ABSTRACT

Information on wave height and sea level is the information needed in the field of hydrography, especially in determining the Mean Sea Level. In addition, it is useful for predicting the tides of sea water, and also supports an early warning system for tsunamis. Therefore, a monitoring system will be created that can provide this information, which will then analyze the data from the observations that have been obtained at the Cikidang Pangandaran Fishing Port for 4.5 hours in real-time (1 minute).

This monitoring system is located at the Port of Pangandaran with electric power obtained from PLN. Batteries are added in the system to anticipate when PLN power blackout. By using the ultrasonic sensor MB-7383, information of wave height and sea level is obtained with the properties of ultrasonic waves. The raw data obtained from the sensors is processed and transmitted using the LoRa network provided by Antares. Observation data sent via the LoRa network will be stored and can be observed on the official Antares website.

The performance of the MB-7383 Ultrasonic sensor is very good against the water surface which can be seen from the accuracy and precision of the sensor, which are 98.60% and 99.72%, respectively. Observations were made in real-time for 4.5 hours at the Cikidang Pangandaran Fishing Port with energy consumption are 1.79Wh. Based on observations, there was a high tide from 9.00 to 13.30 and was accompanied by an increase in the height of the sea waves.

Keywords: *Wave Height, Sea Level, Mean Sea Level, LoRa, Ultrasonic Sensor.*