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Numerical investigations of ultra wide-band stacked rectangular DRA excited by rectangular patch

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Abstract: In this paper, a numerical study of a new ultra wideband (UWB) dielectric resonator antenna (DRA) is presented. The proposed structure consists of two stacked dielectric resonators excited by rectangular patch and operated from 3 GHz to 11 GHz (an impedance bandwidth of 115%), covering the full UWB spectrum. The analysis is carried out using the Finite Difference Time Domain (FDTD) method and two commercial electromagnetic simulators. The numerical results are given and compared in terms of reflection coefficients, radiation pattern and gain. The computed FDTD results are in good agreement with those of simulations.

Keywords : numerical analysis, Finite Difference Time Domain (FDTD) method, stacked dielectric resonators