



(12) **United States Patent**  
**Woolfork**

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(54) **WIRELESS DIGITAL AUDIO MUSIC SYSTEM**

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(\* ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 205 days.

This patent is subject to a terminal disclaimer.

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(65) **Prior Publication Data**

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**Related U.S. Application Data**

(63) Continuation of application No. 13/356,949, filed on Jan. 24, 2012, now Pat. No. 9,107,000, which is a continuation of application No. 12/940,747, filed on Nov. 5, 2010, now Pat. No. 8,131,391, which is a continuation of application No. 12/570,343, filed on Sep. 30, 2009, now Pat. No. 7,865,258, which is a 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, which is a continuation-in-part of application No. 10/027,391, filed on Dec. 21, 2001, now abandoned.

(51) **Int. Cl.**

**G06F 17/00** (2006.01)  
**H04R 1/10** (2006.01)  
**H04R 5/033** (2006.01)  
**H04M 1/60** (2006.01)  
**H04B 1/7097** (2011.01)  
**H04H 20/61** (2008.01)

(52) **U.S. Cl.**

CPC ..... **H04R 1/1083** (2013.01); **H04B 1/7097** (2013.01); **H04H 20/61** (2013.01); **H04M 1/6066** (2013.01); **H04R 5/033** (2013.01); **H04R 2420/07** (2013.01)

(58) **Field of Classification Search**

CPC ..... H04R 2420/07; H04R 5/04; H04R 5/033; H04B 1/086; H04B 5/06; H04M 1/6041; H04M 1/6066

See application file for complete search history.

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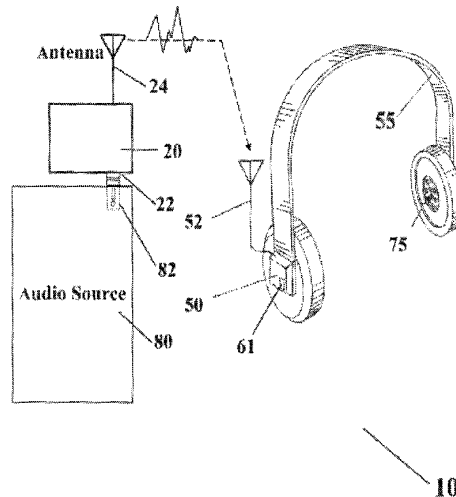
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(57) **ABSTRACT**

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 head-phone 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.

**17 Claims, 3 Drawing Sheets**



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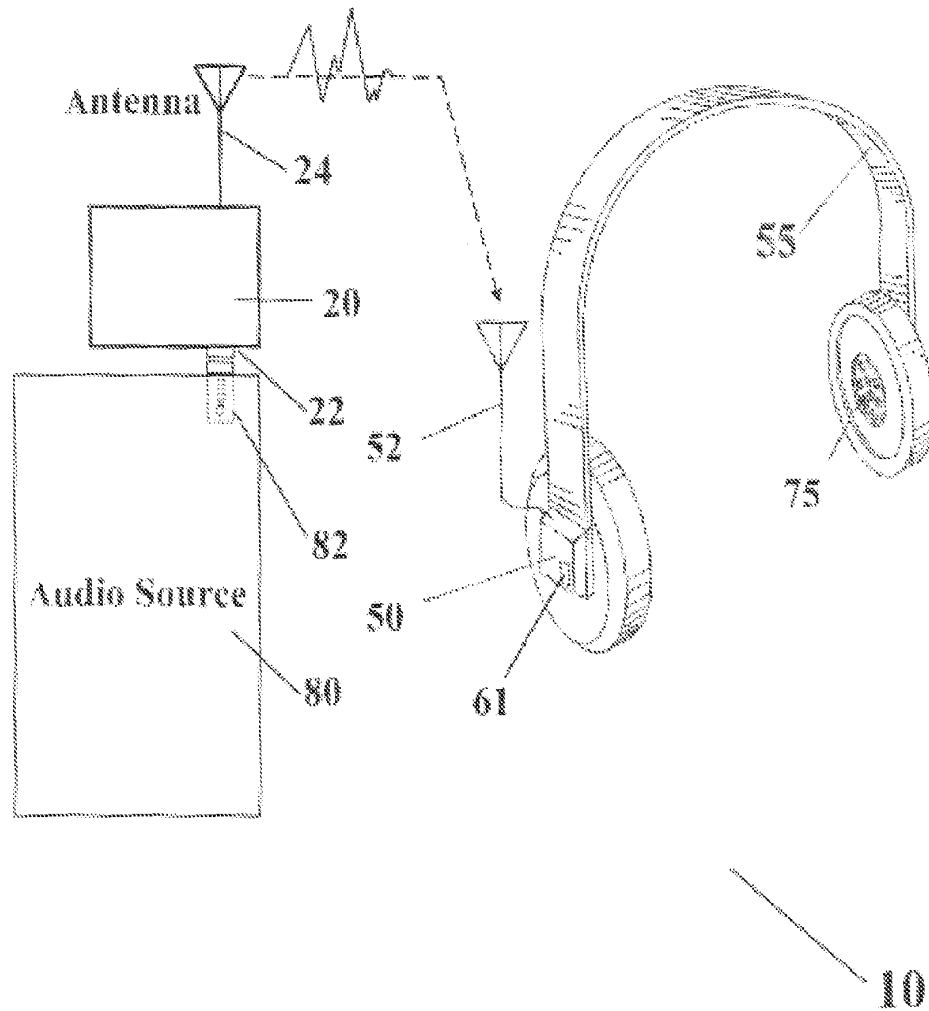


