

Compact Super Wideband Patch Antenna Design Using Diversities of Reactive Loaded Technique

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ABSTRACT

Compact super wideband (SWB) patch antenna using diversities of reactive loaded technique is presented in this paper. The antenna consists of two U-slots in the radiating patch with two inverted U-slot and a triangular slit on the ground plane. By having those structures, a super wide operating bandwidth is produced from 2.43 GHz to 32.93 GHz with a fractional bandwidth of 172.5%. Moreover, while only having a compact dimension of $25 \times 26 \text{ mm}^2$, the proposed antenna still can produce an acceptable gain from 2.73 dBi to 7.35 dBi over the frequency range. This compact SWB antenna is very potential to be used for SWB applications because it provides sufficient impedance bandwidth, high gain and stable radiation pattern that are near omni-directional pattern. The performance of the proposed antenna is observed and analyzed comprehensively in this letter.

KEYWORDS: SWB patch antenna; reactively loaded technique; compliment U-slot; triangular slit

DOI: [10.1002/mop.30152](https://doi.org/10.1002/mop.30152)