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Abstract

Recent advances in wireless communication systems have made use of OFDM technique to achieve high data rate transmission. The sensitivity to frequency offset between the carrier frequencies of the transmitter and the receiver is one of the major problems in OFDM systems. This frequency offset introduces inter-carrier interference in the OFDM symbol and then the BER performance reduced. In this paper a Multi-Orthogonal-Band MOB-OFDM system based on the Discrete Hartley Transform (DHT) is proposed to improve the BER performance. The OFDM spectrum is divided into equal sub-bands and the data is divided between these bands to form a local OFDM symbol in each sub-band using DHT. The global OFDM symbol is formed from all sub-bands together using the (IDHT). The BER performance of the proposed system is simulated and compared with the conventional OFDM in different channel conditions to show the gain in SNR achieved by the proposed system.

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Index Terms

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Keywords

Discrete Hartley Transform (DHT) OFDM and Multi Orthogonal Band OFDM