Abstracts

Super - TSD: A Generalization of the TSD Network Analyzer Calibration Procedure, Covering n-Port Measurements with Leakage

R.A. Speciale and N.R. Franzen. "Super - TSD: A Generalization of the TSD Network Analyzer Calibration Procedure, Covering n-Port Measurements with Leakage." 1977 MTT-S International Microwave Symposium Digest 77.1 (1977 [MWSYM]): 114-117.

The basic philosophy of the THROUGH-SHORT-DELAY calibration procedure for two-port Automated Network Analyzers, has been extended to n-port S-parameter measurements, while also accounting for the possible signal leakage between all port pairs. The system errors are represented by a 2n-port virtual error network, having n ports connected to the device under test (DUT) and n ports connected to an ideal, error-free multiport network analyzer. The $(2n)^2$ T-parameters of the error network are explicitly expressed, in blocks of n^2 at a time, as matricial functions of the $3n^2$ measured S-parameters of three n-port standards, sequentially replacing the DUT during system calibration. Also the possibility has been proved of correcting the errors arising from repeatable port-impedance value-changes, as those found in switching test sets. This capability has been introduced and tested also in the classical two-port TSD algorithm, by means of minor modification and subsequent post-processing.

❑ Return to main document.