Abstracts

A Novel Coupling Method for Dual-Mode Dielectric Resonators and Waveguide Filters

S.-W. Chen and K.A. Zaki. "A Novel Coupling Method for Dual-Mode Dielectric Resonators and Waveguide Filters." 1990 Transactions on Microwave Theory and Techniques 38.12 (Dec. 1990 [T-MTT] (1990 Symposium Issue)): 1885-1893.

A new method for coupling dual-mode waveguide or dielectric resonator cavities is described and analyzed. The method has the advantages of providing a practical, flexible, economic means of replacing irises, of offering easy tunability of the coupling over a wide range of coupling values, and of reducing the length of the coupling structure. Calculation of the resonator's coupling parameters using the mode-matching method yields accurate results and is verified by measurements. Experimental four-pole dual-mode elliptic function filters using the new coupling method for empty cavities and dielectric-resonator-loaded cavities were constructed and tested. The test results showed excellent agreement with theoretical analysis.

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