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(57) Abstract :
The invention COMB SHAPED ANTENNA WITH SRR FOR ISM, WLAN AND WIFI APPLICATION • is a Rectangular slotted metamaterial antenna with defected ground structure is proposed for multiband application. The proposed structure has the maximum dimension of 17 x 18.5x 1.6 mm3and the entire structure is fabricated on a single layer FR- 4 substrate material. It has 5 design stages namely antenna A, B, C, D and E. Antenna A is a simple rectangular patch antenna which operates at 2.9 GHz, antenna B is the rectangular patch with slot in the left side with dual band resonance at 2.8 GHz and 5.8 GHz, antenna C with slots in the right side of the rectangular patch has triple band resonance at 2.25 GHz, 3.5 GHz & 4.6 GHz, antenna D which is the combination of slots at both sides has the operating frequency at 2.5 GHz, 3.5 GHz and 5.1GHz. Finally, the antenna E with metamaterial structure can able to achieve tri band application at 2.42 GHz, 2.8 GHz and 4.7 GHz. All the structure are simulated with the CST software. The entire structure is characterized with the help of return loss, radiation pattern, surface current and gain. The optimum values of the critical parameters are chosen with the help of parametric analysis.

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