73)는, 각 기지국마다 상이한 위상의 pn 부호를 사용하는 다수의 CDMA 기지국 중에서, 본 발명에 따른 음성재생이 가능한 휴대폰을 소유한 사용자와 가장 인접한 CDMA 기지국으로 부터 수신되는 파일럿 신호를 상기 pn 부호 발생기(74)에서 발생출력되는 pn 부호로써 역확산시키고, 역확산된 신호를 일정시간 적분하여 상관값을 구하게 되는데, 상기 상관 값이 일정 기준값에 도달하지 않으면, 동기가 획득되지 않은 것으로 판단하고, 상기 pn 부호 발생기(74)를 제어하여 발생되는 pn 부호의 위상을 1 칩(chip, 1 칩은 pn 부호에서 하나의 논리신호 유지시간을 말한다) 이동시키게 된다.

상기 pn 부호 동기획득/추적부(73)는 1 칩 이동된 pn 부호에 대해서도 상기의 동작을 다시 반복하여 수행하게 되고, 이러한 동작 중 구해지는 상관값이 일정 기준값을 초과하게 되면 그 때의 위상으로써 pn 부호의 동기를 획득하게 되는데, 동기가 획득되고 나면 상기 pn 부호 동기획득/추적부(73)는 획득된 정(punctual) pn 부호 외의, 상기 정 pn 부호의 1 칩 전(early) 후(late) 위상의 pn 부호의 확산에 의해 구해지는 상관값이 한쪽으로 치우치면, 치우치는 위상으로 정 pn 부호, 전 pn 부호 그리고 후 pn 부호의 위상을 모두 1/2 칩 이동시키는 동작을 계속적으로 수행하여 기지국과 pn 부호의 위상을 항상 동기시키게 된다.

상기에서와 같이, 인접된 기지국과 pn 부호가 동기된 상태에서, 상기 데이타 수신부(72)의 결파부(72a)는 안테나(1)로 부터 수신되는 신호에 직교위상(I, Q)의 반송파신호를 각각 곱하게 되고, 상기 기저대역 필터(72b)는 상기 반송파가 곱해진 신호의 대역에서 유효신호가 포함되어 있는 기저대역 신호만을 선택하여 통과시키게 된다. 상기 기저대역 신호는 기지국에서의 송신시 확산된 신호이므로, 상기 역확산기(72c)는 상기 기저대역 필터(72b)에서 통과되는 신호를 기지국에 동기된 pn 부호로 역확산시키고, 다시 호출채널에 해당하는 왈쉬부호를 역확산시켜 I, Q 채널신호를 합성하여 데이타 비트열로 복원한 뒤 상기 직병렬 변환(80)로 송신하게 된다.

상기 제어부(30)는, 상기 직병렬 변환기(80)에 의해 데이타 단위로 복구된 그 내용을 해석하는데, 수신 입력된 데이타가 호요구로 해석되면 상기 제어부(30)는 현재 재생되고 있는 오디오데이타의 상기 플레쉬 메모리(33)에서의 해당 시점의 독출위치를 자체 저장하는 한편, 상기 절환스위치(60)를 제어하여 상기 엠펙 디코더(40)와의 연결상태를 절환하고 상기 직병렬 변환기(80)와 연결 접속 되도록 한 후, 자체내에 저장되어 있는 호출음(RING) 데이타를 상기 D/A 변환기(50)로 출력한다.

상기 호출음 데이타는 상기 D/A 변환기(50)에 의해 아날로그 호출음으로 변환되며, 상기 증폭기(52)는 상기 아날로그 호출음을 전력증폭하여 헤드폰(HP) 등으로 출력함으로써, 음악을 청취하고 있던 사용자는 호출음을 놓치지 않고 듣게 된다.

상기 출력되는 벨소리를 청취한 사용자가 이에 응답하여 상기 키 패드(31)의 응답키를 입력하면 상기 제어부(30)는 기지국과의 호 성립과정을 진행시키고, 이 과정동안에 역방향 링크(reverse link)에 사용할 pn 부호를 설정하게 된다. 상기의 호 성립 과정 후에 사용자가 마이크(Mic) 또는 헤드폰(HP) 등에 부착된 마이크를 통해 음성을 입력하면, 상기 입력되는 음성은 상기 증폭기(100)에서 일정 레벨로 증폭되고, 상기 A/D 변환기(101)는 상기 일정레벨로 증폭된 음성신호를 디지탈데이타로 변환하여 상기 직병렬 변환기(110)로 출력하고, 상기 직병렬 변환기(110)는 상기 변환되는 디지탈데이타를 직렬데이타로 변환하여 상기 데이타 송신부(71)의 확산기(71a)로 송신하게 된다.

상기 데이타 송신부(71)의 확산기(71a)는 상기 직병렬 변환기(110)로 부터 입력되는 직렬데이타 비트를, 상기 pn 부호로 확산시켜 상기 기저대역 필터(71b)로 출력하고, 상기 기저대역 필터(71b)는 입력되는 신호에서 상기 확산기(71a)에서 확산되는 신호대역만을 통과시키게 된다. 상기 대역통과된 신호는 상기 송신부(71a)에서 CDMA 이동통신망의 역방향 대역의 반송파에 의해 I, Q 채널로 위상 변조되어 사용자와 인접되어 현재 호연결되어 있는 하나의 CDMA 무선 기지국(도면 미도시)으로 송신되고, 이는 다시 CDMA 이동통신망 내의 교환기(도면 미도시)를 통하여 호를 요구한 상대측으로 송신됨으로써, 음성통화가 이루어지게 된다.

이에 따라 사용자는 음악이나 외국어 청취 도중, 간단한 응답조작만으로 청취하고 있던 헤드폰(HP) 등

을 그대로 이용하여 통화를 수행하게 된다.

상기와 같은 음성통화 도중, 사용자로 부터 호 해제 요구가 상기 키 패드(31)를 통해 입력되게 되면, 상기 제어부(30)는 상기 절환스위치(60)를 제어하여 연결접속 위치가 다시 상기 엠팩 디코더(40)로 복귀되도록 하고, 자체 저장한 독출위치 정보로 부터 상기 엠팩 디코더(40)로 하여금 상기 플레쉬 메모리(33)에 저장된 디지탈 오디오데이타를 직후 위치부터 이어서 독출하여 전술한 바와 같이 곡의 재생이 계속적으로 이루어지도록 한다.

전술한 실시예에서 상기 적외선신호 수신부(10) 대신 직렬 통신소자(RS233C)를 사용하는 경우에는, 압축된 디지탈 음악 또는 외국어 음성데이타를 컴퓨터의 적외선 포트로 부터 무선수신하는 대신, 컴퓨터에 항상 구비되어 있는 직렬 통신포트를 통하여 필요한 데이타를 유선으로 수신할 수 있게 되므로, 컴퓨터 등에 별도로 적외선 포트를 구비하지 않아도 된다.

또한, 상기 플레쉬 메모리(33) 대신, 필요에 따라 착탈가능한 카드형 대용량 메모리를 사용하게 되면 사용자가 본 발명에 따른 음성재생이 가능한 휴대폰을 오디오 재생용으로 사용하지 않을 경우에는 휴대폰에서 메모리를 탈착할 수 있어 휴대폰의 무게를 감소시킬 수 있으며, 또한 청취하고자 하는 곡을 보다 많이 수용할 수 있어 장시간의 음악 등의 청취가 가능해지게 된다.

발명의 효과

상기와 같이 구성되어 동작하는 본 발명에 따른 음성재생이 가능한 휴대폰은, 휴대폰에 오디오 재생기능을 구현함으로써, 별도의 오디오 재생장치를 휴대하여야 하는 불편함을 제거하였을 뿐만 아니라, 오디오를 재생청취하고 있는 도중에 호가 요구되는 경우, 이를 즉시 사용자에게 알려 음성통화가 이루어지게 함으로써, 사용자가 재생되는 음성을 청취하면서 휴대폰의 벨소리에 주의를 집중해야 하는 불편함과 착신되는 호를 받지 못하게 되는 등의 문제점을 제거한 매우 편리하고 유용한 발명인 것이다.

(57) 청구의 범위

청구항 1

디지탈 오디오데이타를 수신하는 데이타 수신수단;

상기 수신된 디지탈 오디오데이타를 저장하는 저장수단;

사용자의 재생요청에 따라, 해당 디지탈 오디오데이타를 상기 저장수단으로 부터 독출하는 독출하여 해독출력하는 해독수단;

음성통화 신호를 무선으로 송수신하는 무선 송수신수단;

이동통신의 호(Call)요구 및 종료신호를 검출하는 호상태 검출수단;

상기 호상태 검출수단의 호요구 신호 검출시, 디지탈 오디오데이타의 독출위치를 기억하는 기억수단;

상기 호상태 검출수단의 호요구 및 종료신호 검출에 따라, 상기 해독수단의 출력 데이타 및 상기 무선 송수신수단의 수신 음성데이타 중 하나를 선택출력하는 절환수단;

상기 절환수단에 의해 선택출력되는 디지탈데이타를 변환증폭하여 스피커로 출력하는 음성 출력수단; 및

상기 호상태 검출수단의 호종료 신호 검출시, 상기 기억된 디지탈 오디오데이타의 독출위치 부터 독출해독 재개되도록 하는 제어수단; 을 포함하여 구성되는 음성재생이 가능한 휴대폰.

청구항 2

제 1 항에 있어서,

상기 디지탈 오디오데이타는 음악데이타인 것을 특징으로 하는 음성재생이 가능한 휴대폰.

청구항 3

제 1 항에 있어서,

상기 디지탈 오디오데이타는 학습용 외국어 음성데이타인 것을 특징으로 하는 음성재생이 가능한 휴대폰.

청구항 4

제 1 항에 있어서,

상기 데이타 수신수단은, 적외선 무선신호를 수신하여 데이타 복원하는 것을 특징으로 하는 음성재생이 가능한 휴대폰.

청구항 5

제 1 항에 있어서,

상기 데이타 수신수단은, 접속선로를 통한 직렬데이타를 수신하여 데이타 복원하는 것을 특징으로 하는 음성재생이 가능한 휴대폰.

청구항 6

제 1 항에 있어서,

상기 저장수단은 착탈식의 대용량 메모리인 것을 특징으로 하는 음성재생이 가능한 휴대폰.

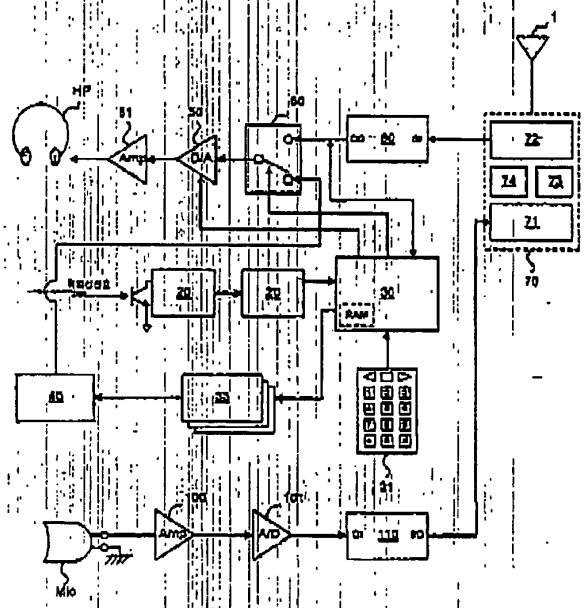
청구항 7

제 1 항에 있어서,

상기 저장수단은 비휘발성(non-volitile) 메모리인 것을 특징으로 하는 음성재생이 가능한 휴대폰.

도면

도면1



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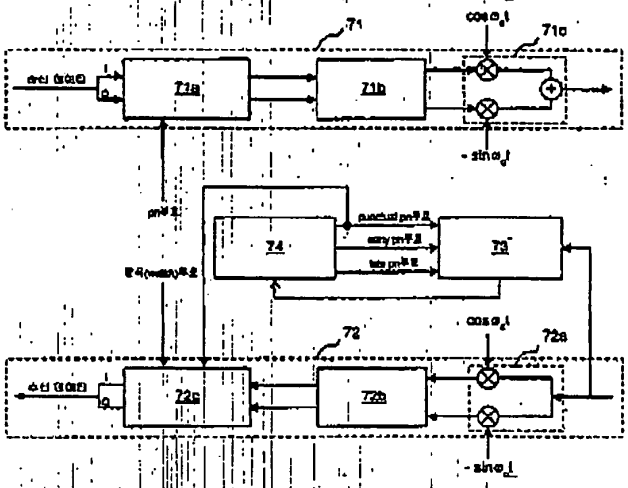

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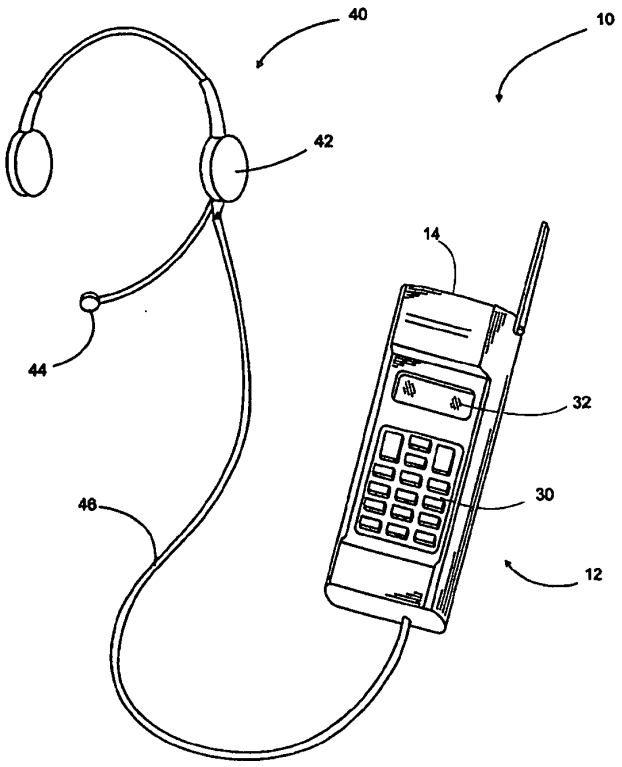
(54) Title: CELLULAR PHONE WITH EXPANSION MEMORY FOR AUDIO AND VIDEO STORAGE

(57) Abstract

A cellular telephone includes an internally integrated digital entertainment module. The telephone includes a transceiver unit and a headset which is connected to the transceiver unit by wired or wireless link. The entertainment module includes an interchangeable ROM and/or expansion RAM for storing music or other audio signals for playback through the telephone's headset. Music or other audio signals in digitized form is stored in the interchangeable ROM or is loaded into the expansion RAM from a CD player, computer, or other source of digitized audio signals. Under control of the cellular telephone's microprocessor, the digitally stored audio signal is played back through the telephone's headset. The entertainment module may be located in the transceiver unit, a removable battery pack, or in a separate adapter.



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CELLULAR PHONE WITH EXPANSION MEMORY FOR AUDIO AND VIDEO STORAGE

FIELD OF THE INVENTION

The present invention relates generally to mobile communication devices, and more particularly to portable radio communication devices having an integral entertainment module including RAM or ROM for storing audio, video and/or still images.

BACKGROUND OF THE INVENTION

In the past two decades, advances in digital electronic technology have led to a rapid growth in the area of entertainment oriented consumer electronic devices. In particular, portable electronic devices such as audio CD players, FM/AM radio receivers, and even television or video tape/disc players have become increasingly popular among consumers as they have become small, lightweight, and easy for an individual to carry.

