

ABSTRACT

Wireless communication technology in the developing world so rapidly and so that raises a wide range of standard forms of new technology and increasingly sophisticated. One example of a tool used to support these technologies, namely the antenna. The antenna is defined as a transformer between the transmission line transmission structure with a wave of free space in the form of an electromagnetic wave or vice versa. Functioning as a receiver antenna and electromagnetic energy release and thus have an important role and an absolute must have in a wireless communication.

In this final task the design and realization of microstrip antenna array with Minkowski fractal-shaped patch that works on a frequency range (2.3-2.4) GHz. This frequency is one of the working frequencies of WiMAX technology (Worldwide Interoperability for Microwave Access). Patches arranged in linear series with as many as six pieces of composition. The six pieces of this patch fed by a stripline and using double $\lambda/4$ matching transformer. Stages of the process initiated from a mathematical calculation, simulations using help of Ansoft HFSS 10 software, the realization of prototypes with the help of fabrication using fotoetching process, and the last measurement prototype realization.

Prototype antenna is capable of producing a work antenna characteristics at 2.35 GHz center frequency with a wide bandwidth of 100 MHz for VSWR values below 1,5. Impedance at 2.35 GHz center frequency of $54.285 + j 11.283 \Omega$. Gain obtained by 6.19 dBi with unidirectional radiation pattern. Therefore, antenna specification meets the specifications for WiMAX.

Key words: Microstrip Antenna, Fractal Minkowski, WiMAX