Abstracts

MFIE Analysis and Design of Ridged Waveguides

W. Sun and C.A. Balanis. "MFIE Analysis and Design of Ridged Waveguides." 1993 Transactions on Microwave Theory and Techniques 41.10 (Nov. 1993 [T-MTT]): 1965-1971.

This paper presents a unified approach for the analysis and design of ridged waveguides by a magnetic field integral equation (MFIE) formulation. The MFIE approach allows accurate and complete solution via a simple numerical implementation of pulse basis functions. The emphasis of the paper is oriented to the design of ridged waveguides for applications in microwave components and systems, rather than to details of numerical algorithms. Erroneous bandwidth estimates due to neglect of the TE/sub 11/ mode in previous works have been corrected; and various useful design curves on cutoff frequency, bandwidth, attenuation, and waveguide impedance are provided. The proposed theory is verified by comparison to exact closed-form solutions and other published results.

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