

## ABSTRACT

Nowadays cellular mobile user service growth very rapidly. With the increasing number of user cellular mobile service, while the frequency is not increasing, then we as an engineer should be able to overcome this problem. Orthogonal frequency division multiplexing (OFDM) is the solution. OFDM is a multicarrier modulation technique which has the ability to perform high speed data transmission, especially in multipath channel, as well as the bandwidth efficiency. The principle of OFDM is to divide the high speed data into multiple parallel data at a low speed. Then the parallel data is modulated with orthogonal subcarriers. However, this OFDM has several disadvantages. One of the disadvantages is the high peak to average power ratio (PAPR), where the value of the maximum power signal will be far greater than the average power, so that the efficiency of the amplifier is reduced.

In this final project analyzed serial combination technique of selective mapping (SLM) and partial transmit sequence (PTS). On the SLM technique, PAPR reduction is done by multiplying a phase factor row with rows of incoming information, then the result that has the lowest PAPR will be selected as the output. In the PTS technique, each subcarrier is partitioned into several sub-blocks, and each sub-block multiplied by a combination of the selected phase to minimize the PAPR.

The results of the simulation of this final project is a technique that has optimum performance is SLM-PTS with the improvement of 4.872 dB PAPR, while improving BER of 0.581 dB when  $N = 16$  and  $V = 16$ .

**Keyword** : OFDM, PAPR, SLM, PTS