

ABSTRACT

RFID (Radio Frequency Identification) can detect and identify objects without using a cable (wireless) with a longer distance. The RFID system has an antenna so that it can capture signals that contain certain product information, and then process it to the system server. The antenna's ability to capture signals is one of the important parameters in order to become a good RFID system. The design is carried out on the UHF (Ultra High Frequency) frequency band, because it has higher speed and can read more number of tags (bulk reading).

In this final project, a meander line shaped microstrip antenna is designed and realized as an RFID reader with FR-4 substrate. The frequency band used is the UHF (923 - 925) MHz band. The range is based on frequency regulation in Indonesia for RFID applications issued by the Indonesian Minister of Communication and Informatics in Regulation No. 34 of 2012 concerning Technical Requirements of Near-Distance Telecommunication Tools and Equipment.

The results of this antenna design have substrate size of 120.85 mm x 37.5 mm. At 924 MHz working frequency, the VSWR is 1.363, the bandwidth is 21.659 MHz, the radiation pattern is bidirectional, the gain is -3.59 dBi and the polarization of the ellipse.

Keywords: Antenna, microstrip antenna, meander line, RFID, UHF