Abstract

In the rapid development of digital wireless communications, have increased demands for wireless systems with high efficiency performance. In this paper, an efficient OFDM system has been proposed based on dual-tree complex wavelet transform (DT-CWT). The mathematics behind the proposed OFDM system is explained. Moreover, comparative study has been made between the traditional OFDM and the OFDM based on DT-CWT. The proposed scheme achieves excellent improvements in bit error rate (BER) over conventional OFDM and wavelet packet modulation (WPM) systems. The proposed technique gives a significant improvement in Bit Error Rate (BER) performance in Additive White Gaussian Noise (AWGN) channels, flat fading channels (FFC), and multi-path selective fading channels (SFC) compared with traditional techniques. The simulation results performance is described in BER as a function of Signal to Noise Ratio (SNR).

References

Index Terms

Computer Science Wireless

Keywords

OFDM; Wavelet; DWT; WPT; DT-CWT; FFT; Multicarrier Modulation; BER.