Anritsu
Advancing beyond

Training & Certification

Course Catalog



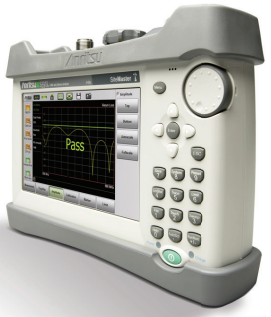
www.anritsu.com/training
us-training@anritsu.com

Anritsu Advancing beyond

Site Master™ Line Sweep Certification

1 Day

Site Master Line Sweep Certification class is an intense, one-day, instructor-led training course focused on RF line sweep theory, technology and best practices for sweeping RF systems using the Anritsu Site Master. With over 60% hands-on instruction, participants learn the skills and procedures to test and maintain RF cable feedlines and antenna systems. Participants who pass the assessments receive a formal certificate of completion and photo ID badge proving they are Anritsu certified for Line Sweeping with the Site Master.



By the end of this training you will…

- Know basic RF theory related to Line Sweep
- Navigate a Site Master
- Complete six labs that teach line sweeping
- Learn about Line Sweep Tools Software and protecting and maintaining your Site Master and Components
- Gain confidence interpreting traces
- Practice line sweep procedures learned in open lab
- Earn a passing score on the written and practical tests and be Anritsu certified

Public classes available all over the U.S. at www.anritsu.com/training

Email **us-training@anritsu.com** for private training classes.

PIM Master™ Certification Training

1 Day

PIM Master Passive Intermodulation Measurement Training is an intense, one-day, instructor-led training using the battery-operated, high-power, Portable PIM Master to identify sources and exact locations of PIM. Participants get valuable hands on experience using the PIM Master and prove their knowledge and skills on the written and practical exams. Participants who pass get a formal certificate of completion and photo ID badge proving they are Anritsu certified in PIM testing and the PIM Master.

What you will cover in this training…

- Learn common causes of PIM
- Understand PIM Master setup and calibration
- Learn and practice making PIM measurements
- Practice dynamic testing and understand its value in the field
- Find Distance-to-PIM (DTP)
- Correctly interpret Swept PIM measurements
- Earn a passing score on the written and practical tests and be Anritsu certified



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Anritsu Advancing beyond

Fiber Optic, OTDR and CPRI Certification

1 Day

Anritsu Fiber Optic, OTDR & CPRI Certification training is an intense, hands-on, one-day training focused on Fiber Optic & OTDR theory, technology and practical applications. The class combines lecture and hands-on lab work using the Anritsu Access Master MT9083A2 and the Network Master Pro MT1000A OTDR's. Participants who pass the course get a formal certificate of completion and photo ID badge proving they are Anritsu certified in Fiber Optic, OTDR and CPRI testing.

What you will cover in this training…



- Intro to Fiber Optics
  - Cable and Connector Types
  - Measurements
- How Does an OTDR Work?
  - Specifications, Parameters, Set Up
- Optical Testing Methods
  - OTDR, PM, LS, VFL
- Applications
  - Long Haul, FTTx/PON, Towers and DAS
- Intro to the Access Master MT9083A2 and the Network Master Pro MT1000A
- CPRI Overview and Testing
- Hands On: CPRI Site Turn-up Testing
  - SFP Test
  - VIP Test
  - Loopback Test
  - RRU/A2 Initialization Test
- Viewing Reports
- Earn a passing score on the written and practical tests and be Anritsu certified

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Interference Analysis Certification

3 Days

RF & Microwave Interference Analysis Certification is a 3-day, instructor-led class encompassing fundamentals of spectrum analysis with a focus on radio interference hunting and finding. Learn to make common measurements and use them to identify and locate interfering signals. Lectures and labs are designed around the Spectrum Master MS2720T. Participants who successfully complete the in-class assessments and activities, and locate the source of interference on the final hunt, get a formal certificate of completion and photo ID badge proving they are Anritsu certified in Interference Analysis.

In this 3-day training you will:



- Use the Anritsu Spectrum Master MS2720T
- Learn RF science principles critical in interference analysis
  - Decibels
  - RF propagation
  - C/I Ratio
  - Intermodulation
  - Triangulation
- Practice measurements and procedures in activities and labs
- Get a deeper understanding of RF concepts and how they apply in the field
- Set up and make measurements with a Spectrum Analyzer
- Hunt down interference
- Confirm and address interference
- Successfully hunt down a live source of interference to earn certification

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Anritsu Advancing beyond

Passive DAS Certification

3 Days

This instructor-led course teaches theory and best practices of assembling, installing and testing Distributed Antenna Systems. Participants use the instruments to make measurements, interpret and analyze information to find problems and correct them, and develop a sound strategy for consistent documentation and efficient, effective workflow. The class trains participants to work smart from the start, avoiding costly rework. Participants who pass get a formal certificate of completion and photo ID badge proving they are Anritsu certified in Passive DAS.

