

## Design of Printed Circuit Board Hybrid Fractal Spiral Inductor

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**Abstract:** In this paper, a novel combination of fractal geometry and spiral is proposed to achieve higher Inductance value (L), Q factor (Q) and Self resonant frequency (SRF) against the reported fractal inductors. The proposed inductor achieves an Inductance value of 238 nH, maximum Q value of 99.63 with a Self resonant frequency of 360 MHz with in the area of 10x10mm<sup>2</sup>. The proposed novel hybrid fractal inductor is fabricated on FR- 4 substrate having an outer diameter (OD) of 10 mm. Measurements are carried out by using Agilent Network Analyzer(E8363B). The results show good agreement between simulation and experimental results.

**Keywords:** *High Frequency Structural Simulator(HFSS), Inductance Value (L), Printed circuit Board(PCB), Quality Factor(Q)*