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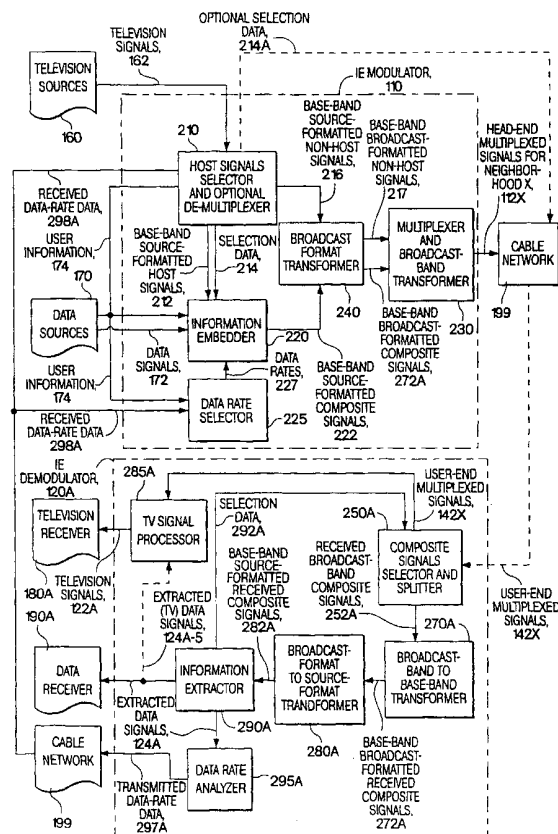
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[Continued on next page]

(54) Title: SYSTEM AND METHOD FOR BACKWARD-COMPATIBLE MODULATION AND DEMODULATION OF DATA USING INFORMATION EMBEDDING IN TELEVISION SIGNALS



(57) Abstract: A backward-compatible cable modem system enables transmission and reception of embedded data over a CATV network (199). The system includes, on the modulation side (head-end), an information embedder (220), embedding first set of data into host signals generating composite signals. The composite signals are watermarked versions of the host signals. The composite signals and a second set of data are multiplexed (230), along with TV signals that haven't been embedded with the first set of data (non-host signals). The multiplexed signals are transmitted to the user. At the receiver (190A), the composite signals are selected and provided to an information extractor (290A). The information is extracted from the composite signals to produce the embedded first set of data. Also, the second set of data is demultiplexed at the receiver using the conventional cable demodulator. Transformers (240, 280A, 270A) may be included at the head end and/or the receiver to transform TV signals between source format and broadcast format and/or between baseband and broadcast band. Some or all of the first and second sets of data may be same data.

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International application No.

PCT/US01/40997

A. CLASSIFICATION OF SUBJECT MATTER		
IPC(7) : HO4N 7/12, 167; GO6K 9/00		
US CL : 725/20,31,136; 348/473; 382/100; 380/28		
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) U.S. : 725/20,31,136; 348/473; 382/100; 380/28		
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 practicable, search terms used) Please See Continuation Sheet		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,793,892 A (PAN, et al) 11 August 1998. Abstract; col. 9, lines 25-40; col. 10, lines 5-20; Fig. 6	1-93
Y	US 5,991,426 A (COX) 23 November 1999. Abstract; col. 1, lines 10-40	1-93
Y	US 5,930,369 A (COX, et al) 27 July 1999. Abstract; Fig. 6; Fig. 7; col. 1, lines 1-15; col. 9, lines 5-25.	1-93
Y	US 5,960,081 A (VYNNE, et al) 28 September 1999. Abstract; Fig. 2.1; Fig. 2.2; col. 2, lines 22-40; col. 27, lines 30-55.	1-93
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.		
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"O" document referring to an oral disclosure, use, exhibition or other means		
"P" document published prior to the international filing date but later than the priority date claimed	"&" document member of the same patent family	
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Continuation of B. FIELDS SEARCHED Item 3:

EAST:

watermark\$3; embed\$4; quatization modulation, stenography, spread-spectrum