

## ABSTRACT

*LoRa is a wireless communication system that offers long distance and low power communication. LoRa has several parameters. Physical layer one of which is Spreading factor, SNR, RSSI. With LoRa, there are many tools made to help humans for their daily needs, LoRa can also be applied in various places such as in cities, villages, or in the forest. Although there are many advantages to using lora, there are also some disadvantages. The solution is to design a network service to transmit information, for long distance wireless networks can be used, one of which is LoRa technology, where the lora wireless network can provide long-distance data communication ranges of up to 15 km. The author conducted this research to determine the performance of LoRa in the forest and to find out how much influence the spreading factor and the percentage of data received. In the research, the author makes a node from Arduino which has been assembled with LoRa. The data retrieval process is carried out every multiple of 100 meters between two LoRa nodes in the forest, and configures LoRa by setting 250 for Bandwidth (BW), 4/5 for Coding Rate (CR) and for Spreading factor (SF) using six configurations. namely 7,8,9,10,11,12. The results of the analysis show a decrease in signal quality with increasing distance, marked by a decrease in the average RSSI and an increase in the average negative value of SNR. The configuration of the spreading factor also affects signal quality, with a higher spreading factor tending to result in a lower RSSI. In some configurations with longer distances, there is a drop in data reception rate which could indicate difficulties in maintaining reliable communications.*

*Keyword: LoRa, Hutan, Spreading factor, RSSI, SNR*