

Keysight Technologies

RF Interference Analysis Training

Keysight Handheld N9340B Spectrum Analyzer and N9912A FieldFox RF Analyzer

Gain a Better Understanding of Spectrum Analysis Measurements

Course overview

This 2-day course covers the theory and practical skills required to operate and understand test results for RF spectrum analysis on the Keysight Technologies, Inc. N9340B or N9912A FieldFox. Modules include an overview of radio as a transmission media, transmitters/receivers, wave propagation and radio antenna systems. Included in this course are numerous spectrum analysis and interference detection hands-on exercises.

What you will learn

- RF concepts and a practical understanding of transmitters, receivers and antenna coupling devices
- Setup and operation of the N9340B and N9912A FieldFox
- Types of signals, interference and radio wave propagation through space
- Efficiently perform spectrum analysis and detect common sources of interference
- Troubleshooting techniques for resolving common problems affecting RF transmission
- Reading and interpreting results using the N9340B or N9912A FieldFox

Specifications

Course type

User training

Audience

- Field service technicians
- Switch technicians
- Design engineers
- Managers/Field supervisors
- Field engineers
- Installers

Prerequisites

None

Course length

Two days

Course format

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

Delivery method

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

Detailed course agenda

Test set overview

- Product overview
- Buttons & menus
- Results settings
- Connections and accessories

How radio works

- Why radio
- Radio – fiber – copper
- Broadband & narrowband
- Bandwidth defined
- Attenuation & noise
- FCC regulation

Understanding radio equipment

- Radio transmitters
- Radio receivers
- Antenna coupling
- Radio antennas
- How antennas work
- Antenna types
- Antenna gain & bandwidth
- Transmission lines
- Grounding overview

Modulation techniques

- Amplitude, frequency and phase
- Cellular modulation

Spectrum analysis

- Signal analysis
- Tips and tricks

Radio wave propagation

- Maxwell & waves
- Attenuation
- Free space loss
- Absorption
- Reflections & multipath
- Radio horizons & clearance

Interference

- Identification
- Detection
- Resolution

Types of measurements

- Interference
- Power
- Adjacent channel
- Co-channel
- Carrier to interference

Supporting documentation

- Standard reporting
- Saving results
- Printing results

Troubleshooting techniques

How to apply this knowledge in the real world

- Practical applications and labs
- Detect and identify interference
- Individual performance testing an written test available in the United States and Canada

Course fees (USA/Canada)

- 2-day course \$1,200 USD per student at Keysight training center (Course #H7215A-122)
- 2-day on-site course \$12,000 USD for up to 10 students on-site* (Course #H7215B-122)

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

Course materials provided

- Student workbook with presentation materials, notes, tips, techniques, and lab exercises
- Quick reference cards with standard operating procedures, tips and techniques
- Keysight equipment for hands-on exercises. However, you are encouraged to bring your own
- N9340B 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.

For more information on Keysight Technologies' products, applications or services, please contact your local Keysight office. The complete list is available at: www.keysight.com/find/contactus

Americas

Canada	(877) 894 4414
Brazil	55 11 3351 7010
Mexico	001 800 254 2440
United States	(800) 829 4444

Asia Pacific

Australia	1 800 629 485
China	800 810 0189
Hong Kong	800 938 693
India	1 800 112 929
Japan	0120 (421) 345
Korea	080 769 0800
Malaysia	1 800 888 848
Singapore	1 800 375 8100
Taiwan	0800 047 866
Other AP Countries	(65) 6375 8100

Europe & Middle East

Austria	0800 001122
Belgium	0800 58580
Finland	0800 523252
France	0805 980333
Germany	0800 6270999
Ireland	1800 832700
Israel	1 809 343051
Italy	800 599100
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Netherlands	0800 0233200
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Switzerland	0800 805353
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United Kingdom	0800 0260637

For other unlisted countries:
www.keysight.com/find/contactus
(BP-09-23-14)

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Published in USA, August 1, 2014
5990-5004EN
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