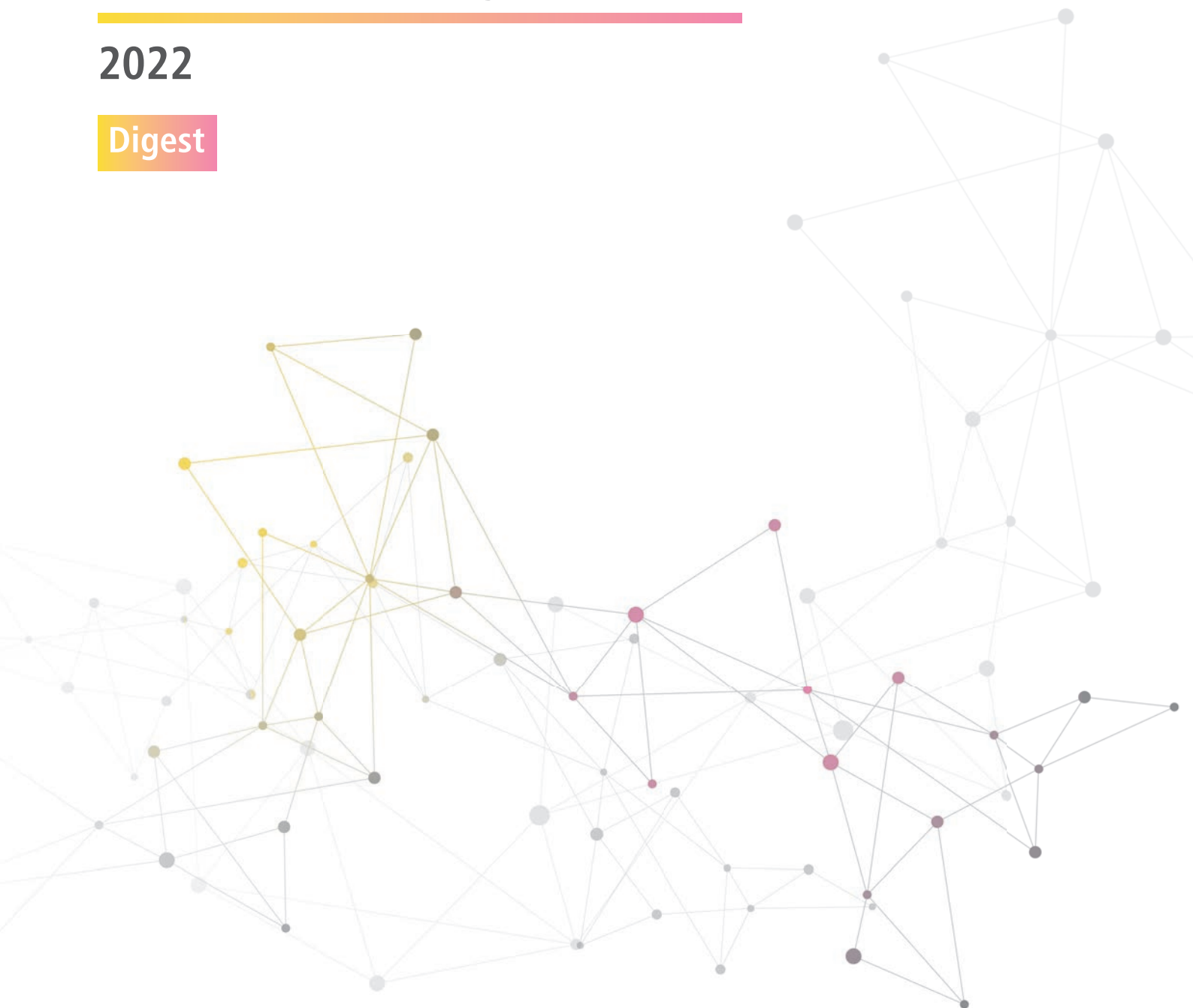












Electronic Measuring Instruments

2022

Digest



Since 1895

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Network Master Pro



Network Master Pro



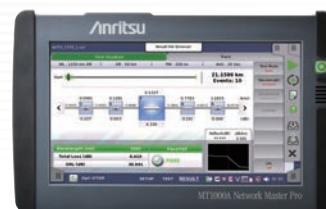
Mainframe MT1000A

OTDR Module MU100020A/MU100021A/MU100022A/MU100023A

1310 nm/1550 nm SMF, 1310/1550/850/1300 nm SMF/MMF, 1310/1550/1625 nm SMF, 1310/1550/1650 nm SMF

Mobile Network I&M

- All-in-one OTDR, light source, optical power meter visual light source and CPRI/OBSAI with MU100010A/MU100011A
- Filtered 1650 nm port for maintenance
- Remote control over cloud and automated test without external PC
- Optical connector inspection with IEC 61300-3-35 pass/fail
- Graphical summary and pass/fail evaluation using Fiber Visualizer function
- Intuitive touch-screen operation



The OTDR module lineup includes the MU100021A for OTDR measurements of both SM and MM fibers in high demand by the mobile network I&M, plus the MU100020A/MU100022A/ MU100023A for OTDR measurements of SM fiber used by PON networks and long-range measurements in Core/Metro networks.

