

ABSTRACT

Communication system technology that uses visible light as an information carrier or commonly called Visible Light Communication (VLC) is growing. This technology existed because of the radio wave spectrum use in some places is banned, the limited frequency of radio waves, and the use of LED lights in the community also increased. LEDs are more power-efficient and have very high switching capabilities that make it possible to be used as an information sender.

This is a development from research that has been done previously. In the previous research, prototype can transmit digital information in the form of text and image in the range of 1 - 12 cm, angle of acceptance 0° - 75° and baud rate 4800, 9600, and 19200 bps. This research create a VLC transceiver prototype with parallel array LED and phototransistor for sending digital data in the form text, image, audio and video with longer distance than previous research. This prototype use half duplex communication systems. Reflector is added to the array LED and the array phototransistor to make the distance longer. The experimental scenario is done by changing the distance, angle of acceptance, and baud rate of both sender and receiver prototypes.

In this research, prototype that has been made can transmit digital data up to 137 cm distance. The angle acceptance where prototype can work equal to 0° - 45° . As for baud rate, prototype can work on 2400 bps, 4800 bps, dan 9600 bps.

Keyword : *VLC, transceiver, LED, phototransistor, array.*