ABSTRACT

The development of Internet Of Things (IoT) is a development that has become a topic of international research. Low Power Wireless Area Network (LPWAN) is designed to connect IoT devices with low power communication and wide range. Long Range (LoRa) technology is one of the implementations of antenna components in wireless technology by offering long distance and low power communication systems. For the LoRa working frequency in Indonesia, it has the ability to work at the frequency of 920 MHz to 923 MHz. LoRa has a wide range of up to several kilometers with Line Of Sight (LOS) conditions and sufficient gain. In wavy geographical conditions and small gain, it causes multipath fading so that the LoRa signal coverage distance will be reduced. In this study, four methods were used, namely the inset feed with a return loss value of -16,141 dB, a VSWR of 1,369 dB, and a gain of -4.090 dBi, then the MIMO method with a return loss value of -18,902 dB, a VSWR of 1,256 dB, and a gain of -0,928 dBi, and array method produces a return loss value of -25.076 dB, a VSWR of 1.118 dB, and a gain of 1.769 dBi.

Keywords*: 920 MHz Frequency, IoT, LoRa, LOS (Line Of Sight), LPWAN.*