Abstracts

Calibration of Multiport Reflectometers by Means of Four Open/Short Circuits

S. Li and R.G. Bosisio. "Calibration of Multiport Reflectometers by Means of Four Open/Short Circuits." 1982 Transactions on Microwave Theory and Techniques 30.7 (Jul. 1982 [T-MTT] (Joint Special Issue on GaAs IC's)): 1085-1090.

This paper presents a simple method for calibrating any practical multiport reflectometer by means of four reflection standards with known complex reflection coefficients. It is shown that these four standards can be such that their reflection coefficient modulus = 1. Computer simulation proves that no singularity appears for both ideal and nonideal five- and six-port reflectometer in a wide range of phase distribution of reflection coefficients. A group of calibration results for a practical simple six-port is fisted to show this calibration procedure; by the use of these calibrated network parameters, some measurement results are presented and compared with the values obtained at the National Bureau of Standard, U.S.A. Both computer simulation and experimental results show that the numerical singularities which may be encountered in multiport calibration procedures are not an intrinsic properties of multiport but from related mathematical treatment.

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