While quite popular with consumers, the mass storage type devices (audio CD, video tape/disc) typically suffer from motion induced distortion otherwise known as bouncing or skipping. These problems arise, in part, as a result of the required motion of the mass storage medium during normal operation. That is, in the case of an audio CD or a video disc, the disc which comprises the storage medium is typically spun or rotated at a relatively high speed while the information stored on the disc is read by an associated read head. Proper and precise alignment of the read head with respect to the spinning storage medium must be maintained at all times in order to insure error free reading of the stored data. Such precise alignment is often difficult to maintain when the audio or video player is being used in manner which is conducive to extreme vibration or mechanical shock. In practice, mechanically harsh

activities such as jogging or running are common among users of portable electronics, particularly with regard to the use of portable audio CD players. In such cases, skipping or bouncing artifacts induced in the CD player can seriously impair the overall performance of the player.

With further regard to the recreational athletic activities of portable electronics consumers, it is often the case such consumers will carry not only an audio CD player for entertainment purposes, but also a cellular telephone for safety and security. Although such equipment provides the desired entertainment/security services to the athletically active consumer, the need to carry multiple pieces of equipment is generally viewed as inhibiting or impairing to their athletic endeavors.

Therefore, there is and continues to be a need for a practical and efficient technique for incorporating the functionality of audio and/or video playing devices within wireless communications devices such as cellular telephones.

SUMMARY OF THE INVENTION

The present invention is a cellular telephone particularly adapted for leisure activities. The cellular telephone of the present invention includes a portable transceiver unit and a headset which can be worn by the user during leisure activities such as jogging, biking, gardening, etc. The transceiver unit includes a fully functional transceiver capable of sending and receiving voice and data signals via an RF carrier. The transceiver unit has an integral digital entertainment module including a memory for storing music or other audio signals for playback through the headset. For purposes of this application, memory means all forms of computer memory but dies not include disk storage, tape storage or other memory requiring electromechanical read systems. The memory may be in the form of a removable ROM cartridge and/or an expansion RAM. In those embodiments having an

expansion RAM, an input port is provided for loading music or other audio signals into the expansion RAM from a CD player, computer, or other source of digitized audio.

Under the control of the transceiver unit's microprocessor, the digitally stored audio signal is played out through the telephone's headset, which in the preferred embodiment comprises stereo headphones. The headset may be connected to the phone by a wired or wireless link. Because of its integration into the cellular phone, the digital entertainment module can share components already present in the cellular phone. Such savings would not be available if a CD player were simply aggregated with the phone. Further, the use of solid state RAM or ROM, as opposed to disc storage, eliminates the need for bounce control circuitry. This enables the disclosed invention to provide cellular communications and entertainment during leisure activities.

In another aspect of the present invention, the digital entertainment module could be located in a removable battery pack which attaches to the transceiver unit, or in a separate adapter which plugs into the transceiver unit. Locating the digital entertainment module in either a battery pack or separate adapter allows the manufacturer to offer the digital entertainment module as an optional accessory which does not need to be purchased at the same time the cellular phone is purchased. This allows consumers who purchase a phone without the digital entertainment module to later purchase the battery pack or adapter as an upgrade to the existing phone.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a perspective view of the portable communication device of the present invention.

Figure 2 is a block diagram of the portable communication device.

Figure 3 is a block diagram of the entertainment module contained in the portable communication device.

Figure 4 is a perspective view of a second embodiment of the portable communication device in which the digital entertainment module is located in a removable battery pack.

Figure 5 is a block diagram showing the second embodiment of the portable communication device in which the entertainment module is located in a removable battery pack.

Figure 6 is a perspective view of a third embodiment of the portable communication device in which the digital entertainment module is located in a separate adapter with attaches to the transceiver unit.

Figure 7 is a block diagram showing the third embodiment of the portable communication device in which the entertainment module is located in a separate adapter.

DETAILED DESCRIPTION OF THE INVENTION

Referring now to the drawings, and particularly to Figures 1 through 3, the cellular phone of the present invention is shown therein and indicated generally by the numeral 10. The cellular phone 10 of the present invention is particularly adapted for use during leisure activities such as jogging, hiking, gardening, etc.

The cellular phone 10 includes a transceiver unit 12 and a headset 40 which can be worn on the head by the user. The transceiver unit 12 includes a main

housing 14 and a removable battery pack 16 containing a rechargeable battery 28. Housing 14 of the transceiver unit 12 contains an RF transceiver 18, control logic 20, program memory 22, and audio processing unit 24 which are operatively connected by a system bus 26. The RF transceiver 18 may be, for example, a class 1 mobile phone transceiver capable of transmitting and receiving radio signals containing voice and/or data. Audio processing unit 24 processes voice and data signals that are transmitted and received by the transceiver 18. Audio processing unit 24 may include voice recognition circuitry to enable activation and use of the phone 10 by voice commands for truly hands-free operation. The control logic 20 controls the operation of the transceiver 18 according to instructions stored in program memory 22. A keypad 30 and display 32 provide a user interface. Keypad 30 enables the user to enter dialing instructions and commands to initiate a call, and to select options. The display 32 displays the number dialed and call status information to the user. Display 32 may also display instructions or options to the user. Unlike a conventional cellular phone, the transceiver unit 12 of the present invention does not include an internal microphone and speaker, though such is within the scope of the contemplated invention.

The headset 40 includes stereo speakers 42 and microphone 44 that are connected to the transceiver unit 12 by a cable 46. Cable 46 may include a plug (not shown) which removably mates with a corresponding jack on the transceiver unit 12. The cable 46 connects to the system bus 26 which routes audio signals from the audio processing unit 24 to and from the headset 40 under the control of the microprocessor 20. The jack could also connect directly to audio processing circuit 24. Alternatively, the headset 40 could communicate wirelessly with the transceiver

unit 12, for example, by means of an infrared carrier, low power RF carrier or magnetic link.

The portable telephone 10 of the present invention includes a built-in digital entertainment module 50 (DEM) which allows music or other audio signals to be "played-back through the cellular telephone's headset 40. The entertainment module 50 includes extended RAM and/or removable memory cartridges for storing music or other audio signals which can be played back through the headset 40 of the phone 10.

Referring now to Figure 3, a schematic diagram of the digital entertainment module 50 is shown. The digital entertainment module 50 includes a secondary bus 52, extended random access memory (RAM) 54, removable ROM 56, and an input 58. The extended RAM 54 may, for example, be a flash EPROM chip capable of storing digitized audio. Digitized audio is loaded into the flash EPROM via input 58. The input 58 may be a serial port, parallel port, infra-red data port, modem, or any other type of input device capable of interfacing with a source of digitized audio, such as a CD player, or computer. It is also contemplated that audio may be obtained from the transceiver unit 12 in an "internet-enabled" phone 10. The removable ROM 56 is preferably in the form of a cartridge which fits into a slot in the transceiver unit 12. The ROM cartridge 54 would contain pre-recorded music which could be purchased by the user. In the preferred embodiment, the data format of both the extended RAM 54 and removable ROM 56 would be organized according to CD-ROM standards, which is 14 bits per sample and 44.1 k samples per second.

In operation, the user would insert a removable ROM cartridge 56 into the transceiver unit 12 or load audio into the extended RAM 54 from a CD player, computer, or other source of digitized audio. The transceiver unit 12 is attached the

belt or other article of clothing worn by the user. The headset 40 is placed on the user's head and connected to the transceiver unit 12. Playback of audio in the extended RAM 54 or removable ROM 56 could be activated via the keypad 30, or alternately, by voice command. The audio would be played back through the headset 40 under control of the microprocessor 20 while the user engages in leisure activities. When an incoming call is received, the microprocessor 20 automatically mutes or stops the playback of audio from the digital entertainment module 50 until the call is terminated. Preferably, the transceiver unit 12 includes a preferred caller list stored in a screening memory which may be part of program memory 22 or separate therefrom but in communication with the control logic 20. This preferred caller list is used to screen incoming calls such that only calls from callers on the preferred caller list cause the playback of audio from the digital entertainment module 50 to be muted or stopped; calls from callers not on the preferred caller list preferably do not cause such response. Upon termination of the call, the microprocessor 20 would unmute or restart the playback of audio from the digital entertainment module 50.

A significant advantage of the present invention is that audio is played back from solid state RAM or ROM memory thus eliminating the need for bounce control circuitry which is commonly used in portable CD players. Further, because of its integration into the cellular phone 10, there is no need for the user to carry both a portable audio player and a cellular phone. Moreover, integration of the entertainment module 50 into the cellular phone 10 allows the entertainment module 10 to share components with the cellular phone 10 to take advantage of the phone's communication capability to load the RAM 54. Thus, the present invention could

replace both a conventional cellular phone and portable audio player at lower cost than a conventional walk-man and telephone.

Referring now to Figures 4 and 5, a second embodiment of the present invention is shown. The second embodiment is similar to the first embodiment and, therefore, the same reference numerals will be used to identify similar components. As shown in Figures 4 and 5, the second embodiment of the phone 10 includes a transceiver unit 12 with a removable battery pack 14, and a headset 40 connected to the transceiver unit 12. The transceiver unit 12 includes a transceiver 18, microprocessor 20, program memory 22, audio processing circuits 24, keypad 30 and display 32 as previously described. Similarly, the headset 40 includes stereo speakers 42 and microphone 44. The second embodiment differs from the first in that the digital entertainment module 50 is contained within the removable battery pack 14. The entertainment module 50 connects to a secondary bus in the battery pack 14. When the battery pack 14 is attached to the transceiver unit 12, a connection is made between the secondary bus in the battery pack 14 and the main bus 26 of the transceiver unit 12. The main bus 26 and secondary bus enable the routing of audio signals between the entertainment module 50 and audio processing circuits 24 under the control of the microprocessor 20.

Figures 6 and 7 show a third embodiment of the present invention. The third embodiment is similar to the first and second embodiments and therefore the same reference numbers will be used to identify similar components. As shown in Figures 6 and 7, the third embodiment includes a transceiver unit 12, headset 40, and adapter 70. The transceiver unit 12 includes a transceiver 18, microprocessor 20, program memory 22, audio processing circuits 24, keypad 30, and display 32. In addition, the transceiver unit 12 in the third embodiment includes an internal

microphone and speaker 34 and 36 respectively. Thus, the transceiver unit 12 can be used without the headset 40.

The headset 40 includes a pair of stereo speakers 42 and microphone 44. The headset 40 is connected by a cable 46 to the adapter 70. The entertainment module 50 is contained in the adapter 70. The adapter 70 includes a secondary bus 72 which connects to the main bus 26 on the transceiver unit when the adapter 70 is plugged into the transceiver unit 12. An input/output circuit 74 routes audio signals to and from the headset 40.

When the transceiver unit 12 is used without the adapter 70, audio signals are routed under the control of the microprocessor from the audio processing circuits 24 to the internal microphone and speaker 34 and 36. When the adapter 70 is plugged into the transceiver unit 12, the audio signals are routed to the microphone 44 and speakers 42 on the headset 40.

The configuration of the phone 10 shown in Figures 6 and 7 is advantageous in that it allows the transceiver unit 12 to be sold without the digital entertainment module 50 and later upgraded by the consumer. The adapter 70 and headset 40 could be sold separately as an accessory or at a later time as an upgrade. Thus, a single phone could be manufactured for use both with and without the digital entertainment module 50.

It will be apparent to those skilled in the art that the digital entertainment module 50 could also be used to store video or still images which could be output to the display 32 of the transceiver unit 12. Any sound accompanying the video would be played back through the headset 40 or internal speaker. It should also be apparent that the digital entertainment module 50 could include a broadcast receiver

for receiving conventional radio and TV broadcasts in addition to its entertainment memory.

The present invention may, of course, be carried out in other specific ways than those herein set forth without departing from the spirit and essential characteristics of the invention. The present embodiments are, therefore, to be considered in all respects as illustrative and not restrictive, and all changes coming within the meaning and equivalency range of the appended claims are intended to be embraced therein.

CLAIMS

What is claimed is:

1. A mobile radio communication device comprising:

a. a transceiver unit for transmitting and receiving audio signals;

b. a speaker operatively connected to said transceiver unit for converting audio signals received by said transceiver unit into audible signals which can be heard by a user;

c. a microphone operatively connected to said transceiver unit for converting the user's voice into audio signals for transmission by said transceiver;

d. memory operatively connected to said transceiver unit for storing pre-recorded audio for subsequent playback through said speaker.

2. The mobile radio communication device according to claim 1 wherein said memory is an erasable memory.

3. The mobile radio communication device according to claim 1 wherein said memory is an unerasable memory.

4. The mobile radio communication device according to claim 1 wherein said memory is contained in said transceiver unit.

5. The mobile radio communication device according to claim 1 further including a removable cartridge insertable into said transceiver unit, wherein said memory is contained in said removable cartridge.

6. The mobile radio communication device according to claim 1 further including a removable battery pack attachable to said transceiver unit, said memory being located in said battery pack.

7. The mobile communication device according to claim 1 further including a detachable adapter for attaching to said transceiver unit, said memory being located in said adapter.

8. The mobile radio communication device according to claim 1 further including a headset, wherein said speaker and microphone are mounted to said headset.

9. The mobile radio communication device according to claim 1 further including a input port operatively connected to said memory for loading audio into said memory.

10. The mobile radio communication device of claim 1 further including a screening memory in communication with said transceiver for storing a list of preferred callers and wherein when an incoming call is received during playback of said pre-recorded audio, playback continues unless said incoming call is from a caller on said list of preferred callers.

11. A cellular telephone having an entertainment module for playing pre-recorded audio and video signals comprising:

a. a transceiver for transmitting and receiving audio and data signals;

b. a microprocessor for controlling the operation of said transceiver;

c. a signal processing circuit operatively connected to the transceiver and microprocessor for processing signals transmitted and received by the transceiver; and

d. an entertainment module with a memory operatively connected to the microprocessor and signal processing circuits for storing audio and video signals for subsequent playback under the control of said microprocessor.

12. The cellular telephone of claim 11 wherein said memory comprises an erasable and programmable memory for storing and playing audio and video signals.

13. The cellular telephone of claim 12 including an input coupled to the erasable and programmable memory for downloading and storing audio and video signals into said erasable and programmable memory.

14. The cellular telephone of claim 11 wherein said memory comprises a permanent memory which is removable from said cellular telephone for storing and playing audio and video signals.

15. The cellular telephone of claim 11 wherein the entertainment module includes a first memory which is programmable and erasable, an input coupled to said first memory for downloading and storing audio and video signals into said first memory, and a second permanent memory having pre-recorded audio and video signals stored therein.

16. The cellular telephone according to claim 15 wherein said second memory is a removable and interchangeable memory cartridge.

17. The cellular telephone of claim 11 wherein the first and second memories are coupled to a headset port in the cellular telephone, thereby permitting audio signals to be directed from the memories to a headset coupled to the cellular telephone via the headset port.

18. The cellular telephone of claim 11 wherein the microprocessor is pre-programmed to preempt output from said first and second memories in response to an incoming call or the initiation of an outgoing call.

19. The cellular telephone of claim 11 further including a screening memory in communication with said microprocessor for storing a list of preferred callers and wherein said output from said first and second memories is not preempted in response to an incoming call unless said incoming call is from a caller on said list of preferred callers.

