World’s Most Trusted Family of RF and Microwave Handheld Analyzers
Now in our tenth generation – field-proven since 1995
Site Master

Handheld Cable and Antenna Analyzers

Since 1995, the Site Master™ family has been the leader in handheld cable and antenna analyzers for installers, contractors, and wireless service providers worldwide. With its unsurpassed measurement uncertainty and best-in-class sweep speed, Site Master products give you extremely accurate and fast measurements that you can trust, whenever and wherever.

The Site Master product family has several models to meet a variety of needs. They all can make traditional line sweep measurements such as Return Loss, VSWR, Cable Loss, and Distance-to-Fault (DTF). To increase productivity, the Site Master product family completes sweeps quickly, performs calibrations promptly with InstaCal™, provides fast trace naming, and comes with automatic report generating capabilities.

The 2-port transmission measurement option, with its excellent dynamic range, allows you to measure gain, insertion loss, or isolation of critical RF devices including tower-mounted amplifiers (TMA), repeaters, and passive RF components, such as filters and antennas. Models with spectrum analyzers can make RF channel measurements and hunt down interference. All Site Master models can be upgraded to CPRI RF. Get the most trusted name in cable and antenna analyzers – the worldwide standard – the Site Master.

LMR Master

Handheld Land Mobile Radio Analyzer

The LMR Master™ S412E is a single instrument that combines all of the tools for technicians and engineers required to install, maintain, and certify analog and digital Land Mobile Radio (LMR) networks in the shop or in the field.

The LMR Master S412E combines the functionality of a 100 dB dynamic range VNA-based cable and antenna analyzer, spectrum analyzer, interference analyzer, power meter, and signal analyzers and generators (P25 and P25 Phase 2, DMR/MotoTRBO, TETRA, NXDN, dPMR, PDT, NBFM, and LTE), as well as an internal GPS receiver for coverage analysis. All of this in a portable, handheld, battery-operated touchscreen package.

The LMR Master S412E features a built-in signal generator for analysis of analog and digital radio receivers, and support for indoor and outdoor coverage analysis with RSSI/BER/ModFid/EVM measurements tagged by GPS location or indexed to an on-screen floorplan. GPS-tagged information can be exported in KML format for use in popular mapping tools, and in CSV text for custom post-processing. It also features a large internal flash memory to store thousands of measurements and quick save/recall of commonly used setups.

The LMR Master S412E is the only handheld LMR signal analyzer that offers an LTE analyzer to support FirstNet 700 MHz public safety broadband. It is also the only battery-operated handheld instrument capable of making TETRA base station receiver sensitivity measurements.

Site Master S820E Microwave Cable and Antenna Analyzer

FEATURES and OPTIONS (not available on all models)
- Cable & Antenna Analyzer
  - 2 MHz to 4 GHz, S331L
  - 2 MHz to 4/6 GHz, S331E/S361E
  - 150 kHz to 4/6 GHz, S331P
  - 1 MHz to 8, 14, 20, 30, or 40 GHz, S820E
- Cable & Antenna Analyzer with Spectrum Analyzer
  - 2 MHz to 4 GHz / 9 kHz to 4 GHz, S332E
  - 2 MHz to 6 GHz / 9 kHz to 6 GHz, S362E
- InstaCal™, FlexCal™, OSL, and TOSL Calibration
- 2-port Transmission Measurement
- 2-port Swept Cable Loss
- Internal Bias Tee
- Internal GPS Receiver
- Internal Power Meter
- High-Accuracy Power Meter with Power Sensor
- Interference Analyzer
- Coverage Mapping
- Channel Scanner
- CW Signal Generator
- LTE CPRI RF (S3xxE)
- LTE OBSAI RF (S3xxE)
- AM/FM/PM Signal Analyzer
- Spectrogram / Spectrum analyzer with +16 dBm TOI
- Narrowband FM
- P25 (Phase 1 FDMA and Phase 2 TDMA)
- DMR/MotoTRBO
- TETRA
- NBFM
- FirstNet LTE
- IEEE 802.16 Fixed WiMAX, Mobile WiMAX
- ≥ 273 x 91 x 199 mm (10.7 x 3.6 x 7.8 in)

