

LOW COMPLEXITY PEAK POWER AND BER REDUCTION OF OFDM SIGNAL BY SYMBOL ALTERATION TECHNIQUE

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ABSTRACT

OFDM (orthogonal frequency division multiplexing) is considered as the modulation schemes for many wireless communication applications. OFDM transmits data in parallel by modulating a set of orthogonal subcarriers. OFDM systems result in large peak amplitudes and crest factor (CF) due to superimposition of large number of subcarriers which results in nonlinear distortion when transmitted through high power transmitting amplifier (HPA). Possibility of extreme amplitude excursion is recognized as one of the severe problem in OFDM. Clipping and filtering is one of the common technique used for peak power reduction. Large Bit Error Rate (BER) due to peak clipping and nonlinearities of transmit amplifier is the greatest disadvantage of this technique. In this paper attempt has been made to reduce the peak power in OFDM transmission system by avoiding nonlinearities of the transmit amplifier. The corrective action gets initiated as and when the large number of subcarriers line up in phase. The suggested method effectively reduces noise and thus BER as compared to the conventional clipping and filtering technique.

KEYWORDS: Bit Error Rate, OFDM, PAPR, Peak Detector