

A peak to average power ratio reduction scheme to increase power efficiency in broadband communication systems

ABSTRACT

Enhanced partial transmit sequence (EPTS) and cross-correlation-PTS are two techniques for reducing peak-to-average power ratio (PAPR) in orthogonal frequency division multiplexing (OFDM) systems. EPTS is a low complexity technique compared to conventional partial transmit sequence (CPTS) and cross-correlation-PTS techniques which outperforms the cross-correlation-PTS in terms of PAPR reduction while cross-correlation-PTS technique is more efficient in BER reduction. This proposed technique is a novel serial combination of the above-mentioned techniques to provide both sufficient PAPR reduction and BER reduction simultaneously. Simulation results are carried out with QPSK modulation and Saleh model power amplifier. From the simulation results the proposed technique achieves about 0.5 and 1.5 dB PAPR reduction compared to EPTS and cross-correlation-PTS techniques, respectively, when it outperforms EPTS in terms of BER performance.

Keyword: OFDM; PAPR; CPTS; EPTS; Cross correlation