Abstracts

A generalized scattering matrix method using the method of moments for electromagnetic analysis of multilayered structures in waveguide

A.I. Khalil and M.B. Steer. "A generalized scattering matrix method using the method of moments for electromagnetic analysis of multilayered structures in waveguide." 1999 Transactions on Microwave Theory and Techniques 47.11 (Nov. 1999 [T-MTT] (Mini-Special Issue on Electromagnetic Crystal Structures, Design, Synthesis, and Applications)): 2151-2157.

The method of moments (MoM) in conjunction with the generalized scattering matrix (GSM) approach is proposed to analyze transverse multilayered structures in a metal waveguide. The formulation incorporates ports as an integral part of the GSM formulation, thus, the resulting model can be integrated with circuit analysis. The proposed technique permits the modeling of interactive discontinuities due to the consideration of a large number of modes in the cascade. The GSM-MoM method can be successfully applied to the investigation of a variety of shielded multilayered structures, iris coupled filters, determining the input impedance of probe excited waveguides, and of waveguide-based spatial power combiners.

❑ Return to main document.