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A Horn Antenna Loaded with FSS of Crossed Dipoles

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Abstract : In this article analysis and investigation of the effect of loading a horn antenna with frequency selective surface (FSS) of crossed dipoles of finite size is presented. It is fabricated on Rogers RO4350 (lossy) of relative permittivity 3.33, thickness 1.524 mm and loss tangent 0.004. Basically it is applied for filtering and minimizing the interference and noise in the desired band. The filtration is carried out using a finite FSS of crossed dipoles of overall dimensions 98x58 mm2. The filtration is shown by limiting the transmission bandwidth from 4 GHz (8–12 GHz) to 0.25 GHz (10.75–11 GHz). It is simulated using CST MWS and measured using network analyzer. There is a good agreement between the simulated and measured results.

Keywords : antenna, filtenna, frequency selective surface (FSS), horn
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