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(57) Abstract :

The present invention discloses a low-profile hexa-band nanogonol ring fractal antenna 100. A fractal ring 102 loaded with nanogonol shape 103 and defected ground structure with triangular slots 105 are attached to top and bottom surfaces of the dielectric substrate 101, respectively. To attain an effective and efficient performance of microstrip patch antenna optimization of fractal iterations, dimensions of the ground plane and triangular slot on the ground structure were done. The nanogonol ring fractal antenna has been deliberated using FR4 substrate and simulated with Ansoft HFSS. A range of resonance frequency bands between 3.1-10.7 GHz has been observed for the designed nanogonol ring fractal antenna. For all resonance frequencies, the Voltage Standing Wave Ratio (VSWR) is less than 2 for the proposed antenna. The simulation outcomes and the optimal fabricated prototype antenna results match closely in performance. The premeditated antenna has the wide range of applications in UWB region. A total of six resonant frequencies have been observed for the proposed nanaogonol ring fractal antenna.

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