Abstracts

Towards a Generalized TLM Algorithm for Solving Arbitrary Reciprocal and Nonreciprocal Planar Structures (Short Papers)

A generalized transmission line matrix (TLM) algorithm is developed in the frequency domain to tackle arbitrary both reciprocal and nonreciprocal anisotropic waveguiding problems. In particular, the modeling issue for arbitrary planar structures is stressed in this work. A new three-dimensional (3-D) condensed node is used to consider the effect of both electric and magnetic constitutive tensors. Various results indicate how the modal dispersive behavior can be manipulated by changing not only the anisotropic characteristics of the substrate, but also the strip/slot geometry as well as the magnitude and orientation of the applied static magnetic field. The present algorithm is useful for CAD and simulation of a large class of gyrotropic waveguide-based microwave and millimeter-wave circuits.

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