

ABSTRACT

Visible Light Communication is communication that based on visible light. Light is the most essential things nowadays, a proverb says that where there is light there is life. This technology exists because the need of a radio frequency range that is not yet used, considering that frequency allocation for communication that now became quite a few. Light from a lamp then comes to think how to apply it for some future communication. The advantage of using it as communication is light not harmful for human body. And some disadvantage is that light can't get through a solid state.

Visible light communication that is going to do is sending a digital data in the form of picture and text. Firstly data is sent over the transmitter with a LED 10 watt, then it is received in the receiver with a phototransistor. From here then it is placed again 1 more LED near the transmitter with the variable of distance from 1-25 cm. From the basic theory that says radio wave with the same frequency have interference each other then from here we can watch over whether it is having an interference or not with the analysis from the data of Character Error Rate (CER) and Bit Error Rate (BER).

After conducting some test, finally it is came into conclusion that on visible light communication, information that is being sent then received clearly at the distance 28-45cm. Then when added one interference that isn't sent anything and located parallel to the main transmitter of VLC, the minimum distance to have CER and BER getting the lowest value is at the distance 21cm with the average of 0. And in the last test, added another LED to interfere the main system of VLC and then the interferer also sent a file at the same time the transmitter VLC system, then the distance to get CER and BER have the lowest value is minimum 19cm.

Keywords : *visible light communication, LED, phototransistor, CER, BER.*