Abstracts

MoM/BI-RME analysis of boxed MMICs with arbitrarily shaped metallizations

M. Bozzi, L. Perregrini, A. Alvarez Melcon, M. Guglielmi and G. Conciauro. "MoM/BI-RME analysis of boxed MMICs with arbitrarily shaped metallizations." 2001 Transactions on Microwave Theory and Techniques 49.12 (Dec. 2001 [T-MTT] (Special Issue on 2001 International Microwave Symposium)): 2227-2234.

In this paper, we propose a novel approach for the analysis of shielded microstrip circuits, composed of a number of thin metallic areas with arbitrary shapes and finite conductivity, embedded in a multilayered lossy medium. The analysis is based on the solution of an integral equation (IE) obtained by enforcing the proper boundary condition to the electric field on the metallic areas. The IE is solved by using the method of moments with entire domain basis functions, which are numerically determined by the boundary integral-resonant-mode expansion (BI-RME) method. The use of the BI-RME method allows for the efficient calculation of the basis functions independently on the shape of the domain, thus permitting the analysis of a wide class of circuits. Two examples demonstrate the accuracy, rapidity, and flexibility of the proposed method.

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