Abstracts

A New Algorithm for the Wide-Band Analysis of Arbitrarily Shaped Planar Circuits

P. Arcioni, M. Bressan and G. Conciauro. "A New Algorithm for the Wide-Band Analysis of Arbitrarily Shaped Planar Circuits." 1988 Transactions on Microwave Theory and Techniques 36.10 (Oct. 1988 [T-MTT]): 1426-1437.

A new algorithm for the wide-band analysis of the two-dimensional model of a planar circuit is described. The planar circuit is considered to be enclosed in a regularly shaped (rectangular or circular) resonator, and the electric and magnetic fields are derived from the Green's functions of this resonator by integrating over the periphery of the circuit not coinciding with the regular shape. The special form used for the Green's fuuctions makes it possible to derive the Z parameters in a special form, similar to Foster's series, but converging much more rapidly. The calculation requires the determination of a reduced number of resonances of the planar circuit, which are obtained by an integral equation approach leading to a linear eigenvalue problem. The algorithm was implemented in an efficient CAD routine, named ANAPLAN, which is briefly described.

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