



US007865258B2

(12) **United States Patent Woolfork**

(10) **Patent No.:** US 7,865,258 B2  
(45) **Date of Patent:** \*Jan. 4, 2011

(54) **WIRELESS DIGITAL AUDIO SYSTEM**

(76) Inventor: **C. Earl Woolfork**, 500 Santa Paula Ave., Pasadena, CA (US) 91107

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

(21) Appl. No.: **12/570,343**

GB 2252013 A 7/1992

(22) Filed: **Sep. 30, 2009**

(Continued)

(65) **Prior Publication Data**

OTHER PUBLICATIONS

US 2010/0014698 A1 Jan. 21, 2010

**Related U.S. Application Data**

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

(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.

(Continued)

*Primary Examiner*—Andrew C Flanders  
(74) *Attorney, Agent, or Firm*—Megan E. Lyman

(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.

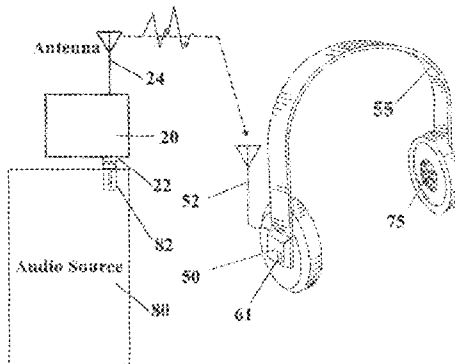
A wireless digital audio system includes a portable audio source with a digital audio transmitter operatively coupled thereto and an audio receiver operatively coupled to a headphone set. The audio receiver is configured for digital wireless communication with the audio transmitter. The digital audio 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

