Abstract

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A Novel OFDM PAPR Reduction Scheme Based on ed Mapping

In this study, a novel effective PAPR reduction scheme for OFDM system based on conventional ed mapping technique has been proposed presented. The proposed PAPR scheme combines two well known PAPR reduction techniques: conventional ed mapping (SLM) and repeating clipping and filtering (RCF). The objective is to enhance the overall OFDM PAPR reduction factor (PRF) to achieve approximately the same bit error rate (BER) as the original OFDM system. A convolutional code has been used for the proposed OFDM transceiver as channel coding for error correction purpose. The proposed PAPR scheme is referred to as Convolutional ed Mapping Repeating Clipping and Filtering scheme “CSLM_RCF”. A detailed analysis performance evaluation of the proposed PAPR scheme are presented. Simulation results show that the proposed PAPR scheme has been achieved a significant PRF as compared to either SLM RCF alone. In addition, the overall BER of OFDM transceiver has been evaluated for different standard channel models (Additive White Gaussian Noise/Rayleigh Fading) with and without the proposed PAPR scheme. The results show that the proposed PAPR technique has been almost achieved the same BER in case of different channel models. Therefore, the proposed CSLM_RCF scheme presented in this study is practically feasible solution of OFDM PAPR problem with insignificant additional processing time.