Abstracts

A three-port vector network analyzer - measurement system, calibration and results

Wei-Kung Deng and Tah-Hsiung Chu. "A three-port vector network analyzer - measurement system, calibration and results." 2001 MTT-S International Microwave Symposium Digest 01.3 (2001 Vol. III [MWSYM]): 1531-1534 vol.3.

In this paper a practical three-port vector network analyzer (TVNA) measurement system with its calibration procedures, and results are presented. With this TVNA, the three-port device scattering matrix can be directly measured by using a test fixture or a probe station. It can then reduce the repeatability problem occurred in the use of conventional two-port vector network analyzer by connecting and disconnecting matched load at the different ports of a three-port device. The three-port TRL and LRM calibration procedures are developed and verified with the coaxial circuits. In addition, a three-port SOLR calibration procedure is developed for on-wafer measurement of a three-port MMIC with three orthogonal-oriented pads.

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