Abstracts

A Rigorous Dispersive Characterization of Microstrip Cross and T Junctions

S.-C. Wu, H.-Y. Yang, N.G. Alexopoulos and I. Wolff. "A Rigorous Dispersive Characterization of Microstrip Cross and T Junctions." 1990 Transactions on Microwave Theory and Techniques 38.12 (Dec. 1990 [T-MTT] (1990 Symposium Issue)): 1837-1844.

A full-wave spectral-domain analysis is applied to the characterization of multiport microstrip discontinuities. This method employs the moment method to find the currents in the microstrip circuits and subsequently the scattering parameters of the junctions. In this approach, all the physical effects are considered including radiation and surface waves. The numerical results for a T and a cross junction are presented and agree well with the quasi-static values at low frequencies. The S parameters of a T junction are further compared with the measured results, with excellent agreement. The utilization of a shaped T junction as a broad-band equal-power divider is also discussed.

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