Chapter Five

Conclusion and Recommendations

5.1 Conclusion:

This thesis has presented reconfigurable dual band rectangular microstrip patch antenna for heterogeneous transceiver. The proposed antenna is operated at 3.5GHz and 5.2GHz for WiMax and WiFi applications and reconfigurable between two these bands. The dual-band antenna configuration by C-slot on the patch plane and two parallel slits in ground plane. Simulation results are ready by Matlab® and CST microwave studio® 2011 simulators. Reconfigurability of the antenna is achieved by using ON/OFF radio frequency PIN diode switches. The reconfigurable antenna is successfully demonstrated for single (3.5GHz) when diodes status is OFF/OFF/ON; single (5.2GHz) when diodes status is OFF/ON/OFFand dual-band (3.5 and 5.2GHz)when diodes status is OFF/OFF/OFF. And also shown good result for the antenna performance such as return loss < -10dB, VSWR< 2, good bandwidth, good radiation patterns and great gains at ON/OFF PIN diodes statuses. Also shown the investigated of the antenna manufactures using PCB with microstrip chip, RP-SMA connector and HPND-4028 PIN diodes switch.

5.2 Recommendation:

For future work of this project is recommended to test the prototype design in real testbed and taking experimental result.

The important recommendation for future work of this design is decrease of gain at 5.2GHz when diodes status is OFF/OFF/ON.

In future study, this antenna design can be operating at 2GHz and 5.5GHz at another status of PIN diodes and will be achieving reconfigurability between two bands.