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A Flexible Wearable Linear-to-Circular Polarizer for GNSS Application

Abstract

This paper presents a single-layered fabric-based flexible linear-to-circular polarizer for GNSS application operating at 1.575 GHz. The structure presented here is based on a square aperture with an E-shaped patch structure on the reverse side. The size of the structure is 0. 21λ0 ×0. 26λ0 × 0. 01λ0 The complete structure is flexible, and the frequency of operation is centered at 1.575 GHz, with a minimum value of the axial ratio achieved is 0.06 dB. The 3 dB axial ratio fractional bandwidth is 3.81% (1.54-1.60 GHz) and the conversion efficiency fractional bandwidth covering 90% is 5.09% (1.53 to 1.61 GHz).

Keywords

CubeSats; frequency selective surfaces; LEO satellites; Linear-to-circular polarizer