

Triple-Band Cpw-Fed Planar Monopole Antenna for Wlan/Wimax Application

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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 $20 \times 38 \text{ mm}^2$ 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; WLAN; WiMAX