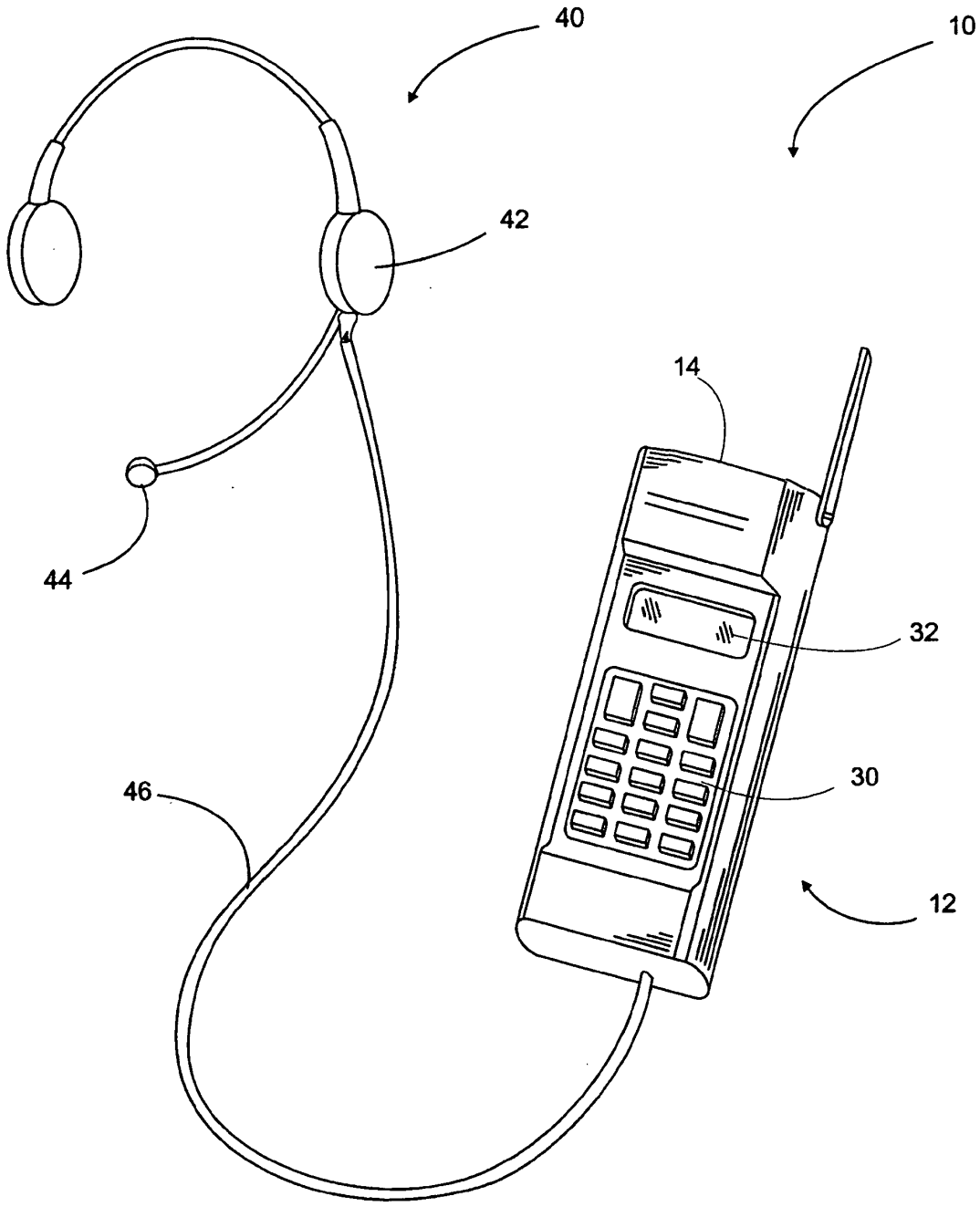


FIG. 1

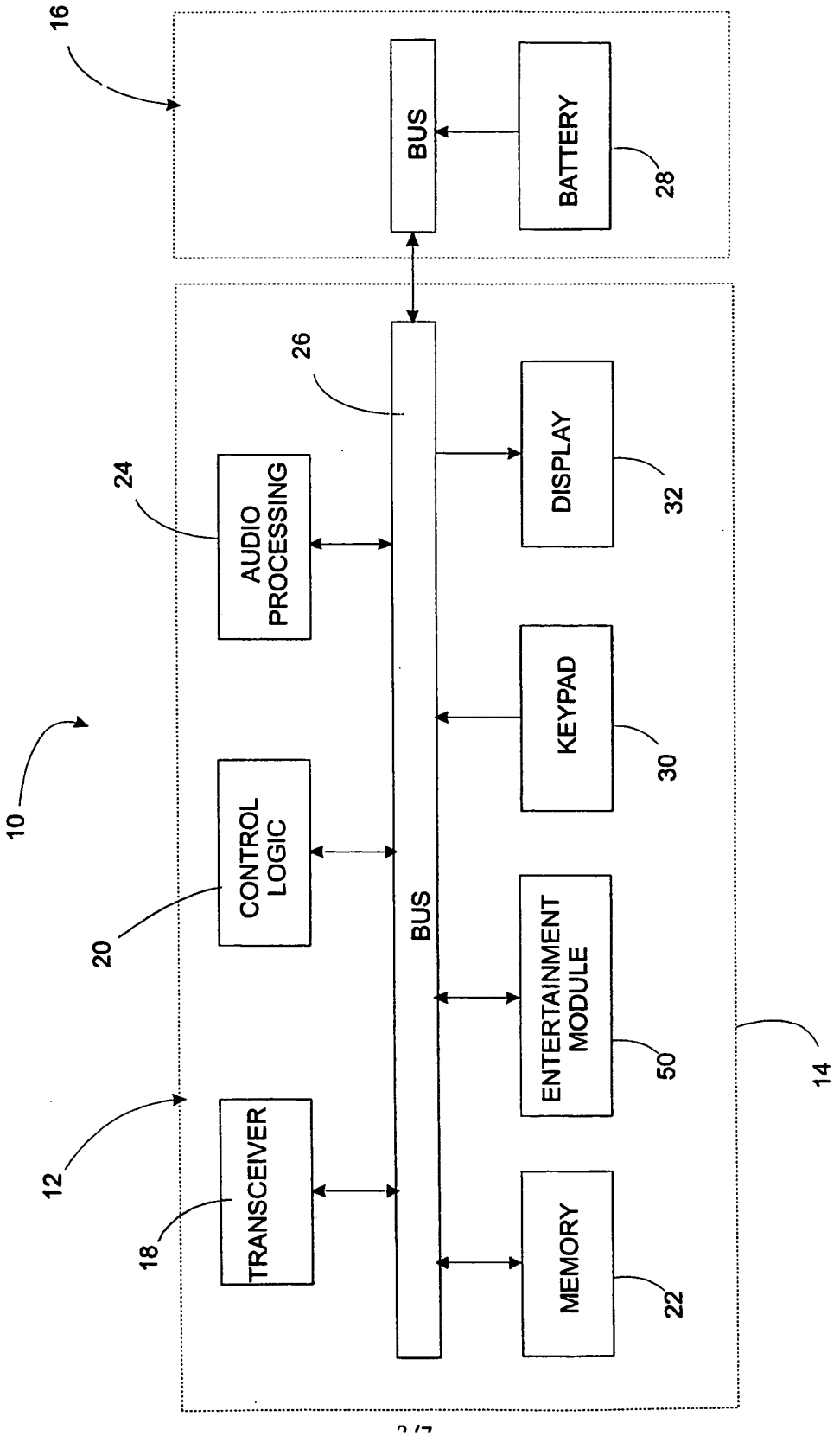

16
BUS
BATTERY
28
26
DISPLAY
32
24
AUDIO PROCESSING
KEYPAD
30
10
CONTROL LOGIC
20
BUS
ENTERTAINMENT MODULE
50
14
12
TRANSCEIVER
18
MEMORY
22

FIG. 2

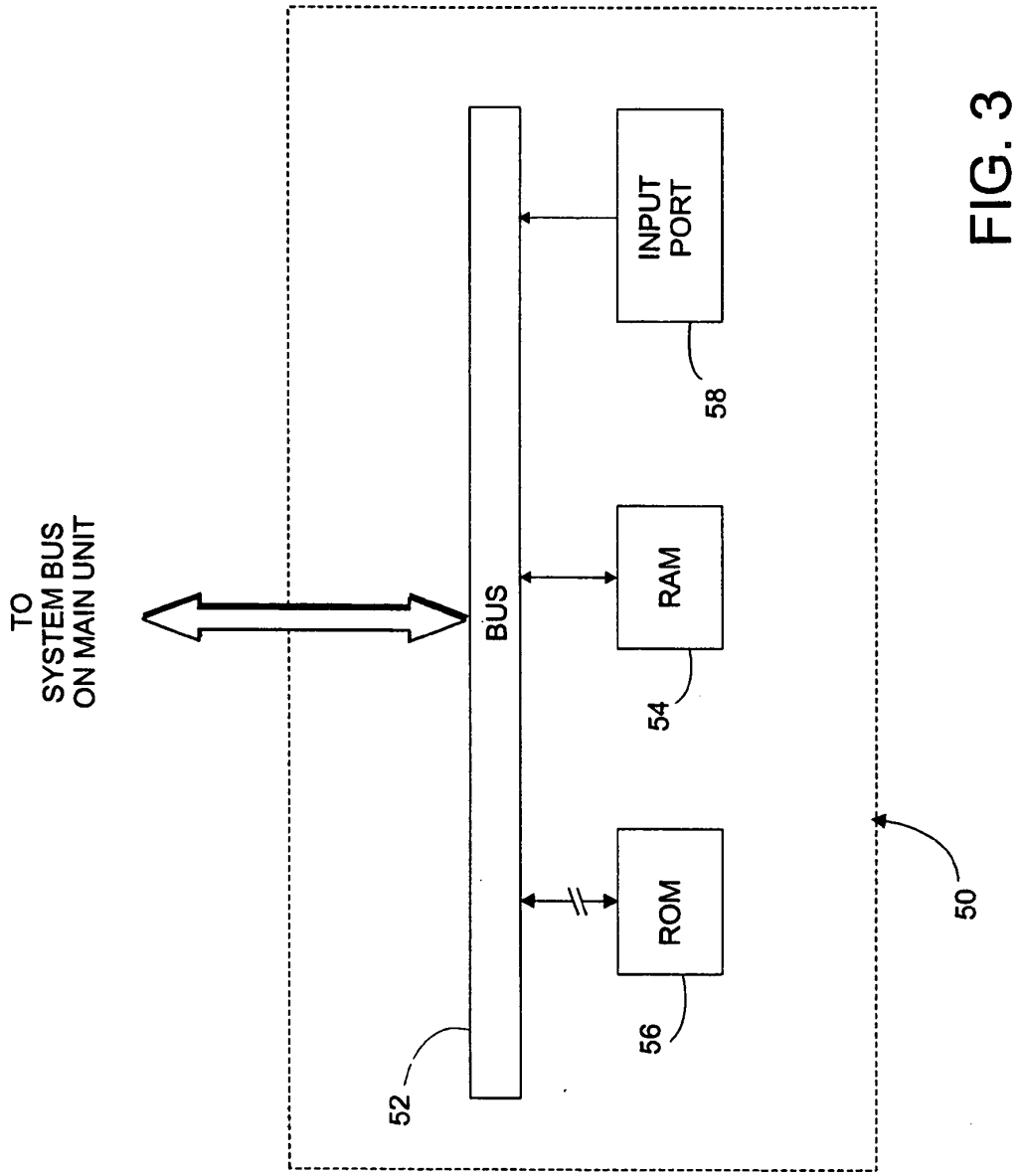


FIG. 3

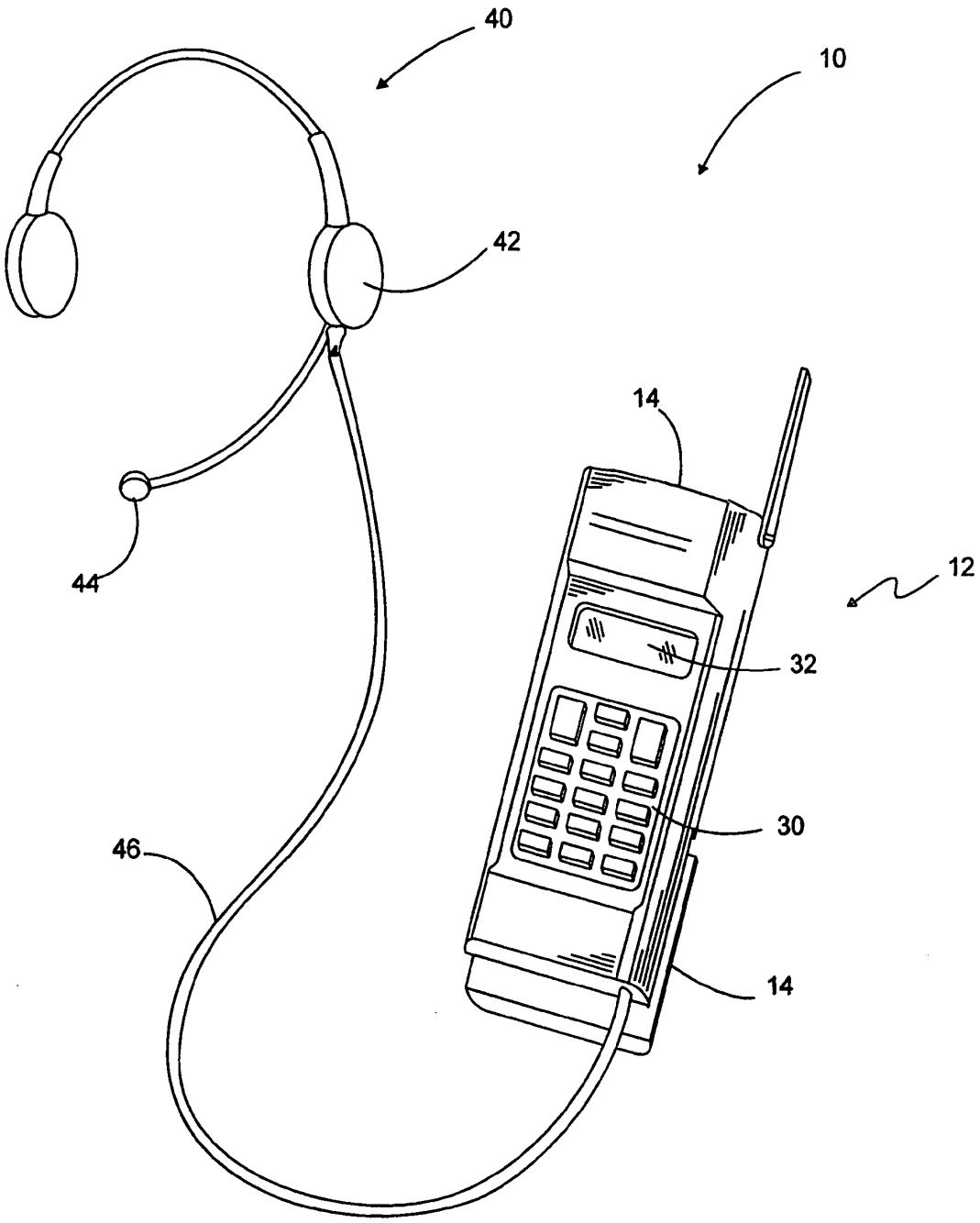
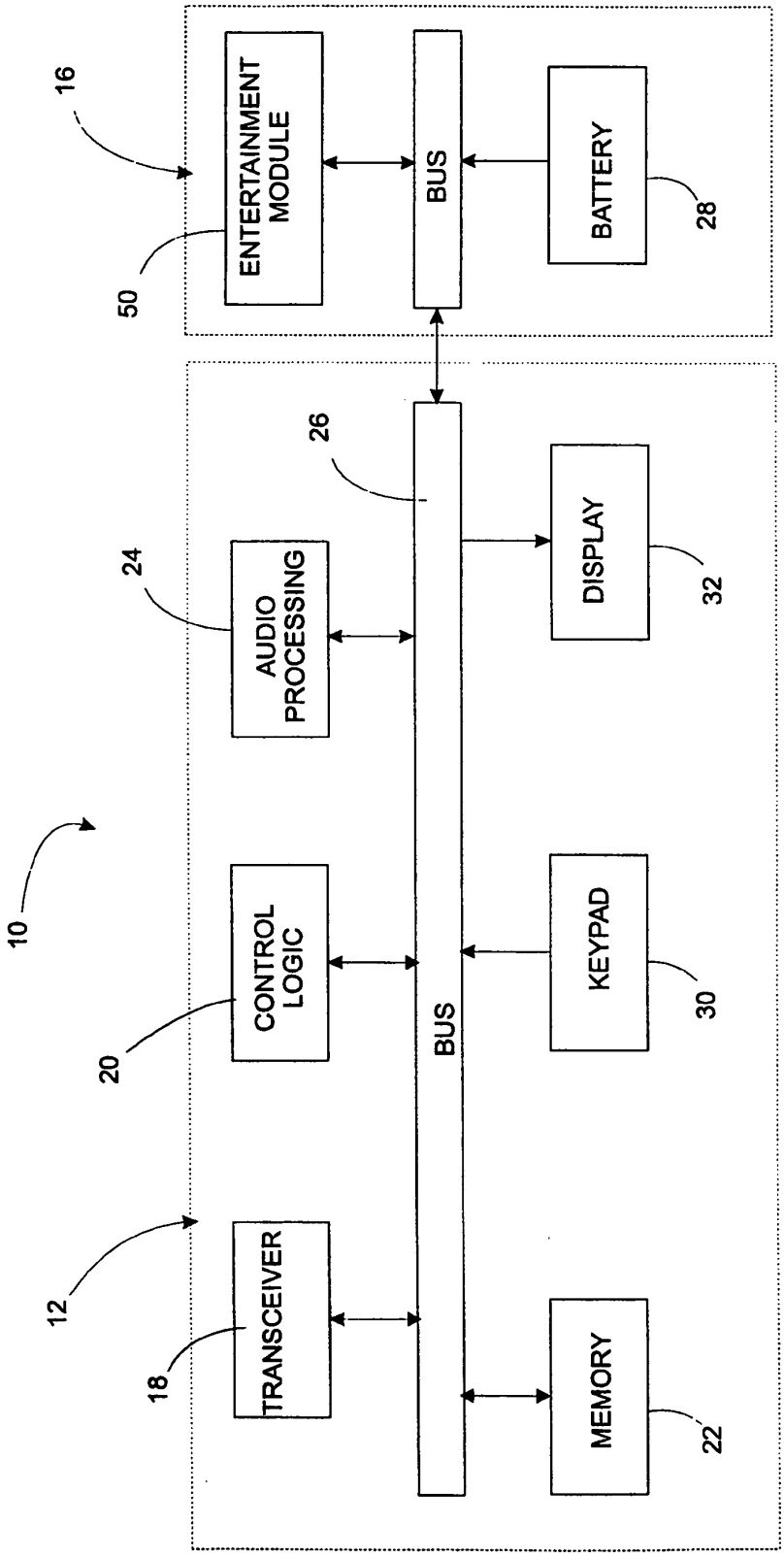


