

Abstracts

TE Modes of the Dielectric Loaded Trough Line

M. Cohn. "TE Modes of the Dielectric Loaded Trough Line." 1960 Transactions on Microwave Theory and Techniques 8.4 (Jul. 1960 [T-MTT]): 449-454.

The properties of TE modes on a dielectric loaded trough waveguide have been investigated. In the case of the dominant mode of this line (TE_{sub 20}), families of design curves giving the field distribution, guide wavelength, power handling capability, wall losses, and dielectric losses as a function of operating wavelength, waveguide dimensions and dielectric constant are presented. For a loosely bound wave, the losses are comparable to those of conventional rectangular waveguide and the power handling capability is an order of magnitude greater. The apparatus and procedure used to measure guide wavelength, rate of field decay in the transverse direction, and attenuation are described. The measured performance is in close agreement with the theoretically predicted characteristics.

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