

## ABSTRACT

Communication technology is a technology that has a very fast and rapid development. One of communication technology is wireless communication technology. Visible Light Communication (VLC) is a wireless system that is being developed, because VLC has fast speed, user friendly and more efficient in energy use.

In this final task research, a bit rate comparison analysis conducted in VLC, using various bit rates. The Bit rates used are 0.5 Gbps, 1 Gbps, 2 Gbps, and 3 Gbps. This research uses a single lamp of Light Emitting Diode (LED) with a power of 2 Watt and the modulation of On Off Keying-Non Return to Zero (OOK-NRZ) on conducted simulation. This research conducted in a 5x5x4 m closed room using mirror as a reflector on the one side of the room.

Based on simulated results, the farthest and wide range coverage area for 0.5 Gbps is 4.7878 m with an area of  $20.52 m^2$ , 1 Gbps as far as 4.7331 m with an area of  $18.84 m^2$ , 2 Gbps with the farthest distance value 4.4738 m with an area of  $16 m^2$ , and at 3 Gbps get The farthest distance is 4.0726 m and the coverage area is worth  $14.56 m^2$ .

**Keywords:** Visible Light Communication, Light Emitting Diode, On Off Keying - Non Return to Zero, Bit Rate