FIG. 4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ENTERTAINMENT MODULE
50
BUS
BATTERY
28
26
DISPLAY
32
24
AUDIO PROCESSING
10
CONTROL LOGIC
20
BUS
KEYPAD
30
12
TRANSCEIVER
18
MEMORY
22

FIG. 5

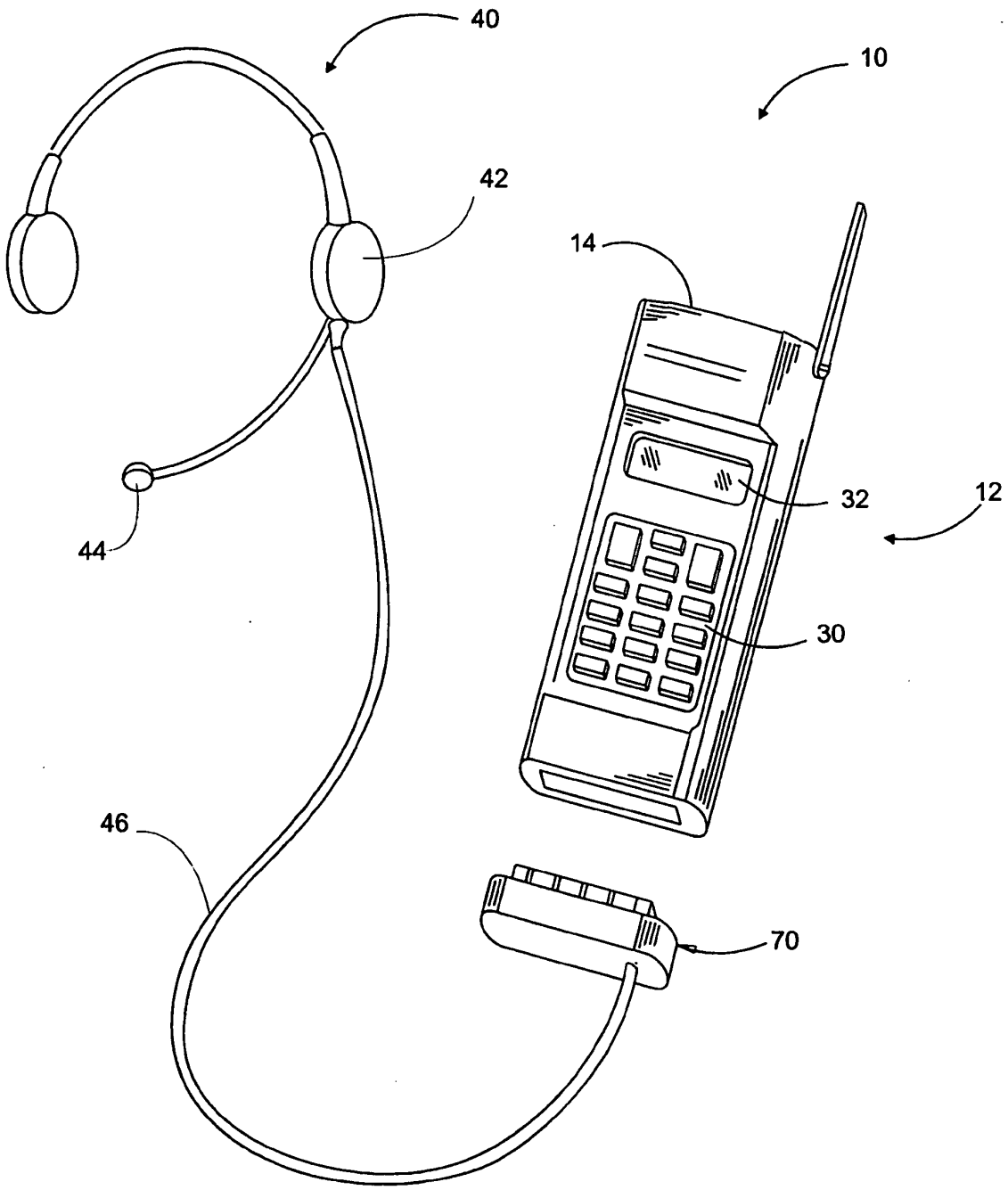

FIG. 6

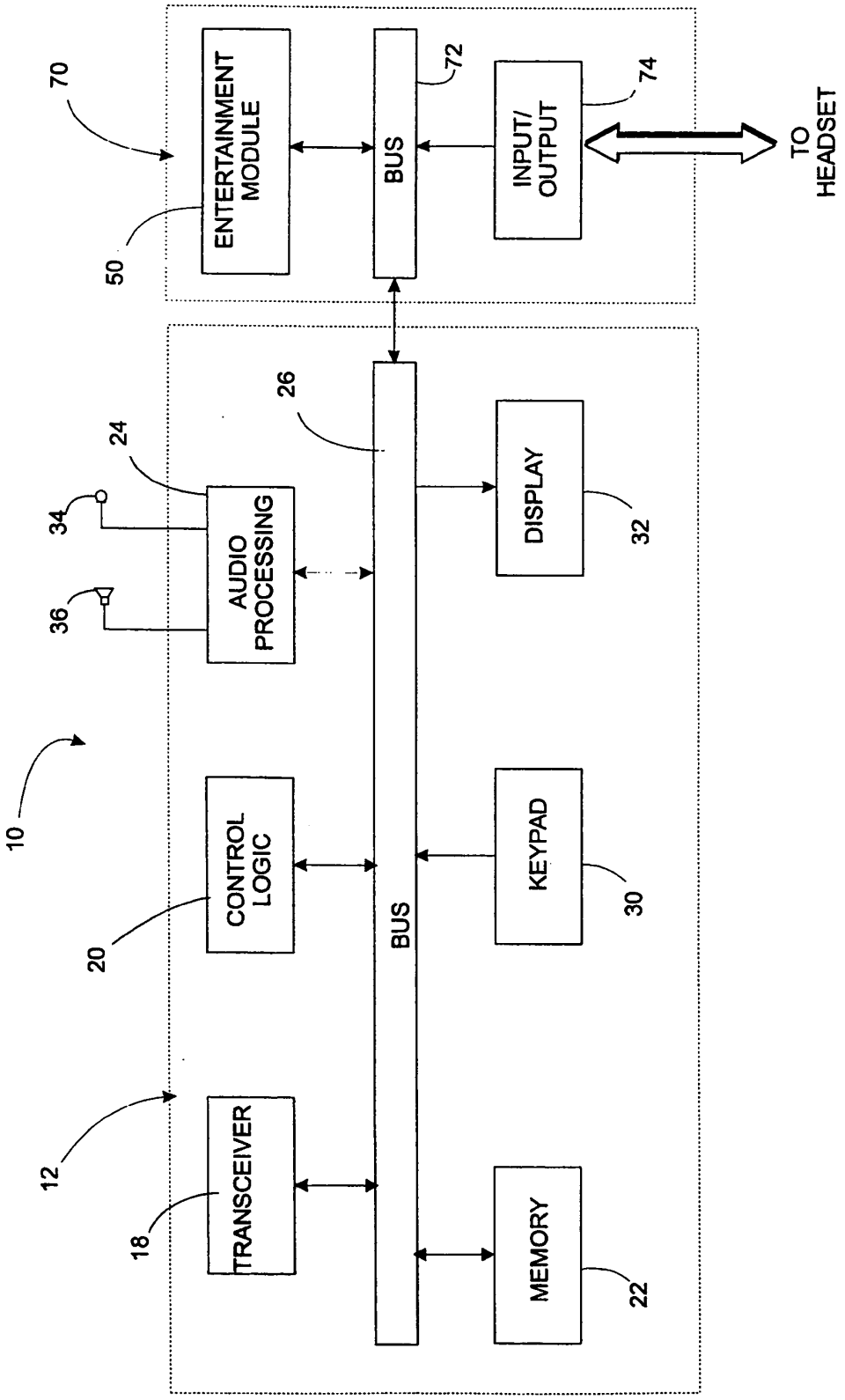
70
ENTERTAINMENT MODULE
50
BUS
72
INPUT/ OUTPUT
74
TO HEADSET
10
26
24
AUDIO PROCESSING
34
36
DISPLAY
32
CONTROL LOGIC
20
BUS
KEYPAD
30
12
TRANSCEIVER
18
MEMORY
22

FIG. 7

Ir. ational Application No
PCT/US 99/00570

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 H04M1/72 H04M1/60

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 6 H04M H04B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 2 308 775 A (NIPPON ELECTRIC CO) 2 July 1997	1,2,5,8
A	see page 6, line 1 - line 26 see page 8, line 9 - page 11, line 17 see page 14, line 6 - line 11 see figures 1,2	10,11,18

X	US 4 481 382 A (VILLA-REAL) 6 November 1984	1,2,4,5
A	see column 2, line 29 - line 34 see column 12, line 39 - line 56 see column 13, line 34 - line 50 see figures 6-8	11

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[X] Further documents are listed in the continuation of box C.

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Date of the actual completion of the international search	Date of mailing of the international search report
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 875 229 A (SPEAR ET AL) 17 October 1989 see abstract see column 1, line 25 - line 36 see column 2, line 32 - line 55 see figure 1 ---	1,2,5
A	WO 97 26744 A (ROBB) 24 July 1997 see abstract see page 1, line 8 - page 2, line 6 see page 3, line 5 - page 4, line 4 see page 9, line 18 - page 10, line 17 see page 12, line 12 - line 22 see page 15, line 4 - line 16 see page 16, line 20 - line 25 see page 17, line 10 - page 18, line 6 see page 21, line 13 - page 22, line 26 see page 24, line 1 - line 12 see page 25, line 10 - line 22 see page 26, line 1 - page 27, line 5 see figures 3,9 ---	1-5, 11-16
A	GB 2 289 555 A (NOKIA MOBILE PHONES LTD) 22 November 1995 see page 1, line 1 - line 6 see page 4, line 18 - line 23 see page 5, line 20 - page 6, line 2 see page 7, line 1 - page 8, line 9 see page 10, line 5 - line 7 see page 14, line 1 - line 16 see figures 1-3 ---	1,2,4,7, 11-13
A	DE 195 28 424 A (SIEMENS AG) 21 November 1996 see column 1, line 29 - line 34 see column 4, line 68 - column 5, line 64 see column 7, line 36 - line 60 see column 8, line 43 - line 53 see figures 1,2,6 ---	1,2,4, 11,12
A	US 5 550 754 A (WILLIAMS ET AL) 27 August 1996 see abstract see column 7, line 24 - column 8, line 9 see column 11, line 1 - line 34 see column 12, line 24 - column 13, line 27 see column 20, line 54 - column 22, line 4 see figures 8,16,30,31 --- -/--	1,7-9, 11,17

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 665 655 A (HEWLETT PACKARD CO) 2 August 1995 see abstract see column 3, line 29 - column 4, line 5 see column 4, line 44 - column 5, line 1 see figures 3B,6 ---	1,2,6,9
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Information on patent family members

International Application No
PCT/US 99/00570

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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(71)(72) Applicant and Inventor: KIM, Jaehan [KR/KR]; Kwangju Dong-gu, Sansudong 568-1, Duam-Town, Apt.107-1106, 501-090 (KR).

(81) Designated States: CN, JP, US, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).

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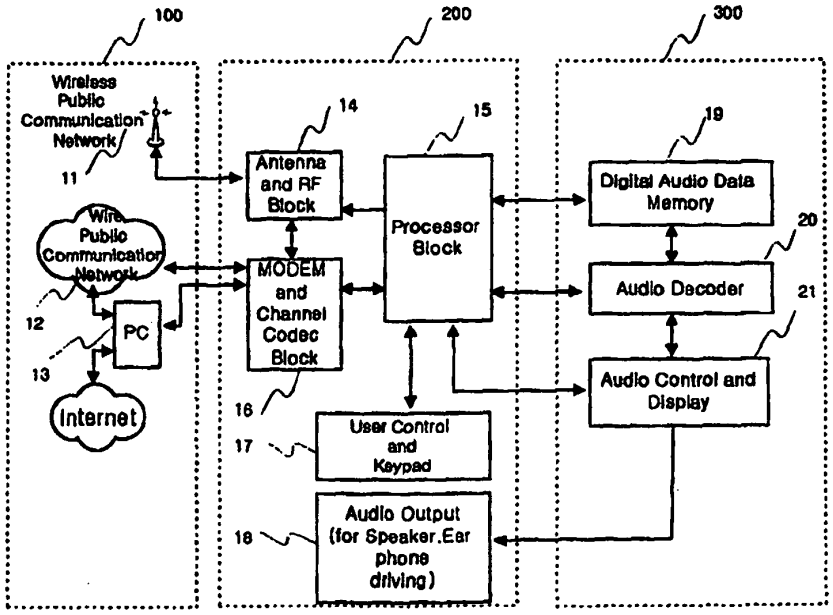
In English translation (filed in Korean).

