

Abstracts

A New Leaky Waveguide for Millimeter Waves Using Nonradiative Dielectric (NRD) Waveguide-Part I: Accurate Theory

A. Sanchez and A.A. Oliner. "A New Leaky Waveguide for Millimeter Waves Using Nonradiative Dielectric (NRD) Waveguide-Part I: Accurate Theory." 1987 Transactions on Microwave Theory and Techniques 35.8 (Aug. 1987 [T-MTT]): 737-747.

An almost-rigorous analysis is presented for a new leaky waveguide of simple configuration based on a recent nonradiative modification of H guide suitable for millimeter wavelengths. The analysis employs a transverse equivalent network that yields a dispersion relation in closed form, and contains some interesting and subtle features. Numerical values are presented for the phase and leakage constants in terms of the different geometric parameters and the dielectric constant comparisons with measurements are made in the companion paper, part II.

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