

ABSTRACT

In this Final Project conducts research on the effect of multiplexing techniques on Visible Light Communication (VLC) technology. The emergence of ideas from this research is based on the importance of using multiplexing techniques that fit everyday needs. The subject of this final project is the performance capability of multiplexing techniques for different channel conditions, namely Line of Sight (LOS) and Non-Line of Sight (NLOS) which refers to the resulting coverage area.

The multiplexing technique used in this Final Project is Unipolar OFDM (U-OFDM). The multiplexing technique was chosen because of the multiplexing technique optical OFDM has a fairly good power efficiency against VLC technology. Associated with the characteristics of the channels used, this Final Project discusses the comparison of the influence of the transmission distance, the effect of the angle, the coverage area and the performance of the Error Error Rate (BER) of each channel which will be analyzed from the results of the wide coverage area generated.

The results obtained from the parameters that have been determined that the U-OFDM multiplexing technique on NLOS channels can work almost equal to the LOS conditions. The value of the Bit Error Rate (BER) and coverage area produced is quite good because it has a difference of 6.56% on the two channels so that the U-OFDM multiplexing technique is proposed for the use of VLC technology considering that in everyday life there are various conditions at the application site of VLC technology.

Keywords: VLC, LOS, NLOS, U-OFDM, BER.