LMR Master S412E

FEATURES and OPTIONS
- Cable & Antenna Analyzer
  - 500 kHz to 1.6 GHz (6 GHz extension optional)
- Spectrum Analyzer
  - 9 kHz to 1.6 GHz (6 GHz extension optional)
- 1-path, 2-port Vector Network Analyzer w/100 dB Transmission Dynamic Range and 42 dB Directivity
- Internal Bias Tee
- Internal GPS Receiver
- Internal Power Meter
- High-Accuracy Power Meter with Power Sensors
- Interference Analyzer Including Support for the New MA2700A
- Channel Scanner
- Coverage Mapping
- Distance-to-Fault
- Spectrum Analyzer w/-152 dBm DANL and +16 dBm TOI
- Signal Analyzers
  - P25 (Phase 1 FDMA and Phase 2 TDMA)
  - DMR/MotoTRBO
  - TETRA
  - NXDN
  - dPMR
  - PTC
  - PDT
  - NBFM
  - FirstNet LTE
- IEEE 802.16 Fixed WiMAX, Mobile WiMAX
- ≥ 250 x 61 x 177 mm (9.8 x 2.4 x 7.0 in) (S331L)
- ≥ 273 x 91 x 199 mm (10.7 x 3.6 x 7.8 in) (S331P)
Cell Master

Compact Handheld Base Station Analyzer

The Cell Master™ handheld multi-function base station analyzers are the smallest, lightest, and most economical solution for 2/3/4G base station and digital broadcast testing during installation and commissioning, and for maintenance and troubleshooting.

The Cell Master product family combines the functionality and the capabilities of a cable and antenna analyzer, spectrum analyzer, interference analyzer, signal analyzers, backhaul analyzer, CPRI RF, and power meter into one instrument, making it the most full-featured, compact base station analyzer on the market.

This optimal combination of base station test capabilities eases the job of the user by eliminating the need for several independent test instruments, reducing the number of tools the user must carry and learn to operate. Whether it’s sweeping cables, making power measurements, finding interference, troubleshooting 2/3/4G base station signal quality, or verifying backhaul performance, the Cell Master MT8212E and MT8213E are the ideal all-in-one instruments.

FEATURES and OPTIONS
- Cable and Antenna Analyzer
- Spectrum Analyzer
- Internal Bias Tee
- Internal Power Meter or High Accuracy with Power Sensor
- Interference Analyzer
- Channel Scanner
- Coverage Mapping
- CW Signal Generator
- Signal Analyzers (up to 20 MHz demodulation)
  - GSM/GPRS/EDGE and W-CDMA/HSPA+
  - TD-SCDMA/HSPA+
  - LTE, TD-LTE
- CDMA2000 1X and CDMA2000 1xEV-DO
- Fixed WiMAX, Mobile WiMAX
- DVB-T/H (SFN, BER), ISDB-T (SFN, BER)
- LTE CPRI RF
- LTE OBSAI RF
- Backhaul Analyzers – E1, T1, T3/T1
- 273 x 199 x 91 mm (10.7 x 3.0 x 7.8 in)

BTS Master

High-Performance Handheld Base Station Analyzer

The BTS Master™ MT8220T is a high-performance handheld base station analyzer that has been specifically developed to advance the support for 4G wireless networks as well as installed 2G, 3G, and WiMAX networks.

The BTS Master MT8220T base station analyzer is an essential, multi-function instrument for senior wireless technicians and RF engineers. It provides all required capability for field testing of cellular base transceiver stations ensuring key network performance indicators are consistently met.

Utilizing easy-to-use, touchscreen technology, the BTS Master MT8220T includes support for: multiple technology standards; comprehensive over-the-air (OTA) testing for remote radio heads (RRH) and MIMO installations; low-cost signal analysis, providing all necessary measurements for each technology in a single option for convenience and economy; 2-port cable and antenna analysis; sophisticated interference analysis and tracking; and, CPRI RF, BBU emulation, and PIM over CPRI measurement options. All of this functionality is backed by a standard 3-year warranty.

