Abstracts

Error-Corrected Large-Signal Waveform Measurement System Combining Network Analyzer and Sampling Oscilloscope Capabilities

G. Kompa and F. van Raay. "Error-Corrected Large-Signal Waveform Measurement System Combining Network Analyzer and Sampling Oscilloscope Capabilities." 1990 Transactions on Microwave Theory and Techniques 38.4 (Apr. 1990 [T-MTT]): 358-365.

A large-signal automatic stepped CW waveform measurement system for nonlinear device characterization is presented which combines the high accuracy of a vector network analyzer with the waveform measurement capabilities of a sampling oscilloscope. A large-signal error model and a corresponding coaxial calibration procedure are proposed to describe the systematic errors of the measurement setup. The error parameters and the correction algorithm are independent of the properties of the RF generator. System accuracy is investigated by Schottky diode verification measurements with different offsets toward the reference plane. GaAs MESFET reflection and transmission response measurements with error correction extended to the planar DUT reference planes are given.

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