Abstract

Wireless technology is one of the main areas of research in the world of communication and a study of communication system is incomplete without understanding the operation of an antenna. Recent trends of wireless mobile communication technology are towards the miniaturization and demand for more robust and compact designs. This paper proposed a low cost, efficient, high gain and wideband Microstrip Antenna (MSA) using rectangular patch for wireless applications. In this paper an attempt is made to implement the line feed and probe feed MSA with a low cost, easily available FR4 substrate with permittivity 4.4, substrate height of 1.59mm and loss tangent of 0.02. The proposed Antenna is also optimised by using air as a dielectric substrate. An attempt is also made to optimised MSA using double layer with airgap.
Double layer consisted of double sided copper ensure using one side as ground plane and other side as feed network. The air gap reduces both the electric field concentration on the lossy epoxy and the effective dielectric constant of the radiating plane. The structure is optimised using Zeland IE3D version 14.10. The optimised MSA with air as a dielectric substrate provides a maximum gain of about 9.3 dB, RL90% at resonance frequency at 2.4 GHz.

References


Index Terms

Computer Science

Networks
Keywords
Msa  Fr4  Probe Feed  Line Feed  R. I