Abstracts

A Periodic Structure of Cylindrical Posts in a Rectangular Waveguide

E.E. Altshuler. "A Periodic Structure of Cylindrical Posts in a Rectangular Waveguide." 1961 Transactions on Microwave Theory and Techniques 9.5 (Sep. 1961 [T-MTT]): 398-402.

The propagation characteristics of a rectangular waveguide loaded with uniformly spaced cylindrical posts (periodic structure) are investigated at a frequency of 2840 Mc. A qualitative discussion on the expected behavior of the effective guide wavelength of this type of periodic structure is presented, and it is shown that the presence of the posts reduces the guide wavelength of the waveguide. The guide wavelength is then measured as a function of post diameter, post depth, and post spacing; and curves enabling one to design periodic structures which have guide wavelengths in the region of the free space wavelength are presented.

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