(54) Title: APPARATUS AND METHOD FOR STORING AND PLAYING BACK OF DIGITAL AUDIO DATA ON WIRELESS MOBILE TERMINAL

(57) Abstract

This invention presents the combining idea of the wireless mobile terminal and the digital audio data player. This invention will reduce user's inconveniency with possessing above two products. In this invention, the function of storing digital audio data encoded by MP3 or AAC into the memory and the function of decoding the data to decoded original audio signal are added to a wireless mobile terminal. And using various methods that first method is PC interfacing method to connect with Internet, second method is requesting method of the digital audio data encoded by MP3 or AAC via the public communication network or data network that is wire or wireless channel, third method is passive receiving method of the digital audio data transmitted from station, it is stored the digital audio data encoded by MP3 or AAC into the memory, decoded the digital audio data stored in the memory to decoded original audio signal. As result, using this invented apparatus, it will be implemented convenient mobile services of telephone and audio on demand (AOD) or music on demand (MOD). The main function of the invented apparatus is wireless mobile terminal, additional function is storing and playback of the digital audio data encoded by MP3 or AAC.



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Apparatus and method for storing and playing back of Digital audio data on wireless mobile terminal

Technical Field

This invention relates to combining technology of wireless mobile terminal and digital audio data player.

Background Art

We want to communicate with others using wireless mobile terminal or listen to music using digital audio data player, must take two products inconveniently.

The present wireless mobile terminal for communication is consists of data transceiving function block, audio signal processing function block and control function block by keypad. And present portable digital audio data player is consists of playback module as basic function, data storage module and recording module. But there are no products providing two functions as single assembly.

Above mentioned the wireless mobile terminal includes cellular phone, PCS phone, IMT-2000 terminal, GSM terminal, wireless portable handset, hand phone and mobile phone for wireless communication of audio or data.

Disclosure of Invention

Since it is added the function of storing and playing back of the digital audio data to the wireless mobile terminal by this invention, selectable usage of the digital audio player or the wireless mobile terminal is available in this invented apparatus.

In this invention, the wireless mobile terminal comprises memory for storing digital audio data, audio decoder, audio control and display module, audio signal output module. The memory for storing of the digital audio data is fixed or replaceable.

There are two method for storing of the digital audio data, first method is PC interfacing method to connect with Internet, second method is requesting and receiving method of the digital audio data via public communication network or data network that is wire or wireless channel, or passive receiving method of the digital audio data transmitted from station.

The digital audio data that are received and stored into the memory, will be decoded and played back to the decoded original audio signal using keypad operation by user's necessity.

In accordance with an embodiment of the present invention, the receiving and storing method of the digital audio data is as follows;

first, this invented apparatus is connected with public communication network via wire(12), the digital audio data are inputted to the modem block(16) by user's keypad operation(17), stored into the memory(19) by the processing of the processor block(15).

second, operation of the PC(13) connected with public communication network

via wire or Internet, provides the modem's block(16) with the digital audio data, this data will be stored into memory(19) by control of the processor block(15),

third, by the user's keypad(17), requesting and receiving of the digital audio data via the public wireless communication network, or passive receiving of the digital audio data transmitted from the audio providing station is performed, and then the digital audio data are stored into the memory(19),

fourth, the replaceable memory storing digital audio data is inserted and connected with the data interfacing connector.

The stored digital audio data by above methods will be decoded by decoder(20) and generated a audio signal to audio output(18) in accordance with the audio circuit control by the operation of keypad(17).

As result, using this invented apparatus, the mobile services of audio on demand(AOD) or music on demand(MOD) will be implemented.

Brief Description Of Drawing

FIG. 1 is a block diagram showing the functional configuration of storing and playing back of Digital audio data on wireless mobile terminal.

Modes for Carrying out the Invention

The storing and playing back part(300) of the digital audio data is consists of the digital audio data storage memory(19), audio Decoder(20), selecting control of

transceiving that wireless telephone function has priority over audio player in the case of detecting call signal, audio control and display(21). The processor block(15), user's controller, key pad(17) and audio output module(18) are common to be used in the function of wireless mobile terminal and audio player.

In accordance with an embodiment of the present invention, the fresh memory may be used for storing memory(19) of digital audio data. The memory types adequate for this embodiment are fixed memory, replaceable or combinational memory(19) for storing digital audio data. The MP3(MPEG-1 Layer 3) decoder, AAC(MPEG-2 Advanced Audio Coding) decoder, or MP3 and AAC decoder(20) are used for decoding of the digital audio data. The LCD display at present or LCD displaying selection menu of digital audio data is used as a display module(21). And the selected digital audio data is decoded and the audio signal is outputted to the audio output device(18) such as speaker or earphone.

The digital audio data comprises music, audio program for language education, narration and so forth that are coded by the MP3 or AAA coding algorithm.

Industrial Applicability

Using this invention, it will be implemented convenient mobile services of telephone and audio on demand(AOD) by single apparatus.

CLAIMS

1. A wireless mobile terminal including;

fixed or replaceable memory(19) for storing digital audio data encoded by MP3(MPEG-1 Layer 3) audio encoder or AAC(MPEG-2 Advanced Audio Coding) encoder; and

MP3 or AAC Decoder(20) for reading digital audio data stored in the memory and decoding the digital audio data to the decoded original audio signal.

2. The apparatus of claim 1 including;

interfacing means with PC for storing the digital audio data from Internet into the memory(19) mentioned in claim 1; and

interfacing means with public communication network (or data network) via wire or wireless channel for storing the digital audio data from Internet into the memory(19) mentioned in claim 1.

3. A Method for playing back to the original audio signal ; comprising the steps of;

interfacing with PC to connect with Internet as mentioned in claim 2;

receiving the digital audio data encoded by MP3 or AAC from Internet;

storing the digital audio data into the memory(19) mentioned in claim 1; and

decoding the digital audio data to the decoded original audio signal using the

decoder(20) mentioned in claim 1.

4. A Method for playing back to the original audio signal ; comprising the steps of;

requesting and receiving the digital audio data encoded by MP3 or AAC via public communication network (or data network) that is wire or wireless channel; or receiving the digital audio data encoded by MP3 or AAC that is transmitted from station; and

storing the digital audio data into the memory(19) mentioned in claim 1; or decoding the digital audio data stored in the memory to the decoded original audio signal using the decoder(20) mentioned in claim 1.

5. The apparatus of claim 1 comprising;

Antenna and RF Block(14) for communication function of wireless mobile telephone;

Modem and Channel codec Block(16);

Processor Block(15) for Signal Processing and Control function;

Fixed or replaceable memory(19) for storing digital audio data;

Decoder(20) for reading digital audio data stored in the memory and decoding the data to the decoded original audio signal;

Interfacing means with PC for receiving the digital audio data from Internet and storing the digital audio data into the memory;

Interfacing means with public communication network for receiving of the digital audio data via wire or wireless public telephone network (or data network) and storing of the digital audio data into the memory;

User control means and keypad(17) for the call operation of wireless mobile terminal, the data storing operation, and the playback operation of the digital audio data;

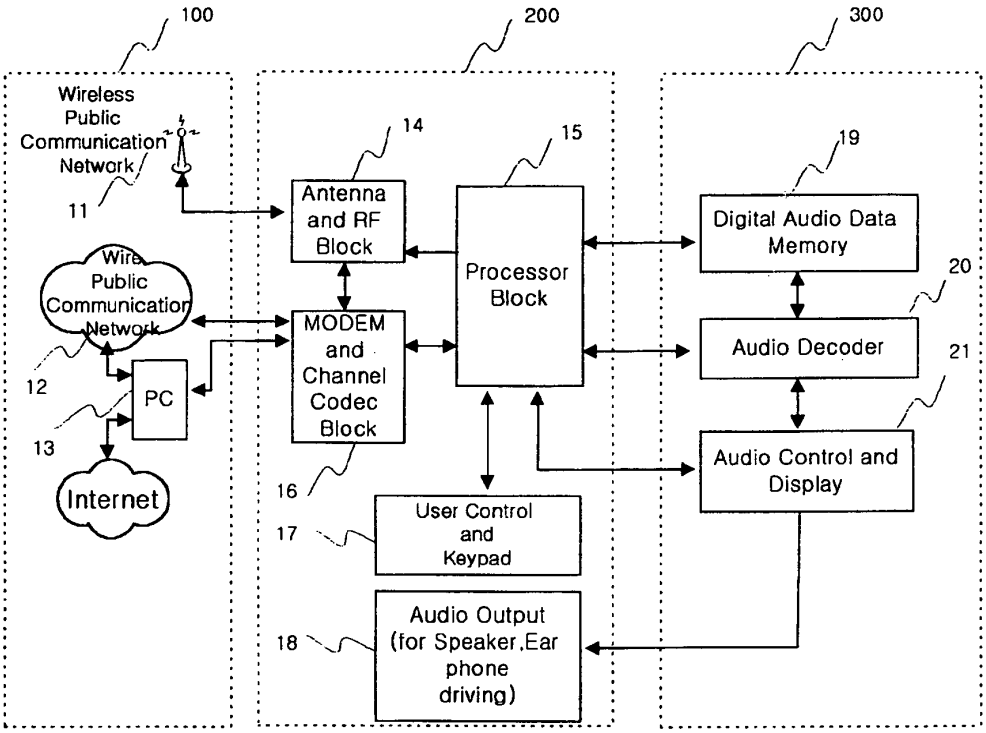
Audio control and display means(21) for control and display of wireless mobile terminal's call operation status and audio operation control status by keypad; and

Audio signal output means(18) for speaker or earphone to listen mobile terminal's voice and playback audio.

DRAWING

1 / 1

Figure 1



INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR99/00800

A. CLASSIFICATION OF SUBJECT MATTER

IPC7 H04B 1/40

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimun documentation searched (classification system followed by classification symbols)

IPC7 H04B 1/40. H04M 1/21

Documentation searched other than minimun documentation to the extent that such documents are included in the fileds searched

Electronic data base consulted during the intertnational search (name of data base and. where practicable. search trerms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document. with indication. where appropriate. of the relevant passages	Relevant to claim No.
X.P	KR 99-33726 A (JOON-SUNG. KIM) 15 MAY 1999. page 3 lines 11 - lines 48	1-5
X.P	KR 99-79660 A (DANAL CORP.) 5 NOVEMBER 1999. page3 lines10 - lines 39	1-5
A	US 5.577.190 A (AVID TECH. INC.) 19 NOVEMBER 1996. abstract	1

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

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Name and mailing address of the ISA/KR	Authorized officer
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FEE DETERMINATION	LW	68904	4/4/00
O.I.P.E. CLASSIFIER			
FORMALITY REVIEW	M.L.M.	71891	5-30-00
RESPONSE FORMALITY REVIEW			

INDEX OF CLAIMS

✓	Rejected	N	Non-elected
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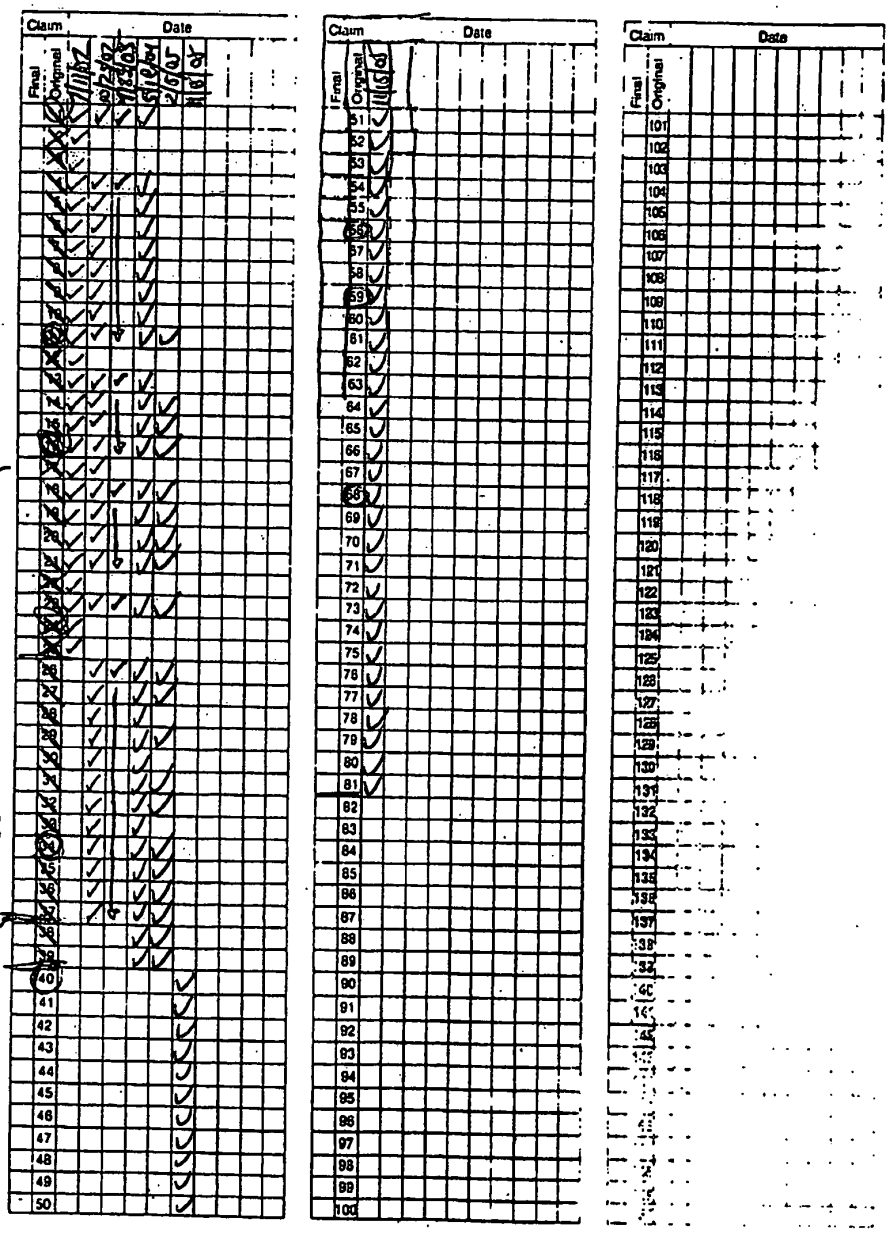
– (Through numeral)	Canceled	A	Appeal
÷	Restricted	O	Objected



If more than 150 claims or 10 actions staple additional sheet here

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SEARCHED

Class	Sub.	Date	Exmr.
455	412.1	7/10/02	ART
↓	414.1		
	556.1		
Updated 1/9' Expanded above search		4/23/03	ART
	update search	5/17/04	R.R.G.
455	3.01	5/17/04	R.R.G.
	3.03	5/17/04	R.R.G.
	3.04	5/17/04	R.R.G.
	410	5/17/04	R.R.G.
	411	5/17/04	R.R.G.
	414.2	5/17/04	R.R.G.
	414.3	5/17/04	R.R.G.
	517	5/17/04	R.R.G.
	41.2	5/17/04	R.R.G.
	556.2	5/17/04	R.R.G.
709	217	5/17/04	R.R.G.
	218	5/17/04	R.R.G.
	219	5/17/04	R.R.G.
Updated	search	2/8/05	R.R.G.
Updated	search	11/10/05	R.R.G.

INTERFERENCE SEARCHED

Class	Sub.	Date	Exmr.