ACCESS Master™



MT9085 series 850 nm/1300 nm (MM), 1310/1490/1550/1625/1650 nm (SM)

All-in-One Solution for Optical Fiber Construction and Maintenance of Core, Metro and Access Networks

- 8-inch LCD with easy visibility even in direct sunlight
- Better work efficiency with synergy of LCD touchscreen, rotary knob, and dedicated hard keys
- Easy-to-Use Fiber Visualizer function for simple fiber path analysis

The MT9085 series is a compact handheld all-in-one tester for performing optical pulse tests, optical loss/power measurements, and optical fiber end-face inspections. It has a wide variety of applications, ranging from installation and maintenance (I&M) of trunk fibers (Core, Metro, Mobile Fronthaul, Mobile Backhaul) to troubleshooting Access networks, such as breaks in drop cables.



Network Master™



Mainframe MT9090A

μOTDR Module™ MU909014/MU909015

1310/1490/1550 nm plus filtered 1650 nm or 1625 nm

Field Optical Testing Redefined

- High-performance OTDR in a pocket-size package with unique battery operation
- Tri-wavelength OTDR for both installation and maintenance
1310/1490/1550 nm plus filtered 1650 nm or 1625 nm
- Built-in PON power meter, loss test set and light source function
- "Fiber Visualizer" mode simplifies operation, no OTDR knowledge needed
- Bluetooth, WLAN and Ethernet connectivity



The MU909014/15 series for the MT9090A from Anritsu finally addresses this need by providing all of the features and performance required for installation and maintenance of optical fibers in a compact.

The MT9090A represents an unmatched level of value and ease of use, while not compromising performance. Data sampling of five centimeters, dead zones of less than 0.8-meter and dynamic range up to 38 dB ensure accurate and complete fiber evaluation of any network type – premise to access, metro to core...including PON-based FTTx networks featuring up to a 1 × 64 split.

Optical Loss Tester/Light Source/Optical Power Meter

CMA5 series 850 nm/1300 nm (MM), 1310/1490/1550/1625 nm (SM)

For Optical Fiber Installation and Maintenance

- Built-in light source and power meter (Optical Loss Tester)
- Two wavelengths at one port (Light Source)
- Level measurement up to +23 dBm (Optical Power Meter)

The compact and durable design of the CMA5 series make these instruments the ideal combination of light source and optical power meter for measuring optical power when installing and servicing optical fiber cables.



Video Inspection Probe

Autofocus Video Inspection Probe G0382A

Video Inspection Probe G0306C

Optical Connector End Face Inspection

- Fully automated one-button operation (G0382A)
- Supported pass/fail analysis with the IEC61300-3-35 standard
- Wide range of adaptors available

The Video Inspection Probe (VIP) application for Anritsu field testing platforms gives operators a safe, easy way to analyze and document connector conditions.



Optical Spectrum Analyzer

MS9740B 600 nm to 1750 nm

Reduces Measurement Time and Improves Production Efficiency

- Wavelength sweeping time <0.35 s
- Dedicated applications for evaluating active optical devices
- Excellent cost performance
- Dynamic range performance ≤58 dB (0.4 nm from peak wavelength)
- 30 pm minimum resolution

The MS9740B reduce the measurement processing times by up to half compared to the earlier model while assuring high performance and complete test menus brings higher-efficiency inspection of active optical devices.



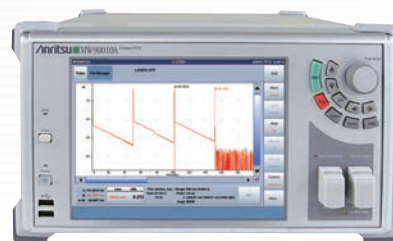
Coherent OTDR

MW90010A

Measures Submarine Cables up to 12,000 km Long

- Fault detection with 10 m distance resolution
- Compact and lightweight all-in-one design for on-site portability
320 (W) × 177 (H) × 451 (D) mm, <17 kg
- Simple and easy touch-panel operation for easy first-time use by any operator
- Wide dynamic range supporting fault detection and troubleshooting of submarine cables with repeaters at 80 km or longer intervals

The MW90010A is a measuring instrument for detecting faults in ultra-long optical submarine cables of up to 12,000 km including multiple repeaters (EDFAs).



