Abstracts

Two-port scattering at an elliptic-waveguide junction

Kin-Lung Chan and S.R. Judah. "Two-port scattering at an elliptic-waveguide junction." 1997 Transactions on Microwave Theory and Techniques 45.8 (Aug. 1997, Part I [T-MTT]): 1255-1262.

A concentric waveguide junction consisting of an elliptic waveguide has been formulated using the mode-matching method. The formulation is a generalized solution of the problem such that the second waveguide, which forms the junction, can be any regular shape in cross section. Exact closed-form expressions for computing the coupling integrals have been obtained from the generalized formulation. As a special case of the general solution, the expressions for evaluating the coupling integrals of rectangular-to-elliptic, circular-to-elliptic, and elliptic-to-elliptic waveguide junction are given. Theoretical results compare well with the experimental and published results.

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