Abstracts

Full-wave analysis of coupling between cylindrical combline resonators

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The mode-matching method is applied to the analysis of couplings between cylindrical combline resonators, which are key building elements of combline filters. Finite iris thickness and higher order mode interactions are rigorously taken into account, thus allowing any size of rectangular coupling iris to be analyzed, and accurate solutions to he obtained. Validity of the approach is verified by checking the field distributions in the resonators and comparing the numerical results with HFSS and measurements. As an application of the analysis, a filter design example is demonstrated. Typical coupling curves of practical importance are presented, which can help in the design of combline filters.

❑ Return to main document.