

Microstrip Patch Antenna with Triangular Slits

MICANS INFOTECH

ABSTRACT

In this paper, a microstrip patch antenna with triangular slits is presented. The proposed patch antenna, with operating frequency of 9.5 GHz, is targeted. Simulation is carried out using Sonnet Suites 13.52. Antenna has 9.683 dB gain at 9.5 GHz with corresponding reflection coefficient of -15 dB. The measurements of the fabricated patch antenna corroborate the simulation results well.

EXISTING SYSTEM

- The design of an efficient wide band small size antenna, for recent wireless applications, is a major challenge. The operation frequency of the reference antenna is 2.285 GHz.
- The size of the antenna is 80 mm X 80 mm. The coaxial probe feeding technique is used.
- Reference antenna has a parasitic element strip under the main part and antenna has 4 asymmetric triangular slits.

PROPOSED SYSTEM

- In this paper, a triangular shaped double-slit microstrip patch antenna with resonance at 9.5 GHz frequency is proposed.
- The number of slits was reduced from 4 to 2 and the feed position was moved to the middle of the antenna.
- The size of the antenna is reduced to 21.6 mm X 21.6 mm and simulation air thickness is 10 mm. Slits angle was changed to optimize the maximum gain.

SYSTEM REQUIREMENTS

HARDWARE REQUIREMENTS:

- Processor - intel core i3
- RAM - 2GB
- Hard Disk - 20 GB

SOFTWARE REQUIREMENTS:

- Ansoft HFSS(High Frequency Structure Stimulator)

REFERENCE

- [1] C. A. Balanis, Antenna Theory Analysis and Design, 2nd edition, John Wiley & Sons, Inc., 1997.
- [2] M. T. Islam, M. Cho, M. Samsuzzaman, and S. Kibria, “Compact antenna for small satellite applications,” IEEE Antennas and Propagation Magazine, vol. 57, no. 2, pp. 30-36, April 2015.
- [3] Sonnet Suites, version 13.52,
www.SONNETSOFTWARE.com