Signal Quality Analyzer-R



MP1900A

Support 400 GbE/800 GbE and PCIe Gen4/5.

All-in-One Support for Evaluating Next-Generation NRZ/PAM4 Network Interfaces and High-Speed Serial Buses

- All-in-one support for both high-speed Ethernet and PCI Express interface tests
- Easily configured and easy-to-use all-in-one 64-GBaud PAM4 BER measurement system supporting FEC analysis
- Receiver tests are supported by the built-in Protocol Awareness PCIe Link Training and LTSSM analysis functions
- High-reproducibility measurements due to high waveform quality and high input sensitivity
- Supports true signal integrity analysis, such as bit error rate measurements, Jitter Tolerance tests, etc.

The MP1900A is a high-performance BERT with excellent expandability for supporting Physical layer evaluations of these high-speed interfaces. The all-in-one design is ideal for early stage R&D evaluations of all interfaces covering next-generation Ethernet networks to bus interconnects.



BERTWave™



MP2110A

For 10G to 800G Multi-channel Optical Module/Device R&D and Manufacturing

- Sampling oscilloscope and BERT for up to 4ch installed one unit
- Sampling oscilloscope supports analysis for both NRZ and PAM4 signals with high-speed, low-noise, and built-in CRU

The BERTWave MP2110A is an all-in-one instrument with built-in 4 channel Sampling Oscilloscope and BERT designed for manufacturing inspection of 10G/25G/100G/200G/400G/800G optical modules. The MP2110A will improve optical module production efficiency and reduce manufacturing costs.



Network Master Pro



Mainframe MT1000A

10G Multirate Module MU100010A

100G Multirate Module MU100011A

High Performance GNSS Disciplined Oscillator MU100090B

All-in-One Transport Tester for Metro and Backhaul Network Installation and Maintenance

- Supports testing from 1.5 Mbps to 100 Gbps
- Remote operation & scripting
- Remote control over cloud and automated tests for standalone
- Compact, lightweight design for maximum field portability

The modular design of the Network Master Pro MT1000A platform makes it easy to support I&M for different network configurations. Combining it with the 10G Multirate Module MU100010A offers the necessary functions for I&M of networks at speeds from 1.5 Mbps to 10 Gbps. Combining with the 100G Multirate Module MU100011A, it supports more interface standards than any other handheld transport tester on the market such as CFP4/QSFP28, QSFP+, SFP28 (25GbE), SFP+/SFP and RJ45. MU100090B enables easy Pass/Fail evaluations when installing and commissioning time and phase synchronous networks.



Network Master Pro



Mainframe MT1040A

400G (QSFP-DD) Multirate Module MU104014A

400G (OSFP) Multirate Module MU104015A

100G Multirate Module MU104011A

One unit supporting 400G Ethernet I&M

- Supports network speeds from 10 Mbps to 400 Gbps
- Continuous and quantitative 400G FEC measurements
- Remote control over cloud and automated tests without external PC
- Compact and lightweight for easy portability

The MU104014A support QSFP-DD module and a dual-port interface for speeds from 10M to 100G for evaluating network equipment. The MU104015A supports OSFP modules for evaluating 400G. The MU104011A has a dual-port interface for speeds of 100G or less. In addition, by combining 2 measurement modules, MT1040A can test 2-port 400G Ethernet and also perform equipment evaluation tests.



Site Over Remote Access



Site Over Remote Access MX109020A

Site Over Remote Access Connect MT1040A-011

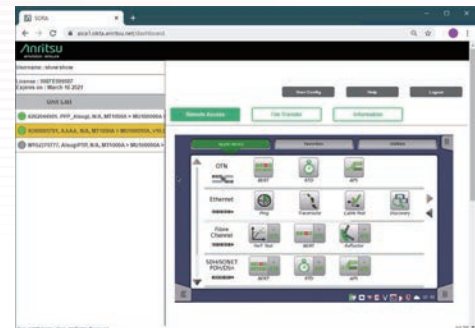
Site Over Remote Access Connect MT1000A-011

Remote control via Cloud

- Supports remote control of MT1040A/MT1000A using general Web browser
- Supports simultaneous control of multiple MT1040A/MT1000A units
- Supports direct access using web browser to files saved in measuring instrument and copying of settings files saved at operation side to measuring instrument

The MX109020A software is the license to operate either the MT1040A or MT1000A via a Web browser.

