

New circularly polarized monopole antennas for GPS applications

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ABSTRACT

This thesis proposes a new microstrip-fed circularly polarized printed antenna for global positioning satellite (GPS) receivers. The antenna consists of two orthogonal monopoles, generating two orthogonal linearly polarized waves of equal amplitudes and with a 90-degree phase shift in the operation band. In contrast to typical GPS patch antennas, the proposed antenna has much wider axial ratio bandwidth. In addition, the antenna can be simply designed, cost-effectively manufactured, and easily merged with the related circuit board. A prototype antenna was created and investigated, and the experimental results obtained demonstrate its low sensitivity to manufacturing uncertainty.

Keywords : Global positioning satellite、circularly polarized antenna、monopole antenna

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