ABSTRACT

The development of wireless communication technology nowadays has increasedrapidly and has vastly varied . This situation certainly leads into various form of new technology standards which increase its sophistication. One of those wireless communication standards is WIMAX (Worldwide Interoperability for Microwave Access). To support these technologies, we can't eliminate its detrimental form of a device called an antenna. Antenna is defined as a transformer that is passed on guided wave transmission line into the free space wave and in reverse. Antenna as an electromagnetic energy transmitter and receiver, has a very important role in wireless communications.

Monopole antenna is an antenna that is widely popular and frequently used. These antennas can be used for broadcasting applications, car radio, landline mobile communication service, and support the latest mobile phones. The design of array of monopole antenna are adding sierpinski gasket fractal method and fractal shape have function to make more frekuensi range area and push VSWR approaching one. At the end of this project by developing previous research on the monopole patch antenna using a single element, but the results still do not meet the initial specification of the set. At the end of this project, by developing previous research on ***the design and realization of the fractal Sierpinski gasket monopole antenna (3.3-3.4) GHz for mobile WiMAX applications***[8]*, but the results obtained there are those who do not meet the initial specification of the set. With this frequency, it can be used to support mobile WIMAX technology (Worldwide Interoperability for Microwave Access) to improve the performance of the reinforcement Gain antenna, has the work rate and more and also other parameters.*

From the process simulation and measurement result obtained VSWR ≤ 1.5, the gain obtained ≥ 6 dB, omnidirectional radiation pattern, and bandwidth that is equal to ≥ 100 MHz. thus the improvement of antenna that had a low gain previously be a better. Therefore array fractal sierpinski gasket monopole antenna can be realized for mobile WiMAX applications at frequency 3.3 – 3.4 GHz.

KeyWords: Composite Monopole Antennas, fractal Sierpinski Gasket, Mobile WiMAX