HARMONIC REDUCED HIGH SELECTIVE BANDPASS FILTER USING OPEN ENDED COUPLED RESONATORS AND DEFECTED GROUND STRUCTURE

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ABSTRACT

Resent developments in wireless communication systems demand good Band pass filter (BPF) with high quality factor and good selectivity to select the required signal from the adjacent signals. In this paper one coupled Band pass filter with centre frequency 2GHz and 30% Fractional Bandwidth (FBW) has been designed with rectangular split ring coupled resonators forming with conventional Microstrip transmission line. This designed BPF has been simulated with the help of MoM besed IE3D electromagnetic EM simulation software. Here it is found that the proposed BPF provides second harmonic nearer to the twice of its passband centre frequency and some other few harmonics. Therefore, in this paper attention also has been given towards the suppression of harmonics with the help of Defected Ground Structures (DGS) in addition with the proposed coupled microstrip BPF.

Keywords: Microstrip, split ring resonator, defected ground structure, elliptical, bandpass filter