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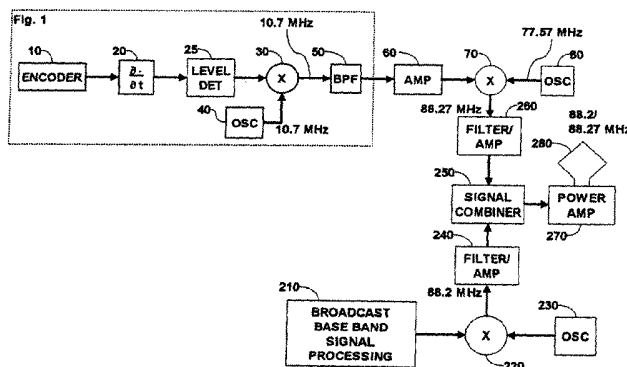
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(54) Title: AN IN-BAND-ON-CHANNEL BROADCAST SYSTEM FOR DIGITAL DATA



(57) Abstract: An FM broadcast transmitter (Fig. 5) transmits a broadcast signal having a carrier at a broadcast frequency and sidebands, able to be transmitted at full power, within a transmission bandwidth around the carrier. It includes a source of a modulated FM stereo signal having a carrier at the broadcast frequency and having sidebands with a bandwidth less than the transmission bandwidth representing a stereo signal. It also includes a source of a modulated IBOC signal, having carrier pulses spaced relative to each other to represent the IBOC digital data signal encoded as a variable pulse width encoded signal, and a bandwidth within the transmission bandwidth not overlapping the FM stereo signal sidebands. A signal combiner combines the modulated FM stereo signal and the modulated IBOC signal to form the broadcast signal. An FM broadcast receiver (Fig. 6) receives a broadcast signal including a first modulated signal representing an FM stereo signal, and a second modulated signal, having carrier pulses spaced relative to each other to represent an in-band-on-channel (IBOC) digital data signal encoded as a variable pulse width encoded signal. It includes a signal separator for generating a first separated signal representing the FM stereo signal and a second separated signal representing the IBOC digital data signal. An FM signal processor generates a stereo audio signal represented by the FM stereo signal. An IBOC signal processor generates a digital data signal represented by the IBOC digital data signal.



*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

## INTERNATIONAL SEARCH REPORT

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## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H04H1/00 H03M5/08

According to International Patent Classification (IPC) or to both national classification and IPC

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Minimum documentation searched (classification system followed by classification symbols)

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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)

EPO-Internal, WPI Data, PAJ, INSPEC, COMPENDEX

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 97 39544 A (LOCKHEED CORP) 23 October 1997 (1997-10-23) page 2, line 7-21 page 3, line 25 -page 4, line 5 ---	1, 16
A	WO 99 46861 A (RIEDL WILHELM ERNST ; MOHAN CHANDRA (US); ZHANG ZHIMING (US); THOMS) 16 September 1999 (1999-09-16) page 8, line 10 -page 10, line 30; figures 5, 6 ---	1, 16
A	WO 99 20007 A (USA DIGITAL RADIO INC) 22 April 1999 (1999-04-22) page 10, line 28 -page 11, line 6; figure 7 -----	1, 16

☐ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

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Information on patent family members

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