# Abstracts

## A New Aperture Admittance Model for Open-Ended Waveguides

*C.L. Sibbald and S.S. Stuchly. "A New Aperture Admittance Model for Open-Ended Waveguides." 1992 MTT-S International Microwave Symposium Digest 92.3 (1992 Vol. III [MWSYM]): 1549-1552.*

A new model for the aperture admittance of open-ended waveguide structures radiating into a homogeneous, lossy dielectric is presented. The model is based on the physical and mathematical properties of the driving point admittance of passive, stable one-port networks. The model parameters, which depend upon the geometry of the waveguide and aperture, are determined from a relatively small number of computed admittances. This computed data is obtained by a full-wave moment method solution and, hence, includes the effects of radiation and energy storage in the near-field and the evanescent waveguide modes. The accuracy of the numerical method is demonstrated by comparison with measured values. As an example, the model parameters are determined for the coaxial-line geometry. The accuracy of the model, for both the direct and inverse problem, is verified. The new model has important applications in the field of dielectric spectroscopy.

❑ Return to main document.