

Multiband Prefractal Microstrip Antenna for Wireless Applications

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Abstract : In this paper the design of a multiband pre-fractal micro strip antenna with proximity coupling feed is presented. The proposed antenna resonates on seven different frequencies that are 2.6 GHz, 5.1 GHz, 9.4 GHz, 11.5 GHz, 13.8 GHz, 16.3 GHz, and 18.6 GHz. Simulated results presented here shows that the minimum return loss is achieved at the 16.3 GHz frequency which is up to 37 dB. Also the maximum band width of 700 MHz is achieved by the frequency bands 13.4 GHz to 14.1 GHz, 15.9 GHz to 16.6 GHz and 18.2 GHz to 18.9 GHz. The proposed feed line is sandwiched between two substrate layers and increases in the bandwidth of antenna has been observed up to 13% in comparison of micro strip feed line. Effect of key design parameters such as variation in substrate material, substrate height and feeding technique on antenna S-parameter have been investigated and discussed.

Keywords : fractal antenna, pre-fractals, micro strip antenna, ISM band, electromagnetic coupling, VSWR

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