

Frequency-Dependent Characteristics of Shielded Broadside Coupled Microstrip Lines on Anisotropic Substrates (Short Papers)

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In this paper, a spectral-domain technique is applied to compute the propagation characteristics of a shielded broadside coupled microstrip line printed on homogeneous uniaxial and biaxial substrates. The formulation derives the Green's functions for even and odd modes of the guiding structure via the transformed fourth-order differential equations. The analysis includes anisotropic substrates which are simultaneously characterized by both $[\epsilon]$ and $[\mu]$ tensors. This rigorous full-wave approach to the solution of the problem is shown to yield results agreeing well with the existing data. The propagation characteristics are studied with respect to different line width/thickness ratios as well as to the material substrate parameters.

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