Abstracts

A Multipipe Model of General Strip Transmission Lines for Rapid Convergence of Integral Equation Singularities

G.E. Howard, J.J. Yang and Y.L. Chow. "A Multipipe Model of General Strip Transmission Lines for Rapid Convergence of Integral Equation Singularities." 1992 Transactions on Microwave Theory and Techniques 40.4 (Apr. 1992 [T-MTT]): 628-636.

An integral equation for solving thin conducting strip problems always involves three singularities, viz, two charge singularities at the strip edges and the Green's function singularity for close proximity of source and field points. This paper overcomes the singularity convergence problem using Gauss-Chebyshev quadrature for the edge charges, but more importantly by a multipipe model for the Green's function singularity, This model applies equally well to both two-dimensional (2-D) and three-dimensional (3-D) problems of metallic strips embedded in multilayer dielectric substrates. To reduce the scope, however, this paper analyzes only the quasi-TEM cases of 2-D thin strip transmission lines in multilayer dielectric substrates.

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