Using the MX109020A installed in a PC supports remote operation of multiple MT1040A/MT1000A from a one PC. Additionally, when problems occur, direct remote operation of the measuring instrument by a skilled technician helps efficient troubleshooting.



Network Master™



Mainframe MT9090A

Gigabit Ethernet Module MU909060A1/A2/A3

Handheld Gigabit Ethernet Tester

- Lightweight and compact unit (approx. 800 g)
- Testing time reduced by the "Test Automator" creating a series of tests with pass/fail
- Automated ITU-T Y.1564 and RFC 2544 testing including bidirectional path analysis service
- Disruption time measurement ideal for testing VoIP and IPTV applications top talkers, network attacks and finding the route course of an issue by "Channel Stats"

The portable and easy-to-use MU909060A offers versatile measurement functions supports deployments and maintenances of Carrier Class Ethernet and LTE mobile backhaul networks.



Radio Communication Test Station



Mainframe MT8000A

RF TDD Measurement Software MX800010A

Protocol Platform Software MX800030A

NR Fading Basic MX800031A

LTE protocol Platform Software MX800032A

LTE Fading Basic MX800033A

Rapid Test Designer Platform (RTD) MX800050A

SmartStudio NR (SSNR) MX800070A

All-in-One 5G Signaling and RF Tests

- Supports FR1/FR2 RF measurement, protocol test, and application test with one unit
- Supports FR2 Beam Management test with MA8171A RF Chamber that can install antennas in multiple positions/directions
- Supports 3GPP compliant FR2 TRx testing with MA8172 CATR chamber
- The modular architecture makes it possible to flexibly build a test environment suitable for various purposes
- Supports both SA (Standalone) and NSA (non-Standalone) on MT8000A. Possible to use existing LTE test environment for NSA
- Supports not only NR but also LTE Protocol tests such as IP Throughput tests exceeding 2 Gbps and LTE Anchor function of NSA tests
- Supports protocol testing in a fading environment with one unit
- Optimal tools are prepared for each test application

The MT8000A is a platform supporting both 5G RF measurement, protocol testing and application test. This instrument strongly support the development of chipset, UE etc. corresponding to the frequency bands of 5G communication used all over the world.



mmW OTA test environment for 5G NR

Shield Box MA8161A

RF Chamber MA8171A

CATR Anechoic Chamber MA8172A

For 5G NR mmW testing

- MA8161A: A mmW OTA connection environment can be built on the desktop
- MA8171A: RF/Protocol mmW OTA environment can be built with this single unit
- MA8172A: 3GPP compliant CATR chamber for testing 5G NR mmW devices



MA8161A



MA8171A



MA8172A

You can choose from 3 mmW OTA test environments according to your application, such as RF/RRM test and Protocol test.

Signalling Tester for LTE/Rapid Test Designer (RTD)

MD8430A/MX800050A/MX786201A

Powerful Support for Developing LTE/LTE-Advanced/LTE-Advanced Pro/5G NSA Anchor Chipsets and Mobile UEs

GUI for Creating 5G/4G/3G/2G Test Cases

- Supports LTE-Advanced FDD/TDD Carrier Aggregation (CA) 2CCs, 3CCs, 4CCs, 5CCs and 6CCs
- One MD8430A supports CA handover, 4 × 4 MIMO and 8 × 4 MIMO
- Supports full-digital fading test
- Supports DL 1 Gbps (PHY: 2.0 Gbps), UL 300 Mbps throughput test
- Supports 5G NSA protocol testing is possible by using in combination with Radio Communication Test Station MT8000A
- Full development and analysis toolset cuts L1, L2 and L3 scenario development time and costs
- Supports UMTS Release 10, HSPA Evolution, GSM/GPRS/EGPRS
- Easy to create, and execute test cases. Easy network parameter management

The MD8430A is a key LTE-Advanced Pro base station simulator for developing LTE-Advanced Pro-compliant chipsets and mobile devices. Using its extensive experience in 3G markets, Anritsu has developed the MD8430A as a powerful LTE-Advanced Pro R&D test solution to help developers bring LTE/LTE-Advanced/LTE-Advanced Pro UEs to market as fast as possible.

The MX800050A/MX786201A is a GUI tool for creating and executing test cases based on 3GPP, including 5G NR, LTE/LTE-Advanced/LTE-Advanced Pro, W-CDMA/HSPA, GSM handover tests, that runs on the MT8000A/MD8430A.



