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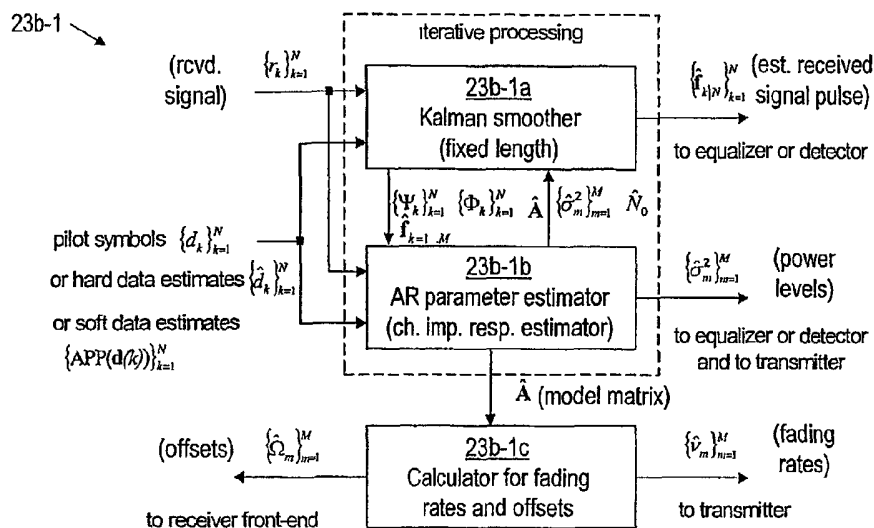
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[Continued on next page]

(54) Title: METHOD AND APPARATUS FOR ESTIMATING CARRIER FREQUENCY OFFSET AND FADING RATE USING AUTOREGRESSIVE CHANNEL MODELING



(57) Abstract: A method for use by a receiver of a wireless communication system in providing information of use in adapting to changing characteristics of a communication channel (22) over which the receiver (23) receives a signal at an offset from a carrier frequency due to changes in the characteristics of the communication channel characteristics, the changing communication channel characteristics also causing from time to time changes in other characteristics of the communication channel (22), the method characterized by: a step (23b-1a 23b-1b) of providing expectation maximization estimates of autoregressive parameters representing the changing communication channel (22) using received signal samples extracted from the received signal and corresponding to transmitted pilot symbol; and a step (23b-1a 23b-1c) of providing an estimate of the channel impulse response and an estimate of a frequency offset of at least one multipath signal based on the estimated values of the autoregressive parameters.

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B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
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Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
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C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6,320,919 B1 (KHAYRALLAH et al) 20 November 2001 (20.11.2001), column 1, line 66 -column 2, line 1; column 13, line 4 - column 14, line 5; and figures 2-3.	1-13
A	US 5,432,821 A (POLYDOROS et al) 11 July 1995 (11.07.1995), column 24, line 54 - column 5, line 20, and figure 14.	1-13

Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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"O" document referring to an oral disclosure, use, exhibition or other means		
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