

Abstracts

New Technique to Measure Transmission Line Attenuation (Short Papers)

J. Carroll, M. Li and K. Chang. "New Technique to Measure Transmission Line Attenuation (Short Papers)." 1995 Transactions on Microwave Theory and Techniques 43.1 (Jan. 1995 [T-MTT]): 219-222.

A new technique using a quarter-wave open stub resonator was developed to measure a transmission line's attenuation coefficient. Transmission line attenuation was extracted from the Q-factor measurement of the open stub resonator. Equations were derived that relate the stub's two port S-parameters to transmission line attenuation. The new method's benefits include higher accuracy over other methods of attenuation measurement, less area required for the test structure, and easier test structure design. Applications include simple and accurate determination of the transmission line's loss characteristics and effective dielectric constant at very high frequencies.

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