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ACCRETION IN PARAMETERS OF RECTANGULAR MICROSTRIP PATCH ANTENNA WITH METAMATERIAL

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ABSTRACT

Rectangular microstrip patch antenna is low profile, light weighted and easy to fabricate, but it also have some drawbacks like low efficiency, high return loss, low directivity etc. In this paper, metamaterial structure have been incorporated on patch antenna for improving the parameters of microstrip patch antenna. Metamaterial has few unique and unusual properties due to negative values of permittivity and permeability, with these properties; the Metamaterial will be mainly used to focus on the radiation of the patch antenna and improved parameters of patch antenna. The suggested microstrip patch antenna along with metamaterial cover provides the better response in comparison to patch antenna alone. In this work, the bandwidth of directional device has become twice and the return loss reduced more than one by two times of previous one.

KEYWORDS: Rectangular Microstrip Patch Antenna (RMPA), Metamaterial (MTM), Permittivity and Permeability, Nicolson-Ross-Weir (NRW)