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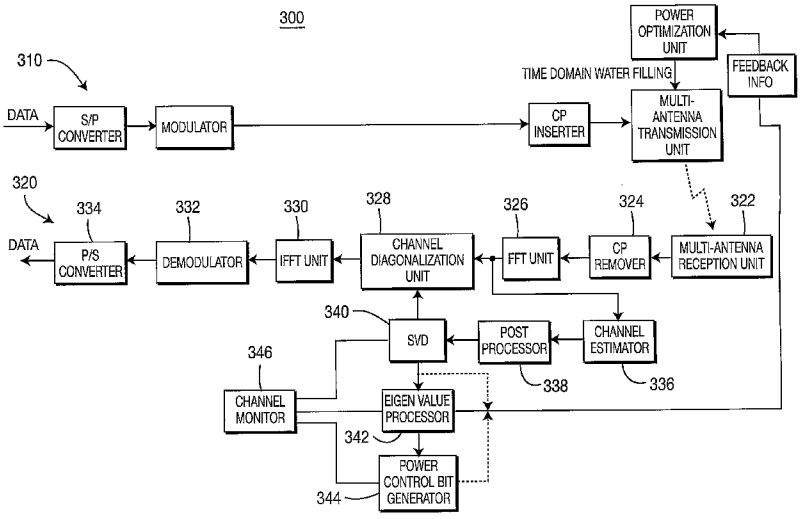
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(54) Title: METHOD AND SYSTEM FOR TRANSMIT POWER CONTROL IN A MULTIPLE-INPUT MULTIPLE-OUTPUT WIRELESS COMMUNICATION SYSTEM




(57) Abstract: The present invention is related to a method and system for transmit power control in a multiple-input multiple-output (MIMO) wireless communication system. Both a transmitter and a receiver comprise multiple antennae for transmission and reception. The transmitter comprises a power allocation unit for controlling transmit power based on a feedback received from the receiver. The receiver comprises a channel estimator and a singular value decomposition (SVD) unit. The channel estimator generates a channel matrix from a signal received from the transmitter and the SVD unit decomposes the channel matrix into D, U and V matrices. The receiver sends a feedback generated based on output from the SVD unit to the transmitter for controlling the transmit power. The feedback may be one of an eigenvalue, a transmit power level or a power control bit or command. A hybrid scheme for selecting one of them based on channel condition may be implemented.

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# INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
IPC(8) - H04B 7/00 (2007.01)
USPC - 455/522
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B. FIELDS SEARCHED

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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)
Patbase (All)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|---|---|---|
| X | US 2004/0082356 A1 (WALTON et al) 29 April 2004 (29.04.2004) entire document | 1-52 |
| A | US 2004/0179627 A1 (KETCHUM et al) 16 September 2004 (16.09.2004) entire document | 1-52 |

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