SEARCH NOTES
(INCLUDING SEARCH STRATEGY)

	Date	Exmr.
Also performed various keyword searches. See search enclosed for details	7/11/02	ART
EAST image and keyword search in USPAT, US-PGPUB, DERWENT, EPO, JPO, IBM-TDB	5/17/04	R.R.G.
WIPO Database http://ep.espacenet.com	5/17/04	R.R.G.
EPO Database http://ep.espacenet.com	5/17/04	R.R.G.
IEEE Xplore http://ieeexplore.ieee.org/Xplore/DynWel.jsp	5/17/04	R.R.G.
Inventor names search in PALM, EPO and EAST	5/17/04	R.R.G.

(RIGHT OUTSIDE)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	4	"10173737"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/15 17:19
S1	13	((audio adj file) with (wireless or RF)) and Internet and (GUI or (graphical adj user adj interface)) and (@rlad<"20000328" or @ad<"200003828")	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/10/18 14:23
S2	4	(("20040002904") or ("20040002359") or ("20040006769") or ("20040005039")).PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2004/01/28 17:48
S3	1	gantt.xa. and (xm or satellite).as.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2004/05/17 07:41
S4	64	(xm near2 satellite).as.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2004/05/17 09:25
S5	55	((wireless or RF) same (download$3 with (audio or mp3 or music))) and (Internet or server or web) and ((graphical adj2 interface) or GUI) and brows$3	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/10/18 15:59
S6	11	(((wireless or RF) same (download$3 with (audio or mp3 or music))) and (Internet or server or web) and ((graphical adj2 interface) or GUI) and brows$3) and (@rlad<"20000328" or @ad<"20000328")	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/01/27 07:57

S7	36	(russell near2 white).in. or (kevin near2 imes).in.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2004/05/17 13:01
S8	41	gsm with "2.0 GHZ"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2004/05/17 14:19
S9	41	(gsm with "2.0 GHZ") and (@rlad<"20000328" or @ad<"200003828")	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/01/27 13:33
S10	2	"6247130".uref.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2004/05/17 15:59
S11	2	"6247130".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2004/05/17 15:59
S12	3	("5991399" | "6009410" | "6038595").PN.	USPAT	OR	ON	2004/05/17 15:59
S13	3	(("6587835") or ("6014569") or ("6247130")).PN.	USPAT; USOCR	OR	OFF	2004/05/18 08:40
S14	101	((music or audio or mp3 or wav) near3 play$3) with ((incoming adj2 (call or communication)) or (call near2 alert$3))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/01/27 09:03

S15	37	S14 and (@rlad<"20000328" or @ad<"20000328")	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/12 12:32
S16	3	(("20030008646") or ("6496692")).PN.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/01/27 08:15
S17	2	("6496692").URPN.	USPAT	OR	ON	2005/01/27 08:49
S18	80	("5414444" | "5461666" | "5479510" | "5481599" | "5483580" | "5483581" | "5485370" | "5486686" | "5487671" | "5490210" | "5490251" | "5499288" | "5510777" | "5513272" | "5517605" | "5526620" | "5530852" | "5533115" | "5534855" | "5537586" | "5542046" | "5544255" | "5544322" | "5548726" | "5550976" | "5551021" | "5572571" | "5583763" | "5598461" | "5606597" | "5608786" | "5612682" | "5613012" | "5623531" | "5661802" | "5687227" | "5689825" | "5727047" | "5732216" | "5796728" | "5799063" | "5828956" | "5835495" | "5842124" | "5884262" | "5915001" | "5926756" | "5930703" | "5933328" | "5940752" | "5940775" | "5948059" | "5952918" | "5953638" | "5999094" | "5999599" | "6002761" | "6018654" | "6018656" | "6035018" | "6035189" | "6058161" | "6073003" | "6088730" | "6091947" | "6094587" | "6101242" | "6122526" | "6137525" | "6144722" | "6167130" | "6167278" | "6179682" | "6219413" | "6222838" | "6226532" | "6229990" | "6243375" | "6256378" | "6366791").PN.	US-PGPUB; USPAT; USOCR	OR	ON	2005/01/27 08:51
S19	202	combin$6 with ((music or audio or mp3 or wav) near3 play$3) with (telephone or phone)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/01/27 09:09
S20	34	S19 and (@rlad<"20000328" or @ad<"20000328")	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/07 14:08

S21	85	(((music or audio or mp3 or wav) near3 play$3) with (telephone or phone)) same ((incoming adj2 (call or communication)) or (call near2 alert$3))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/01/27 09:23
S23	30	S21 and (@rlad<"20000328" or @ad<"20000328")	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/01/27 09:26
S24	4077	((music or audio or mp3 or wav) near3 play$3) with (telephone or phone)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/01/27 09:40
S25	4	S24 and ((stop$4 or paus$5 or alter$3) near3 (music or audio or mp3)) with ((incoming adj2 (call or communication)) or (call near2 alert$3))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/01/27 09:41
S26	1	S25 and (@rlad<"20000328" or @ad<"20000328")	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/15 15:50
S27	1	anvekar.in. and 455/560.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/01/27 09:34
S28	3877	((music or audio or mp3 or wav) near3 play$3) with ((portable or mobile or cellular or radio or wireless or handheld) adj3 (station or device or terminal or telephone or phone))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/01/27 09:40

S29	4	S28 and ((stop$4 or paus$5 or alter$3) near3 (music or audio or mp3)) with ((incoming adj2 (call or communication)) or (call near2 alert$3))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/01/27 09:41
S30	5	S28 and ((stop$4 or paus$5 or alter$3) near5 (music or audio or mp3)) with ((incoming adj2 (call or communication)) or (call near2 alert$3))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/01/27 09:43
S31	1	S30 and (@rlad<"20000328" or @ad<"20000328")	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/01/27 09:43
S32	34	S28 and ((stop$4 or paus$5 or alter$3) near5 (music or audio or mp3)) with (call or communication)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/01/27 10:40
S33	2	S32 and (@rlad<"20000328" or @ad<"20000328")	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/01/27 09:43
S34	1	("6510210").URPN.	USPAT	OR	ON	2005/01/27 10:01
S35	5	("5802467" | "5901366" | "5963624" | "6192340" | "6223029").PN.	US-PGPUB; USPAT; USOCR	OR	ON	2005/01/27 10:02
S36	34	S20 and (@rlad<"20000328" or @ad<"20000328")	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/01/27 10:37

S37	4631	((stop$4 or paus$5 or alter$3) near5 (music or audio or mp3)) and (@rlad<"20000328" or @ad<"20000328")	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/01/27 11:09
S38	1	S37 and 455/567.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/01/27 10:47
S39	2	("6167253").PN.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/01/27 10:57
S40	2	("6407750").PN.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/01/27 10:59
S41	6	(("6014569") or ("6496205") or ("6088730")).PN.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/01/27 11:02
S42	8056	((stop$4 or paus$5 or alter$3) with (music or audio or mp3)) and (@rlad<"20000328" or @ad<"20000328")	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/01/27 11:10
S43	183	((stop$4 or paus$5 or alter$3) with (music or audio or mp3) with call) and (@rlad<"20000328" or @ad<"20000328")	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/01/27 11:11

S44	102	(((stop$4 or paus$5 or alter$3) near5 (music or audio or mp3)) with call) and (@rlad<"20000328" or @ad<"20000328")	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/01/27 11:12
S45	3877	((music or audio or mp3 or wav) near3 play$3) with ((portable or mobile or cellular or radio or wireless or handheld) adj3 (station or device or terminal or telephone or phone))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/01/27 13:33
S46	29	S45 and (455/556.1-556.2.ccls.)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/01/27 13:57
S47	1	S46 and (@rlad<"20000328" or @ad<"20000328")	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/01/27 13:33
S48	1	itunes with (cellular adj2 (telephone or phone))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/10/18 14:24
S49	3	itunes with (((cellular or mobile or wireless or radio or portable) adj2 (telephone or phone or station or device or terminal or equipment)) or radiotelephone or PDA)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/10/18 16:00
S50	0	"ROKR E1"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/10/18 14:28

S51	4	white.in. and imes.in.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/10/18 14:35
S52	1	("RE34976").PN.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/10/18 14:35
S53	9	("RE34976").URPN.	USPAT	OR	ON	2005/10/18 14:37
S54	10	((plural$6 or multipl$7) near4 (audio or music or song) near5 (format or protocol)) with (((cellular or mobile or wireless or radio or portable) adj2 (telephone or phone or station or device or terminal or equipment)) or radiotelephone or PDA)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/07 10:11
S55	26	(log$3 with (web$5 or Internet)) with (audio or song or music) with (((cellular or mobile or wireless or radio or portable) adj2 (telephone or phone or station or device or terminal or equipment)) or radiotelephone or PDA)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/10/18 15:29
S56	3067532	"26" and (@rlad<"20000328" or @ad<"20000328")	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/10/18 15:29
S57	3	S55 and (@rlad<"20000328" or @ad<"20000328")	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/10/18 16:00
S58	2	"20020045438"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/10/18 15:46

S59	2	("6947728").PN.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/10/18 15:46
S60	0	("6947728").URPN.	USPAT	OR	ON	2005/10/18 15:47
S61	8	("20010049262" | "20020068610" | "5974333" | "6023700" | "6192340" | "6407325" | "6495747" | "6694012").PN.	US-PGPUB; USPAT; USOCR	OR	ON	2005/10/18 15:50
S62	2	("20020013784").PN.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/10/18 15:50
S63	357	((wireless or RF) same (download$3 with (audio or mp3 or music))) and (Internet or server or web) and brows$3	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/10/18 15:59
S64	332	S63 and (((cellular or mobile or wireless or radio or portable) adj2 (telephone or phone or station or device or terminal or equipment)) or radiotelephone or PDA)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/10/18 16:00
S65	71	S64 and (@rlad<"20000328" or @ad<"20000328")	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/10/18 16:07
S66	1	("6956833").PN.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/10/18 16:07
S67	10	("5128755" | "5537586" | "5761662" | "5848064" | "6198941" | "6314094" | "6363339" | "6389337" | "6615024" | "6697792").PN.	US-PGPUB; USPAT; USOCR	OR	ON	2005/10/18 17:12

S68	2	("6944475").PN.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/10/18 17:12
S69	697	(download$3 near4 (audio or music)) with (((cellular or mobile or wireless or radio or portable) adj2 (telephone or phone or station or device or terminal or equipment)) or radiotelephone or PDA)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/07 08:10
S70	65	((download$3 near4 (audio or music)) with (((cellular or mobile or wireless or radio or portable) adj2 (telephone or phone or station or device or terminal or equipment)) or radiotelephone or PDA)) same ((sign$3 or log$4 or access$3) near5 (Internet or server or website or webpage or (web adj2 (site or page))))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/07 08:56
S71	6	S70 and (@rlad<"20000328" or @ad<"20000328")	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/07 10:14
S72	2	("5914941").PN.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/11/07 08:23
S73	1	("2004/0078274").URPN.	USPAT	OR	ON	2005/11/07 08:34
S74	9	("5991399" | "6009410" | "6038595").PN. OR ("6247130").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2005/11/07 08:44
S75	66	(((cellular or mobile or wireless or radio or portable) adj2 (telephone or phone or station or device or terminal or equipment)) or radiotelephone or PDA) same ((receiv$5 or incoming) near3 (call or communication or message)) same ((stop$4 or paus$5 or alter$3) near5 (music or audio or mp3 or play$5))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/07 09:08

S76	24	S75 and (@rlad<"20000328" or @ad<"20000328")	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/07 09:08
S77	12	(((cellular or mobile or wireless or radio or portable) adj2 (telephone or phone or station or device or terminal or equipment)) or radiotelephone or PDA) and ((receiv$5 or incoming) near3 (call or communication or message)) and ((stop$4 or paus$5 or alter$3) near5 (music or audio or mp3 or play$5))	JPO	OR	ON	2005/11/07 09:08
S78	4	S77 and @pd<"20000328"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/07 09:32
S79	2	("20050197063").PN.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/11/07 09:34
S80	2	("20050027385").PN.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/11/07 09:36
S81	2	("20050054379").PN.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/11/07 09:36
S82	146	(stor$3 or sav$3) with ((plural$6 or multipl$7) near4 (((audio or music or song) near5 (format or protocol)) or MP3 or WAV or analog or digital or MIDI)) with (((cellular or mobile or wireless or radio or portable) adj2 (telephone or phone or station or device or terminal or equipment)) or radiotelephone or PDA)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/07 14:06

S83	63	S82 and (@rlad<"20000328" or @ad<"20000328")	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/08 14:44
S84	4	(stor$3 or sav$3) with ((plural$6 or multipl$7) near4 (((audio or music or song) near5 (format or protocol)) or (MP3 and (WAV or MIDI)))) with (((cellular or mobile or wireless or radio or portable) adj2 (telephone or phone or station or device or terminal or equipment)) or radiotelephone or PDA)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/07 14:18
S85	0	S84 and (@rlad<"20000328" or @ad<"20000328")	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/07 14:08
S86	9	(stor$3 or sav$3) with ((plural$6 or multipl$7) near4 (((audio or music or song) near5 (format or protocol)) or (MP3 or WAV or MIDI))) with (((cellular or mobile or wireless or radio or portable) adj2 (telephone or phone or station or device or terminal or equipment)) or radiotelephone or PDA)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/07 14:19
S87	0	S86 and (@rlad<"20000328" or @ad<"20000328")	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/07 14:11
S88	4	(stor$3 or sav$3) with (audio or music) with ((MP3 and WAV) or (WAV and MIDI) or (MP3 and MIDI)) with (((cellular or mobile or wireless or radio or portable) adj2 (telephone or phone or station or device or terminal or equipment)) or radiotelephone or PDA)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/07 14:14
S89	0	S88 and (@rlad<"20000328" or @ad<"20000328")	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/07 14:10

S90	14	((stor$3 or sav$3) with (audio or music) with ((MP3 and WAV) or (WAV and MIDI) or (MP3 and MIDI))) same (((cellular or mobile or wireless or radio or portable) adj2 (telephone or phone or station or device or terminal or equipment)) or radiotelephone or PDA)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/07 14:11
S91	0	S90 and (@rlad<"20000328" or @ad<"20000328")	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/07 14:12
S92	11	((stor$3 or sav$3) with ((plural$6 or multipl$7) near4 (((audio or music or song) near5 (format or protocol)) or (MP3 or WAV or MIDI)))) same (((cellular or mobile or wireless or radio or portable) adj2 (telephone or phone or station or device or terminal or equipment)) or radiotelephone or PDA)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/07 14:12
S93	1	S92 and (@rlad<"20000328" or @ad<"20000328")	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/07 14:13
S94	27	((stor$3 or sav$3) with (audio or music)) same ((MP3 and WAV) or (WAV and MIDI) or (MP3 and MIDI)) same (((cellular or mobile or wireless or radio or portable) adj2 (telephone or phone or station or device or terminal or equipment)) or radiotelephone or PDA)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/07 14:13
S95	0	S94 and (@rlad<"20000328" or @ad<"20000328")	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/07 14:15
S96	60	((stor$3 or sav$3) with (audio or music or song or track or file)) same ((MP3 and WAV) or (WAV and MIDI) or (MP3 and MIDI)) same (((cellular or mobile or wireless or radio or portable) adj2 (telephone or phone or station or device or terminal or equipment)) or radiotelephone or PDA)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/07 14:14

