

# Ultra-wideband CPW Antenna Integrated with Narrow Band Dielectric Resonator

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**Abstract :** In this paper, an ultra-wideband (UWB) patch antenna integrated with dielectric resonator is proposed for cognitive radio applications. The patch antenna is fed by coplanar waveguide (CPW) line, consists of a rectangular monopole having an elliptical base, and operates from 2.6 to 12 GHz. The proposed structure integrates a narrow band rectangular dielectric resonator antenna (RDRA) for operation. The RDRA operates at 5.8 GHz and is excited through an aperture inserted in the UWB patch antenna that is considered as a ground plane. The electromagnetic analysis is carried out using CST microwave studio and HFSS software. The numerical results, obtained from simulation, are given and compared in terms of S parameters and radiation patterns.

**Keywords :** Integrated antenna, coplanar waveguide (CPW) line, rectangular dielectric resonator antenna (RDRA)