

## ABSTRACT

Nowadays technology has increase rapidly, followed by the wireless technology that makes communication easier. Antenna is the component of the wireless system which widely used in communication. One of the antenna that will be discusses is microstrip antenna MIMO 3x3. Microstrip antenna MIMO 3x3 has many advantages, such as has small size, lightweight, and can be integrated directly.

In this final project will be design and implement microstrip antenna for WiMAX 3x3 MIMO at the frequency center of 2.35 GHz, the frequency range of 2.3 GHz – 2.4 GHz with  $\geq 3$  dBi gain and the bandwidth up to 100MHz. From the result of simulation using CST software, available bandwidth is already qualified with  $VSWR \leq 2$  and about 5.8dBi for the gain.

The result of measurement obtained that antenna  $VSWR \leq 2$  with first antennas is 95 MHz , second antennas is 100 MHz, third antennas is 75 MHz of bandwidth and gain of 5.82 dBi. The unidirectional radiation pattern obtained both from simulation and measurement. The polarization is linier. This antenna can be used as a receiver antenna on WiMAX technology seen from this frequency design, bandwidth, and gain.

Keyword : MIMO, Antennas, Microstrip, WiMAX