Abstracts

Loss Measurements of Nonradiative Dielectric Waveguide (Special Papers)

T. Yoneyama, N. Tozawa and S. Nishida. "Loss Measurements of Nonradiative Dielectric Waveguide (Special Papers)." 1984 Transactions on Microwave Theory and Techniques 32.8 (Aug. 1984 [T-MTT] (Special Issue on Electromagnetic-Wave Interactions with Biological Systems)): 943-946.

A technique has been developed for precisely measuring the attenuation constant of the nonradiative dielectric waveguide (NRD-guide) at 50 GHz. The novelty of the present technique lies in incorporating the NRD-guide directional coupler into the measurement system and taking advantage of the total reflection of waves at the truncated end of the dielectric strip to facilitate the construction of the setup and to attain a high degree of accuracy in measurements. Measured attenuation constants were found to be about 13 dB/m for a polystyrene NRD-guide and 4 dB/m for a Teflon NRD-guide. These values indicate that the NRD-guide can be of practical use as a waveguide for millimeter-wave integrated circuits because of its low-loss nature as well as its radiation suppression capability. Calculation is also carried out in order to support measurements.

❑ Return to main document.