Simple Conformance Test System

ME7800L

Simple configuration conformance test system supporting RF/RRM and Protocol testing by 1 platform

- Support LTE RF/RRM and Protocol conformance testing
- Support IoT testing (Cat-M, NB-IoT)
- GCF and PTCRB validated conformance test system
- Measurement functions for supporting R&D
- Superior measurement reproducibility and stability
- Support for Regional Frequency Bands

The ME7800L is the ideal system for introducing RF and Protocol Conformance tests of 3GPP-compliant LTE mobile terminals and IoT devices.



5G NR Mobile Device Test Platform

ME7834NR

GCF/PTCRB, and Carrier Approved Test System for 5G/4G Mobile Protocol Testing

- All-in-One 5G/4G NR Support for Protocol Conformance Tests and Carrier Acceptance Test
- Initial setup and training support
- High test efficiency with reliable automation and easy GUI
- Supports 3GPP defined bands from Sub-6 GHz to mmWave
- Upgrade your current ME7834 system for 5G
- Reduction of test time & cost by automatic continuous test execution function

The ME7834NR is an all-in-one test system to support 3GPP- based Protocol Conformance Tests (PCT) and Carrier Acceptance Tests (CAT) for Sub 6 GHz and mmWave. In addition to the 5G New Radio (NR) Technology in both Standalone (SA) and Non-Standalone (NSA) modes, ME7834NR support LTE, LTE-Advanced (LTE-A), LTE-A Pro, W-CDMA and GSM to strongly assist certification test of global 5G & 4G communication device and chipset.



LTE-Advanced Mobile Device Test Platform

ME7834LA

GCF/PTCRB, and Carrier Approved Test System for LTE-Advanced Mobile Protocol Testing

- No. 1 GCF and PTCRB approved test cases
- Initial setup and training support
- High test efficiency with reliable automation and easy GUI
- Carrier approved test platform
- Support LTE-Advanced by Single Rack

The ME7834LA supports quick and easy 3GPP TS 36.523, TS 34.229, TS 34.123 and TS 51.010 protocol conformance tests of 3G/4G mobile systems as well as carrier acceptance testing.





New Radio RF Conformance Test System

ME7873NR

5G NR RF/RRM conformance system supporting both sub-6 GHz and mmWave band

- Industry-first test case validation
- Test system realizing superior measurement reproducibility and stability
- Measurement functions for efficient R&D
- Multiple hardware configurations tailored to measurement requirements
 - TRX Full/Performance/RRM
- Tunable filtering supports multiple bands with no hardware upgrade
- Upgradable from ME7873LA supporting W-CDMA, LTE and LTE-Advanced
- Support both 5G NR Non-Standalone mode and Standalone mode

ME7873NR is the RF/RRM conformance system complying with 3GPP TS 38.521 and TS 38.533 for both sub-6 GHz and mmWave band. ME7873NR won World-First GCF Approval for 5G RF, and the number of Approved TCs is the top class in the market. And ME7873NR supports Regulatory testing and RF testing for US Operator.



LTE-Advanced RF Conformance Test System

ME7873LA

RF/RRM Conformance Test System Supporting W-CDMA, LTE/LTE-A/LTE-A Pro by 1 platform

- Industry-first test case validation
- Test system realizing superior measurement reproducibility and stability
- Measurement functions for efficient R&D
- Multiple hardware configurations tailored to measurement requirements
 - TRX/Performance/RRM
- Tunable filtering supports multiple bands with no hardware upgrade
- Inter-RAT handover capability
 - LTE to GSM/UMTS/CDMA2000/TD-SCDMA
- Support LTE-Advanced Pro, such as LAA and Cat-M/NB-IoT, Joint CA up to 5CA, 4 × 4 MIMO, and HPUE testing

ME7873LA is the world's first PTCRB-validated RF test platform for 5DL CA (June 2018). And ME7873LA supports many test cases for LAA and 4Rx/4 × 4 MIMO. The number of Approved TCs is top class in the market, and ME7873LA contributes to the evolution and development of mobile broadband service.



RF Regulatory Test System

ME7803NR

Tests in Compliance with National and Regional Radio Regulations

- Supports Correction Function for Increased Reliability
- Supports Regional Frequency Bands
- Supports Multi format Measured Data Management Function

The 5G RF Regulatory Test System ME7803NR test solution is in compliance with the ARIB/ETSI/FCC-defined TRCC/RED/CFR FR1 tests.



