

ABSTRACT

This thesis conducts a study on one wireless technology that can provide solutions to network development. *Visible Light Communication* as a technology currently being developed has many advantages given, but there are deficiencies in the distribution of light or received power that can be affected by the conditions of the room and *photodetector*.

This thesis does a research about the effect of receiver angle orientation of 0° , 15° and 25° on the performance of the *Visible Light Communication* of the light distribution system using *On Off Keying Non-Return to Zero* (OOK-NRZ) modulation with two room condition scenarios, *Line of Sight* (LOS) and *Non-Line of Sight* (NLOS). Both scenarios be tested based on the receiver power, propagation angle and *Bit Error Rate* with 6 Watt of transmitted power and located in a room with the size $5m \times 5m \times 3m$.

The results of this thesis prove the receiver angle orientation can affect the scope of communication and received power with some conditions or use of different channel in the room. The largest coverage area is obtained $25 m^2$ coverage with the smallest received power in LOS channel -52.6 dBm and in NLOS channel -51.6 dBm. The narrowest of coverage area is obtained $13.64 m^2$ with the smallest received power in LOS channel -43.4 dBm and in NLOS channel just -44.4 dBm.

Keywords: *Visible Light Communication, Line Of Sight, Non Line Of Sight, Photodetector, Receiver Angle Orientation, Bit Error Rate.*