ABSTRACT

The development of telecommunications is currently growing rapidly. At present there have been many new breakthroughs in the field of telecommunications including developments originating from the development of light transmission media (VLC). Initially the use of light communication was used only by using infrared light at very close distances.

With the development of UVLC (Underwater Visible Light Communication), now the VLC system can be implemented into underwater. In this final project, the Underwater Visible Light Communication (UVLC) Design and Implementation for Sending Digital Data with color Filter. This tool is designed to use RGB LEDs to send digital data in the form of images through a laptop and USB to TTL with a set of LED Drivers that have been determined. In the receiver, using TSL251R and the digital data will be displayed again on the laptop in the receiver. Through this implementation, it can be seen that information in the form of digital data in the form of images can be transmitted through the UVLC system.

The tool in this system is capable of transmitting digital data in the form of images through visible light under water and can transmit information as far as 50 cm properly and transmit information as far as 70 cm in the air. Based on the test results, the comparison between the baud rate and the sending time is inversely proportional, the greater the baud rate value, the shorter the time to send information data to the recipient. While the comparison between the size of the information sent and the delivery time is directly proportional. Because the larger the size of the information sent, the longer the delivery time.

Keywords : ***Underwater Visible Light Communication, Communication System,*** LED***, Filter color, RGB, Digital Data***