

Proximity-Inset Fed Triple Band Antenna for Global Position System with High Gain

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Abstract : A triple band circularly polarized antenna covering 1.17, 1.22, and 1.57 GHz is presented. To extend to the triple-band operation, we need to add one more ring while maintaining the mechanism to independently control each ring. The inset-part in the feeding scheme is used to excite the band at 1.22 GHz, while the proximate-part of the feeding scheme is used to excite not only the band at 1.57 GHz but also the band at 1.17 GHz. This is achieved by up-vertically coupled with one ring to radiate at 1.57 GHz and down-vertically coupled another ring to radiate at 1.17 GHz. It is also noted that the inset-part in our feeding scheme is by horizontal coupling. Furthermore, to increase the gain at all three bands, three air-layers are added to make the total height of the antenna be 7.8 mm. The total thickness of the three air-layers is 3 mm. The gains of the three bands are all greater than 5 dBiC after adding the air-layers.

Keywords : circular polarization, global position system, high gain, triband antenna

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