

ABSTRACT

Antenna is a transformer or transmission structure between guided wave (transmission line) to the free space wave or vice versa. Diverse forms of the antenna according to the design, deployment patterns, and the frequency and gain. While IEEE 802.11 is a set of standards for implementing wireless local area network (WLAN) computer communication in the 2.4 GHz, 3.6 GHz and 5 GHz frequency bands. For the Wireless LAN, using the center frequency of 2.45 GHz and 5.8 GHz as standard Wi-Fi networks. Therefore, in this final task will be designed and realized dual band antenna that works on both frequencies.

Antenna types to be made is that using microstrip fractal antenna with Minkowski method, and manufacturing of the antenna will be done through photoetching. Before the photoetching, antenna design will be done with the counting process to obtain the ideal dimension of the antenna, and the antenna is designed in the form of hardware. Once that was done, including measurement of antenna impedance measurement, measurement of VSWR, return loss measurement, bandwidth measurement, radiation pattern measurements, polarization measurements and measurements of gain, the following analysis to compare the measurement results with the earlier specification.

The results of measurements of Minkowski fractal antenna characteristics are obtained two working frequency: 2.35GHz - 2.57GHz and 5.67GHz - 6.66GHz. With VSWR <1.3, obtained a fairly wide bandwidth of both frequencies respectively 240MHz and 990MHz. Gain is achieved at 2.21 dBi and 2.18 dBi, the radiation pattern bidirectional.

Keywords: *Antenna, Microstrip, Fractal, Minkowski, Dual Band*