ABSTRACT

Multicarrier Code Division Multiple Access (MC CDMA) is a system which is a combination of Orthogonal Frequency Division Multiplexing (OFDM) and Code Division Multiple Access (CDMA). Because MC CDMA is a combination of OFDM and CDMA systems, the advantages contained in OFDM and CDMA are also present in the MC CDMA. Besides the advantages, MC CDMA also has the disadvantage that high Peak to Peak Average Power Ratio (PAPR). This PAPR can result in reduced efficiency of power transmission.

B. Sarala and D.S. Venkateswarulu propose combining the Discrete Cosine Transform with companding to reduce PAPR in MC CDMA system. In this final project will combine the Discrete Cosine Transform (DCT) with Partial Transmit Sequence (PTS) to reduce the PAPR in MC CDMA system. DCT itself is a technique to reduce the autocorrelation of the input rows to reduce the problem of peak power to average and it does not require the information to be transmitted to the receiver. While PTS divided subcarriers into multiple subblock, and each subblock multiplied by the chosen combination phase to minimize the PAPR.

The simulation results from the final project show the combination DCT and PTS provide the best improvements PAPR value than if using a reducing agent alone. For $V = 2$ DCT and PTS provide improvent about 2.7 dB - 6.2 dB with a power efficiency about 40%-55% and for $V = 4$ gives an improvement about 5.8 dB - 8 dB with a power efficiency about 58%-71%. And the combination of the reducing agent also does not affect the BER system.

Keywords : PAPR, MC CDMA, DCT, PTS