



Course Number 89400A+24C or 24Y Scheduled, Dedicated

Vector Signal Analyzer User Training

Overview

Learn to efficiently configure the Agilent Technologies Vector Signal Analyzer to make a broad variety of measurements

Course Overview

This is a complete course on the theory and operation of the vector signal analyzer, including an understanding of frequency, time and modulation domain measurements. These can be immediately applied to a wide variety of application areas including the latest digital communication systems, spectrum/signal monitoring, digital video, underwater acoustics, etc. Learn about sampling, signal processing, analog and digital demodulation, time capture and much more.

What You Will Learn

- Understand proper instrument set up for measurement of a variety of signals-of-interest
- Learn how to configure the instrument for maximum real-time performance
- Measure I-Q modulation formats used in a wide variety of digital communications systems

Specifications

Course Type

User/Application training

Audience

Test engineers and technicians who need to get the most performance out of their Vector Signal Analyzer

Prerequisites

Experience with spectrum analyzers and some familiarity with the use of generic test equipment recommended.

Course Length

2 days

Course Format

Course content is 50% lecture and 50% lab. Students will share an Agilent 89440A instrument with other students to gain extensive hands-on experience.

Delivery Method

Scheduled (at Agilent training locations) or

Dedicated (at customer site)

To save you time and travel, many Agilent courses can be delivered at your site. Agilent can provide required equipment, or save money by furnishing your own.

Detailed Course Agenda

Introduction

- Concepts of vector signal analysis and comparison to traditional analyzer types, with examples
- User interface tutorial with examples
- Vector signal analyzer IF section block diagram and general measurement sequence
- Sampled data tutorial including sampling and all signal processing
- Vector Signal Analyzer RF section block diagram and wideband scalar spectrum analysis

Frequency and Time Domain Measurements

- Frequency/time relationships
- Time-Gated spectrum measurements
- Measurement triggering



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Time-Capture Measurements

- Time capture concepts
- Measurement setup
- Measurement triggering
- Time capture playback
- Additional post-processing
- Introduction to advanced display types—waterfall and spectrogram

Analog Demodulation

- Modulation concepts—traditional AM, FM, PM
- Vector Signal Analyzer analog demodulation in DSP
- Phase demodulation and phase noise measurements

Digital Demodulation

- Digital modulation concepts and overview
- Modulation formats—nPSK, QPSK, DQPSK, QAM, MSK, FSK
- Filtering and filter types
- Measurement types—I-Q, frequency and time domain
- Displays—Vector/constellation diagrams, EVM, mag/phase error, eye and trellis diagrams, demodulated data tables
- Analysis tools and modulation quality analysis

LAN Capabilities

- Configuring LAN
- Connecting to Ethernet
- Using FTP and TELNET services
- SCPI discussion
- X-window generation

IBASIC Capabilities

- Entering IBASIC programs
- Using the external keyboard
- Keystroke recording

Managing Data and Results

- Printing/plotting
- Disk/file operations; data storage
- File conversions, standard data format (SDF) utilities
- Trace math
- Trace and buffer memory

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