



Compact and Planar Metamaterials for RF/Microwave applications

By Harleen Singh

LAP Lambert Academic Publishing Jul 2013, 2013. Taschenbuch. Book Condition: Neu. 220x150x7 mm. This item is printed on demand - Print on Demand Neuware - In this book, a study of Metamaterials for RF and microwave applications is presented. Several novel designs of planar Metamaterials are proposed and their electromagnetic properties are investigated with the help of FEM based software package. The proposed structure possesses artificial magnetic conductor like response at a particular frequency which is lower than UCPBG and mushroom like structure. The novel structure also possesses very wide band gap, approximately equal to 4.5 GHz, for surface waves in X-band of frequency. The effect of various structure parameters such as substrate permittivity, substrate thickness, patch size and gap between adjacent unit cells of Metamaterial slab, on reflection phase characteristic, is investigated. These investigations provide information about how to control the band width and resonant frequency of Metamaterial by varying these parameters. The proposed structure is modified to exhibit negative refractive index in some frequency region matched to free space. The Metamaterial slab behaves like DNG medium in a specified frequency region. 112 pp. Englisch.



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