

“Miniaturized dual-mode microstrip bandpass filters using meander space-filling curves”,
pp.187-192

Mohamed H. Awida, Amr M. E. Safwat and Hadia El-Hennawy

Abstract – A new class of dual-mode microstrip loop resonators is proposed and developed for the miniaturization of high selectivity narrowband microwave bandpass filters. The novelty of the proposed structures lies behind the efficient usage of the space inside the loop by employing space-filling curves to increase the loop perimeter and consequently decreasing the structure size. Three different space-filling curves are presented. Physical interpretation of the effect of the space-filling curves on the loop resonator is explained. The idea was successfully applied for microstrip square loop resonators. The simulation results show that the proposed filters have a significant size reduction with respect to the conventional ones. The fabricated prototypes were designed, tested and verified for the GPS applications with center frequency equals to 1.57 GHz.

