

ABSTRACT

Visible Light Communication (VLC) is one type of communication that is currently continuing to experience growth, due to the relatively more traffic communication systems occurring in a room with a fixed location. VLC uses visible light to transmit data. However, in the process of transmitting data, VLC can experience interference. Interference in VLC can be caused by ambient light, one of which is sunlight.

In this final project a simulation of VLC design will be made, using Pulse Position Modulation (PPM) as the modulation technique. By using a room dimension of 5x5x3 meters, by placing the lamp in the middle of the room or at coordinates (0.0), and there are two scenarios used in this study, the first scenario is the VLC system in the room without any interference from sunlight or Line of Sight (LOS), while for the second scenario assumes that there is a window in coordinates (1.25), so that half of the room's dimensions experience sunlight interference or LOS with interference and the other half is not affected by sunlight interference or LOS. The system performance is evaluated using BER and SNR parameters.

The final results show that the VLC system in scenario I is relatively better than the scenario II VLC system. This is evidenced for scenario I, the received power is 38.62 dB, while for scenario II it is 36.29 dB. While for the distribution for BER maximum in scenario I obtained 0,2745 and for scenario II is 0,4853.

Keywords : VLC, PPM, Sunlight, LED, BER, SNR.