Signalling Tester

MD8475B 350 MHz to 6 GHz, 8TX/4RX

For General Wireless Device Application Tests

- Scenario-less test environment
- Supports most mobile communications technologies from LTE-Advanced to legacy (2G/3G)
- Built-in IMS server enables to test VoLTE
- Supports LTE-Advanced throughput test using built-in IP Traffic Generator (MD8475B only)
- Function test of the smartphone such as RCS or WLAN offload
- Supports automotive emergency call system (eCall, ERA-GLONASS), enables to verify the communication quality of in-vehicle module and device
- Automated continuous 24/7 testing using SmartStudio Manager



The all-in-one MD8475B supports the full range of smartphone and wireless device tests; when used in combination with SmartStudio, it handles all the complex functions and application tests required by manufacturers and vendors.

Radio Communication Analyzer

MT8821C 30 MHz to 3.8 GHz/6.0 GHz

All-in-One Integrated Wireless Tester for RF TRX measurement of LTE/LTE-Advanced and Cat-M/NB-IoT, 5G NSA Anchor operation

- Supports multiple communications technologies from LTE-Advanced, IoT to legacy (2G/3G)
- Easy-to-use GUI for 3GPP RF TRX tests. In addition, operation is made easy just by choosing item numbers using the automatic test tool
- Supports VoLTE tests with built-in IMS server
- Upgradeable from MT8820C. Compatible functions, performance and remote commands



The MT8821C is a measuring instrument for mobile terminal developers; it is the successor to Anritsu's popular MT8820C used by mobile terminal and chipset vendors worldwide. As well as inheriting MT8820C technologies and know-how, the MT8821C adds support for new functions, including DL CA 8 CC, LTE-U/LAA, DL 256QAM, DL 4 × 4 MIMO, UL CA, and LTE Cat-M/NB-IoT. Also, MT8821C supports 5G NSA Anchor operation and call connection with UE by combining with MT8000A. As well as supporting RF measurements, the MT8821C also supports other R&D tests ranging from RF calibration, inspection, and functional tests. Additionally, it supports a full range of evaluation items for developing smartphones and communications module hardware with OTA and SAR test solutions customized by each vendor.

Vector Signal Generator

MG3710E 100 kHz to 2.7 GHz/4 GHz/6 GHz

Supports the Evaluation of Wireless Communications Evolving into the 5G

- RF modulation bandwidth 160 MHz*/120 MHz
- Pre-installed key waveform patterns
- Waveform addition function
Adds and outputs two signals, such as wanted signal + interference signal or wanted signal + AWGN
- One unit supports two RF outputs max., Ideal for multi-system evaluations
- Supports BER test function

*: When using MX370111A/MX370111A-002



The MG3710E supports various digital modulation signals, such as 5G, LTE/LTE-Advanced, GSM/GPRS/EDGE, W-CDMA/HSPA/HSPA Evolution, TD-SCDMA, Digital Broadcast (ISDB-T, DVB-T/H, CMMB), GPS, Bluetooth, and WLAN for major communication systems. It is ideal for tests of base stations, mobile terminals and devices.

Signal Analyzer

MS2690A 50 Hz to 6 GHz

MS2850A 9 kHz to 32 GHz/44.5 GHz

MS2830A 9 kHz to 3.6 GHz/6 GHz/13.5 GHz

Supports All Key Communications Systems

- Analysis bandwidth: 1 GHz max. (MS2850A)
125 MHz max. (MS2690A/MS2830A)
- Versatile built-in measurement functions: Adjacent channel leakage power, Occupied bandwidth, Spectrum emission mask, Spurious emission, Frequency counter, etc
- Measurement software options supporting modulation analysis: 5G (MS2690A/MS2850A), LTE/LTE-Advanced, W-CDMA/HSPA/HSPA Evolution, TD-SCDMA, GSM/EDGE/EDGE Evolution, CDMA2000/1xEV-DO, WLAN, FM/øM/AM



MS2850A

The MS2690A/MS2850A/MS2830A have all the versatile built-in measurement functions needed for evaluating Tx characteristics. Parameter setting is easy using pre-installed templates for each measurement standard. Installing measurement options displaying numerical and graphical results supports modulation analysis of key communications systems.

