Abstracts

On the Complete Eigenvalue Solution of Ridged Waveguide

J.P. Montgomery. "On the Complete Eigenvalue Solution of Ridged Waveguide." 1971 Transactions on Microwave Theory and Techniques 19.6 (Jun. 1971 [T-MTT]): 547-555.

The complete solution of the ridged waveguide eigen-value problem is presented. The solution is obtained by the formulation of an integral eigenvalue equation which is subsequently solved numerically by application of the Ritz-Galerkin method. The significance of the eigenvalue spectrum is discussed and the modes are classified as either hybrid or trough modes. Equations are given for the electric and magnetic fields and a brief discussion of the edge singularity is presented. The theory is illustrated by computing the dominant eigenvalues and characteristic impedances of various unsymmetrical ridged waveguides.

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