Abstracts

Characterization of a Class of Waveguide Discontinuities Using a Modified TE/sup x//sub mn/ Mode Approach

J. Bornemann and R. Vahldieck. "Characterization of a Class of Waveguide Discontinuities Using a Modified TE/sup x//sub mn/ Mode Approach." 1990 Transactions on Microwave Theory and Techniques 38.12 (Dec. 1990 [T-MTT] (1990 Symposium Issue)): 1816-1822.

This paper presents a modified TE/sup x//sub mn/ wave approach which is used in conjunction with the mode matching method for the field. theory modeling of a class of waveguide discontinuities. In particular, for characterizing waveguide discontinuities in which resonant effects occur, this method resolves conflicting results which have been observed rising the conventional TE/sup x//sub mn/ mode matching technique, commonly known from the literature, and the generalized analysis based on a linear superposition of TE/sup z//sub mn/ and TM/sup z//sub mn/ modes. It is found that results from the modified TE/sup x//sub mn/ mode approach are consistent with the generalized analysis and agree well with measurements on iris filters and corrugated waveguide polarizers. In comparison with the generalized TE-TM mode analysis, the modified TE/sup x//sub mn/ mode procedure consumes less memory and CPU time and provides improved convergence behavior without sacrificing design accuracy.

❑ Return to main document.