SIERPINSKI GASKET FRACTAL ANTENNA FOR RFID APPLICATION

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ABSTRACT

This paper presents the design of a compact, simple and low cost single band Radio Frequency Identification (RFID) tag microstrip patch antenna based on sierpinski gasket (SGFA).

The SGFA was designed and simulated using Computer Simulation Technology (CST) Microwave Studio. In this design, FR4 was used as a substrate with height 1.6 mm and relative dielectric constant, ε_r =5 at centre frequency of 5.8 GHz. The parameters of the SGFA were measured by using Vector Network Analyzer (VNA).

This work consists of two measurement results which are without and with stub matching. Without using stub matching, the operating frequency has been shifted from its original state where the frequency shifted to 6.175 GHz.

While after using stub matching, it was observed that the simulated and measured values of the parameters of the antenna were closed to each other and concurs well with the specification as well as unidirectional radiation pattern was achieved.

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