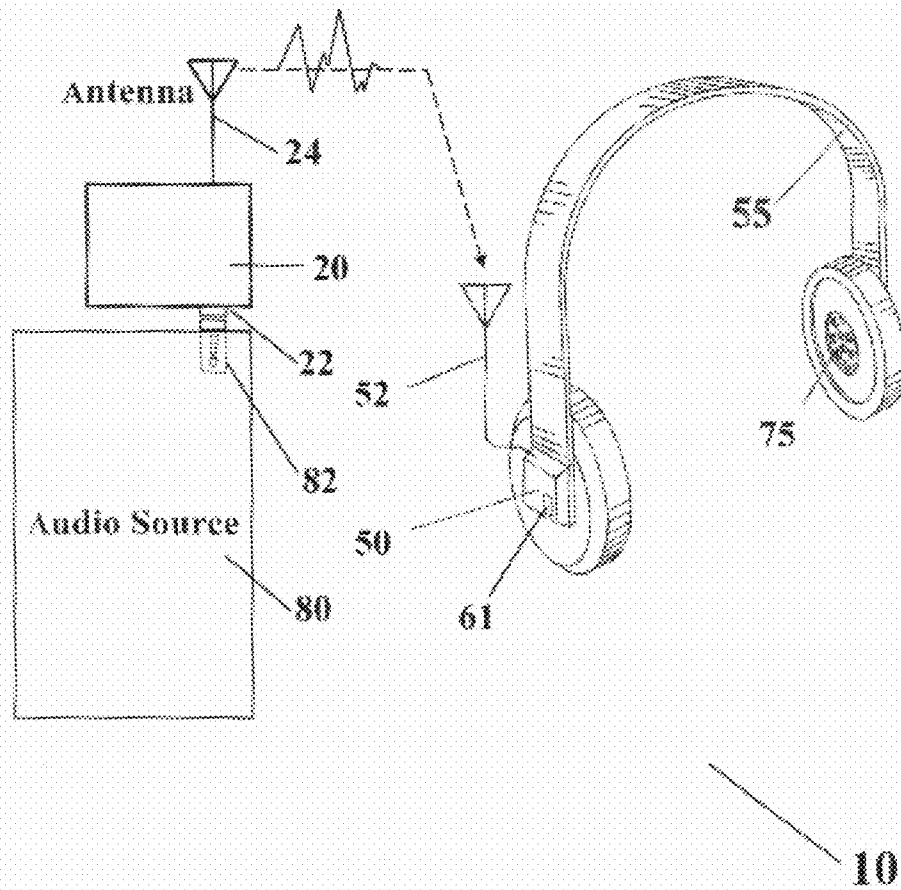


FIG.1

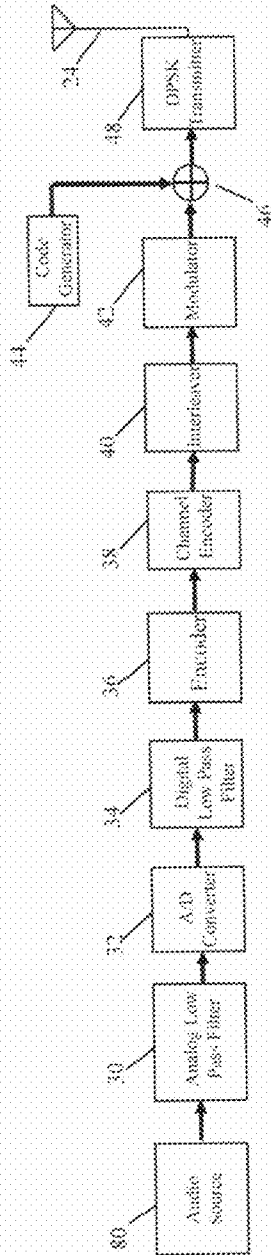


FIG. 2

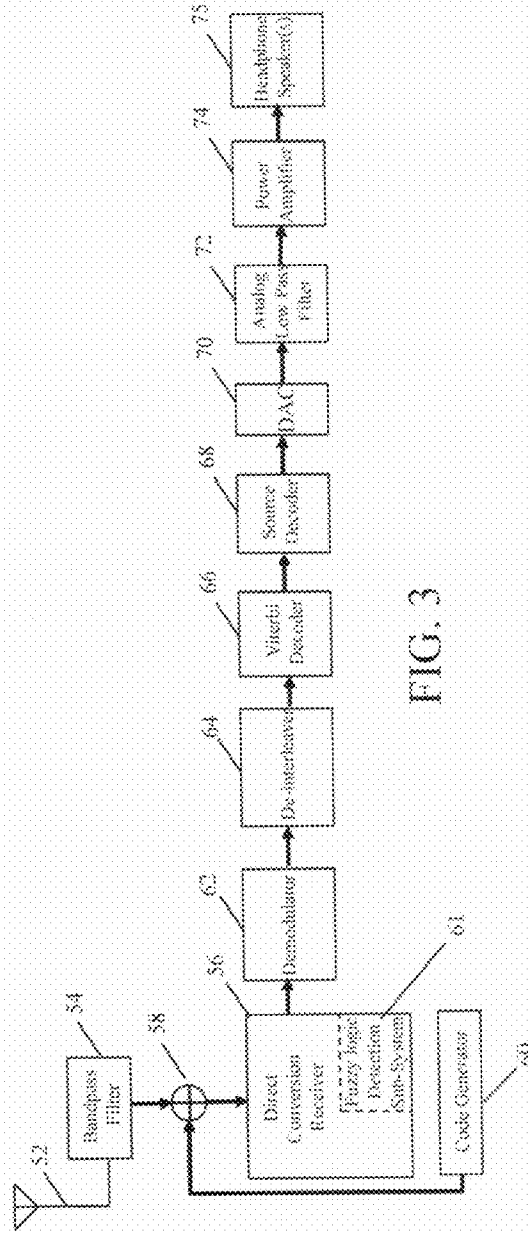


FIG. 3

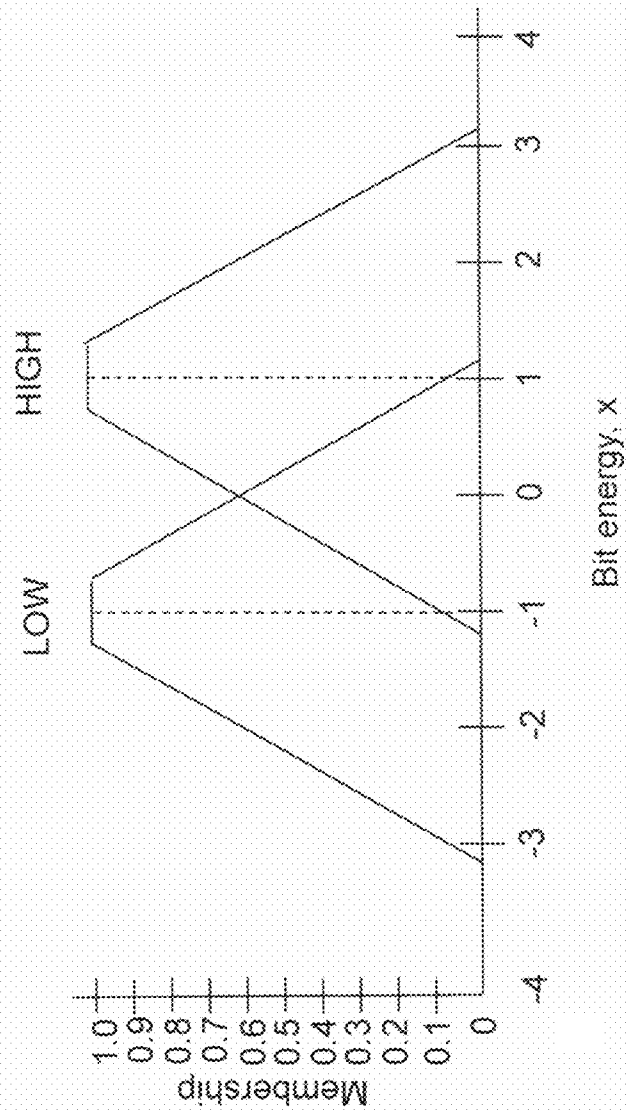


Fig. 4

# Explore Litigation Insights

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

## Real-Time Litigation Alerts



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

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

## Advanced Docket Research



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

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

## Analytics At Your Fingertips



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

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

## API

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

## LAW FIRMS

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

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

## FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

## E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.