

A Wideband Low-Profile Circularly-Polarized Slotted Patch Antenna

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Abstract : A wideband low-profile circularly-polarized antenna, consisting of 2×2 sequentially-rotated, differentially-fed, slotted rectangular patch elements, is proposed. To realize the right-hand circular polarization, an anti-clockwise phase rotation of 0° , -90° , -180° and -270° is applied between the antenna elements. The proposed antenna, with a height of only 0.02λ (where λ is the wavelength of the antenna at the center frequency of the antenna), exhibits a 68% impedance bandwidth from 2 to 4.05 GHz with a 3dB axial ratio bandwidth in the order of 56% from 2.25 to 4.05 GHz. Moreover, a wide 3dB axial ratio beamwidth of 140° is obtained at the center frequency of 3 GHz, along with symmetrical radiation patterns over the operating frequency band.

Keywords : circular polarization, sequentially rotated, slotted patch antennas, wideband

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