IPTS BASED PAPR REDUCTION OF OFDM SYSTEM WITH A LINEARIZATION TECHNIQUE

CHHAVI SHARMA[1] & S.K.TOMAR [2]

[1,2]Faculty of Engineering & Technology, MJP Rohilkhand University, Bareilly, India

ABSTRACT

Orthogonal frequency division multiplexing (OFDM) is very attractive for high data rate transmission in a radio environment, but high peak to average power ratio (PAPR) is very serious problem due to many subcarriers, which seriously limits the power efficiency of the high power amplifier (HPA). One of the most promising approaches for the mitigation of this nonlinear distortion is to use a predistorter, applied to the OFDM signal prior to its entry in to HPA. Predistortion is a linearization technique used for the compensation of nonlinear distortion in HPA. However this linearization is not enough to control the problem of PAPR and large back off is required to improve the power efficiency, therefore, the PAPR reduction of the OFDM signal before the linearization would be more reasonable to improve power efficiency. In this paper iterative partial transmit sequence (IPTS) based PAPR reduction with a linearization technique is proposed. Simulation result shows that BER performance is significantly improved and power efficiency of HPA can be enhanced due to low PAPR of OFDM signal.

KEYWORDS: OFDM, PAPR, HPA.