Abstracts

Theory of a Strip-Line Cavity for Measurement of Dielectric Constants and Gyromagnetic-Resonance Line-Widths

R.A. Waldron. "Theory of a Strip-Line Cavity for Measurement of Dielectric Constants and Gyromagnetic-Resonance Line-Widths." 1964 Transactions on Microwave Theory and Techniques 12.1 (Jan. 1964 [T-MTT]): 123-131.

The cavity consists of a half-wavelength or wavelength of strip-line, short-circuited at both ends, and open along the sides. For measurements of dielectric and magnetic properties of samples, it has two apparent advantages over the more usual coaxial line method: the sample is simpler in shape, and it can be inserted without dismantling the cavity. Perturbation formulas are obtained for the frequency shift and change of "Q" on inserting a sample into a position of zero electric or zero magnetic field. The "Q" of the cavity in the absence of a sample is calculated by a perturbation method. The limiting sample size for a given accuracy to be obtained is also discussed.

❑ Return to main document.