Abstracts

Phase Shift Determination of Imperfect Open Calibration Standards (Short Papers)

G. Biddle. "Phase Shift Determination of Imperfect Open Calibration Standards (Short Papers)." 1991 Transactions on Microwave Theory and Techniques 39.4 (Apr. 1991 [T-MTT]): 737-740.

A new measurement technique for determining the inherent phase shift of open calibration standards for network analyzers due to fringing capacitance is presented. The resultant phase shift is directly measured using an uncalibrated network analyzer and requires no modeling of coefficients of capacitance as conventional methods do. An exact expression for the phase shift of an imperfect open is derived for each frequency point. Two sets of standard one-port error equations are developed for the application. The traditional set of calibration standards, the match, short, and imperfect open, are used. The standards are measured twice: once at the reference plane and then offset by a precision piece of air line. Results are presented for the phase shifts of a few open calibration standards at discrete frequencies.

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