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(12) **United States Patent Woolfork**

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(54) **WIRELESS DIGITAL AUDIO SYSTEM**

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6,678,892 B1 1/2004 Lavelle et al.
6,781,977 B1 * 8/2004 Li 370/335
6,982,132 B1 1/2006 Goldner
7,505,823 B1 3/2009 Bartlett et al.

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

(Continued)

FOREIGN PATENT DOCUMENTS

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GB 2252013 A 7/1992

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(Continued)

(65) **Prior Publication Data**

OTHER PUBLICATIONS

US 2010/0014698 A1 Jan. 21, 2010

Microsoft Computer Dictionary definition for Code Division Multiplex Access, copyright 2002.*

Related U.S. Application Data

(Continued)

(63) Continuation of application No. 12/144,729, filed on Jul. 12, 2008, now Pat. No. 7,684,885, which is a continuation of application No. 10/648,012, filed on Aug. 26, 2003, now Pat. No. 7,412,294.

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(51) **Int. Cl.**
G06F 17/00 (2006.01)

(57) **ABSTRACT**

(52) **U.S. Cl.** **700/94**

(58) **Field of Classification Search** None
See application file for complete search history.

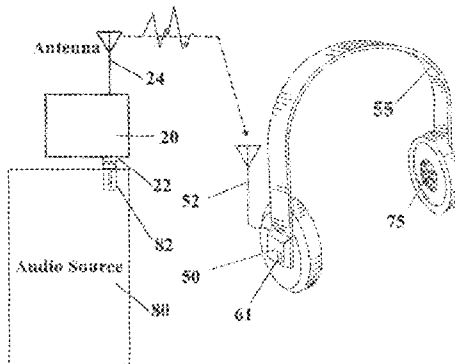
A wireless digital audio system includes a portable audio source with a digital audio transmitter operatively coupled thereto and an audio receiver operatively coupled to a headphone set. The audio receiver is configured for digital wireless communication with the audio transmitter. The digital audio receiver utilizes fuzzy logic to optimize digital signal processing. Each of the digital audio transmitter and receiver is configured for code division multiple access (CDMA) communication. The wireless digital audio system allows private audio enjoyment without interference from other users of independent wireless digital transmitters and receivers sharing the same space.

(56) **References Cited**

U.S. PATENT DOCUMENTS

- 5,491,839 A 2/1996 Schotz
- 5,668,880 A 9/1997 Alajajian
- 5,721,783 A 2/1998 Anderson
- 5,771,441 A * 6/1998 Altstatt 455/66.1
- 5,781,542 A 7/1998 Tanaka
- 5,790,595 A 8/1998 Benthin
- 5,946,343 A 8/1999 Schotz
- 6,115,478 A 9/2000 Schneider
- 6,236,862 B1 5/2001 Erten et al.
- 6,342,844 B1 1/2002 Rozin
- 6,418,558 B1 7/2002 Roberts

13 Claims, 3 Drawing Sheets



U.S. PATENT DOCUMENTS

2003/0045235 A1 3/2003 Mooney
2004/0223622 A1 11/2004 Lindemann

FOREIGN PATENT DOCUMENTS

WO WO0076272 A1 12/2000
WO WO0133836 A1 5/2001

OTHER PUBLICATIONS

American National Standard for Methods of Measurement of Compatibility Between Wireless Communication Devices and Hearing Aids—ANSI C63. 19-2001.

A Conferencing Spread Spectrum Radio, KM Lye, TT Tjhung, KC Chua, TC Pek, WH Yung, WP Goh, YP Chia, WK Loh, FL Ma, KM Low, 1994.

Specification of the Bluetooth System, Version 1.0 B, pp. 17-27, 4144, 81-86, 143-147, Nov. 20, 1999.

