Abstracts

Full-Wave Boundary Integral Equation Method for Suspended Planar Transmission Lines with Pedestals and Finite Metallization Thickness

L. Zhu and E. Yamashita. "Full-Wave Boundary Integral Equation Method for Suspended Planar Transmission Lines with Pedestals and Finite Metallization Thickness." 1993 Transactions on Microwave Theory and Techniques 41.3 (Mar. 1993 [T-MTT]): 478-483.

A new boundary integral equation method is proposed for the full-wave analysis of suspended planar transmission lines with pedestals and/or finite metallization thickness. Coupled boundary integral equations are formulated on the equivalent magnetic currents only on the apertures of subregions using the Green's identity of the second kind. Because it is possible to take a large number of terms in the series expansion of Green's functions in each subregion independently from the order of resulting matrices, this approach can avoid the relative convergence problem. Numerical results of the present method on suspended coplanar waveguides are found to have a stable convergent property and to be in excellent agreement with other available theoretical results. Numerical data reveal the effects of conductor thickness and aperture width on the transmission properties of suspended planar transmission lines with pedestals.

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