

Multicarrier signal equalizing method of intercarrier interference for mobile phone, involves determining equalized signal by solving frequency domain channel matrix using sparse linear equation and sparse least squares algorithm

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Abstract: NOVELTY - The method involves approximating the frequency domain channel matrix by a sparse matrix comprising the main band that consists of a significant diagonal and adjacent parallel diagonals within a predetermined main bandwidth such that the remaining elements of the sparse matrix is zero. An equalized signal is determined by solving frequency domain channel matrix using relative parameters such as received multicarrier signal (x), sparse matrix (H-B) and equalized signal (a) by sparse linear equation and sparse least squares (LSQR) algorithm.

USE - Multicarrier signal equalizing method of intercarrier interference for enhancing signal reception in mobile phone.

ADVANTAGE - The bit error rate of the equalized signal can be reduced and the potential of ill-condition channel matrixes are improved by LSQR algorithm. The complexity of inter carrier interference (ICI) equalization method can be reduced.

DESCRIPTION OF DRAWING(S) - The drawing shows a block diagram of the multicarrier transmission system.

Multicarrier modulator (1)

Physical channel (2)

Multicarrier demodulator (3)

Multicarrier channel (4)

Sparse matrix (H-B)

Equalized signal (a)

Multicarrier signal (x)

Drawing:

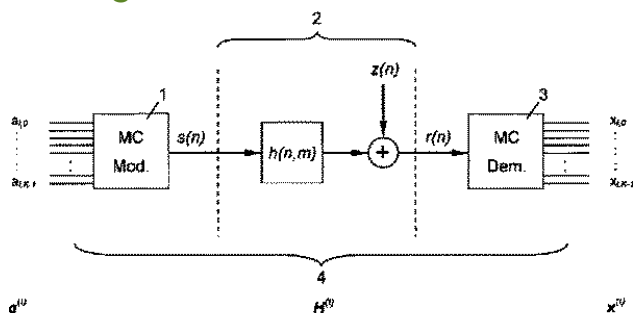


Fig. 1

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