



A hybrid printed monopole antenna loaded with dielectric resonator for wideband and circular polarization applications

O. M. Haraz, A. R. Sebak, and T. A. Denidni

Abstract:

This article presents a novel compact circularly polarized antenna with wideband operation. The proposed antenna consists of a microstrip-line-fed printed monopole, a finite truncated ground, and a dielectric resonator (DR). Compared to the printed monopole antenna, the proposed DR-loaded antenna has an increased impedance bandwidth, a large axial ratio bandwidth, and a good realized gain across the desired frequency range. An antenna prototype is fabricated and experimentally tested. The measured antenna impedance match is better than -10 dB over 90% from 4.5 to 11.8 GHz frequency band and the 3-dB axial-ratio bandwidth is better than 35% covering the 5.4–7.65 GHz frequency band.

Keywords:

printed monopole antennas; dielectric resonator antenna; hybrid antennas; dielectric loaded antennas; wideband antennas

Published In:

International Journal of RF and Microwave Computer-Aided Engineering , Volume 22, Issue 5 , Pages 588–593