



Metamaterial Inspired Microstrip Patch Antenna

By Surabhi Dwivedi

LAP Lambert Academic Publishing Feb 2013, 2013. Taschenbuch. Book Condition: Neu. 220x150x8 mm. Neuware - The introductory topic of this special issue provides a carefully structured, elegant discussion of the fundamental principles of the radiating elements and has been written as an introduction for the nonspecialist and a review for the expert. An analytical method is used to predict the features of the simulation results, implying that within a certain frequency range, negative value of permittivity and permeability is obtained due to metamaterials. The S-parameters as a performance matrix with -35.1532dB are obtained from antenna simulations carried on CADFEKO Silverlite version 5.5 and High Frequency Structure Simulator version 11. These parameters are used to retrieve the effective permittivity and permeability. Simulations have been carried out for different shapes of microstrip patch antenna in the microwave regime of Low Earth Orbit and Medium Earth Orbit satellites. Based on the methodology, optimization of structure is proposed for the application of metamaterials as antenna substrate to primarily enhance directivity by minimizing its refractive index. 132 pp. Englisch.

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