Abstracts

Broadband Vertical Interconnects Using Slot-Coupled Shielded Microstrip Lines

N.L. VandenBerg and L.P.B. Katehi. "Broadband Vertical Interconnects Using Slot-Coupled Shielded Microstrip Lines." 1992 Transactions on Microwave Theory and Techniques 40.1 (Jan. 1992 [T-MTT]): 81-88.

A full-wave space-domain integral equation analysis of aperture coupled shielded microstrip lines is presented based on the Equivalence Principle. The formulation includes the capability to model multi-layered substrates through the derivation of the associated dyadic Green's functions which represent the layers through impedance boundary conditions. The method of moments is used to solve for the line currents and slot voltage with even and odd mode excitations which are then interpreted through transmission line analysis to determine the two-port scattering parameters. A parametric study together with experimental data is presented which demonstrates the behavior of the coupler and the accuracy of the technique.

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