Abstracts

Two-Mode Waveguide for Equal Mode Velocities

R.S. Elliott. "Two-Mode Waveguide for Equal Mode Velocities." 1968 Transactions on Microwave Theory and Techniques 16.5 (May 1968 [T-MTT]): 282-286.

A rectangular waveguide, with a T-septum attached to one of its side walls, is capable of supporting two modes with equal-phase velocities. Stationary expressions are developed for the cutoff wavelengths of these two modes as functions of the cross-sectional dimensions. A Rayleigh-Ritz procedure is used to produce families of curves relating each cutoff wavelength to the septum dimensions; intersections of corresponding curves establish theoretically those combinations of dimensions that permit the two modes to propagate at a common velocity. Experimental corroboration of the theory is also presented.

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