Abstracts

Lumped-element conductor-loaded cavity resonators

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In this paper, we present a novel conductor-loaded cavity resonator having the form of L and C lumped-element resonators. The resonator is derived by modifying traditional split-ring resonators. The proposed lumped-element resonator offers more than 85% size reduction in comparison with split-ring resonators. In addition, the proposed resonator eliminates the need to use the dielectric support that is typically required for split-ring resonators. An 800 MHz 3-pole Chebyshev function filter was designed, built and tested. The experimental results obtained verify the validity of the proposed concept.

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