Abstracts

A Rigorous Dispersive Characterization of Microstrip Cross and Tee Junctions

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A full-wave spectral-domain analysis is applied to the characterization of multi-port microstrip discontinuities. This approach 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 tee and a cross junction are presented and agree well with the quasistatic values at low frequencies. The S parameters of a tee junction are further compared against 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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