ABSTRACT

Recently, the development of smart antenna technology is one of a good solution to support flexibility, cost efficiency, and power to fulfill the human need for increased communication. Reconfigurable Antenna is one of the latest smart antenna technology which is able to change it's parameters such as operating frequency, polarization, and radiation pattern to maintain the quality of wireless communication links when the propagation environment changes. Radiation Pattern Reconfigurable Antenna can improve security by emitting directional signaling between two users, reduce fading, reduce noise, and increase the diversity *gain*[9].

Within this final project, has been designed and researched reconfigurable microstrip antenna which is capable of changing the direction of the radiation pattern to four different angles on the working frequency of 2400 MHz with the similar shape of the radiation pattern, which is unidirectional. Switches that implemented in this final project are a diode-pin. Pin-diode is a semiconductor component which operates as a variable resistor in the circuit of radio frequency and microwave[10]. The advantages of diode-pin lies on its small size and very high switching speeds making it suitable to be implemented in high-frequency microstrip antenna

In the final stage, a reconfigurable antenna on ideal conditions (connected *patch*es) were able to emitting four variations of the radiation pattern changes in different directions but not followed by a changes in polarization and frequency of the antenna work. Designed antenna has a frequency of 2400 MHz with the bandwidth > 50 MHz at VSWR ≤ 2. The form of the radiation pattern emitted by the antenna is unidirectional by the different of the tilt angle beam areas in each state with the linear polarization.

Keywords : *Reconfigurable Microstrip Antenna, Radiation pattern Reconfigurable, wi-fi*