

**QUARTER-WAVELENGTH SIDE-COUPLED RING FILTER WITH
OPEN STUBS FOR NARROW DUAL-BAND APPLICATION**

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ABSTRACT

A Quarter-wavelength side-coupled ring filter with open stubs has been designed and presented. This filter exhibits narrow dual-band frequency response with dual resonance characteristics with reference frequency response at 1 GHz. This filter was realized and fabricated on FR4 substrate, with dielectric constant of 5.4 and 1.6 mm of thickness. Computer-aided design (CAD) software was used to simulate the ideal circuit and the layout of the filter. The response is controlled by varying the value of impedances of each element. The value of the impedances were converted to the microstrip of lines, in terms of length, width and separation gap. Adjustment of the dimensions were required to attain the good response and then fabricated via standard PCB fabrication technique. The dimension of the microstrip filter is about 120 mm x 100 mm. The filter was measured and compared to the simulated response. The measurement results were found to be coherent to the simulation and showed fine separation of passbands with good out-of-band rejection level.

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