ABSTRACT

The development of wireless communication technology in the world to date so rapid and diverse . One of them is Wi - Fi (Wireless Fidelity). To support these technologies , will not be separated from a device called an antenna. Microstrip Antenna is used fairly popular , but has the disadvantage that the Narrow Band or having a narrow channel bands . So to improve or cover the shortfall , the microstrip antenna using IDMA technique .

In this final project the writer Microstrip Antenna theme which serves to increase the bandwidth by IDMA technique (Identical Dual Microstrip patch antenna with air- gap) is by adding a second patch on top of the first patch similar / identical to having the air space between the two patches with certain distance . By design using CST software and antenna measurements in order to obtain the result of increased bandwidth and antenna parameters good value .

The results has obtained after the design using CST software and perform the measurement antenna is omnidirectional radiation pattern shaped, linear polarization, the Gain value of 3.7 dB. VSWR value of 1.11. Impedance Terminal value of 51.15 Ω. The value of bandwidth in the simulation results without using IDMA is 27.7 MHz compared using IDMA is 31.1 MHz and the measurement results without using IDMA is 51.6 MHz compared to 55 MHz for use IDMA. Based on the simulation and measurement results, the microstrip antenna using IDMA technique is not feasible to increase the bandwidth of up to 3.3% on the Wi-Fi system. Because only an increase in bandwidth to 2.2%.

Keywords : Microstrip antenna , bandwidth , Wi - Fi , Narrow Band , IDMA , CST , VSWR , radiation pattern , polarization , Terminal Impedance , Gain .