

Abstracts

A Semi-Automatic 3-Port Network Analyzer

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A semi-automatic three-port network analyzer has been developed. The three-port network analyzer consists of an automatic two-port network analyzer, a switching network for RF rerouting and a software package. The design of the three-port network analyzer is based on a new method for obtaining accurate three-port S-parameters from measured two-port parameters. This method is based on a flow-chart description of the measurements. The resulting, overdetermined, nonlinear, equation system is solved numerically. No assumptions are made about the device under test or the terminations apart from that the latter must be known. The efficiency of the method is demonstrated by characterization of a two-way Wilkinson power divider. The three-port network analyzer has been used to characterize dual-gate MESFET's.

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