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A Dual Band Microstrip Patch Antenna for WLAN and WiMAX Applications

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Abstract : In this paper, the design of a multiple U-slotted microstrip patch antenna with frequency selective surface (FSS) as a superstrate for WLAN and WiMAX applications is presented. The proposed antenna is designed by using substrate FR4 having permittivity of 4.4 and air substrate. The characteristics of the antenna are designed and evaluated the performance of modelled antenna using CST Microwave studio. The proposed antenna dual resonant frequency has been achieved in the band of 2.37-2.55 GHz and 3.4-3.6 GHz. Because of the impact of FSS superstrate, it is found that the bandwidths have been improved from 6.12% to 7.35 % and 3.7% to 5.7% at resonant frequencies 2.45 GHz and 3.5 GHz, respectively. The maximum gain at the resonant frequency of 2.45 and 3.5 GHz are 9.3 and 11.33 dBi, respectively.

Keywords : multi-slotted antenna, microstrip patch antenna, frequency selective surface, artificial magnetic conduction
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