Abstracts

The Finite Difference Method for S-Parameter Calculation of Arbitrary Three-Dimensional Structures

This paper describes the application of the finite-difference method for the determination of scattering parameters of passive, arbitrary three-dimensional, lossy structures. Maxwell's equations are solved in the frequency domain by solution of a boundary value problem. The generalized S-parameters can be computed for any one port or two port structure, while, for the first time, dielectric and conductor losses are taken into account. Higher order mode coupling can be considered and different geometries are allowed at the input and output ports. Verification calculations are given and results are presented for typical structures.

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