

Joint Clipping and Amplifying Techniques for Papr Reduction in Ofdm Systems

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ABSTRACT

Multicarrier system such as orthogonal frequency division multiplexing (OFDM) are significantly affected by peak-to-average-power ratio (PAPR). Many researchers introduce different techniques to reduce PAPR with tradeoffs of data rate loss and computations of approach. In some cases, the techniques of reduction may lead to increase average power of transmitted signal and degrades the BER performance at the receiver. Hence, proper design of PAPR reduction technique needs to be considered. In this paper, a combination of Clipping Peak and Amplifying Bottom (CPAB) is proposed. The peak of signal is clipped at a threshold A, while the bottom values of signal are amplified to threshold B. The clipping technique was widely accepted method to improve the PAPR statistics. Therefore, joint clipping with amplifying in CPAB will develop PAPR reduction. In addition, PAPR value depends on clipping and amplifying thresholds. The result shows that the clipping factor affected the complementary cumulative distribution function (CCDF) performance more than the amplifying factor in CPAB technique. Thus, by properly select the threshold of A and B, better OFDM system performance is achieved with lower PAPR.

KEYWORDS: OFDM; CCDF; PAPR; Clipping; Amplifying.

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