Abstracts

Efficient Spectral Domain Analysis of Generalized Multistrip Lines in Stratified Media Including Thin, Anisotropic, and Lossy Substrates

G. Cano, F. Medina and M. Horno. "Efficient Spectral Domain Analysis of Generalized Multistrip Lines in Stratified Media Including Thin, Anisotropic, and Lossy Substrates." 1992 Transactions on Microwave Theory and Techniques 40.2 (Feb. 1992 [T-MTT]): 217-227.

This paper deals with the full-wave analysis of multiconductor microstrip lines used in electrooptic modulators (EOM), MMIC or high speed VLSI applications. An arbitrary number of coupled coplanar strips are embedded in a stratified medium involving iso/anisotropic dielectric and/or semiconductor layers. The numerical aspects of the computation of the propagation constants using the spectral domain analysis (SDA) are stressed. An efficient scheme is used to accurately compute attenuation and propagation constants and current distributions with reasonable CPU times. Convergence problems due to the existence of very thin layers adjacent to the metallized interface has been explicitly considered. An algorithm to compute the modal characteristic impedances is provided regardless of the number and nature of substrate layers. A reciprocity related definition of modal impedances is used in this paper. The use of this definition ensures the symmetry of the multiport scattering matrix associated to the structure.

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