

Bit Error Rate Analysis of Multiband OFCDM UWB System in UWB Fading Channel

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Abstract : Orthogonal frequency and code division multiplexing (OFCDM) has received large attention as a modulation scheme to realize high data rate transmission. Multiband (MB) Orthogonal frequency division multiplexing (OFDM) Ultra Wide Band (UWB) system become promising technique for high data rate due to its large number of advantage over Singleband (UWB) system, but it suffer from coherent frequency diversity problem. In this paper we have proposed MB-OFCDM UWB system, in which two-dimensional (2D) spreading (time and frequency domain spreading), has been introduced, combining OFDM with 2D spreading, proposed system can provide frequency diversity. This paper presents the basic structure and main functions of the MB-OFCDM system, and evaluates the bit error rate BER performance of MB-OFDM and MB-OFCDM system under UWB indoor multi-path channel model. It is observe that BER curve of MB-OFCDM UWB improve its performance by 2dB as compare to MB-OFDM UWB system.

Keywords : MB-OFDM UWB system, MB-OFCDM UWB system, UWB IEEE channel model, BER

Conference Title : ICSRD 2020 : International Conference on Scientific Research and Development

Conference Location : Chicago, United States

Conference Dates : December 12-13, 2020