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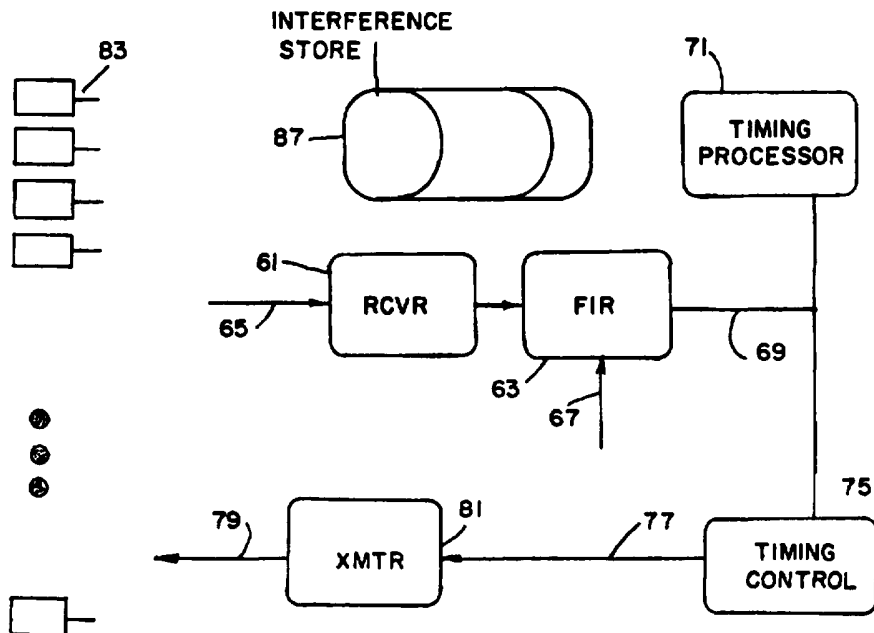
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(54) Title: SPREAD ALOHA CDMA DATA COMMUNICATIONS



(57) Abstract

Multiple transmitters transmit data signals using identical spreading codes. A single matched filter (63) of a receiver (61) receives all the signals (65). A broadcast timing control signal (77) retards or advances timings of individual transmitters (83) to offset the interleaved signals. A subtracting circuit subtracts first and strongest signals until a single signal remains, and then reinserts the subtracted signals in the receiver. The identical code spreading sequence used in all the transmitters and in the matched filter is selected from a specific class of codes known as maximum length shift register sequences in a length equal to $(2^n - 1)$ for integer values of n. The method provides multiple access to a data communications channel without prearranging times or querying availability, and with automatic offsetting of the identical form signals.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US95/07228

A. CLASSIFICATION OF SUBJECT MATTER
 IPC(6) H04J 13/00, 3/24; H04B 1/00; H04K 1/00; H04L 5/00
 US CL :370/18, 93; 375/200, 205, 206, 208, 209, 210, 343
 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. : 370/18, 93; 375/200, 205, 206, 208, 209, 210, 343

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)
 APS
 search terms: spread or spreading code, multiple, filter or correlator, advance or retard or retarding time or timing

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y,P	US, A, 5,377,225 (DAVIS) 27 December 1994, col. 10, line 65 to col. 11, line 16, col. 4, lines 57-64, col. 1, line 66 to col. 2, line 19, col. 2, lines 38-47, and col. 1, lines 31-65.	1-4, 6-9, 11-13
Y,P	US, A, 5,410,568 (SCHILLING) 25 April 1995, col. 15, line 62 to col. 16, line 6, col. 4, lines 55-58, and Fig. 6.	1-4, 6-9, 11-13
Y	US, A, 4,545,061 (HILEMAN) 01 October 1985, col. 1, line 66 to col. 2, line 21.	5, 10, 14-16
A,E	US, A, 5,430,761 (BRUCKERT ET AL.) 04 July 1995, see entire document.	1-16
A,E	US, A, 5,430,760 (DENT) 04 July 1995, see entire document.	1-16

Further documents are listed in the continuation of Box C. See patent family annex.

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