

ABSTRACT

The increasing demand for high speed data access encourages the emergence of a technology that can transmit information in a relatively short time and fast data access speed. One of them is MIMO technology. MIMO (Multiple Output Multiple Input) is a technology that use multiple transmit and receive antenna. MIMO technology can be applied on WI-Fi (Wireless-Fidelity) base on IEEE 802.11n standards.

In this final project, a microstrip 4x4 MIMO antenna with circular patch for Wi-Fi application on frequency 2441 MHz is designed. Because of the type of MIMO antenna, parameters become like mutual coupling become important things. Hence four scenarios with different configurations are made to choose the best design.

MIMO antenna simulation results work at 2441 MHz frequency with average value $VSWR \leq 1,0151$ mutual coupling $\leq -40,2172$ dB, bandwidth up to 87,1 MHz, omnidirectional radiation pattern, gain 3,59 dBi and elliptical polarization of the four antennas. MIMO antenna realization has overall dimensions of 117,14 mm x 117,14 mm can work on frequency of 2441 MHz. This antenna has an average value $VSWR \leq 1,1234$, Mutual Coupling $\leq -36,4685$ dB, bandwidth up to 77,6 MHz, omnidirectional radiation pattern, gain 3,24 dBi, and elliptical polarization of each antenna.

Keywords : *Antenna, MIMO, Circular Patch, Wi-Fi*