Abstracts

Control of attenuation pole frequency of a dual-mode microstrip ring resonator bandpass filter

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A novel method is proposed to control the attenuation pole frequency of a dual-mode circular microstrip ring resonator bandpass filter, keeping the bandwidth constant. In this paper, the coupling between the dual modes is provided as the total effect of stub perturbation at the end of symmetry plane, and the angle between input/output ports. By making a various combinations of these two parameters, it is possible to control the attenuation pole frequency. An additional small coupling induced by excitation capacitance is also considered. Filters are simulated using the calculated coupling constant, and then the attenuation pole frequencies and bandwidth of the simulated filters are verified by experiment. Theoretical expressions are further devised to calculate the attenuation pole frequencies.

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