

1. Record Nr.	UNINA9910791706103321
Autore	Dunsmore Joel P
Titolo	Handbook of Microwave Component Measurements [[electronic resource]] : with Advanced VNA Techniques
Pubbl/distr/stampa	Hoboken, : Wiley, 2012
ISBN	1-283-54976-X 9786613862211 1-118-39125-X 1-118-39124-1 1-118-39132-2
Edizione	[2nd ed.]
Descrizione fisica	1 online resource (637 p.)
Classificazione	TEC024000
Disciplina	537.5344 621.3813
Soggetti	Microwave devices - Testing Microwave devices -- Testing TECHNOLOGY & ENGINEERING / Microwaves Electrical & Computer Engineering Engineering & Applied Sciences Electrical Engineering
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di contenuto	HANDBOOK OF MICROWAVE COMPONENT MEASUREMENTS; Contents; Foreword; Preface; Acknowledgments; List of Acronyms; 1 Introduction to Microwave Measurements; 1.1 Modern Measurement Process; 1.2 A Practical Measurement Focus; 1.3 Definition of Microwave Parameters; 1.3.1 S-Parameter Primer; 1.3.2 Phase Response of Networks; 1.4 Power Parameters; 1.4.1 Incident and Reflected Power; 1.4.2 Available Power; 1.4.3 Delivered Power; 1.4.4 Power Available from a Network; 1.4.5 Available Gain; 1.5 Noise Figure and Noise Parameters; 1.5.1 Noise Temperature; 1.5.2 Effective or Excess Input Noise Temperature 1.5.3 Excess Noise Power and Operating Temperature 1.5.4 Noise Power Density; 1.5.5 Noise Parameters; 1.6 Distortion Parameters; 1.6.1 Harmonics; 1.6.2 Second-Order Intercept; 1.6.3 Two-Tone

Intermodulation Distortion; 1.7 Characteristics of Microwave Components; 1.8 Passive Microwave Components; 1.8.1 Cables, Connectors and Transmission Lines; 1.8.2 Connectors; 1.8.3 Non-Coaxial Transmission Lines; 1.9 Filters; 1.10 Directional Couplers; 1.11 Circulators and Isolators; 1.12 Antennas; 1.13 PCB Components; 1.13.1 SMT Resistors; 1.13.2 SMT Capacitors; 1.13.3 SMT Inductors; 1.13.4 PCB Vias
 1.14 Active Microwave Components
 1.14.1 Linear and Non-Linear;
 1.14.2 Amplifiers: System, Low Noise, High Power; 1.14.3 Mixers and Frequency Converters; 1.14.4 Frequency Multipliers and Limiters and Dividers; 1.14.5 Oscillators; 1.15 Measurement Instrumentation; 1.15.1 Power Meters; 1.15.2 Signal Sources; 1.15.3 Spectrum Analyzers; 1.15.4 Vector Signal Analyzers; 1.15.5 Noise Figure Analyzers; 1.15.6 Network Analyzers; References; 2 VNA Measurement Systems; 2.1 Introduction; 2.2 VNA Block Diagrams; 2.2.1 VNA Source; 2.2.2 Understanding Source Match; 2.2.3 VNA Test Set
 2.2.4 Directional Devices
 2.2.5 VNA Receivers; 2.2.6 IF and Data Processing; 2.2.7 Multiport Extensions; 2.2.8 High Power Test Systems; 2.3 VNA Measurement of Linear Microwave Parameters; 2.3.1 Linear Measurements Methods for S-Parameters; 2.3.2 Power Measurements with a VNA; 2.3.3 Other Measurement Limitations of the VNA; 2.3.4 Limitations Due to External Components; 2.4 Measurements Derived from S-Parameters; 2.4.1 The Smith Chart; 2.4.2 Transforming S-Parameters to Other Impedances; 2.4.3 Concatenating Circuits and T-Parameters; 2.5 Modeling Circuits Using Y and Z Conversion
 2.5.1 Reflection Conversion
 2.5.2 Transmission Conversion; 2.6 Other Linear Parameters; 2.6.1 Z-Parameters, or Open-Circuit Impedance Parameters; 2.6.2 Y-Parameters, or Short-Circuit Admittance Parameters; 2.6.3 ABCD Parameters; 2.6.4 H-Parameters or Hybrid Parameters; 2.6.5 Complex Conversions and Non-Equal Reference Impedances; References; 3 Calibration and Vector Error Correction; 3.1 Introduction; 3.2 Basic Error Correction for S-Parameters: Cal Application; 3.2.1 Twelve-Term Error Model; 3.2.2 One-Port Error Model; 3.2.3 Eight-Term Error Model
 3.3 Determining Error Terms: Cal Acquisition for 12-Term Models

Sommario/riassunto

This book provides state-of-the-art coverage for making measurements on RF and Microwave Components, both active and passive. A perfect reference for R&D and Test Engineers, with topics ranging from the best practices for basic measurements, to an in-depth analysis of errors, correction methods, and uncertainty analysis, this book provides everything you need to understand microwave measurements. With primary focus on active and passive measurements using a Vector Network Analyzer, these techniques and analysis are equally applicable to measurements made with Spectrum Analyzers or Noise Figure
