

ABSTRACT

Antenna is one of important element in telecommunication world. Antenna that has attracted many people to develop specially in mobile communication is microstrip antenna because of its small size and light mass. Weaknesses that have to given more attention are these antenna has narrowbandwidth and low gain.

In this final project, writer design and realize U-shape patch microstrip antenna array that can operate at 2.35 GHz that is a study case that is taken. Before design the objective case, writer make a characterization to the U-shape patch microstrip antenna and then get the optimum dimension. And array technique is used to get more gain. Dimension that give the optimum result from simulation is used to be a design for realization.

Variations performed on the patch U cause frequency resonance shifting, the gain value changes, VSWR value changes, and changes in the value of the terminal impedance of the antenna. From variations that have done the optimum conditions for the complete the study case based on author version are slot position at the middle, stripline position on the edge, make width slot with ratio about 2:40, and make length of the slot with a ratio of 19:29.

The realization of antenna can operate at frequency 2.365 GHz with 26 MHz bandwidth frequency for VSWR below 1.5. By using array technique, this antenna has more gain, unidirectional radiation pattern, and elliptical polarization. But, this antenna still has narrowbandwidth. Although this antenna has small bandwidth, it still can apply on WiMAX technology.

Keywords : U-shape patch microstrip antenna, array technique, Stripline Feed, WiMAX