

ABSTRACT

Optical communication system is growing very rapidly right now, one of the technology is textit Optical Wireless Communication (OWC), it is no longer using fiber optic as its propagation media but using air. There is technology development of OWC called *Visible Light Communication*(VLC), VLC is using visible light and air as its propagation media. There is still no standardization for its use. Therefore the study of VLC development is still going.

In this Final Project research, has done analysis of *Light Emitting Diode* (LED) amount comparison as one and two transmitters towards light communication distribution in a 5m x 5m x 4m closed room with reflector in the form of reflector mirror using On Off Keying-Non Return to Zero modulation.

Based on the receiver distance counted from reflector, result of the farthest coverage distance when 1 LED used is 4.43 m, while when using 2 LED is 5.16 m. With *Bit Error Rate* (BER) 10^{-3} using each LED power equal to 2 Watt. The LED placed on 4 m height, with each coordinates. Receiver position is exactly under LED lamp in Line of Sight condition. Based on maximum distance obtained from 1 and 2 LED, communication area coverage for one LED is $18.84 m^2$ while for two LED is $21.76 m^2$.

Keywords: Optical Wireless Communication, Visible Light Communication, Line Of Sight