S97	3	S96 and (@rlad<"20000328" or @ad<"20000328")	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/07 14:20
S98	20	((stor$3 or sav$3) with (((plural$6 or multipl$7) near4 (((audio or music or song or track or file) near5 (format or protocol)) or (MP3 or WAV or MIDI))))) same (((cellular or mobile or wireless or radio or portable) adj2 (telephone or phone or station or device or terminal or equipment)) or radiotelephone or PDA)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/07 14:19
S99	1	S98 and (@rlad<"20000328" or @ad<"20000328")	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/07 14:45
S100	471	(wireless or mobile or cellular or portable) and (telephone or phone or terminal or station) and (music or audio) and (reproducing or play$3) and (MP3 OR WAV OR MIDI OR aac)	EPO; JPO; DERWENT	OR	ON	2005/11/07 14:43
S101	8	S100 and @PD<"20000328"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/09 08:34
S102	1	1999-151852.NRAN.	DERWENT	OR	ON	2005/11/07 14:40
S103	0	"0038340".fref.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/07 14:40
S104	5	"00/38340".fref.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/07 14:40
S105	4	("6496692").URPN.	USPAT	OR	ON	2005/11/07 14:41

S106	207	((wireless or mobile or cellular or portable or radio) adj2 (telephone or phone or terminal or station or device)) same ((music or audio) near3 (reproduc$5 or play$3)) same (MP3 or WAV or MIDI or AAC)	EPO; JPO; DERWENT	OR	ON	2005/11/07 14:46
S107	23	S106 and (@rlad<"20000328" or @ad<"20000328")	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/07 14:47
S108	1191	((wireless or mobile or cellular or portable or radio) adj2 (telephone or phone or terminal or station or device)) same ((music or audio) near3 (reproduc$5 or play$3)) same (MP3 or WAV or MIDI or AAC)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/09 08:34
S109	91	S108 and (@rlad<"20000328" or @ad<"20000328")	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/07 15:01
S110	4	"6407325".uref.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/07 15:02
S111	2	("6407325").PN.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/11/07 15:02
S112	7	("5459702" | "5912958" | "5963624" | "6084168" | "6167251" | "6192253" | "6192340").PN.	US-PGPUB; USPAT; USOCR	OR	ON	2005/11/07 15:02
S113	0	("2005/0054379").URPN.	USPAT	OR	ON	2005/11/07 15:35

S114	2	("5577190").PN.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/11/07 15:39
S115	0	("6845398").URPN.	USPAT	OR	ON	2005/11/07 16:01
S116	48	("4685133" | "5262875" | "5557541" | "5596420" | "5684716" | "5694334" | "5694455" | "5698802" | "5721956" | "5732216" | "5734119" | "5752032" | "5758293" | "5764961" | "5768527" | "5784649" | "5797043" | "5815634" | "5822524" | "5822537" | "5822553" | "5831664" | "5841979" | "5848422" | "5862235" | "5870710" | "5886276" | "5914941" | "5926624" | "5930493" | "5957985" | "5986692" | "6055566" | "6061802" | "6064379" | "6072521" | "6081843" | "6138221" | "6151634" | "6175822" | "6199076" | "6208804" | "6275896" | "6292834" | "6300880" | "6460076" | "6487663" | "6502194").PN.	US-PGPUB; USPAT; USOCR	OR	ON	2005/11/07 16:01
S117	9	("RE34976").URPN.	USPAT	OR	ON	2005/11/07 16:10
S121	2	("6721710").PN.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/11/08 10:19
S122	313	((wireless or mobile or cellular or portable or radio) adj2 (telephone or phone or terminal or station or device)) and ((music or audio) near3 (reproduc$5 or play$3))	JPO	OR	ON	2005/11/09 08:40
S123	43	S122 and @PD<"20000328"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/09 08:40
S124	21	((wireless or mobile or cellular or portable or radio) adj2 (telephone or phone or terminal or station or device)) and MP3	JPO	OR	ON	2005/11/09 08:40

S125	0	S124 and @PD<"20000328"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/09 08:40
S126	37	((wireless or mobile or cellular or portable or radio) adj2 (telephone or phone or terminal or station or device)) and MPEG	JPO	OR	ON	2005/11/09 08:40
S127	2	S126 and @PD<"20000328"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/09 08:41
S128	2247	((wireless or mobile or cellular or portable or radio) adj2 (telephone or phone or terminal or station or device)) and ((music or audio) near3 (reproduc$5 or play$3))	EPO; DERWENT; IBM_TDB	OR	ON	2005/11/09 08:41
S129	204	(((wireless or mobile or cellular or portable or radio) adj2 (telephone or phone or terminal or station or device)) same ((music or audio) near3 (reproduc$5 or play$3))) and MP3	EPO; DERWENT; IBM_TDB	OR	ON	2005/11/09 08:43
S130	2	S129 and @PD<"20000328"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/09 08:43
S131	1854	(((wireless or mobile or cellular or portable or radio) adj2 (telephone or phone or terminal or station or device)) same ((music or audio) near3 (reproduc$5 or play$3)))	EPO; DERWENT; IBM_TDB	OR	ON	2005/11/09 08:43
S132	107	S131 and @PD<"20000328"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/09 08:43
S133	3240	(((cellular or mobile or wireless or radio or portable) adj2 (telephone or phone or station or device or terminal or equipment)) or radiotelephone or PDA) same ((wav or mp3) near5 play$3)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/12 12:32

S134	11	(((cellular or mobile or wireless or radio or portable) adj2 (telephone or phone or station or device or terminal or equipment)) or radiotelephone or PDA) same ((wav and mp3) near5 play$3)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/15 15:46
S135	1	S134 and (@rlad<"20000328" or @ad<"20000328")	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/12 12:33
S136	193	S133 and (@rlad<"20000328" or @ad<"20000328")	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/12 12:33
S137	0	S136 and 455/567.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/12 12:33
S138	15	S136 and "455"/$.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/12 12:33
S139	58	(russell near2 white).in. or (kevin near2 imes).in.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/12 12:37
S140	2	(russell near2 white).in. and (kevin near2 imes).in.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/12 12:37

S141	5	(((cellular or mobile or wireless or radio or portable) adj2 (telephone or phone or station or device or terminal or equipment)) or radiotelephone or PDA) same ((online or (on adj line)) with broadcast) same ((incoming or receiv$5) near3 (call or message or communication))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/15 15:50
S142	60	(((cellular or mobile or wireless or radio or portable) adj2 (telephone or phone or station or device or terminal or equipment)) or radiotelephone or PDA) same ((online or (on adj line)) with broadcast)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/15 15:50
S143	60	S141 or S142	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/15 15:50
S144	11	S143 and (@rlad<"20000328" or @ad<"20000328")	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/11/15 17:19

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DATE: **June 2, 2005**

TO: **Examiner** FAX NO.: **703-872-9306**
Perez-Gutierrez, R.

FROM: **Russell W. White**
Reg. No. 45,691

RE: REPLY TO NOTICE OF NONCOMPLIANT AMENDMENT

U.S. APP NO.:	**09/537,812**
FILING DATE.:	**03/28/2000**
APPLICANT(S):	**Russell W. White, et al.**
ATTY DKT NO.:	**111111.1111**
TITLE:	**SYSTEM AND METHOD FOR COMMUNICATING SELECTED INFORMATION TO AN ELECTRONIC DEVICE**
NO. OF PAGES (INCL. COVER SHEET):	**14**

MESSAGE:

Attached please find:

- ☒ PTO/SB/21 Transmittal Form (1 pg.)
- ☒ Reply to Notice of Noncompliant Amendment (10 pgs.)
- ☒ Copy of Notice of Noncompliant Amendment (2 pgs.)

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PTO/SB/21 (09-04)
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(to be used for all correspondence after initial filing)

Total Number of Pages in This Submission: 13

Application Number	09/537,812
Filing Date	03/28/2000
First Named Inventor	Russell W. White
Art Unit	2686
Examiner Name	Perez-Gutierrez, R.
Attorney Docket Number	111111.1111

ENCLOSURES (Check all that apply)

- ☐ Fee Transmittal Form
  - ☐ Fee Attached
- ☐ Amendment/Reply
  - ☐ After Final
  - ☐ Affidavits/declaration(s)
- ☐ Extension of Time Request
- ☐ Express Abandonment Request
- ☐ Information Disclosure Statement
- ☐ Certified Copy of Priority Document(s)
- ☐ Reply to Missing Parts/ Incomplete Application
  - ☐ Reply to Missing Parts under 37 CFR 1.52 or 1.53
- ☐ Drawing(s)
- ☐ Licensing-related Papers
- ☐ Petition
- ☐ Petition to Convert to a Provisional Application
- ☐ Power of Attorney, Revocation Change of Correspondence Address
- ☐ Terminal Disclaimer
- ☐ Request for Refund
- ☐ CD, Number of CD(s) _____
  - ☐ Landscape Table on CD
- ☐ After Allowance Communication to TC
- ☐ Appeal Communication to Board of Appeals and Interferences
- ☐ Appeal Communication to TC (Appeal Notice, Brief, Reply Brief)
- ☐ Proprietary Information
- ☐ Status Letter
- ☐ Other Enclosure(s) (please identify below):

Reply to Notice of Noncompliant Amendment

Remarks

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

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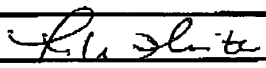
Signature			
Printed name	Russell W. White		
Date	6/2/05	Reg. No.	45,691

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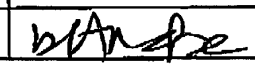
Typed or printed name		Date	6/2/2005

This collection of information is required by 37 CFR 1.6. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and1.14. This collection is estimated to 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, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: **Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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PATENT
CUSTOMER NO. 34456

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s):	**Russell W. White, et al.**		
Title:	**SYSTEM AND METHOD FOR COMMUNICATING SELECTED INFORMATION TO AN ELECTRONIC DEVICE**		
App. No.:	**09/537,812**	**Filed:**	**03/28/2000**
Examiner:	**Perez-Gutierrez, R.**	**Group Art Unit:**	**2686**
Atty. Dkt. No.:	**111111.1111**	**Confirmation No.:**	**4698**

MS AF
Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

REPLY TO NOTICE OF NON-COMPLIANT AMENDMENT

Dear Commissioner:

In response to the Notice of Non-Compliant Amendment document dated May 25, 2005, Applicant submits a replacement of the "Claim Amendments" section of the Reply to Final Office Action filed May 4, 2005.

Please amend the above-identified application as follows under 37 CFR § 1.121:

CERTIFICATE OF TRANSMISSION/MAILING
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Laura H. Andre
Typed or Printed Name

Signature

CLAIM AMENDMENTS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Canceled)

2. (Canceled)

3. (Canceled)

4. (Canceled)

5. (Canceled)

6. (Canceled)

7. (Canceled)

8. (Canceled)

9. (Canceled)

10. (Canceled)

11. (Canceled)

12. (Canceled)

13. (Canceled)

14. (Canceled)

15. (Canceled)

16. (Canceled)

17. (Canceled)

18. (Canceled)

19. (Canceled)

20. (Canceled)

21. (Canceled)

22. (Canceled)

23. (Canceled)

24. (Canceled)

25. (Canceled)

26. (Canceled)

27. (Canceled)

28. (Canceled)

29. (Canceled)

30. (Canceled)

31. (Canceled)

32. (Canceled)

33. (Canceled)

34. (Canceled)

35. (Canceled)

36. (Canceled)

37. (Canceled)

38. (Canceled)

39. (Canceled)

40. (New)A cellular communication device comprising:

a cellular communication module operable to receive an incoming telephonic communication;

a memory module operable to store plural audio formats of one or more audio files received via a cellular communication network independent of the incoming telephonic communication; and

a processor operable to alter a playing of at least one of the audio files in response to the incoming telephonic communication.

41. (New) The device of Claim 40, further comprising the processor operable to stop playing of the audio file in response to the incoming telephonic communication.

42. (New) The device of Claim 40 further comprising the processor operable to enable a user to alter the playing of the at least one audio file to answer the incoming telephonic communication.

43. (New) The device of Claim 40, further comprising the processor operable to enable sequential playing of plural audio files.

44. (New) The device of Claim 43, further comprising the processor operable to first play a WAV file and second play an MP3 file.

45. (New) The device of Claim 43, further comprising the processor operable to first play a MP3 file and second play a WAV file.

46. (New) The device of Claim 43, wherein the plural audio files include WAV files.

47. (New) The device of Claim 40, wherein at least one of the audio files includes a streaming audio formatted file.

48. (New) The device of Claim 40, further comprising the processor operable to pause playing of the audio file in response to the incoming telephonic communication.

49. (New) The device of Claim 48, further comprising the processor operable to enable listening of a telephone call upon a user answering the incoming telephonic communication.

50. (New) The device of Claim 40, further comprising a Bluetooth communication module operable to communicate an output to a wireless speaker, the output including the playing of the at least one of the audio files or the incoming telephonic communication.

51. (New) The device of Claim 50, further comprising a PDA.

52. (New) The device of Claim 40, further comprising a cellular telephone.

53. (New) The device of Claim 40, further comprising a WAP browser operable to access a list of downloadable preformatted audio files.

54. (New) The device of Claim 40, further comprising the communication module operable to receive an audio file selected via an Internet website accessed external to the cellular communication device.

55. (New) The device of Claim 53, further comprising a media player operable to play user selected media downloaded outside of a web browsing environment.

56. (New) A cellular communication device comprising:

a processor operable to play plural audio formats;

a communication module operable to receive an audio file selected by a user accessing an Internet website accessible external to the cellular communication device and operable to provide the user access to plural audio files via a user login page;

a memory operable to store plural formats of audio files; and

a Bluetooth communication module operable to communicate an in process playing of at least one of the audio files or a telephonic communication to a wireless speaker.

57. (New) The device of Claim 56, further comprising:

output means for providing an audio output;

input means for selecting the audio file; and

browsing means for viewing available preformatted audio and media files.

58. (New) The device of Claim 56, further comprising a removable memory device operable to store at least one audio file.

59. (New) A method for managing audio outputs for a cellular communication device comprising:

playing an audio file received via a cellular communication;

detecting an incoming cellular telephone call; and

altering playing of the audio file in response to detecting the cellular telephone call.

60. (New) The method of Claim 59, further comprising playing a second audio file stored within a memory of the cellular device.

61. (New) The method of Claim 60, further comprising:
receiving the second audio file independent of the incoming cellular telephone call;
storing the second audio file within the memory; and
playing the second audio file after detecting the incoming cellular telephone call.

62. (New) The method of Claim 59, further comprising playing a second audio file received via a non-wireless communication network.

63. (New) The method of Claim 59, further comprising:
enabling access to a streaming media link within a user interface of the cellular communication device;
detecting selection of the streaming media links; and
receiving the selected streaming media.

64. (New) The method of Claim 63, further comprising altering playing of the streaming media in response to receiving the cellular telephone call.

65. (New) The method of Claim 63, further comprising enabling access to streaming audio.

66. (New) The method of Claim 63, further comprising enabling access to a broadcast video.

67. (New) The method of Claim 64, wherein the streaming media comprises streaming audio.

68. (New) A wireless communication system comprising:

an Internet website provided in association with a cellular communication device operable to receive and play an audio file selected by a user accessing the Internet website external to the cellular communication device;

a wireless communication network operable to communicate the audio file to the cellular communication device identified through a user logging into the Internet website; and

a digital engine operable to determine availability of the cellular communication device and to communicate the audio file to the cellular communication device.

69. (New) The system of Claim 68, further comprising the Internet website operable to present a user login page in association with identifying the cellular communication device.

70. (New) The system of Claim 69, further comprising the Internet website operable to provide access to downloadable software operable to be communicated to the cellular communication device.

71. (New) The system of Claim 68, further comprising the cellular communication device operable to alter playing of the audio file in response to receiving a telephone communication communicated via the wireless communication network.

72. (New) The system of Claim 68, further comprising the Internet website presenting a link to a selectable preformatted audio file operable to be communicated to the identified cellular communication device.

