

ABSTRACT

Microstrip antenna is one type of thin boards shaped antenna and capable of working at high frequencies. The total package size microstrip antenna is likely to be smaller, patches varying shapes, easy to implement, and the price is relatively cheaper manufacturing. However, microstrip antennas also have drawbacks. One disadvantage of these antennas are operating frequency range produced is quite small or narrow bandwidth.

There are many ways / methods that can be done to overcome the bandwidth tends to narrow, such as by using parasitic elements, increase the thickness of the substrate, reduce the dielectric constant, or by making modifications as patch antenna U-shaped, E-shaped, EH-shaped and also a pair of double cross-shaped slots. Antenna with a pair of double-cross-shaped slots microstrip antenna is a rectangular patch antenna radiator shapes modified to widen the bandwidth so that wideband characterized by a certain frequency range. A pair of double cross-shaped patch antenna are placed near the non-radiating and groundplane layer between the substrate layer will be the layer of dielectric. Method of adding a layer of dielectric between the layers of the coating substrate groundplane is also able to widen the bandwidth that will be achieved.

Simulation results that have been achieved using CST software is 7.881 dB at 2.4 GHz and bandwidth 215 MHz (8.89%) on $VSWR \leq 2$. Rectangular microstrip antenna with a pair of double cross-shaped slots was realized and obtained results of measurements are 8.524 dBi gain and bandwidth 280 MHz (11.72%) on a $VSWR \leq 2$. The radiation pattern of the antenna is unidirectional. After testing directly on the system, then the result is known antenna can work well on Wi-Fi system.

Key Words : microstrip antenna, cross-shaped slots, Wi-Fi