In this 3-day class you will:

- Get comfortable with a Site Master S331L and a PIM Master MW82119B
- Learn what a DAS is and how it works
- Recognize DAS components, their functions and performance ranges
- Review line sweep and PIM theory
- Learn correct cleaning procedures critical in PIM testing
- Test and troubleshoot components and DAS assemblies and sub-assemblies for
  - return loss
  - insertion loss (cable measurements and DAS measurements)
  - PIM
- Measure cable length
- Learn antenna placement testing and its value in the field
- Build, test and troubleshoot simulated DAS branches
- Collaborate in teams to build, test and troubleshoot a simulated DAS floor
- Use and apply site maps and system diagrams
- Understand documentation and do it correctly
- Earn a passing score on the written and practical tests and be Anritsu certified



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Active DAS Certification

3 Days

Learn the theory and practice of Active DAS using the Anritsu Access Master OTDR and a state-of-the-art simulation of a fiber system in the room. This 3-day, instructor-led course is anchored in extensive hands-on exercises from testing fiber and system components to splicing fiber and understanding detailed design documentation. Applying theory in real time is the best way to learn and remember.

In this 3-day class you will:

- Get comfortable with the Anritsu Access Master OTDR
- Learn and use the in-depth feature set of the instrument
- Make measurements on a simulated DAS
- Understand the complexities of a given DAS
- Read and interpret the extensive documentation in active DAS
- Learn and practice splicing techniques
- Troubleshoot and repair the simulated system
- Identify and refine procedures and strategies that save time and money
- Earn a passing score on the written and practical tests and be Anritsu certified



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Anritsu Advancing beyond

LMR Master™ Certification

4 Days

This four day instructor-led certification class will give students a complete overview of the S412E LMR Master, enabling them to fully utilize the many features and functions of this instrument. Live polling quiz questions and extensive use of hands-on labs throughout builds confidence and helps students become proficient using the instrument. The entire first day is spent familiarizing the student with every facet of the Spectrum Analyzer mode plus coverage mapping. The second day of class covers RF interference scientifically but in an easy to understand format that teaches successful interference hunting techniques. On day three, students will learn to test cables and antennas, tune Duplexers, and learn to interpret digital measurements. Day four is spent covering optional topics such as P25, NXDN, DMR2, PTC, and LTE signals.

This will be covered in this course:

- Frequency and wavelength
- Amplitude units (logarithmic vs. linear)
- Decibels and ratios
- Amplitude modulation, frequency modulation, and phase modulation
- Recognizing modulation types
- Frequency range and span
- Amplitude, units and detection options
- Reference level offset
- Sensitivity and noise figure
- Attenuator functions/minimizing spurious
- Resolving closely spaced signals
- Using markers (peak/delta/noise)
- Trace operations: max/min hold and averaging
- Limit lines, limit envelope and save on event
- AM/FM demodulation

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LMR Master Certification - Continued

This will be covered in this course:

- Coverage mapping option
- Sources of interference: self-generated, intentional and unintentional
- Recognizing and identifying the interference
- Interference hunting tools
- IP3 (third order intercept point)
- Antennas and antenna gain (dBi vs. dBd)
- Antenna mismatch loss and polarization loss
- Interference analysis option functions (Option 25)
- Direction finding via pattern slewing, triangulation and mapping
- Doppler system direction finding
- Duplexer caused self-interference
- Measuring a P25 signal using BER, eye diagram and constellation
- The performance of a P25 signal as its C/I ratio degrades
- Narrowband FM testing
- And so much more!



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Master Your Career

When building, installing, testing or maintaining wireless networks, Anritsu equipment is the first step to any successful project. Master all the capabilities of your Anritsu equipment with hands-on, instructor-led training and certification.



CERTIFIED

Register online TODAY!

Complete list of training classes and registration available at:
www.anritsu.com/training

For private or custom training classes, email
us-training@anritsu.com

or call
1-800-ANRITSU (1-800-267-4878)
Ask for Customer Training

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