

ABSTRACT

Technological advances in the current era are increasingly rapid and far developing, many who want to create new and more efficient technologies. Visible Light Communication (VLC) is a transmission that uses a light source which in the process superimposes data transmission on the light source. VLC is one of the technologies currently being developed, but in many cases it has also been allocated or not able to use radio frequencies such as hospitals, gas stations, aircraft, and many more.

In research analyzing the received power in VLC technology, the effect of the amount of power sent and the number of bit rates to the receiver will be analyzed. There are several modulation techniques that can be used in VLC technology, but the modulation techniques used in this Final Project are Quadrature Amplitude Modulation (QAM) modulation and Asymmetrically Clipped Optical Orthogonal Frequency Division Multiplexing (ACO-OFDM) modulation. Uses 1 LED in a room with a NLOS (Non Line of Sight) channel.

In this Final Project can find out the effect of sending power and bit rate on the results obtained, the largest communication coverage can be with a broad coverage of $22.36m^2$ and narrowest that is equal to $3.64m^2$ of the total area of $25m^2$.

Keywords: Visible Light Communication, Modulasi, Non Return to Zero, Asymmetrically Clipped Optical Orthogonal Frequency Division Multiplexing, Bit Error Rate, Signal to Noise Ratio.