FEATURES and OPTIONS
- Cable and Antenna Analyzer
- Spectrum Analyzer
- Internal Bias Tee
- Standard Internal GPS Receiver with Miniature Antenna
- Internal Power Meter or High-Accuracy with Power Sensor
- Interference Analyzer
- Channel Scanner
- CW Signal Generator
- Zero-Span IF Output
- I/Q Waveform Capture
- Signal Analyzers (up to 20 MHz demodulation)
  - GSM/GPRS/EDGE and W-CDMA/HSPA+
  - TD-SCDMA/HSPA+
  - LTE FDD/TDD
  - CDMA2000 1X and CDMA2000 1xEV-DO
- Fixed WiMAX, Mobile WiMAX
- LTE CPRI RF
- LTE OBSAI RF
- Backhaul Analyzers – E1, T1, T3/T1
- 273 x 199 x 91 mm (10.7 x 3.0 x 7.8 in)
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<td>High</td>
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<td>Performance</td>
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<tr>
<td>Performance</td>
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**Anritsu RF & Microwave Handheld Analyzers Solutions**

- **Standard / Premium Calibration**
- **K Test Port Connectors**
- **PTC Measurements**
- **LTE CPRI RF**
- **Fixed WiMAX Measurements**
- **CDMA2000 1X Measurements**
- **TD-SCDMA/HSPA+ Measurements**
- **W-CDMA/HSPA+ Measurements**
- **Demodulation Hardware**
- **High Accuracy Power Meter Support (requires USB power sensor)**
- **Power Meter**
- **Tracking Generator (TG) 9 GHz**
- **43 GHz**
- **14 GHz**
- **8 GHz**
- **Distance Domain only**
- **Time Domain and Distance Domain**
- **Vector Network Analyzer**
- **Coverage Mapping (Indoors and Outdoors)**
- **Interference Analyzer/Channel Scanner**
- **EMF Measurements**
- **Preamplifier**
- **Frequency Range**
- **1-port Measurements**
- **Cable & Antenna Analyzer**
- **MT8213E**
- **Base Station Analyzers**
- **UMTS 2100**
- **LTE 800**
- **0028**
- **00740**
- **9 kHz to 4 / 6 GHz**
- **S 0542 Modulation Quality**
- **S 0591 RF Measurements**
- **Standard**
- **In TG Option**

**Option Numbers**

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<td>9 kHz to 1.6 GHz</td>
<td>High Performance</td>
<td>9 kHz to 4 / 6 GHz</td>
<td>S 0546</td>
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</table>
**Spectrum Master**

**Handheld Spectrum Analyzers**

Anritsu’s Spectrum Master™ handheld spectrum analyzers provide excellent flexibility in field environments for locating, identifying, recording, and solving communication systems problems without sacrificing measurement accuracy. There are five models to choose from, including our ultraportable Spectrum Master MS2760A, to meet a variety of needs. Some models include Burst Detect to see bursty signals that are 200 µs or wider.

Our handheld units have dedicated routines for simple, one-button measurements including field strength, channel power, occupied bandwidth, Adjacent Channel Power Ratio (ACPR), Carrier-to-Interference ratio (C/I), and AM/FM/SSB demodulator. Interference analyzers feature spectrum, RSSI, signal strength, and interference mapping for efficient interference monitoring, detection, and location.

Compact models feature 3, 4, and 6 GHz models while high-performance models go to 43 GHz (or even our 110 GHz in our ultraportable MS2760A) — offering benchtop quality measurements in dynamic range, sensitivity, and phase noise. With advanced marker and limit line capabilities, the Spectrum Master spectrum analyzers’ flexibility and power is available to meet all types of field measurement needs. Whether it is for spectrum monitoring, interference analysis, RF and microwave measurements, broadcast proofing, Wi-Fi and wireless network measurements, or CPRI RF measurements (for MS2712/13E), the Spectrum Master is the ideal instrument for making fast and reliable measurements — anytime or anywhere.

