

ABSTRACT

The use of electricity nowadays is always needed in everyday life. An example of its application is for boarding rooms. The payment of electricity costs is frequently the same. However, the electricity usage may differ. In addition, there can be excess electricity use, which is difficult to control. This happens because it is not known how much electricity is used in each room. It takes a device that can be used to overcome these problems.

Internet of Things (IoT) technology is currently starting to develop and can be used to see electricity consumption easier. In this study, the author will design a 1-Phase Internet of Things (IoT) based kWh meter communication device using LoRa. This device will be used to see the amount of electrical energy used and limit electricity consumption by disconnecting the electrical load using a smartphone application.

The result of this final project is a communication device for an IoT-based single-phase kWh meter that can read data on the amount of electricity on a single-phase power meter and send it to the Antares IoT Platform using LoRa. The average value of the RSSI signal parameter for the delivery of total data uplink in Lab P303 is -82.08 dBm and at Selasar 1st Floor, Building P -100.33 dBm, the total data uplink SNR parameter in Lab P303 is 9.12 dB and at 1st Floor of the P Building is 5.54 dB, and the total data uplink delay parameter in the P303 Lab is 0.622 s and at Selasar 1st Floor, Building P is 0.6223 s. For downlink data, the electricity restriction order was received with an average delay of 3,789 s at Lab P303 and at Selasar 1st Floor, Building P is 3,002 s.

Keyword : *electricity, 1-phase kWh meter, internet of things, LoRa*