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Authors:

Garima Saini

S. S. Pattnaik

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Abstract

The new services of mobile broadband system can deal with the growth of mobile internet traffic and high data rate. Long Term Evolution (LTE) is one of the prospective solutions to future mobile broadband systems. In this paper, a novel antenna is presented with Split Ring Resonator (SRR) loading suitable for LTE in handheld devices. The radiating element is Planar Inverted F- Antenna (PIFA) constructed with 2x2 SRR array placed in innerside of the top plate. PIFAs are preferred to use for communication and handheld devices due to low SAR, light weight, etc. The substrate used for this antenna design is RT duroid 5880 with $\epsilon_r = 2.2$. The patch size is 10mm x 16mm and the height of the top plate is varied from 3mm to 6mm. The

antenna is designed to operate in the LTE - FDD frequency bands of 3410–3500 MHz & 3510–3600 MHz; and LTE-TDD frequency bands of 3400–3600 MHz & 3600–3800 MHz. This paper also presents the effect on the performance of antenna in terms of return loss, VSWR, gain and bandwidth due to the height variation of top plate with 2x2 SRR loading.

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Computer Science

Index Terms

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Keywords

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