ABSTRACT

Microstrip antenna is popular antenna because of its function and its profile which is small and lightweight. Basically this Antenna consists of patch, dielectric substrate and ground plane. Aluminium oxide is chemical element which consists of aluminium and oxygen. Its formula is Al_2O_3, *and known as alumina.*

This final project explains about supported equipment of transmission for WiMAX. This hardware should have fulfilled user needs. . This antenna is located in the consumer side. So, the antenna has compact design, exact gain, and has the right polarization. This antenna is microstrip patch antenna which has rectangular shape and will work at range frequency by 3.3-3.4 GHz to support WiMAX application (IEEE 802.16d).

From design and measurement test, the VSWR value in frequencies 3.3 – 3.4 GHz $\leq$ *1.8, Radiation pattern* is close to *unidirectional and polarization is elliptical with axial ratio 3.7 dB . It has 2,371 dBi in Gain.*

Key Words: WiMAX, rectangular patch microstrip, alumina.