Abstracts

Propagation in Rectangular Waveguide Containing Inhomogeneous, Anisotropic Dielectric

D.A. Holmes. "Propagation in Rectangular Waveguide Containing Inhomogeneous, Anisotropic Dielectric." 1964 Transactions on Microwave Theory and Techniques 12.2 (Mar. 1964 [T-MTT]): 152-155.

The Wentzel, Kramers and Brillouin (WKB) approximation is used to solve the wave equations for propagation of guided waves in rectangular waveguide containing an inhomogeneous dielectric. The simplest form of anisotropy is used to characterize the relative dielectric constant, i.e., it is assumed that the relative permittivity tensor is diagonalized with respect to the waveguide coordinants. Each of the elements of the relative permittivity tensor is allowed to vary continuously across the broad dimension of the waveguide. The TE/sub nm/ and TM/sub nm/ cases are analyzed for the instance of completely filled guide, while the TE/sub no/ modes are considered for slab-loaded guide.

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