Abstract

Microstrip patch antennas are strong candidates for use in many wireless communications applications. Microstrip patch antennas are also highly preferable for multiband as well as for the WiMAX application. In this paper, a multi-band H-slot microstrip patch antenna for Worldwide Interoperability for Microwave Access (WiMAX) is presented. The radiation performance such as VSWR, return loss, radiation pattern and gain of the antenna are simulated using Ansoft HFSS, fabricated and then presented. This antenna has a simpler structure than other antennas designed for realizing multi-band characteristics which is just composed of a coaxial feed line, a substrate, and a ground plane. Radiating patch lies on the FR4_epoxy substrate which is having dielectric constant 4.1 and height 1.5mm. Coaxial feeding technique is used to feed the antenna with 50 ohm impedance. This proposed antenna enhances the maximum return loss of -17.79 dB at 5.55 GHz, -24.16 dB at 6.55 GHz and -25.55 dB at 7.40 GHz frequencies. Computer simulated results showing the VSWR value lesser than two for the frequency range of 5.40-5.60 GHz, 6.45-6.22 GHz and 7.35-7.50 GHz. Simulated and fabricated results are very much similar.
Design and Analysis of Triple-Band Inverted F-slot Microstrip Patch Antenna

- Wang Ren, &quot;Compact H-Shaped Slot Antenna for 2.4/5.8GHz WLAN Applications,&quot; IEEE International Conference on Multimedia Technology (ICMT), 2010.
- S. Park, J. Lee, J. Lee, and A. S. Kim, &quot;Dual-port LCP multi-band antenna for
Design and Analysis of Triple-Band Inverted F-slot Microstrip Patch Antenna

- Ansoft HFSS ver. 11, Ansoft Corporation. Canonsburg.

Index Terms

Computer Science
Communications

Keywords

Triple-band; Microstrip Patch Antenna; F-Slot; WiMAX; WLAN; Radiation pattern.