ABSTRACT

This final assignment conducts the study of Optical Wireless Communication, in this era telecommunication technologys is expanding very rapidly. One of them is wireless communication, it is divided into several kinds depending on the medium used. Visible Light Communication is one of the optical wireless technology which provides communication and illumination, because using visible light as a medium. One of the problem that occur on the VLC is how far the coverage that can emitted by Light Emitting Diode (LED).

To get how far coverage can be emmited by LED, this final assignment performs an analysis of Full Width at Half Maximum and coordinate of LED. This final assignment uses 4 LED placed on the roof of a room that has dimension $5 \times 5 \times 3$ m^3. System performance is evaluated using several parameters i.e Bit Error Rate (BER), Signal to Ratio Noise (SNR), and Optical Distribution.

The contribution of this final assignment is to get how far the coverage can be emitted by LED based on BER $\leq 10^{-3}$. The results of this final assignment were acquired that with an angle of FWHM 40°, the receiver's farthest distance from transmitter by 2.51 m and the wide coverage is 20.68 m^2.

Key words **:** *Visible Light Communication*, *Full Width at Half Maximum*, *Light Emitting Diode*, *Bit Error Rate*, *Signal to Noise Ratio*