ABSTRACT

SMART WATER METER DESIGN BASED ON INTERNET OF THING HOUSEHOLD

This research develops a PDAM (Regional Water Company) clean water meter using the Internet of Thing (IoT) which is a concept that aims to expand the benefits of continuously connected internet connectivity so that PDAM users or officials can find out about household water usage through the application.

This system uses Wemos as a microcontroller using the YF-S021 water flow sensor that is connected to the ANTARES platform, equipped with an LCD and supported with Android applications. The developed system can read the flow of water then calculate the discharge, total volume and price accurately with an error rate of volume testing with manual flow using a measuring instrument resulting in an error rate of 0.0022 L / L or 0.22% with a resolution of 0.0044 L / L or 0.44% and testing with water flow using a water tap produces an error rate of 0.0046 L / L or 0.46% with a resolution of 0.009 L / L or 0.9%. Network quality testing between Wemos, ANTARES, and Android also resulted in 959 bytes / s throughput, 0.16 seconds delay time, 0.0513% packet loss, 0.898% bit error rate (BER) while the average time needed by data sent to be read the application on Android is 12.08 seconds with sending data from wemos to ANTARES at 692 bytes on one packet send. The minimum power consumption is 0.002706 Watt and a maximum of 0.00585 Watt.

Keyword: PDAM, Wemos, Android, IoT, ANTARES, Flowmeter Sensor.