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Ultra-Wideband Antenna Integrated with Dual-Band Dielectric Resonator

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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-ellipticalbase and a rectangular dielectric resonator (DRA) with dualbandoperation. Both of them are excited via coplanar waveguide(CPW) lines. The numerical results show that the planarmonopole provides a -10dB impedance bandwidth between 2GHzand 12 GHz which largely covers the entire UWB spectrum, andthe rectangular DRA operates at two bands; 5.7-6.2 GHz and 8.2-9.7 GHz. The electromagnetic analysis is carried out using CSTmicrowave studio and HFSS software. The numerical results,obtained from simulation, are given and compared in terms of Sparameters and radiation patterns.

Keywords : CPW-fed line, dielectric resonator antenna (DRA), Dual-band antenna, Integrated antennas, UWB antenna.