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### **PCT**

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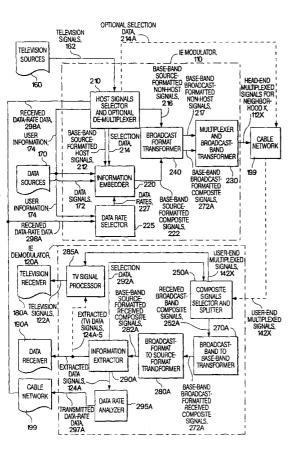
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[Continued on next page]

(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 (headend), 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 SEARCH REPORT

International application No.

PCT/US01/40997

US CL : 725/20,31,136, 348/473, 382/100; 380/28  According to Innermational Patent Classification (PC) or to both national 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.  19 US 5,793,892 A (PAN, et al) 11 August 1998. Abstract; col. 1, lines 10-40  193  Y US 5,994,264 (COX) 23 November 1999. Abstract; col. 1, lines 10-40  194  Y US 5,990,369 A (COX, et al) 27 July 1999. Abstract; Fig. 6; Fig. 7, col. 1, lines 11-15; col. 9, lines 5-25.  Y US 5,990,369 A (COX, et al) 28 September 1999. Abstract; Fig. 2.1; Fig. 2.2; col. 2, lines 22-40; col. 27, lines 30-55.  **Special categories of claid documents*  **A* document sching the general state of the art which is not considered to be of particular relevance  **B* earlier application or patent published on or after the international fling date  **Considered from a moral disclosure, use, exhibition or other means  **P* document referring to an oral disclosure, use, exhibition or other means  **P* document referring to an oral disclosure, use, exhibition or other means  **P* document or principal extractional fling date but inter than the principal or theory underlying the invertion cannot be considered one or more claims and other distants or other means  **P* document published are or to the unernational fling date but international fling date but international experiments of principal extractions; the claimed invertion cannot be considered one or more other such documents, such combination being discussion as expenses the considered one to cannot be document or considered one to more the considered one to consi	A. CLASSIFICATION OF SUBJECT MATTER					
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