Agilent Line Sweep, Antenna Test Training

Agilent Handheld N9330B Cable and Antenna Tester and N9912A FieldFox RF Analyzer

Data Sheet

Gain a better understanding of cable and antenna line testing

Course Overview

This 2-day course covers the theory and practical return loss and distance-to-fault testing used in installation, maintenance and operation of antenna systems utilizing the Agilent N9330B or N9912A FieldFox. The class will include extensive hands-on exercises including testing cables, connectors and antennas, interpreting results and troubleshooting.

What You Will Learn

- Understand the basics of antennas, cables and connectors
- Set up and operation of the N9330B and N9912A FieldFox
- Efficiently install and test cables, connectors and antennas
- Troubleshoot common problems affecting RF transmission
- Read and interpret sweeping traces and results using the N9330B or N9912A FieldFox
- Measure effective and center frequencies of antennas
- Save and store test results on the N9330B or N9912A FieldFox

Specifications

Course type

User training

Audience

Field Service Technicians
Field Engineers
Switch Technicians
Design Engineers
Managers/Field Supervisors
Installers

Prerequisites

None

Course length

2 days

Course format

Lecture with hands-on exercises that cover theory and practical applications

Delivery method

Scheduled at Agilent locations, or dedicated at a customer site upon request
www.agilent.com/find/training

Detailed Course Agenda

Test Set Overview

- Product overview
- Buttons & menus
- Connections and accessories

Introduction to RF Signals and RF Network Fundamentals

- Radio terminating equipment
- Connectivity: coax, waveguide, connectors
- The 3 core elements: amplitude, frequency & phase
- Wave propagation: reflected waves & standing waves

Introduction to Antennas

- Why antennas work
- Gain, beamwidth & bandwidth
- Antenna network components
- Terminations
- Testing standards

Transmission Line Basics

- Coax characteristic impedance, capacitive reactance & inductive reactance
- Types: size, frequency & loss
- Connectors: coax, waveguide, installation & testing
- Cable: crushed cable, damaged cable & other problems

Basics of Line Sweeping

- What are you testing?
- N9330B or N9912A cable & antenna test equipment
- TDR v/s FDR

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Antenna Test Equipment

- Phase stable cables
- Equipment set-up
- Initial calibration
- Environmental considerations

Supporting Documentation

- Standard reporting
- Saving results
- Printing results

Test Interpretation

- Testing standards: sweep characteristics, limits & markers
- Return loss, distance-to-fault, VSWR, cable loss
- Post analysis tools
- Saving and printing plots

Practical Applications & Labs

- Testing antennas, connectors and coax
- Individual performance testing and written test available in the United States and Canada.

Course Fees (USA/Canada)

- 2-day course $1,200 USD per student at Agilent training center (Course #H7215A-121)
- 2-day on-site course $12,000 USD for up to 10 students (Course #H7215B-121)*

* To save you time and travel, this Agilent course can be delivered at the site of your choosing. Contact your local representative for details.

For more information please visit our web site at
www.agilent.com/find/training
or contact your local representative.

Course Materials Provided

- Student workbook with presentation materials, notes, tips, techniques, and lab exercises
- Quick reference cards with standard operating procedures, tips and techniques
- Agilent equipment for hands-on exercises. However, you are encouraged to bring your own N9330B or N9912A FieldFox so you can train on, configure and save the measurements on the actual instrument you use in the field.
- Upon completion of the course and successful written and practical hands-on evaluation, students will receive a laminated certificate of completion wallet card.

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Product specifications and descriptions in this document subject to change without notice.

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