

ABSTRACT

Radio Frequency Identification (RFID) is a technology that uses communication via electromagnetic waves to change data between terminals and objects such as goods, animals, or humans with the aim of identifying and tracing traces through the use of a device called an RFID tag.

In this final project, a square microstrip antenna with an N slot at a frequency of 2.4 GHz has been designed and simulated for the RFID system. The aim is to add N slots because the bandwidth of the microstrip antenna is narrow, while for RFID it requires a fairly large bandwidth so that it can be read by the system.

The results of the optimal microstrip antenna simulation are that the antenna bandwidth is 146.4 MHz, the return loss achieved is -16.450966 dB, the antenna gain is 4.45 dBi and the radiation pattern is unidirectional. For antenna measurement results, the antenna bandwidth is 309,54 MHz, the return loss achieved is -30,037 dB, the antenna gain is 4.4 dBi and the radiation pattern is unidirectional. These results have met the antenna specifications for the RFID system.

Keywords: Square microstrip antenna, N-Slot, 2.4 GHz RFID