FIG.1

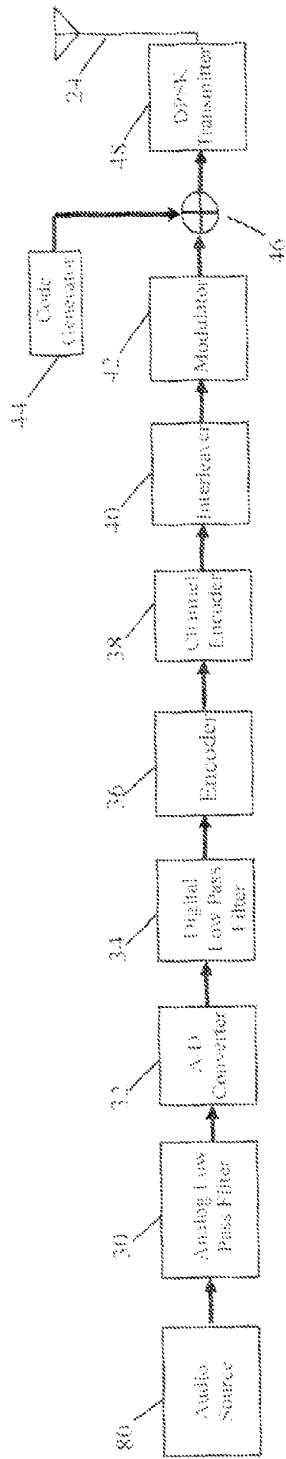


FIG. 2

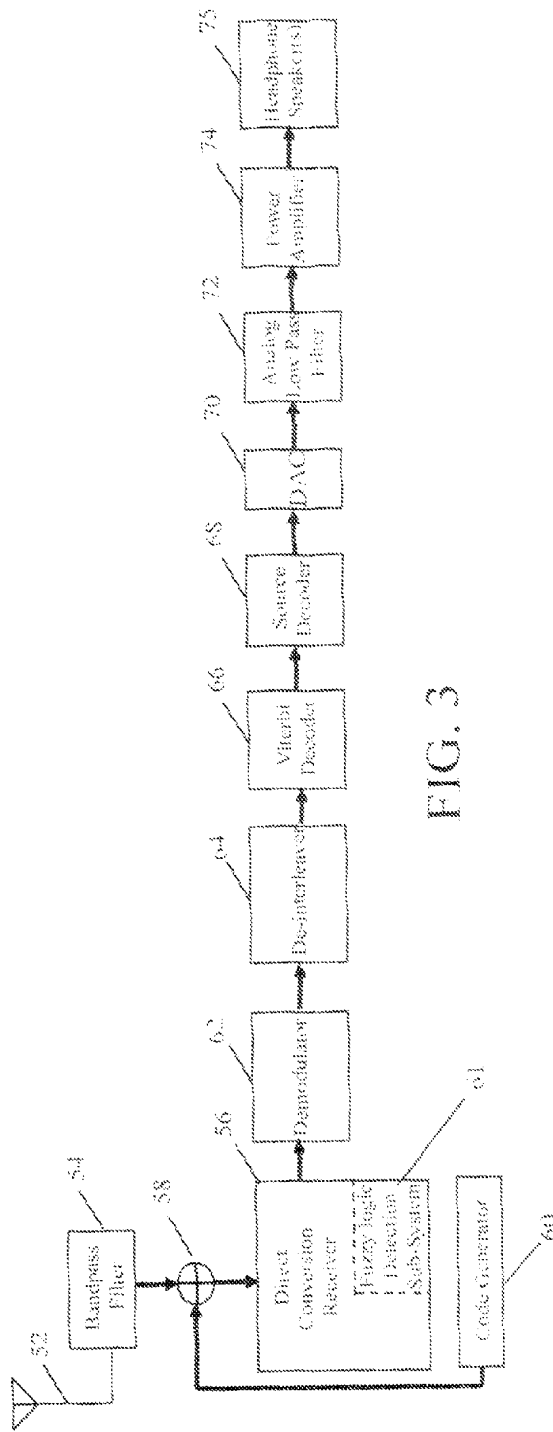


FIG. 3

