

ABSTRACT

In the era of rapidly developing globalization, technological advances have become a very important phenomenon. One of the domains that have experienced technological advances is communication, especially in underwater environments. Underwater communications face complex challenges, including territorial disputes, communication limitations at sea depths, as well as difficulties in search and rescue operations. This research introduced an underwater visible light communication system underwater visible light communication (UVLC) that rely on light emitting diode (LED) as sender information and photodetector type positive intrinsic negative (PIN) berliner glas photodetector with a window of 3.4 mm (BPW34) as the recipient of the information.

Tests were conducted to evaluate the performance of UVLC systems under various conditions. Parameters measured include communication distance, bit period, and environmental conditions around the system. Test data obtained through experiments. The test results show that the UVLC system successfully operates at a communication distance of 60 cm and 120 cm with a high success rate.

As for data transmission performance tends to decrease with increasing distance communication, indicating the need for consideration in the use of repeaters or reinforcement signals for longer distances. Thus, UVLC systems have the potential to overcome various problems of underwater communication that exist today, as well as to assist and meet the needs in various fields that require communication under the sea.

Keywords : *Light emitting diode, photodetector PIN BPW34, underwater visible light communication.*