Abstracts

E-Plane Steps in Rectangular Waveguide

T. Rozzi and M. Mongiardo. "E-Plane Steps in Rectangular Waveguide." 1991 Transactions on Microwave Theory and Techniques 39.8 (Aug. 1991 [T-MTT]): 1279-1288.

In this paper, the classical problem of interacting E-plane step discontinuities is reconsidered. New, frequency-independent equivalent circuits are derived by explicitly considering the edge condition in the rigorous Ritz-Galerkin variational approach. A dramatic reduction of the numerical effort has also been achieved; in fact, in no case were more than two basis functions needed. The theoretical results have been compared with those reported in [1] as well as with experimental tests, always with excellent agreement. The very high accuracy, the reduced numerical effort, and the absence of relative convergence phenomena make this method ideally suited for the full-wave analysis of interacting discontinuities in efficient CAD routines for small desk-top computers.

❑ Return to main document.