Wireless Connectivity Test Set

MT8862A 2.4/5 GHz Band, 2.4/5/6 GHz Band

Ideal for RF TRx Tests of WLAN Devices

- Network Mode Support
No need to control chipset and no use test firmware for measurement under realistic operating conditions
- Support 6 GHz band as a new Frequency band for Wireless LAN
Support the latest standard IEEE802.11ax 6 GHz band on one-box solution while keeping high-performance measurement
- Wide Connectivity Support
Supports IEEE802.11a/b/g/n/ac/ax AP and STA mode connections. Also, supports measurements with wireless encryption
- Measurable at specified Data Rate
Controls DUT data rate using MT8862A control function
- Stable Measurement in OTA Environment
Cuts evaluation time and cost due to stable RF performance measurement using MT8862A for OTA measurement where measurements can be unstable
- MIMO Measurement Support
Can evaluate 2×2 MIMO RF performance



Anritsu's Wireless Connectivity Test Set is ideal for measuring the RF TRx characteristics at design and manufacturing inspection of WLAN devices. It has a built-in Network Mode for measuring the performance of the WLAN DUT under realistic operation conditions to play a key role in quality evaluation and improvement. MT8862A gives manifold inspections for WLAN equipment because it also supports Direct Mode without requiring a WLAN protocol, supporting measurement of prototypes in development.

Universal Wireless Test Set

MT8870A/MT8872A MU887002A: 400 MHz to 6 GHz/7.3 GHz, MU887001A: 10 MHz to 3.7 GHz/6.0 GHz

Timely support for the latest wireless technology (5G NR/WiFi6E and more) for Mass production

- The measurement functions for up to four units are mounted in a single chassis. Realizes a high-density measurement system
- Signal generator and Analyzer pair is installed in one slot
- Replaceable TRX test module to reduce manufacturing downtime
- Support multiple wireless standards
5G NR, LTE/LTE-V2X, W-CDMA/HSPA, TD-SCDMA, GSM/EDGE, CDMA2000/1xEV-DO, WLAN11 ax/ac/n/a/g/b/l/p (V2X), Bluetooth, Zigbee, Z-Wave, GPS/GLONASS/BeiDou/Galileo/QZSS, DVB-H, ISDB-T
- Supports simultaneous signal output of 0 dBm from all 12 RF connectors per slot (MU887002A)
- Support FM measurement by Built-in audio analyzer and audio generator (MU887001A)



The MT8870A is a chassis that can be equipped with up to four slots of TRX test modules MU887000A/MU887001A/MU887002A. The MT8872A is a space-saving chassis that supports two slots. Each slot of the test module is equipped with a signal analyzer function and a vector signal generator, allowing each slot to be used as an independent measurement device. By installing a software license on the MT8870A/MT8872A, it is possible to perform transmit/receive measurements (power, frequency, EVM, spectrum mask, receive sensitivity, etc.) according to various wireless communication standard.

Bluetooth Test Set

MT8852B

Corresponds to the latest Bluetooth core specification v5.3

- Measurements performed as defined in the Bluetooth RF test specification
- Supports Angle of Arrival/Angle of Departure added with Bluetooth core specification v5.1
- Qualified by Bluetooth SIG for RF measurements

The MT8852B is the market leading RF measuring instrument for design proving and production test of a wide range of products that integrate Bluetooth technology, including; phones, headsets, computers, audio-visual and gaming products as well as modules. In production, a single key press initiates a measurement script that tests a device.



Cell Master™

MT8213E Cable & Antenna Analyzer: 2 MHz to 6 GHz, Spectrum Analyzer: 9 kHz to 6 GHz

Compact Base Station Analyzer

- 30 analyzers in one
- Return loss, Cable loss, VSWR, Distance-to-Fault
- High-accuracy power meter
- Interference analyzer with interference mapping, GPS
- Signal analyzers: 3GPP (LTE/LTE-A, 3GPP2, WiMAX), ISDB-T, and DVB-T/H
- PIM hunting
- Indoor/outdoor coverage mapping

This optimal combination of base station test capabilities in one handheld device eliminates the need for several independent test instruments, thereby reducing the number of tools the user must carry and learn to operate. Whether it's sweeping cables, making power measurements, finding interference, troubleshooting base station signal quality, or verifying backhaul performance, the MT8213E is the ideal all-in-one instrument to help keep your network up and running.



PIM Master™

MW82119B Passive Intermodulation (PIM) Analyzer with Site Master™ Cable & Antenna Analyzer Option

Battery-Operated, High-Power, Portable PIM Analyzer with Cable & Antenna Analyzer

- Measurements: PIM vs. time, swept PIM, distance-to-PIM, noise floor, 2-port PIM
- PIM analyzer
- Battery operated: >3 hour
- 20 to 46 dBm (0.1 Watt to 40 Watt)
- Field-proven design: Rugged, compact, daylight viewable display

The MW82119B is a 40 Watt, battery-operated PIM analyzer featuring Site Master line sweep capability. With the Site Master option included, the MW82119B is able to fully certify cable and antenna system performance and measure PIM, distance-to-PIM, return loss, VSWR, cable loss, and distance-to-fault with a single test instrument. The MW82119B includes a large, outdoor viewable display and intuitive user interface that is optimized for field conditions. The rugged design and enhanced portability enables both PIM and line sweep testing at the top of the tower, helping operators achieve maximum RF performance from their LTE remote radio head (RRH) installations.



