Abstracts

Frequency/time-domain modeling of microstrip circuits by a modified spectral domain approach

P. Arcioni, M. Bressan and G. Conciauro. "Frequency/time-domain modeling of microstrip circuits by a modified spectral domain approach." 2001 MTT-S International Microwave Symposium Digest 01.2 (2001 Vol. II [MWSYM]): 1237-1240 vol.2.

This paper shortly describes a novel full-wave approach to the analysis of boxed planar passive MMICs. The analysis takes into account both the losses in the substrate and in the metallization. Like in the standard SDA the analysis is performed by applying the Method of Moments (MoM) in the spectral domain, but the standard algorithm is modified according to the philosophy of the Boundary-Integral Resonant-Mode-Expansion (BIRME) method. Like in frequency-time domain modeling based on finite difference or finite element methods, this modification lends itself to obtaining the pole expansion of the admittance matrix in the s-plane by solving a linear matrix eigenvalue problem. With respect to finite methods, the implementation of the integral approach described in this paper results in much shorter computer times and requires much smaller memory resources. An example demonstrates the advantage of the method.

❑ Return to main document.