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Miniaturized and Compact Monopole Corner Antenna with a Periodic Slot Truncated and T-Inverted Stub-Tuning for Ultra Wideband Applications

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Abstract : The design and analysis of a new compact and miniaturized monopole antenna structure for ultra wideband (UWB) wireless applications are presented and suggested in this paper. The proposed antenna structure is based on corner radiator patch with T-shaped slot and fed by mictostrip feed line with a partial ground plane combined a periodic rectangular slot and inverted T-stub tuning to increase the bandwidth. The design parameters and the performance of the suggested antenna are investigated by using 'CST Microwave Studio' and Advanced Design System. The final prototype of the proposed antenna operates from 3GHZ to 25GHz, corresponding to wide input impedance bandwidth around (157.14%) with a size of 16*24mm2 and can be easily integrated with radio-frequency or microwave circuits with low cost manufacturing. Details of the UWB antenna design and both simulated and measured results are described and discussed.

Keywords : UWB, T-shaped slots, improvement, bandwidth, stub tuning
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