Ultra wideband printed monopole antenna with dual-band circular polarization

Abstract:

An ultra wideband printed monopole antenna with dual band circular polarization for wireless application is presented. The antenna dimensions are 30 × 30 × 1.6 mm3. The proposed antenna is able to cover frequency range between 2.65 GHz and 11 GHz with impedance bandwidth is around 122%. With the use of I-shape slit in the radiation element and the T-slot in the ground plane, the ultra wideband and circular polarization are excited. In addition, the rectangular slit is added in the ground plane, to enhance the impedance- and Axial Ratio - bandwidth. Furthermore, the dual band circular polarization with right hand circular polarization at 3.1 GHz and the left hand circular polarization at 7 GHz are obtained. Also, the 3-dB axial ratio bandwidths are about 242 and 246 MHZ at the lower and upper band without rectangular slit and 356 and 546 MHZ at the lower and upper band with rectangular slit, respectively.