73. (New) The system of Claim 72, wherein the preformatted audio files may be categorized within the Internet website by at least two of:

genre;

artist;

most popular;

newest;

most viewed; and

favorites.

74. (New) The system of Claim 68, further comprising the digital engine operable to enable access to streaming audio information.

75. (New) The system of Claim 74, further comprising the digital engine operable to provide links to streaming audio accessible by the cellular communication device.

76. (New) The system of Claim 69, further comprising the digital engine operable to communication the audio file to the wherein the audio file may be communicated to the wireless communication device independent of a user being logged into the Internet website.

77. (New) The system of Claim 69, further comprising the digital engine operable to enable access to a WAP enabled Internet website operable to initiate downloading of the audio file via the cellular communication network.

78. (New) The system of Claim 68, further comprising the digital engine operable to provide access to a broadcast.

79. (New) The system of Claim 78, further comprising the digital engine operable to provide access to an on-line video broadcast.

80. (New) The system of Claim 78, further comprising the digital engine operable to provide access to an on-line radio broadcast.

81. (New) The system of Claim 78, wherein the cellular communication device is operable to alter playing of an accessed broadcast in response to an incoming cellular telephone call.

REMARKS

Claims 11, 14-16, 18-21, 23, 26, 27, 29, 31, 32, and 34-39 have been canceled without prejudice or disclaimer.

Applicants have added new claims 40-81.

Applicants respectfully submit that the amendment of May 4, 2005 is now compliant. Applicants respectfully submit that the present application is now in condition for allowance. Accordingly, the Examiner is requested to issue a Notice of Allowance for all pending claims. If, for any reason, the Office is unable to allow the Application on the next Office Action, and believes a telephone interview would be helpful, the Examiner is respectfully requested to contact the undersigned attorney or agent. The Commissioner is hereby authorized to charge any fees, which may be required, or credit any overpayment, to Deposit Account Number 50-2469.

Respectfully submitted,

6/2/05
Date

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/537,812	03/28/2000	Russell W. White	111111.1111	4698

7590 05/25/2005

Russell W White
10704 Redmond
Austin, TX 78739

EXAMINER	
ART UNIT	PAPER NUMBER

DATE MAILED: 05/25/2005

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

PTO-90C (Rev. 10/03)

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UNITED STATES PATENT AND TRADEMARK OFFICE
P.O. BOX 1450
ALEXANDRIA, VA 22313-1450
www.uspto.gov

Notice of Non-Compliant Amendment (37 CFR 1.121)

The amendment document filed on 9/5/05 is considered non-compliant because it has failed to meet the requirements of 37 CFR 1.121. In order for the amendment document to be compliant, correction of the following item(s) is required. Only the corrected section of the non-compliant amendment document must be resubmitted (in its entirety), e.g., the entire "Amendments to the claims" section of applicant's amendment document must be re-submitted. 37 CFR 1.121(h).

THE FOLLOWING CHECKED (X) ITEM(S) CAUSE THE AMENDMENT DOCUMENT TO BE NON-COMPLIANT:

- ☐ 1. Amendments to the specification:
  - ☐ A. Amended paragraph(s) do not include markings.
  - ☐ B. New paragraph(s) should not be underlined.
  - ☐ C. Other _____
- ☐ 2. Abstract:
  - ☐ A. Not presented on a separate sheet. 37 CFR 1.72.
  - ☐ B. Other _____
- ☐ 3. Amendments to the drawings: _____
- ☒ 4. Amendments to the claims:
  - ☒ A. A complete listing of all of the claims is not present.
  - ☐ B. The listing of claims does not include the text of all pending claims (including withdrawn claims)
  - ☒ C. Each claim has not been provided with the proper status identifier, and as such, the individual status of each claim cannot be identified. Note: the status of every claim must be indicated after its claim number by using one of the following 7 status identifiers: (Original), (Currently amended), (Canceled), (Withdrawn), (Previously presented), (New) and (Not entered).
  - ☐ D. The claims of this amendment paper have not been presented in ascending numerical order.
  - ☐ E. Other: _____

For further explanation of the amendment format required by 37 CFR 1.121, see MPEP Sec. 714 and the USPTO website at http://www.uspto.gov/web/offices/pac/dapp/opla/preognotice/officeflver.pdf.

If the non-compliant amendment is a **PRELIMINARY AMENDMENT**, applicant is given **ONE MONTH** from the mail date of this letter to supply the corrected section which complies with 37 CFR 1.121. Failure to comply with 37 CFR 1.121 will result in non-entry of the preliminary amendment and examination on the merits will commence without consideration of the proposed changes in the preliminary amendment(s). This notice is not an action under 35 U.S.C. 132, and this **ONE MONTH** time limit **is not extendable**.

If the non-compliant amendment is a reply to a **NON-FINAL OFFICE ACTION** (including a submission for an RCE), and since the amendment appears to be a *bona fide* attempt to be a reply (37 CFR 1.135(c)), applicant is given a **TIME PERIOD** of **ONE MONTH** from the mailing of this notice within which to re-submit the corrected section which complies with 37 CFR 1.121 in order to avoid abandonment. **EXTENSIONS OF THIS TIME PERIOD ARE AVAILABLE UNDER 37 CFR 1.136(a).**

If the amendment is a reply to a **FINAL REJECTION**, this form may be an attachment to an Advisory Action. The period for response to a final rejection continues to run from the date set in the final rejection, and is not affected by the non-compliant status of the amendment.

LaShawn Mays — Legal Instruments Examiner (LIE)

571-272-2997 — Telephone No.

Rev. 6/04

BEST AVAILABLE COPY

PATENT APPLICATION FEE DETERMINATION RECORD

Effective October 1, 2003

Application or Docket Number: 09/531812

CLAIMS AS FILED - PART I

	(Column 1)	(Column 2)
TOTAL CLAIMS		
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	minus 20=	*
INDEPENDENT CLAIMS	minus 3 =	*
MULTIPLE DEPENDENT CLAIM PRESENT		☐

SMALL ENTITY TYPE ☐			OTHER THAN SMALL ENTITY	
RATE	FEE	OR	RATE	FEE
BASIC FEE	375.00	OR	BASIC FEE	750.00
X$ 9=		OR	X$18=	
X43=		OR	X86=	
+140=		OR	+280=	
TOTAL		OR	TOTAL	

* If the difference in column 1 is less than zero, enter "0" in column 2

CLAIMS AS AMENDED - PART II

9/1/04

AMENDMENT A	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	* 20	Minus	** 25	=
Independent	* 3	Minus	*** 4	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

SMALL ENTITY			OTHER THAN SMALL ENTITY	
RATE	ADDITIONAL FEE	OR	RATE	ADDITIONAL FEE
X$ 9=		OR	X$18=	
X43=		OR	X86=	
+140=		OR	+280=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

6/2/05

AMENDMENT B	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	* 42	Minus	** 25	= 16
Independent	* 4	Minus	*** 4	= 0
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

RATE	ADDITIONAL FEE	OR	RATE	ADDITIONAL FEE
X$ 9=		OR	X$18=	900.00
X43=		OR	X86=	
+140=		OR	+280=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

AMENDMENT C	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

RATE	ADDITIONAL FEE	OR	RATE	ADDITIONAL FEE
X$ 9=		OR	X$18=	
X43=		OR	X86=	
+140=		OR	+280=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. 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.

PATENT
CUSTOMER NO. 34456

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s):	Russell W. White, et al.		
Title:	SYSTEM AND METHOD FOR COMMUNICATING SELECTED INFORMATION TO AN ELECTRONIC DEVICE		
App. No.:	09/537,812	**Filed:**	03/28/2000
Examiner:	Perez-Gutierrez, R.	**Group Art Unit:**	2686
Atty. Dkt. No.:	111111.1111	**Confirmation No.:**	4698

MS AF
Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

REPLY TO NOTICE OF NON-COMPLIANT AMENDMENT

Dear Commissioner:

In response to the Notice of Non-Compliant Amendment document dated May 25, 2005, Applicant submits a replacement of the "Claim Amendments" section of the Reply to Final Office Action filed May 4, 2005.

Please amend the above-identified application as follows under 37 CFR § 1.121:

06/07/2005 LBADIE 00000002 502469 09537812
01 FC:1202 800.00 DA

CERTIFICATE OF TRANSMISSION/MAILING
I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to the Commissioner for Patents on 6-2-2005.

Laura H. Andre
Typed or Printed Name

Signature

REMARKS

Claims 11, 14-16, 18-21, 23, 26, 27, 29, 31, 32, and 34-39 have been canceled without prejudice or disclaimer.

Applicants have added new claims 40-81.

Applicants respectfully submit that the amendment of May 4, 2005 is now compliant. Applicants respectfully submit that the present application is now in condition for allowance. Accordingly, the Examiner is requested to issue a Notice of Allowance for all pending claims. If, for any reason, the Office is unable to allow the Application on the next Office Action, and believes a telephone interview would be helpful, the Examiner is respectfully requested to contact the undersigned attorney or agent. The Commissioner is hereby authorized to charge any fees, which may be required, or credit any overpayment, to Deposit Account Number 50-2469.

Respectfully submitted,

6/2/05
Date

Russell W. White; Reg. No. 45,691
Attorney for Applicant
TOLER, LARSON & ABEL, L.L.P.
5000 Plaza On The Lake, Suite 265
Austin, Texas 78746
(512) 327-5515 (phone)
(512) 327-5452 (fax)

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.
09/537,812	03/28/2000	Russell W. White	111111.1111	4698

7590 05/25/2005

EXAMINER	

Russell W White
10704 Redmond
Austin, TX 78739

ART UNIT	PAPER NUMBER

DATE MAILED: 05/25/2005

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

PTO-90C (Rev. 10/03)

UNITED STATES PATENT AND TRADEMARK OFFICE

09/537812

COMMISSIONER FOR PATENTS
UNITED STATES PATENT AND TRADEMARK OFFICE
P.O. BOX 1450
ALEXANDRIA, VA 22313-1450
www.uspto.gov

Notice of Non-Compliant Amendment (37 CFR 1.121)

The amendment document filed on 5/5/05 is considered non-compliant because it has failed to meet the requirements of 37 CFR 1.121. In order for the amendment document to be compliant, correction of the following item(s) is required. **Only the corrected section of the non-compliant amendment document must be resubmitted (in its entirety), e.g., the entire "Amendments to the claims" section of applicant's amendment document must be re-submitted.** 37 CFR 1.121(h).

THE FOLLOWING CHECKED (X) ITEM(S) CAUSE THE AMENDMENT DOCUMENT TO BE NON-COMPLIANT:

☐ 1. Amendments to the specification:
- ☐ A. Amended paragraph(s) do not include markings.
- ☐ B. New paragraph(s) should not be underlined.
- ☐ C. Other_____

☐ 2. Abstract:
- ☐ A. Not presented on a separate sheet. 37 CFR 1.72.
- ☐ B. Other_____

☐ 3. Amendments to the drawings: _____

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For further explanation of the amendment format required by 37 CFR 1.121, see MPEP Sec. 714 and the USPTO website at http://www.uspto.gov/web/offices/pac/dapp/opla/preognotice/officeflyer.pdf .

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If the non-compliant amendment is a reply to a **NON-FINAL OFFICE ACTION (including a submission for an RCE)**, and since the amendment appears to be a *bona fide* attempt to be a reply (37 CFR 1.135(c)), applicant is given a TIME PERIOD of ONE MONTH from the mailing of this notice within which to re-submit the corrected section which complies with 37 CFR 1.121 in order to avoid abandonment. **EXTENSIONS OF THIS TIME PERIOD ARE AVAILABLE UNDER 37 CFR 1.136(a).**

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LaShawn Mark — Legal Instruments Examiner (LIE)

571-272-2997 — Telephone No.

Rev. 6/04

05-06-05

RCE ZIW 2686 $

PTO/SB/30 (09-03)
Approved for use through 07/31/2006. 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	09/537,812
Filing Date	March 28, 2000
First Named Inventor	Russell W. White
Art Unit	2686
Examiner Name	Examiner: Perez-Gutierrez, R.
Attorney Docket Number	111111.1111

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 Rely Brief previously filed on _____

      ii. ☐ Other _____

   b. ☑ Enclosed

      i. ☑ Amendment/Reply

      ii. ☐ Affidavit(s)/ Declaration(s)

      iii. ☐ Information Disclosure Statement (IDS)

      iv. ☑ Other Transmittal Letter, Return Postcard

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, or credit any overpayments, to Deposit Account No. _____

      i. ☐ RCE fee required under 37 CFR 1.17(e)

      ii. ☐ Extension of time fee (37 CFR 1.136 and 1.17)

      iii. ☐ Other _____

   b. ☑ Check in the amount of $ 395.00 enclosed

   c. ☐ Payment by credit card (Form PTO-2038 enclosed)

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

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

Name (Print/Type)	Kevin R. Imes	Registration No. (Attorney/Agent)	44,795
Signature		Date	May 4, 2005

CERTIFICATE OF MAILING OR TRANSMISSION

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop RCE, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450 or facsimile transmitted to the U.S. Patent and Trademark Office on the date shown below.

Name (Print/Type)	Kevin R. Imes		
Signature		Date	May 5, 2005

This collection of information is required by 37 CFR 1.114. 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: Mail Stop RCE, 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.

05/09/2005 DEMMANU1 00000034 09537812

01 FC:2801 395.00 OP

PATENT

CERTIFICATE OF MAILING
I hereby certify on this the 4th day of May, 2005, that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop RCE, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450.

Kevin R. Imes

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

Applicant:	White et al	:	Paper No.:	
Serial No.:	09/537,812	:	Group No.:	2686
Filed:	March 28, 2000	:	Examiner:	Perez-Gutierrez, R.
For:	SYSTEM AND METHOD FOR COMMUNICATING SELECTED INFORMATION TO AN ELECTRONIC DEVICE			

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

TRANSMITTAL LETTER

Dear Sir or Madame:

Transmitted herewith for filing in the above-identified application for patent are the following documents:

1. Request for Continued Examination Transmittal;
2. Amendment/Reply to Office Action (15 pgs);
3. Check #1593 for a fee of $395.00; and
4. Confirmation Postcard. Please file-stamp and return.

Please forward any overpayment or request for additional payments to the address below.

Respectfully Submitted,
Russell White

By
Kevin R. Imes
Reg. No. 44,795

Kevin R. Imes
2001 So. Mopac #624
Austin, Texas 78746
Telephone: (512) 773-2900
Facsimile: (512) 342-8713

PATENT

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I hereby certify on this the 4th day of May, 2005, that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop RCE, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450.

Kevin R. Imes

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For:	SYSTEM AND METHOD FOR COMMUNICATING SELECTED INFORMATION TO AN ELECTRONIC DEVICE			

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

Dear Sir or Madame:

This is a response to an Final Office Action mailed Febraury 7, 2005 by the United States Patent and Trademark Office (the Office). Applicants request reconsideration of the above-identified application in view of the remarks presented herein.

Amendments of the Claims begin on page 3 of this correspondence.

Remarks begin on page 13 of this correspondence.

Conclusions begin on page 16 of this correspondence.

IN THE CLAIMS

Please amend the claims as follows. Please cancel pending Claims 11, 14-16, 18-21, 23, 26, 27, 29, 31, 32, and 34-39 without prejudice.

Please amend the application to add Claims 40-81 as follows:

1. (Canceled)

2. (Canceled)

3. (Canceled)

4. (Canceled)

5. (Canceled)

6. (Canceled)

7. (Canceled)

8. (Canceled)

9. (Canceled)

10. (Canceled)

11. (Canceled)

12. (Canceled)

13. (Canceled)

14. (Canceled)

15. (Canceled)

16. (Canceled)

17. (Canceled)