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Designing of Log Periodic Antenna using Fractal Koch

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Abstract

In this paper, a log periodic fractal Koch antenna is proposed. The antenna is an amalgamation of log periodic antennas that require large lengths and fractal curves that are known for excellent form factor characteristics. The procedure is to design the LPFKA with three different numbers of iterations for better appraisal. The Zeland IE3D software has been used to analyze the performances of the designed antennas such as return loss, radiation patterns and gain. The antennas have been fabricated using FR4 laminate board thickness 1.6 mm and relative permittivity of 4.4 and mounted above the ground plane at a height of 6 mm. Using fractal Koch technique, the return loss of the antenna can be reduced up to 72% when the series iteration is applied to the antennas without degrading the overall performances.

Keyword: Antennas, Fractal, Koch, Logperiodic