

ABSTRACT

Visible Light Communication (VLC) technology is one of the wireless network technologies that is increasingly developing, especially in closed spaces. Generally, VLC utilizes an LED light as a means of sending information. LED lights have the advantage of more efficient power usage and very high switching capabilities.

The Final Project is comparing the using of 1, 2 and 3 LED lights. By measuring receiving power, the maximum distance and angle reached by the ideal BER = 10^{-3} . There are two draft scenarios, namely without the addition of an optical concentrator on the photodetector and the addition of an optical concentrator to the photodetector on the VLC system using OOK NRZ modulation.

Simulation results from two scenarios with the addition of an optical concentrator are better than without the addition of an optical concentrator. With 1st lamp on the addition of the optical concentrator the range of receiving power is very large with the distance and position of the receiver angle is covered. The receiving power of 1st lamp is $8,7 \times 10^{-3}$ mW, the distance is 3,83 m and the position of the receiver angle is 55,87°.

Key words : VLC, LED, BER, OOK-NRZ, Optical Concentrator, Photodetector