

Abstracts

A Six-Port Automatic Network Analyzer (Dec. 1977 [T-MTT])

H.M. Cronson and L. Susman. "A Six-Port Automatic Network Analyzer (Dec. 1977 [T-MTT])." 1977 Transactions on Microwave Theory and Techniques 25.12 (Dec. 1977 [T-MTT] (1977 Symposium Issue)): 1086-1091.

This paper describes the analysis, design, and testing of a six-port automatic network analyzer. A new calibration procedure is derived from a matrix description of the six-port network. The calibration constants appear as the solution of an eigenvalue problem resulting in new insights and faster numerical computation. A programmable calculator-controlled six-port system was designed to measure S_{11} and S_{21} over the frequency range 2-18 GHz without perturbing the device under test. Measurements on the completed system taken from 7-12 GHz show that results within 1 percent can be obtained.

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