Abstracts

Basic Properties of Microstrip Circuit Elements on Nonreciprocal Substrate-Superstrate Structures

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The spectral domain-exponential matrix method is developed to evaluate the dyadic Green's function for generalized anisotropic substrate-superstrate structures. The method of moments is employed to obtain the basic dispersive characteristics of microstrip and inverted microstrip circuit elements on such structures. A collection of results will be presented for the propagation constant and characteristic impedance of microstrip elements on generalized anisotropic layers. Emphasis will be placed on the investigation of microstrip properties on a biased ferrite-semiconductor interface. The modeling accounts for arbitrarily oriented dc bias magnetic fields. The phenomenon of forward and backward wave propagation on this type of nonreciprocal structure will be highlighted.

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