Abstracts

The Groove Guide, a Low-Loss Waveguide for Millimeter Waves

F.J. Tischer. "The Groove Guide, a Low-Loss Waveguide for Millimeter Waves." 1963 Transactions on Microwave Theory and Techniques 11.5 (Sep. 1963 [T-MTT]): 291-296.

A new waveguide for the low-loss transmission of millimeter waves is presented. The guide consists of two parallel conducting walls with grooves in the central region of the guide cross section. The grooves run along the guide in the direction of the wave propagation. It is shown that the waveguide, if excited in the TE-wave mode, has properties similar to those of the H guide, which contains a dielectric slab between the conducting walls in the center. The new guide is characterized by an exponential transverse decrease of the field distributions in direction from the center and by low attenuation. Theoretical considerations dealing with the field distribution and the data of the guide are presented.

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