Abstracts

Generalized Scattering Matrix of Generalized Two-Port Discontinuities: Application to Four-Port and Nonsymmetric Six-Port Couplers

J. Esteban and J.M. Rebollar. "Generalized Scattering Matrix of Generalized Two-Port Discontinuities: Application to Four-Port and Nonsymmetric Six-Port Couplers." 1991 Transactions on Microwave Theory and Techniques 39.10 (Oct. 1991 [T-MTT]): 1725-1734.

A field theory analysis of multiport, multidiscontinuity structures based on the generalized scattering matrix of a generalized two-port discontinuity concept is presented. The analysis can be used in any structure equipped with any number of input and output ports, and results in substantial simplifications over previous analyses. The GSM's of generalized two-port discontinuities can also be cascaded with the same procedure as the two-port discontinuities and can be used to determine the electromagnetic field and the Poynting vector at every point of the structure, The GSM of the generalized two-port technique is used to analyze four-port and nonsymmetric six-port branch-waveguide directional couplers, and good agreement between the theoretical results and experimental data is obtained.

❑ Return to main document.