

ABSTRACT

The development of communication technology in the modern world is increasing fast and diverse, so much new technology standard emerge and it gets more sophisticated. The antenna is important in the development of telecommunications in particular telecommunications with radio waves. Antenna in this case is a device which directly relate to the transmission medium of communication is indispensable utility. Antenna in general function is a modifier of the guided wave which is passed through the transmission line into free space wave and vice versa. Microstrip antenna is one of a kind of antenna. Microstrip antenna is an antenna that is very compact and it is consisted of two thin plates of conductor which has specific pattern called a patch. Whereas the larger plate is called ground plane. Between the patch and ground plane, there is a dielectric layer with a specific dielectric constant. Generally, the microstrip antenna final projejt is used in user terminal.

This final project is to design and implement of microstrip antenna array with a rectangular shaped patch that works on the frequency center 3.35GHz, on the frequency range (3.3 - 3.4) GHz with Gain ≥ 16 dBi with ± 16 element antenna

From the results of simulation testing, with software simulations using Ansoft HFSS 9.2. value of VSWR ≤ 1.5 and Gain 8.5243 dBi. From the results of antenna measurement, it os obtained that the result is VSWR ≤ 1.2 and Gain 19.54 dBi. And, polaradiation is unidirectional when simulation and the tested of the antenna. Whereas, polarization of this antenna is ellips. With this design of the frequency and gain, the antenna can be used as a transmitter antenna on WiMAX technology.

Keywords: Microstrip Antennas, Gain, WiMAX