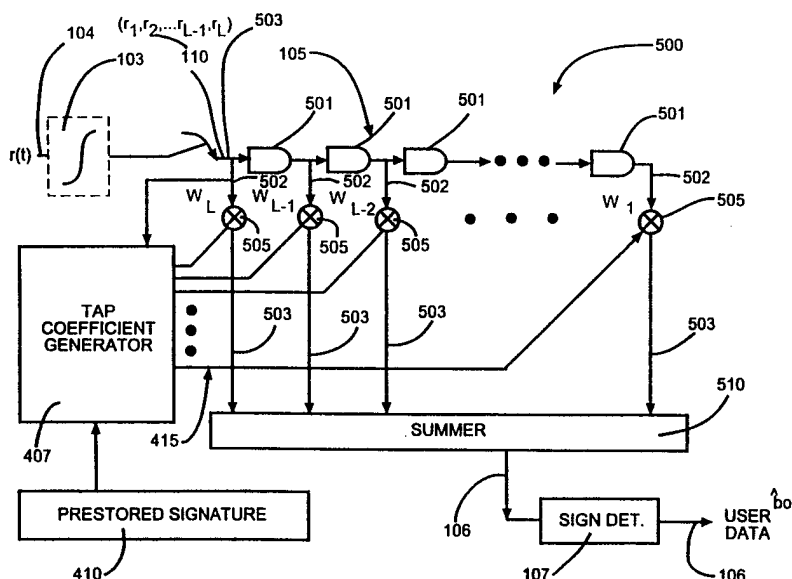




INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(54) Title: CIRCUITRY AND METHOD FOR DEMODULATING CODE DIVISION MULTIPLE ACCESS (CDMA) SIGNALS



(57) Abstract

A method and apparatus is provided for demodulating direct sequence, spread spectrum CDMA signals in the presence of unknown spread-spectrum multiuser interference and additive white Gaussian noise, using only the available received signal and the predetermined, pre-stored spreading code (410) assigned to user of interest. The method includes the steps of sampling the incoming channel signal at the chip rate to produce an incoming sampled signal (103), supplying the incoming sampled signal to filter means (105) having tap coefficients (407) corresponding to an auxiliary vector, the filter means (105) having an output representing an estimate of the transmitted symbol, providing the output to a sign determining means (107) and determining the sign of said output to thereby generate the detected symbol.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US98/07464

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) :H04B 7/216

US CL :370/201, 290, 291, 293, 335, 342, 320; 375/350, 200

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. : 370/201, 290, 291, 293, 335, 342, 320; 375/350, 200

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

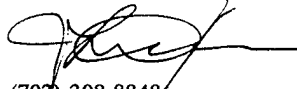
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,534,472 A (LEE et al) 06 September 1994, col. 6, lines 36-44 and fig. 5.	1-2, 8, 13-14, and 18-20
Y	US 5,267,266 A (CHEN) 30 November 1993, Fig. 2.	4 and 6
Y	US 5,644,596 A (SIH) 01 July 1997, col. 1, lines 30-40.	4 and 6
Y	US 5,291,525 A (Funderburk et al) 01 March 1994, col. 8, lines 15-20.	9-12 and 29
Y	US 5,479,363 A (WILLSON, Jr. et al), 26 December 1995, col. 1, lines 21-28.	9-12 and 29

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

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Date of the actual completion of the international search 22 JUNE 1998	Date of mailing of the international search report 08 OCT 1998
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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,343,496 A (Honig) 30 August 1994, col. 20, lines 58-59.	9-12 and 29
Y	US 5,481,533 A (HONIG et al) 02 January 1996, Fig. 3D and col. 9, lines 19-31.	16-17 and 26-27
Y	US 5,377,255 A (Davis) 27 December 1994, col. 7, lines 37-39.	22-25
Y	US 5,138,631 A (TAYLOR) 11 August 1992, col. 3, lines 5-20.	30