

ABSTRACT

The development of mobile wireless communication technologies more quickly and have a variety of types. In addition, in the future, communication not only use voice services only, but began to enter the data services that require a wide bandwidth. WiMAX operates at a frequency of 2.3 GHz, 2.5 GHz and 3.5 GHz. In this final project has been designed and realized a circular microstrip antenna array which works at a frequency of 2500 MHz - 2600 MHz which can be used to support the technology WIMAX (Worldwide Interoperability for Microwave Access).

WIMAX is a wireless broadband technology that has broad coverage and is suitable for transmission in rural areas. This technology was first developed in the frequency 2.5 GHz (2.50 to 2.69 GHz and 2.7 to 2.9 GHz) and 3.5 GHz (3.4 to 3.6 GHz). In this final task in the capture frequency is 2500 MHz - 2600 MHz. The first step to be done is to calculate the dimensions of the antenna by using the transmitted line with the help of software CST microwave studio 2010 to get the antenna performance predictions. The simulation results obtained using the substrate FR4 Epoxy realized. Microstrip antenna array is arranged circle with 4 elements. Rationing methods used are the microstrip line, combined with Coaxial Probe rationing techniques. Using Coaxial Probe, unwanted radiation becomes less.

Antenna Measurement results show that the resulting polaradiasi is unidireksional, polarization ellipse with getting VSWR <1.5 at frequency (2500-2600) in the amount of 1.159 MHz and gain of more than > 6dbi that is equal to 9.165 dbi

Key words: Microstrip Antenna, WIMAX, Coaxial Probe, FR4 Epoxy