ABSTRACT

Orthogonal Frequency Division Multiplexing (OFDM) is a multicarrier technique that has resistance to fading, and high bandwidth efficiency. The major drawback of OFDM systems is the high of PAPR value. PAPR is the ratio of peak signal power to average power.

So, it requires techniques that can reduce the PAPR value. This final project will simulate and analyze a combination of partial transmit sequence (PTS) and clipping technique to reduce the PAPR value. In this simulation, subcarriers are partitioned into several subblock, then each subblock is multiplied by particular factors phase. Then, the results of subblock combination having the lowest PAPR value will be processed in the clipping block. In this block the input signal of clipping will be restricted to a certain amplitude value. Input signal that exceeds that amplitude will be cut, so that PAPR reduction will be obtained.

The simulation result shows that the use of the PTS technique only can reduce the PAPR value of 2.6 dB. While, if the PTS technique is combined with a clipping technique, they can reduce the PAPR of 6.719 dB. If only clipping technique is used, it can reduce the PAPR of 6.46 dB. In terms of system performance, using combination of PTS and clipping technique produce BER which tends to be the same with using PTS technique only, but smaller if it is compared with clipping techniques. In combination of PTS and clipping techniques BER 10^{-4} is achieved when the SNR value is 6 dB and 8 dB, for BPSK and QPSK modulation.

Key words: OFDM, PTS, Clipping, PAPR