

Abstracts

Dielectric-Shielded G-Line

J.E. Partch. "Dielectric-Shielded G-Line." 1969 Transactions on Microwave Theory and Techniques 17.5 (May 1969 [T-MTT]): 271-274.

A dielectric shield is proposed to protect a G-line from environmental conditions, such as ice, without altering the basic characteristics of the surface wave. A solution is obtained for a multilayered cylindrical surface waveguide and is used to predict the guide wavelength and attenuation rate of a dielectric-shielded G-line and the effect of a layer of ice, which can be very detrimental to the performance of a G-line. A dielectric shield is shown to effectively protect the G-line without appreciably changing its transmission characteristics. Experimental confirmation of the calculations is demonstrated.

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