Abstract

Long term evolution (LTE) selects orthogonal frequency division multiplexing (OFDM) and its single-carrier counterpart SC-FDM as the basic transmission schemes. OFDM is a very interesting approach for high data rate transmission in a Gaussian channel and multipath fading environment that leads to inter symbol interference (ISI). In this paper, a proposed convolutional encoder model is used to improve the error rate performance of OFDM system, by using discrete wavelet transform (DWT) instead of fast Fourier transform (FFT) to reduce ISI. The performance of OFDM based on DWT using M-ary quadrature amplitude modulation (M-QAM) as a modulation scheme to achieve high data rate. The simulation results demonstrate that, the bit error rate (BER) is improved for a proposed convolutional encoder model as compared with the previous work.


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Index Terms

Computer Science  Signal Processing

Keywords

LTE, OFDM, SC-FDMA, ISI, DWT, FFT, M-QAM, BER