

## **ABSTRACT**

*The development of wireless mobile communication technology is getting faster and diverse. Today and in the future, communication not only using voice-only services, but began to use data services that require a wide bandwidth. At this final project, is designed and realized the microstrip circular array antenna on the frequency range (2.35 to 2.45) GHz which can be used to support WiMAX technology (Worldwide Interoperability for Microwave Access) as a solution to for these developments. WiMAX is a broadband wireless technology that has a far and suitable range for transmission in urban areas.*

*Thing to do is calculate the dimensions of the antenna in theory, and then using the Ansoft HFSS 11 software as a simulation tool before manufacturing. The simulation results will be implemented using air substrate. The exitation method that used in this making of microstrip antenna is an Electromagnetically Coupled (EMC) technique.*

*Prototype is made according to the model and simulation results, which is obtained in the measurement frequency for VSWR  $\leq 1.5$  and the gain to be achieved in this thesis is  $\geq 8$  dBi, which is in the (2.35 to 2.45) GHz frequency range. Then the antenna's radiation pattern is unidirectional.*

**Key word : Microstrip antenna, WIMAX, air substrate, Electromagnetically Coupled (EMC)**