

ABSTRACT

Monitoring the patient's vital signs can be done anywhere without having to go to the hospital through the Internet of Things device. Internet of Things device technology requires internet access, not all rural areas have internet or Wi-Fi access. The solution to this problem is to build a remote health monitoring system using LoRa (Long Range), where LoRa is a long-distance wireless communication system that can be applied anywhere and makes it easier to send patient vital sign data such as body temperature using the MLX90614 sensor, heart rate and oxygen in the blood using the MAX30102 sensor to health workers via the Antares Platform. Based on the results of the body temperature sensor test, namely MLX90614, after performing a linear regression analysis on the temperature sensor measurement, there was a decrease in the average error value from 20.88% to an average error value of 0.03%. The MAX30102 sensor, the results of measuring the heart rate value, obtained an average error value of 2.3% and the oxygen in the blood obtained an average error value of 1.5%. In testing the placement of the end device distance is very influential when sending patient vital sign data, the farther the distance and the number of obstacles when sending via LoRa communication, the worse the signal quality results. By using this method, it is hoped that health workers can monitor patients remotely in remote villages.

Keywords: *lora communication, linear regression, health monitoring system, temperature measurement, heart rate measurement*