

Evanescent-Mode Coupling of Dual-Mode Rectangular Waveguide Filters

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A novel coupling method for dual-mode rectangular waveguide filters is presented and analyzed. Unequal coupling between dual-mode pairs of rectangular cavities is achieved without the need of an iris. This method replaces the iris completely while offering a practical, flexible, and wide range of couplings. Mode matching method is used in the analysis and its accuracy is verified by experiments. A four-pole dual-mode elliptic function filter using this new coupling method is built and tested. Results show excellent agreement with the analysis.

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