

ABSTRACT

This year, the need for both in the industrial and the home scale to start using LoRa technology is increasing. LoRa is a long distance communication system with low power and data transmission. One of the devices contained in LoRa is an antenna. Antenna is a component transmits signals to free space and receives signals from free space. The software used to design the antenna include CAT 2019 and EAGLE. The components in the manufacture of the antenna include the substrate, ground plane and patch. The substrate material used is FR-04 (lossy) with an epsilon value of 4,3. While the material of the patch and ground plane is copper (annealed). The antenna design uses an impedance value (Z_0) of 50 ohm. Because, an impedance 50 ohm is a stable type of antenna. Design and realization for applications on LoRa with a frequency of 920 – 923 MHz. The simulation works at a frequency of 920 to 923 MHz, has a VSWR (Voltage Standing Wave Ratio) value of < 2 at the center frequency of 921.5 MHz. The process of optimizing the antenna parameter values such as substrate length, substrate width, patch length and patch width have an influence on the resulting VSWR value.

Keywords : LoRa, VSWR, Frequency