ABSTRACT

WiFi is a wireless networking technology that uses radio waves to provide high-speed wireless internet access. Therefore, WiFi requires an antenna with a wide bandwidth. Microstrip antenna has small size, light weight, low power consumption, easy to fabricate and low price. All of these advantages make microstroip antennas very suitable for WiFi applications. However, microstrip antennas have a narrow bandwidth.

To overcome these problems, this final project studies the design of microstrip antennas using proximity coupled feeding techniques and adding an M-shaped slot to the patch to increase the bandwidth of the microstrip antenna. The antenna is designed to work at a frequency of 5.8 GHz, has a minimum VSWR/return loss value of 2/-10 dB in the frequency range 5.75 – 5.85 GHz (minimum bandwidth 100 MHz), a minimum gain of 3.5 dBi, has a omnidirectional radiation pattern and linear polarization.

To prove the design concept, a simulation is carried out using the calculated parameters and the optimization results parameters. Optimization is done by reducing the dimensions of the length and width of the patch. The simulation results of antenna performance using a patch length of 13.886 mm and a patch width of 8.8 mm at a frequency of 5.8 GHz produce a VSWR value of 1.1916, a return loss value of -21,102 dB and a gain value of 6.196 dBi and bandwidth for VSWR. 2 is 278.4 MHz. In addition, the antenna has an omni-directional radiation pattern and linear polarization.

Keywords: *Wifi, Microstrip, Proximity coupled, M-Slot.*