ABSTRACT

The development of wireless communication technology in the world today is so rapid and diverse. This of course led to various forms of new technology standards and increasingly sophisticated. One of the wireless communication standard is WiMAX (Worldwide Interoperability for Microwave Access). To support these technologies, will not escape from a device called an antenna. The antenna is defined as a transformer that is passed on guided wave transmission line into free space waves and vice versa. Serves as a receiver antenna and electromagnetic energy release is a very important role in wireless communications.

Monopole antenna is one type of antenna that has one arm in the form of metal and the other end of the arm on the ground. Designed monopole antenna inserted the Sierpinski gasket fractal method in which the functions of the form fractal antenna gain is increased Sierpinski gasket fractal shape. This form has a very compact structure and easy manufactured and integrated with the circuit below.At this final assignment designed and realization monopole antenna with fractal sierpinski gasket patch which can operation in range frequency (3.3-3.4) GHz. At this frequency, it can implementation for provide mobile WiMAX technology with ansoft HFSS as simulator software.

From the process simulation and measurement results obtained VSWR ≤ 1.5, the gain obtained ≥ 2 dB, omnidirectional radiation pattern, and gain bandwidth of ≥ 1% (34 MHz) that is equal to 700 MHz. Therefore fractal Sierpinski gasket monopole antenna can be realized for mobile WiMAX applications at frequencies 3.3 - 3.4 GHz.

Key Word : Monopole Antenna, Fractal Sierpinski Gasket, mobile WiMAX