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Devices; 2.2.2 Transmission lines; 2.2.3 Circuits; 2.3 Signal-path fixture performance measures; 2.3.1 Delay; 2.3.2 Loss; 2.3.3 Mismatch; 2.3.4 Crosstalk; 2.3.5 Multiple-modes; 2.3.6 Electromagnetic discontinuity; 2.4 Power-ground fixture performance measures; 2.4.1 Non-ideal power; 2.4.2 Non-ideal ground; 2.5 Fixture loss performance and measurement accuracy; 2.6 Microwave probing; 2.6.1 Probing system elements; 2.6.2 VNA calibration of a probing system
2.6.3 Probing applications -- in situ test2.6.4 Probing applications -- transistor characterization; 2.7 Conclusion; Part II Microwave instrumentation; 3 Microwave synthesizers; 3.1 Introduction; 3.2 Synthesizer characteristics; 3.2.1 Frequency and timing; 3.2.2 Spectral purity; 3.2.3 Output power; 3.3 Synthesizer architectures; 3.3.1 Direct analog synthesizers; 3.3.2 Direct digital synthesizers; 3.3.3 Indirect synthesizers; 3.3.4 Hybrid architectures; 3.4 Signal generators; 3.4.1 Power calibration and control; 3.4.2 Frequency and power sweep; 3.4.3 Modulation; 3.5 Conclusions
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4.6.3 The DPX spectrum display engine

Sommario/riassunto

This comprehensive, hands-on review of the most up-to-date techniques in RF and microwave measurement combines microwave circuit theory and metrology, in-depth analysis of advanced modern instrumentation, methods and systems, and practical advice for professional RF and microwave engineers and researchers. Topics covered include microwave instrumentation, such as network analyzers, real-time spectrum analyzers and microwave synthesizers; linear measurements, such as VNA calibrations, noise figure measurements, time domain reflectometry and multiport measurements; and non-linear measurements, such as load- and source-pull techniques, broadband signal measurements, and non-linear NVAs. Each technique is discussed in detail and accompanied by state-of-the-art solutions to the unique technical challenges associated with its use. With each chapter written by internationally recognised experts in the field, this is an invaluable resource for researchers and professionals involved with microwave measurements.