

ABSTRACT

Technological growth of mobile wireless communications in modern world is going faster and immeasurable. It makes a lot of emerging the new technology standard and sophisticated progressively. To provide that technology, Apparatus which cannot be discharged and absolute there must be in wireless communication system is antenna. Antenna is the device that transforms guided wave into free space wave and vice versa. The function of antenna as transmitter and receiver electromagnetic wave which very important in wireless communication.

Microstrip antenna is type of antenna which has thin board shape and can work at very high frequency. It has many shapes and one of the shapes is fractal sierpinski carpet. This shape has compact design, easy for fabrication and can integrate with circuit. But this antenna has various weaknesses such low bandwidth and low gain. To cover that, modification antenna will made to overcome this weakness.

At this final assignment designed and implementation microstrip array antenna with fractal sierpinski carpet patch which can operation in range frequency (2.4-2.5) GHz. At this frequency, it can implementation for provide WiFi technology with ansoft HFSS 9.2 as simulator software.

From the results of the design using Ansoft HFSS 9.2 obtained results in accordance with the specifications antenna, with a limit of ≤ 1.8 VSWR at frequency range (2,39-2,50) GHz. After doing the design in Ansoft HFSS 9.2, made the realization of the antenna with fotoethcing techniques. The results of the realization of the antenna measurements do not differ much with the antenna simulation results, the difference is because the environment at the time of measurement is not ideal. Because it is the measurement should be done in a room without echoes like anechoic chamber so that the measurement value in accordance with the Ansoft HFSS simulations 9.2.

Key Word : Microstrip Antenna, Fractal Sierpinski Carpet, WiFi