

Triple-band CPW-FED planar monopole antenna for WLAN/MiMax application

Abstract

A triple-band planar monopole antenna is presented in this article. The antenna consists of three strips which correspond to operating frequency bands of 2.4, 3.5, and 5.8 GHz. The proposed antenna has been designed, simulated, and fabricated on 20 × 38 mm² FR4 board. There is good agreement between simulation and measurement results in terms of return loss and radiation pattern. The proposed antenna provides measured -10 dB bandwidths of 200 MHz for the 2.4 GHz (from 2.36 to 2.56 GHz); 620 MHz for the 3.5 GHz (from 3.48 to 4.10 GHz); and 1.38 GHz for 5.8 GHz (from 5.65 to 7.03 GHz). Moreover, the antenna provides the measured gain of 4.73, 1.66, and 3.28 dBi for 2.4, 3.5, and 5.8 GHz, respectively. The radiation characteristics have proven that the proposed antenna seems to be a good potential candidate for WLAN/WiMAX applications.

Keywords

Monopole antenna; Triple-band antenna; WiMAX; WLAN