Abstracts

Automatic netlist extraction for measurement-based characterization of off-chip interconnect

S.D. Corey and A.T. Yang. "Automatic netlist extraction for measurement-based characterization of off-chip interconnect." 1997 Transactions on Microwave Theory and Techniques 45.10 (Oct. 1997, Part II [T-MTT] (Special Issue on Interconnects and Packaging)): 1934-1940.

An approach is presented for modeling board-level, package-level, and multichip module (MCM) substrate-level interconnect circuitry based on measured time-domain reflectometry (TDR) data. The time-domain scattering parameters of a multiport system are used to extract a SPICE netlist from standard elements to match the behavior of the device up to a user-specified cutoff frequency. Linear or nonlinear circuits may be connected to the model ports, and the entire circuit simulated in a standard circuit simulator. Two- and four-port microstrip-circuit examples are characterized, and the simulation results are compared with measured data. Delay, reflection, transmission, and crosstalk are accurately modeled in each case.

❑ Return to main document.