ABSTRACT

In radar and communication systems, the concept of reconfigurable antenna is very suitable to be applied. In this antenna, all of the required functions can be achieved through a minimum number of antennas in order to reduce the cost of systems and good performance. Antenna that has been designed in this final project is a kind of Radiation Pattern reconfigurable antenna.. This is beam forming antenna, which is has more than one difference radiation patterns.

In this final project, a rectangular spiral microstrip beamforming antenna is designed. It has switches that its combination can be set. ON and OFF switches position are set by connect and disconnect the strip arm antenna, so different radiation patterns are obtained in one antenna and it works at 2.4 GHz. This antenna is simulated in Ansoft High Frequency Structure Simulator version 10.

Simulation and realization process in this final project produce an antenna which has different radiation patterns in any kind of conditions. One of antenna is implemented, that its dimension size are chose from simulation that had been done. Antenna with 1.6 mm in width and 2 mm cleft is chose. This antenna has 8 switches. From VSWR and radiation pattern simulation results in every switch condition, four conditions are chose to be measured in realization process. These four conditions of switch are measured and the results are compared with the simulation results. From the comparison above we can conclude that the measured results are similar with the simulation results.

Key word : antenna reconfigurable, beamforming, radiation pattern, rectangular spiral