

## ABSTRACT

*The antenna is a transformer between the transmission line and free space wave, or vice versa. Antenna's specification are an important parameters in designing antenna for specific specification. In designing this antenna, characteristics of antenna is needed.*

*This final project developed a research on side-by-side array of  $\lambda/2$  dipole antenna with a reflector which includes characterization, design and realization. Characteristics of antenna are including the influence of distance between antenna and reflector an gain and impedance, the influence of number of elements on gain and the influence of current distribution on gain, radiation pattern , VSWR and bandwidth .The design was created to occupy case study of receiver antenna for WiMAX application, at frequency range (3300-3400) MHz.*

*Prototype are made according to the model of simulation and the result which is obtained from the frequency measurement at VSWR < 1,5, that is frequency range at (3150 – 3517) MHz. The radiation pattern of the antenna is unidirectional and also its polarization is elliptical polarized . The available Gain of this antenna are able reach until 11,7 dBi.*

*Keyword: Array of  $\lambda/2$  dipole antenna, sidebyside, reflector, WIMAX*