

Uncertainty analysis of the transmission-type measurement of Q-factor

D. Kajfez, S. Chebolu, M.R. Abdul-Gaffoor and A.A. Kishk. "Uncertainty analysis of the transmission-type measurement of Q-factor." 1999 Transactions on Microwave Theory and Techniques 47.3 (Mar. 1999 [T-MTT]): 367-371.

The transmission-type measurement of the Q-factor of a microwave resonator is analyzed with a goal of establishing uncertainty limits on the unloaded Q-factor. The three major sources of systematic errors which are discussed are: the instrumentation inaccuracy, the inequality of the input and output coupling coefficient, and the effect of coupling losses. It is shown that, for tightly coupled resonators, the uncertainty of the transmission-type method is significantly increased.

 [Return to main document.](#)