* cited by examiner

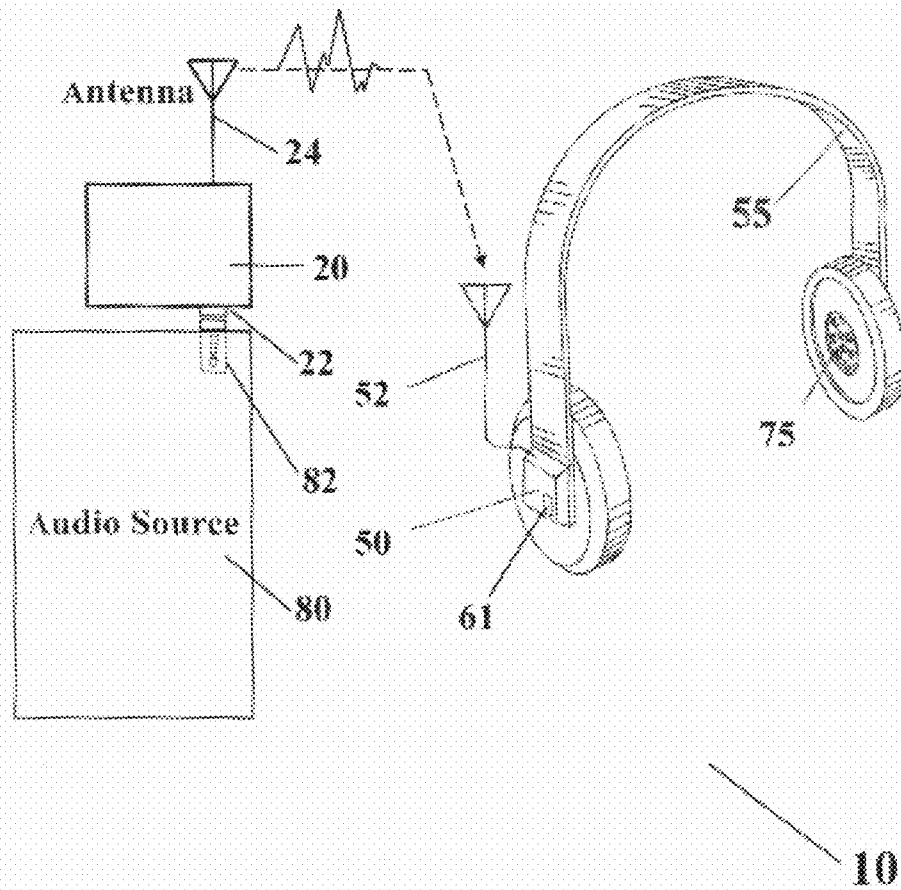


FIG. 1

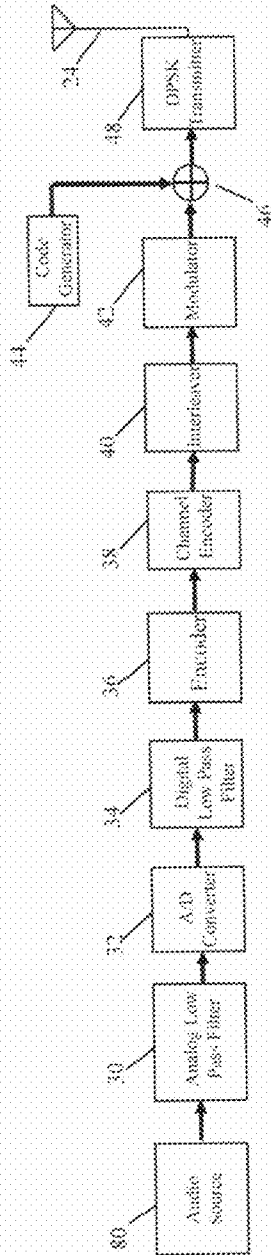


FIG. 2