---

**VNA Master**

**Handheld Vector Network Analyzers**

The VNA Master™ MS202xC/3xC models are advanced, full-reversing, 2-path, 2-port vector network analyzers for demanding wireless backhaul, aerospace, defense, and general purpose applications. With frequency coverage from 5 kHz to 20 GHz, the VNA Master models are cable and antenna analyzers that specialize in S-parameter measurements of isolators, circulators, filters, and phase-matched cables. The MS203xC models add a powerful spectrum analyzer up to 20 GHz with industry-leading low noise floor for accurate small signal measurements. The MS202xB/3xB models are compact, affordable, 1-path, 2-port VNAs. MS203xB models add integrated spectrum analysis up to 6 GHz.

The MS202xC/3xC models are true 2-port VNAs that can measure and display all four S-parameters simultaneously at 350 usec/point sweep speeds. Ideally suited for the field, the VNA Master series is also an attractive, low-cost solution for passive measurements in manufacturing and R&D lab environments.

The VNA Master models are viable alternatives to obsolete voltmeters, scalar tracking generators, and laboratory-grade vector network analyzers. With battery-powered operation, field personnel can do on-site analysis and maintenance tasks that used to require returning the component to a depot or lab. This freedom enables swift and precise measurements to phase match cables, troubleshoot critical system faults, and perform routine installation and maintenance tasks — anytime, anywhere.

---

**FEATURES and OPTIONS (not available on all models)**

- **Spectrum Analyzer**
  - 9 kHz to 3/6/9/13/20/32/43 GHz
  - 9 kHz to 32/44/50/70/110 GHz (MS2760A)
- **Burst Detect**
- **Full Band Preamplifier**
- **GPS Receiver**
- **Internal Power Meter**
- **High Accuracy with Power Sensor**
- **Interference Analyzer**
- **Channel Scanner**
- **Coverage Mapping**
- **Tracking Generator**
- **Zero Span IF Output**
- **I/Q Waveform Capture**
- **Signal Analyzers**
  - up to 20 MHz demodulation
- **CDMA2000 1X and CDMA2000 1xEV-DO**
- **DVB-T/H (SFN, BER), ISDB-T (SFN, BER)**
- **Interference Analyzer**
- **TD-SCDMA/HSPA+**
- **AM/FM/PM Modulation Analyzer**
- **5 kHz to 6/15/20 GHz (MS202xC)**
- **Distance Domain for Distance to Fault (Standard)**
- **GSM/GPRS/EDGE and W-CDMA/HSPA**
- **9 kHz to 3/4/6/9/13/20/32/43 GHz**
- **9 kHz to 32/44/50/70/110 GHz (MS2760A)**
- **Time Domain** (MS202xC/3xC only)
- **LTE, TD-LTE**
- **LTE OBSAI RF for MS2712E and MS2713E**
- **I/Q Waveform Capture**
- **500 kHz to 4/6 GHz (MS2712E and MS2713E)**
- **273 x 91 x 199 mm (10.7 x 3.6 x 7.8 in) (MS271xE)**
- **155 x 84 x 27 mm (6.1 x 3.3 x 1.1 in) (MS2760A)**
- **High-Accuracy Power Meter with USB Power Sensor**
- **AM/FM/PM Modulation Analyzer**
- **5 kHz to 6/15/20 GHz (MS202xC - VNA)**
- **Balanced/Differential S-Parameters (MS202xC/3xC only)**
- **Spectrum Analyzer**
- **LTE OBSAI RF for MS2712E and MS2713E**
- **CDMA2000 1X and CDMA2000 1xEV-DO**
- **500 kHz to 4/6 GHz (MS2720T - SPA)**
- **Frequency Domain for Frequency to Distance (Standard)**
- **Homebrew High-Accuracy Power Meter with USB Power Sensor**
- **I/Q Waveform Capture**
- **5 kHz to 6/15/20 GHz (MS203xC - SPA)**
- **Adjacent Channel Power Ratio (ACPR)**
- **Carrier-to-Interference ratio (C/I)**
- **AM/FM/SSB demodulator**
- **Interference Analyzer**
- **Channel Scanner**
- **Coverage Mapping**
- **Tracking Generator**
- **Zero Span IF Output**
- **I/Q Waveform Capture**
- **Signal Analyzers**
  - up to 20 MHz demodulation
- **CDMA2000 1X and CDMA2000 1xEV-DO**
- **DVB-T/H (SFN, BER), ISDB-T (SFN, BER)**
- **AM/FM/PM**
- **LTE CPR RF for MS2712E and MS2713E**
- **LTE OBSAI RF for MS2712E and MS2713E**
- **273 x 91 x 199 mm (10.7 x 3.6 x 7.8 in) (MS271xE)**
- **155 x 84 x 27 mm (6.1 x 3.3 x 1.1 in) (MS2760A)**

