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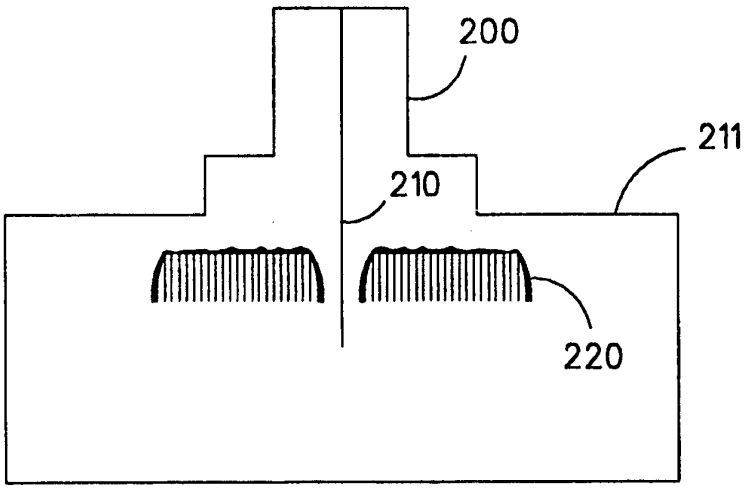
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15 September 1994 (15.09.94)

(54) Title: DIGITAL BROADCASTING SHARING THE CHANNEL WITH AN ANALOG FM TRANSMISSION

(57) Abstract

In a Digital Audio Broadcasting system, the carrier of an FM broadcast signal is amplitude modulated by the digital audio broadcast signal, in order to broadcast the FM programme and a Digital Audio Broadcast simultaneously, without necessity of allocating new frequency bands to the Digital Audio Broadcast service. The amplitude and frequency modulations of the carrier can be demodulated separately, without mutual interference.



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INTERNATIONAL SEARCH REPORT

Interna. .al Application No
PCT/US 94/00386

A. CLASSIFICATION OF SUBJECT MATTER
IPC 5 H04H1/00

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 5 H04H

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 A	US,A,4 660 192 (POMATTO) 21 April 1987 see column 1, line 1 - column 3, line 2; claims 1,2,5; figures 1,3,4,5A,6	1,9,13 2,7,8
X A	EP,A,0 436 875 (ROHDE & SCHWARZ G.M.B.H. &CO KG) 17 July 1991 see column 1, line 33 - column 3, line 52; claims 1,8-14; figure 1	1,9 2,7,8
A	WO,A,92 19053 (INSTITUT FÜR RUNDFUNKTECHNIK G.M.B.H.) 29 October 1992 see page 1, line 1 - page 6, line 2; claim 1; figures 1,2	24,30-33
A	WO,A,88 03342 (MOTOROLA INC.) 5 May 1988 see page 5, line 33 - page 6, line 2; claims 1-3,7,9,11; figure 3A	1,2,7-9

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[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

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"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
13 April 1994	03 08. 94

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax (+31-70) 340-3016	DE HAAN A.J.

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INTERNATIONAL SEARCH REPORT

Interna ..al Application No
PCT/US 94/00386

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
E	US,A,5 278 826 (MURPHY ET AL.) 11 January 1994 see column 1, line 1 - column 4, line 19; claims 1,5,7,8,10,11; figure 2 -----	24,30-33

Form PCT/ISA/210 (continuation of second sheet) (July 1992)

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US94/00386

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. claims 1-33: amplitude modulation of a frequency modulated broadcast signal
2. claims 34,35: notch filter
3. claim 36: FM delay demodulator
4. claims 37-41: method for measuring and diminishing adverse effects of spurious signals; claims 42-44: method for mitigating the effects of multipath on a received signal.

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. ☐ As all searchable claims could be searches without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-33

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest.

☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

Intern... ...al Application No
PCT/US 94/00336

Patent document cited in search report	Publication date	Patent family member(s)		Publication date
US-A-4660192	21-04-87	NONE		
EP-A-0436875	17-07-91	DE-C-	4000538	21-03-91
		US-A-	5218717	08-06-93
WO-A-9219053	29-10-92	DE-A-	4111855	15-10-92
		JP-T-	6500448	13-01-94
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		US-A-	4852086	25-07-89
		US-A-	4955083	04-09-90
US-A-5278826	11-01-94	NONE		