



double spiral microstrip antenna, microstrip feed line technique is used.

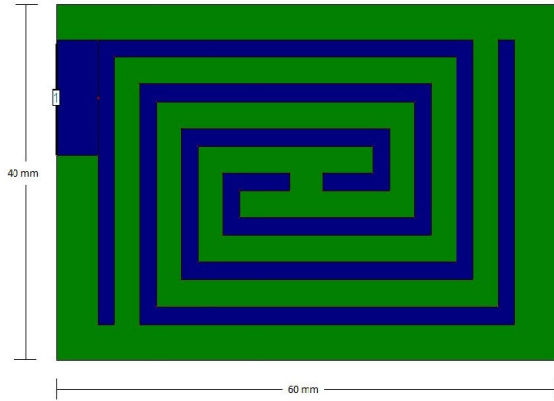


Fig.1. Proposed microstrip antenna design

### 2.2 Simulation and analysis of designed antenna

The simulation of micro strip antenna is done by using IE3D simulation software<sup>3</sup>.The procedure of simulation is done by taking ground plane as a finite plane<sup>2</sup>. The resonance occurs at 2.127GHz and bandwidth is calculated at the frequency range where the return loss ( $S_{11}$ ) is approximately 10 or below. The return loss characteristics of simulated antenna are shown in “fig.2.” and simulated smith chart shows the impedance matching criteria of proposed antenna as shown in “fig.3.”

### 3. Simulated IE3D Results

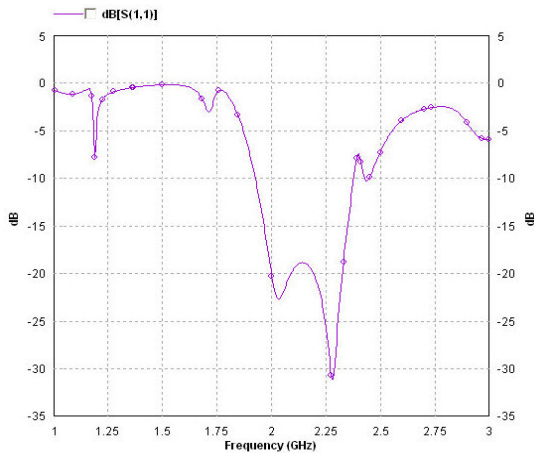


Fig.2. Freq.vs Return loss for proposed antenna

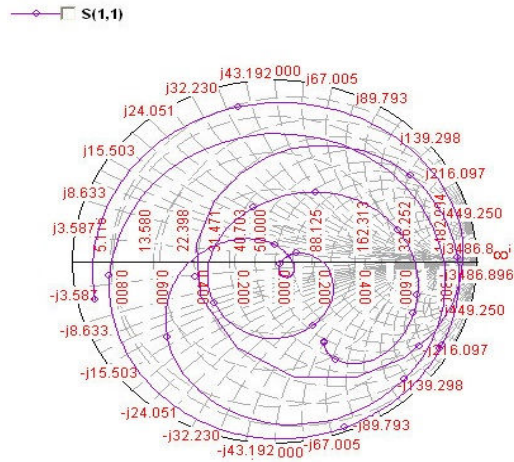


Fig.3. Smith chart for the proposed microstrip antenna

### 4. Conclusion

In this paper, double-Spiral microstrip antenna over rectangular patch improves the bandwidth for Mobile, WiMAX Applications<sup>4</sup>. Here, we have used microstrip line feed technique for enhancing the bandwidth of simple microstrip antenna. Here, we have shown the comparison between the Simulated and the experimental results. In this paper, proposed antenna has a bandwidth of 23.828%, in the range of 1.926GHz-2.447GHz and it resonates at 2.1865 GHz.

### 5. References

1. “Design of Broadband Multi-slotted Microstrip Patch Antenna for Wireless System” Norbahiah Misran, Mohammad Tariqul Islam, Mohammed Nazmus Shakibl and Baharudin Yatim, Proceedings of international conferences on microwave 08.
2. K. L. Wong, “Compact and Broadband Microstrip Antennas”, John Wiley and Sons, Inc., New York, USA, 2002.
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4. Yeonsu Jang, Sungchan Kang, Young-Eil Kim, Jongryul Lee, Jae-Hoon Yi, and Kukjin Chun “A Triple-Band Transceiver Module for 2.3/2.5/3.5 GHz Mobile WiMAX Applications” JOURNAL OF SEMICONDUCTOR TECHNOLOGY AND SCIENCE, VOL.11, NO.4, DECEMBER, 2011.