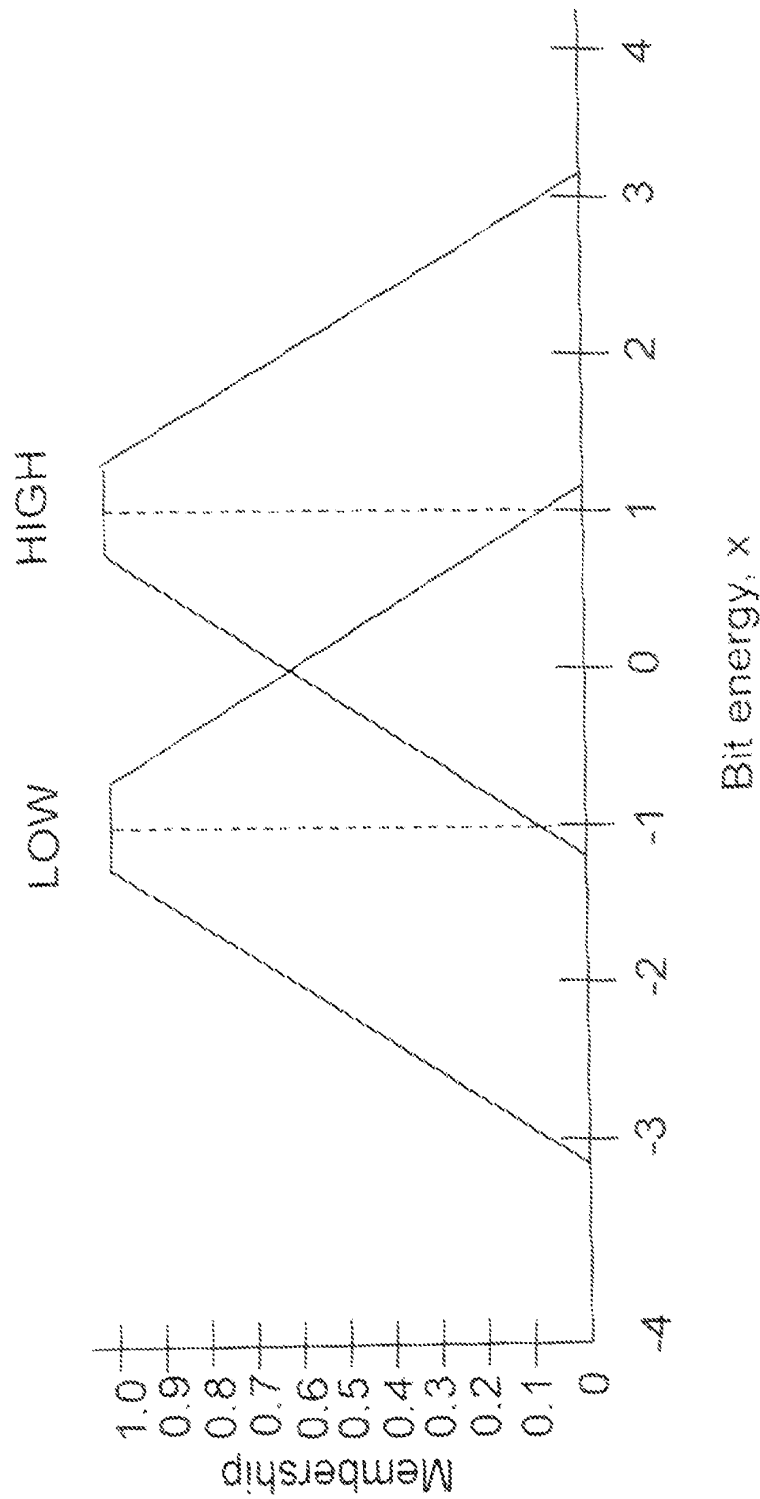


Fig. 4

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