DESIGN AND PERFORMANCE ANALYSIS OF MIMO-OFDM FOR WLAN STANDARD

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ABSTRACT

A combination of multiple-input multiple-output (MIMO) signal processing with orthogonal frequencydivision multiplexing (OFDM) is regarded as a promising solution for enhancing the performance of next generation wireless local area network (WLAN) systems.Because of the rapid growth of Digital Communication in recent years, the need for high speed data transmission is increased. Orthogonal frequency division multiplexing (OFDM) technique is suitable for high speed communication and it utilizes the bandwidth efficiently [1]. MIMO-OFDM is a combination of OFDM and MIMO (Multiple Input Multiple Output) techniques suitable for design of multi-user system and robust against channel impairments. In this paper we have implemented MIMO-OFDM for WLAN (IEEE802.11a) standard. This paper compares bit error rate (BER) performance of Simulink based MIMO-OFDM model for different modulation technique. Here we have used BPSK, QPSK and M-QAM modulation techniques.

KEYWORDS: OFDM, Wireless LAN, M-QAM, SNR, MIMO-OFDM