Abstracts

Measurements on dielectric and radiation loss of flexible circular dielectric waveguides in Q-band

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In Q-band, dielectric losses and radiation losses of flexible circular PTFE waveguides are measured with parameters such as operating frequency, areas of the dielectric region in guiding cross sections, and radii of curvature. The dielectric losses of the rod and tube waveguides show relatively good agreement with theoretical results. The radiation losses of the guides, which current theory cannot predict in the regime of small radius of curvature, are measured from differences between insertion losses and the dielectric losses. The validity of our results can be explained by the fractional power flow ratios in each region of the waveguides.

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