Abstracts

Entire-Domain Basis MOM Analysis of Coupled Microstrip Transmission Lines

J.S. Bagby, C.-H. Lee, Y. Yuan and D.P. Nyquist. "Entire-Domain Basis MOM Analysis of Coupled Microstrip Transmission Lines." 1992 Transactions on Microwave Theory and Techniques 40.1 (Jan. 1992 [T-MTT]): 49-57.

A full-wave spectral-domain integral equation formulation is used to analyze coupled open-boundary microstrip transmission lines. A general rigorous formulation is specialized to the case of two identical uniform lines and a method of moments (MOM) solution is implemented. In contrast with earlier subdomain basis MOM solutions, entire-domain basis functions which incorporate appropriate edge conditions for transverse and longitudinal current components are utilized. This allows close-form evaluation of relevant spatial integrals and results in improved accuracy using far fewer terms. Numerical results in the form of propagation constants and current distributions are presented for the dominant and first two higher-order coupled modes, and compare favorably to results of other techniques.

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