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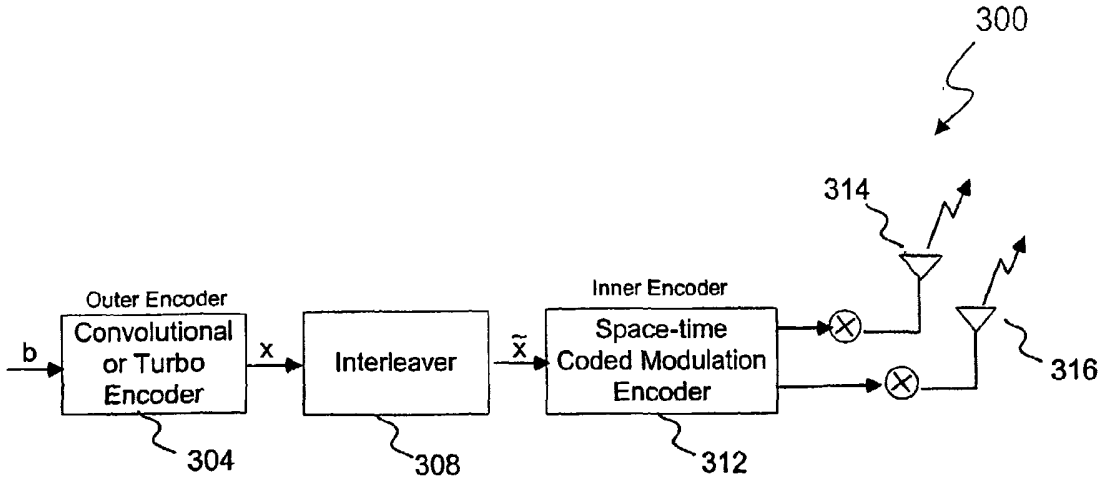
(54) Title: METHOD AND APPARATUS FOR SPACE-TIME TURBO-CODED MODULATION



(57) Abstract: An apparatus and method for transmitting a signal from a plurality of antennas. The apparatus includes an outer encoder configured to encode a stream of data according to a turbo multiple trellis coded modulation scheme, and generate a plurality of channel-coded symbol streams. The apparatus also includes an inner encoder serially concatenated with the outer encoder. The inner encoder is configured to receive the channel-coded symbol streams and provide space-time coding to the channel-coded symbol streams, thereby generating a plurality of space-time-channel-coded symbol streams. A plurality of antennas coupled are to the inner encoder, and each of the plurality of antennas is configured to transmit one of the plurality of space-time-channel-coded symbol streams.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : H04B 7/02; H04L 1/02
US CL : 375/267

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. : 375/267

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)
IEEE, Google.com, ACM

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X,P --- Y,P	US 2003/0112745 A1 (ZHUANG et al) 19 June 2003 see paragraphs 0014, 0015, 0017, 0018, 0036, 0037, 0041, 0023; claims 2, 4, 5, 6, 17, 21, 24; fig 2-4	1-18 --- 2, 9, 14
Y, E	US 2003/0218973 A1 (OPREA et al) 27 November 2003, see paragraphs 93, 95, 125, 137.	2, 9, 14
X, P	US 2003/0072381 A! (IONESCU) 17 April 2003, see paragraphs 48-52	1, 6, 13, 16, 17-18
A	US 4,922,507 (SIMON et al) 01 May 1990, Abstract.	1-18
A	US 5,023,889 (DIVSALAR et al) 11 June 1991, fig 1	1-18
A,P	US 2002/0101934 A1 (KENNEY et al) 01 August 2002, see Claims 1-6, Fig 4.	1-18
A,E	US 2003/0133516 A1 (ALAMOUTI et al) 17 July 2003, fig 1.	1-18

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