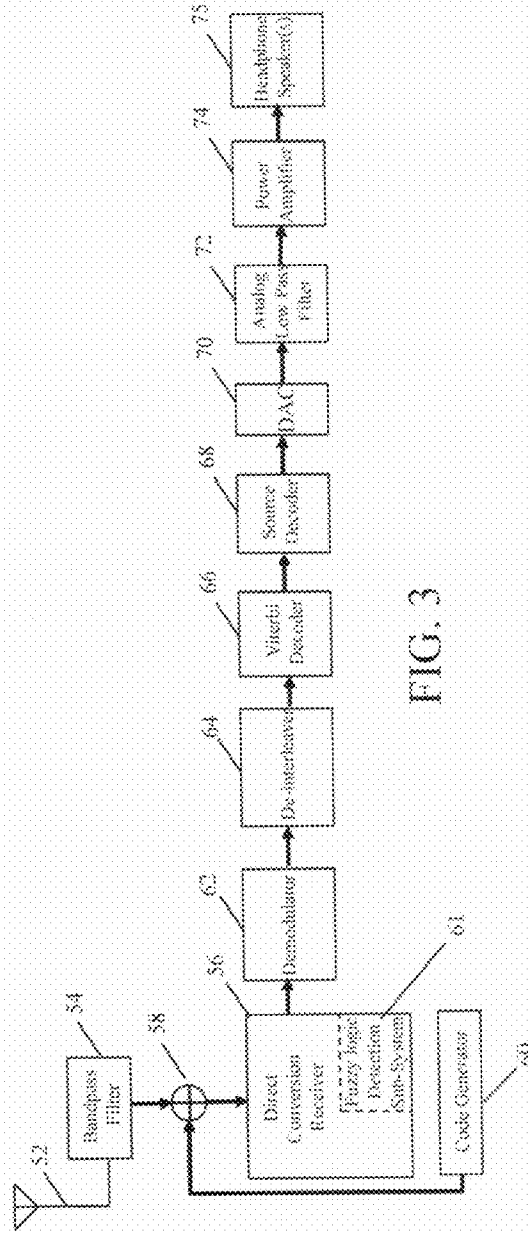


FIG. 3

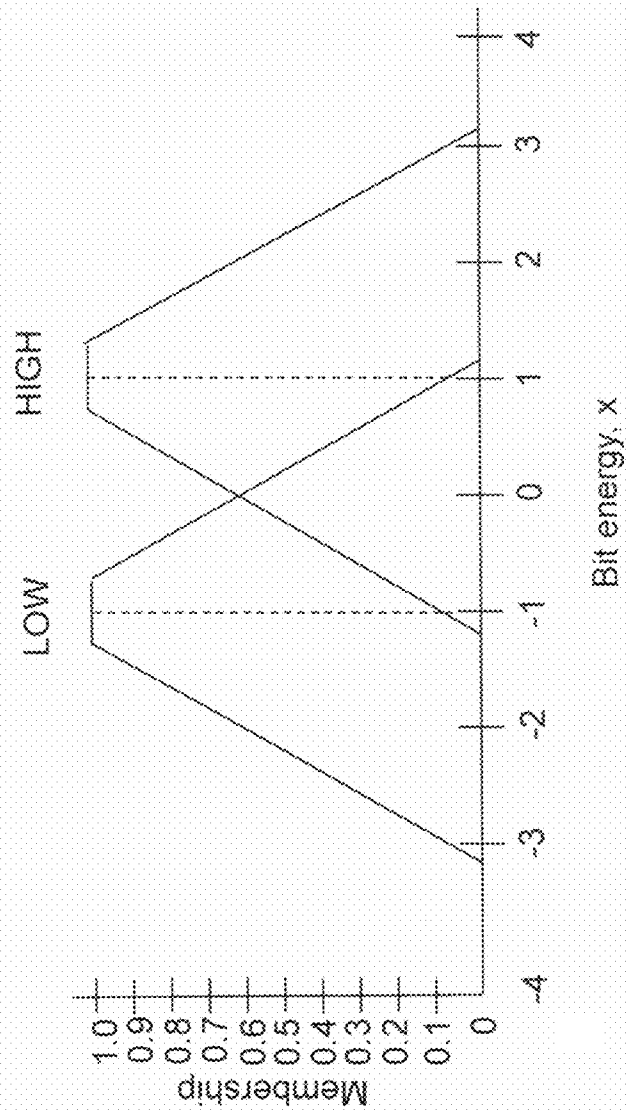


Fig. 4

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