

ABSTRACT

The Final Project studies of future technologies that can provide solutions to the concerns of network users. Optical communication system is a communication system that is currently developing quite rapidly and is becoming the thing that is currently being researched to become a technology in the future, one that is developing rapidly is called Visible Light Communication technology.

The author compares the bit rate on the Visible Light Communication (VLC) system with optical concentrator and without optical concentrator using a bit rate of 1 Gbps, 1.25 Gbps, 1.5 Gbps in a closed room measuring 5mx5mx3m with On Off Keying Null Return to Zero modulation.

The simulation results from 2 scenarios, with the addition of optical concentrator is better than without optical concentrator. With a bit rate of 1 Gbps already covering the entire communication, the received power is 9.2×10^{-6} mW. The distance from the transmitter to the receiver is 4.13 m, and for the angular position of the receiver is 58.69°

Keywords: *VLC, LED, Fotodioda, OOK-NRZ, BER, Optical Concentrator*