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[54] METHOD AND APPARATUS FOR COHERENT COMMUNICATION IN A SPREAD-SPECTRUM COMMUNICATION SYSTEM

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[51] Int. Cl.[5] H04K 1/00

[52] U.S. Cl. 375/1

[58] Field of Search 375/1

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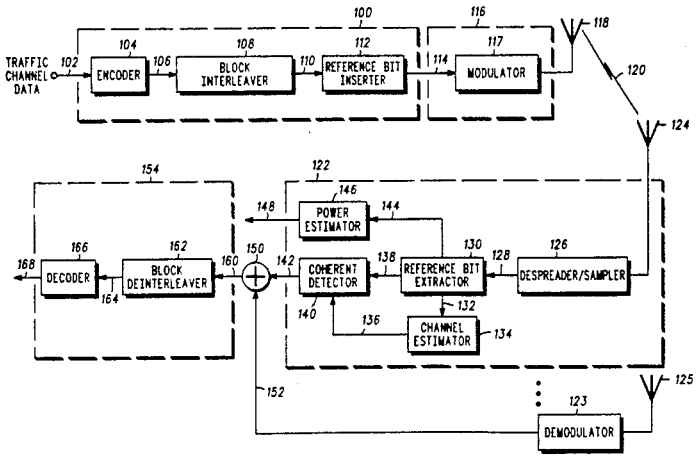
[57] ABSTRACT

A method and apparatus is provided for encoding and decoding to facilitate coherent communication. In encoding, reference symbols are inserted into a stream of input data symbols to form a reference coded stream of input data symbols. Subsequently, the reference coded stream of input data symbols are prepared for transmission over a communication channel by spreading the reference coded stream of input data symbols with a spreading code prior to transmission over the communication channel. In decoding, a received communication signal is despread with a spreading code to derive a stream of reference samples and a stream of data samples. The channel response is estimated by utilizing the stream of reference samples. Finally, an estimated data symbol is detected from the stream of data samples by utilizing the estimated channel response.

42 Claims, 2 Drawing Sheets