Abstracts

Some Properties of T-Septum Waveguides

Y. Zhang and W.T. Joines. "Some Properties of T-Septum Waveguides." 1987 Transactions on Microwave Theory and Techniques 35.8 (Aug. 1987 [T-MTT]): 769-775.

Equations and curves giving cutoff frequency and impedance are presented for rectangular waveguide having a T-septum on one or both sides. It is shown that the T-septum waveguide has a lower cutoff frequency and wider bandwidth than a ridged waveguide of the same gap parameters. The impedance characteristic is shown to be almost the same as that of the ridged guide. Equations and charts are presented to facilitate the design of T-septum waveguides. Experimental measurements show a good agreement with the theoretical predictions. The theoretical results are obtained by the formulation of an integral eigenvalue equation which is subsequently solved numerically by application of the Ritz-Galerkin method. The eigenvalue spectrum is also discussed.

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