Abstracts

An efficient systematic approach to model extraction for passive microwave circuits

I. Timmins and Ke-Li Wu. "An efficient systematic approach to model extraction for passive microwave circuits." 2000 Transactions on Microwave Theory and Techniques 48.9 (Sep. 2000 [T-MTT] (Mini-Special Issue on Research Reported at the 8th Topical Meeting on Electrical Performance of Electronic Packaging (EPEP) 1999)): 1565-1573.

This paper introduces a new systematic approach to equivalent circuit model extraction for linear microwave passive circuits directly from full-wave frequency domain simulation. The devices being modeled may be either lossless or lossy. Adaptive frequency sampling is used to minimize the computational effort of EM simulation while critically assisting in determining the pole locations of an RF circuit. A simple circuit model for lossy RF circuits along with a determined starting point of optimization of lumped element component values is also presented in detail. The overall result is an efficient and accurate means to produce a complete equivalent lumped element model for RF circuits that is suitable for use in conventional SPICE-like simulation software.

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