Abstracts

Full-Wave Analysis of a Transversely Magnetized Ferrite Nonradiative Dielectric Waveguide

A.C. Cesar and R.F. Souza. "Full-Wave Analysis of a Transversely Magnetized Ferrite Nonradiative Dielectric Waveguide." 1993 Transactions on Microwave Theory and Techniques 41.4 (Apr. 1993 [T-MTT]): 647-651.

A full-wave analysis is applied to a nonradiative dielectric waveguide where the isotropic dielectric slab is replaced by a transversely magnetized ferrite. The characteristic equation is obtained and the corresponding effects are discussed. The above structure exhibits reciprocal propagation characteristics. Nonreciprocal effects are also possible with a proper dielectric loading. Several numerical results are presented in the form of dispersion curves and operational diagram, as function of several ferrite and guide parameters. Electronically tuned and nonreciprocal devices can be implemented using this simple structure.

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