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Seminar info

Language: English
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OVERVIEW

This online course provides a thorough introduction to a range of essential RF and microwave measurements from high-frequency (HF) up to 40 GHz.

TOPICS

- RF Signal Generators
- RF Power Measurement
- Network Analyzers
- Spectrum Analyzers
- Noise Figure Measurement
- Phase Noise Measurement
- Vector Signal Analyzers
- Nonlinear Measurements

TIME TO COMPLETE

Approx. 2 hrs 30 mins

Course overview

43 modules – 0 sessions

[Introduction: RF and Microwave Test and Measurement: The Essentials](#)

[Chapter 1 - RF and Microwave Test and Measurement](#)

1.1 Test Equipment and Measurements

1.2 Types of Test Equipment

1.3 RF Signal Generators

1.4 Power Measurement

1.5 RF Voltage and Power

1.6 RF Power Measurement Equipment

1.7 Modulation Characteristics

1.8 Thermal Detection

1.9 Wider Dynamic Range Diode Detection

1.10 Power Spectral Density Measurements

1.11 Network Analyzers

1.12 Simple Response Calibration

1.13 Two-Port Calibration

1.14 Thru-Reflect-Line (TRL) Calibration

1.15 S-Parameters for Balanced Devices

1.16 Group Delay

1.17 Spectrum Analysis

1.18 Spectrum Analyzer Architecture

1.19 Video Demonstration – Measuring Two-Tone Intermodulation

1.20 Video Demonstration – Measuring a Modulated Carrier

1.21 Noise Factor (F) and Noise Figure (NF)

1.22 Noise Figure Measurement and Calculation

1.23 Phase Noise

1.24 Effects of Phase Noise

1.25 Constellations with Phase Noise

1.26 Vector Signal Analysis

1.27 Error Vector Magnitude (EVM)

1.28 EVM Specifications in Practice

1.29 Nonlinear Measurements

1.30 AM-AM and AM-PM Nonlinearities

1.31 Why Does Linearity Matter?

1.32 Spectral Regrowth

1.33 Intermodulation Distortion (IM3)

1.34 Adjacent Channel Power

1.35 Two-Tone Intermodulation

1.36 Design and Diagnostic Techniques for Linear Amplifier Chains

1.37 AM-AM and AM-PM Characteristics Derived from Modulation Measurements

1.38 Load Pull Technique for Linear Power Amplifier Design

1.39 Source and Load Plane Contours

1.40 Summary

End

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