Abstracts

Approach for Evaluating Effects of Wall Losses on Quarter-Wave Short-Circuit Impedance Standards

H.B. Sequeira and B.C. Yates. "Approach for Evaluating Effects of Wall Losses on Quarter-Wave Short-Circuit Impedance Standards." 1985 Transactions on Microwave Theory and Techniques 33.11 (Nov. 1985 [T-MTT]): 1106-1109.

The conservation of energy principle and first-order perturbation theory have been applied to obtain formulas for the physical lengths and reflection coefficient magnitudes of quarter-wave coaxial and rectangular waveguide short-circuit impedance standards. The expressions for the physical lengths ensure zero phase angle at the mating interface when wall losses are present. The method can be extended to include small dielectric and magnetic losses, and requires only knowledge of the loss-free solutions. It can also be applied to other waveguiding structures which support uncoupled modes.

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