Abstracts

Computation of Frequency-Dependent Propagation Characteristics of Microstriplike Propagation Structures with Discontinuous Layers

M. Thorburn, A. Agoston and V.K. Tripathi. "Computation of Frequency-Dependent Propagation Characteristics of Microstriplike Propagation Structures with Discontinuous Layers." 1990 Transactions on Microwave Theory and Techniques 38.2 (Feb. 1990 [T-MTT]): 148-153.

A general procedure based on the method of lines is presented for the full-wave analysis of propagation structures having layered substrates with step inhomogeneities in each layer. Examples of such structures include microslab lines and microstrip near a substrate edge. It is shown that with this extended method of lines technique the frequency-dependent characteristics, including the modal impedance, current distribution, and other properties of these structures, can be calculated. To illustrate the technique typical structures such as microstrips on a finite-width dielectric slab and microstrips near a substrate edge are considered, and the effect of the proximity of the edge on the propagation characteristics of the microstrip is computed. For the case of a microstrip near a substrate edge, the numerical results obtained are compared with measured values of propagation constants.

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