

ABSTRACT

Currently, underwater communication is limited to sign language or use auxiliary tools such as a blackboard. Underwater voice communication itself is still becoming resistance due to acoustic waves which have a propagation distance far but only has a small data rate (about Kbps) and Radio waves Frequency (RF) which has a very short propagation distance, but with high data rate (range up to Mbps). Underwater Visible Light Technology Communication (UVLC) was initiate to replace the role of waves carrier, because besides having a long propagation distance, it also has high data rate (up to Gbps).

This final project will test the indoor and underwater channel tools with artificial seawater media. On the transmitter, the side uses Light Emitting Diode Super bright green LED or 500 nm wavelength and receiver using a Positive Intrinsic Negative (PIN) photodetector of type BPW34. The instrument test scenario includes increasing the propagation distance and changing the angle. The output of this Final Project is in the form of power receive in dBm, internal sound level decibels a-weighting (dBA).

In the measurement, it is achieved that the performance of the device was stable, both in the analysis indoor or underwater. It is evident by the value of the transmit power and the sound level on the indoor channel is -6 dBm and 98,8 dBA. Then on The underwater channel, the value of transmit power and sound level is obtained at -10 dBm and 86,6 dBA.

Keywords: UVLC, receive power, sound level