(Not all options are available in all models)
PIM Master
40 Watts Battery-Operated Passive Intermodulation Analyzer

Anritsu Company introduced the first battery-operated, high-power passive intermodulation (PIM) testing solution for the major wireless standards in use around the world. PIM is a form of interference generated by passive components that are normally thought of as linear, such as connectors, cable assemblies, filters, and antennas. However, when subjected to high RF power levels found in cellular systems, these devices can generate spurious signals that increase the receiver noise floor and reduce site performance.

The PIM Master™ MW82119B accurately measures PIM performance by injecting two CW test tones into the antenna feed network and recording the magnitude of the 3rd, 5th, or 7th order intermodulation products falling in the receive band of the system. The PIM Master MW82119B is able to perform the following measurements, enabling test technicians to quickly find and eliminate PIM problems found at the cell site:

- PIM vs. Time, Swept PIM
- Distance-to-PIM™ (DTP)
- Noise Floor
- Trace Overlay

Training and Service

Knowledge is Power – Anritsu Gives YOU the Power

Anritsu training is the fast track to doing the job right. World-class experts lead in-person courses in which half the class time is hands-on with the instrument. See what the instrument can do, then do it yourself. Pass our rigorous assessments and earn a Site Master, PIM Master or Interference Analysis Certification and photo ID, proving you have the training to perform the most sought-after RF tests from major network carriers. Attend public training sessions in your area or ask about private, on-site training. Contact us at us-training@anritsu.com.

Register TODAY! – Instructor-Led Training or eLearning at www.anritsu.com/training

Anritsu is your partner in professional development. Our eLearning courses can prep you for in-person certification, or deepen your existing knowledge on RF topics. Your private Anritsu My Learning portal stores your eLearning certificates and course progress. Impeccable customer support is an integral part of Anritsu products. Our global network of customer-service centers are registered to ISO 9001:2000 quality system compliance and have achieved ISO 17025 accreditation. Staffed by Anritsu’s factory-trained professionals, our centers provide the most accurate, reliable, highest-quality repair and calibration services. Get the care and quality you demand in the fast turnaround times you need. We are determined to exceed your expectations and solidify your confidence in Anritsu.

FEATURES and OPTIONS

- Features
  - 3.0 Hour Battery Operation
  - 25 dBm to 46 dBm Power Output
  - 3rd, 5th, 7th IMD Detection if In-Band
  - Wireless Remote Access
- Measurements
  - PIM vs. TIME
  - Noise Floor
  - Distance-to-PIM™
  - Swept PIM
- Frequency Options
  - LTE 700 (Upper and Lower band)
  - LTE 800
  - Cellular 850
  - E-GSM 900
  - DCS 1800
  - PCS/AWS 1900/2100 (for dual band systems)
  - UMTS 2100
  - LTE 2600
- Options
  - Site Master Cable and Antenna Analyzer
  - GPS
  - High-Accuracy Power Meter
  - PIM Master Certified PIM Measurement Training Course

INSTRUCTOR-LED CLASSROOM TRAINING

- Instructor Led:
  - Site Master Line Sweep Certification
  - PIM Master™ Certification
  - Active DAS Certification
  - Passive DAS Certification
  - NEW! Fiber Optic, OTDR & CPRI Certification
  - RF & Microwave Interference Analysis Certification
  - LMR Master User Training Course
- eLearning:
  - RF Fundamentals
  - Line Sweeping
  - Passive Intermodulation Measurement (PIM)
  - Distributed Antenna Systems (DAS)
  - Spectrum Analysis
  - LTE Measurement
  - Introduction to W-CDMA