

# Ultra-Wideband Antenna Integrated with Dual-Band Dielectric Resonator

I. Messaoudene, T. A. Denidni, A. Benghalia

**Abstract :** In this paper, we proposed a novel integrated ultrawideband(UWB) monopole antenna with dual-band antenna. The antenna consists of planar rectangular with semi-elliptical base and a rectangular dielectric resonator (DRA) with dual band operation. Both of them are excited via coplanar waveguide(CPW) lines. The numerical results show that the planar monopole provides a -10dB impedance bandwidth between 2GHz and 12 GHz which largely covers the entire UWB spectrum, and the rectangular DRA operates at two bands; 5.7-6.2 GHz and 8.2-9.7 GHz. 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 :** CPW-fed line, dielectric resonator antenna (DRA), Dual-band antenna, Integrated antennas, UWB antenna.