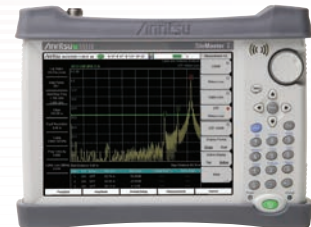
Site Master™

S3xxE Cable & Antenna Analyzer: 2 MHz to 4/6 GHz, Spectrum Analyzer: 9 kHz to 4/6 GHz

Compact Handheld Cable and Antenna Analyzers with Spectrum Analyzer

- Return loss, VSWR, cable loss, distance-to-fault, Smith Chart, 1-port phase
- Field-proven design: four-hour battery life, rugged, compact, lightweight, daylight viewable display
- USB connectivity, built-in touchscreen keyboard
- Intuitive menu-driven touchscreen user interface
- Standard three-year warranty (battery one-year warranty)

The Site Master is the preferred cable and antenna analyzer of wireless service providers, contractors and installers. It is the most integrated cable and antenna analyzer in the world. This compact, handheld cable and antenna analyzer with spectrum analyzer is a sleek instrument that's less than 6 lbs.



Site Master™

S331L 2 MHz to 4 GHz, Power Meter: 50 MHz to 4 GHz

Handheld Cable & Antenna Analyzer Featuring Classic and Advanced Modes

- 2 MHz to 4 GHz handheld cable and antenna analyzer, impact, dust, and splash resistant
- More than 8 hours of continuous battery operation
- Standard built-in InstaCal™ module and power meter
- FlexCal™ maintains calibration with frequency changes
- Built-in one button help function
- 800 × 480 7-inch TFT touch-screen display and multiple USB ports

The S331L is an all-inclusive 1-port cable and antenna analyzer covering the 2 MHz to 4 GHz range, with a built-in InstaCal™ module and a built-in power meter. Standard measurements include: return loss, VSWR, cable loss, smith chart (50Ω/75Ω selectable), 1-port phase, distance-to-fault, return loss, distance-to-fault VSWR, RF power (50 MHz to 4 GHz), and VIP mode, optical connector inspection with IEC 61300-3-35 based pass/fail standard (requires USB video inspection probe G0306A, sold separately).





LMR Master™

S412E Cable & Antenna Analyzer: 500 kHz to 1.6/6 GHz, Spectrum Analyzer: 9 kHz to 1.6/6 GHz

Land Mobile Radio Modulation Analyzer and Signal Generator, Vector Network Analyzer, Spectrum Analyzer

- Return loss, VSWR, Insertion loss, S_{11}/S_{21} , DTF
- Cable and antenna analyzer: 500 kHz to 1.6 GHz, optional to 6 GHz
- LMR signal analyzers with coverage mapping: P25, P25 phase 2, NXDN, DMR (MotoTRBO), TETRA, PTC-ITCR, PTC-ACES, NFBM, FDD & TDD LTE
- Broadband signal analyzers: LTE, WiMAX
- Interference analyzer with interference mapping and support for Handheld InterferenceHunter MA2700A
- PIM hunting

The S412E is the ideal instrument for kLand Mobile Radio (LMR) and professional mobile radio (PMR) technicians and engineers engaged in field testing the RF performance of NBFM, P25, P25 Phase 2 (TDMA), NXDN, DMR (MotoTRBO), TETRA and FDD and TDD LTE for commercial, public safety, maritime, and critical infrastructure radio systems. In addition, the LMR Master S412E offers support for USA class 1 railway Positive Train Control (PTC) systems.



Microwave Site Master™

S820E 1 MHz to 8 GHz/14 GHz/20 GHz/30 GHz/40 GHz

Cable & Antenna Analyzer

- VNA mode (option) offers fully reversing 4 S-parameter measurement capabilities
- VVM mode (option) with standard A/B and B/A ratio capability
- 110 dB of dynamic range from 20 MHz to 40 GHz
- 550 μ s/data point for fast field measurements
- Advanced and classic mode GUI (i.e. S810D/S820D)
- Coaxial and waveguide measurement supported

The S820E family, with frequency options covering 1 MHz to 8, 14, 20, 30, and 40 GHz, is the world's most advanced Site Master ever developed. Available vector network analyzer (VNA) and vector voltmeter (VVM) options allow users to easily expand the S820E's versatility at any time. Adding options is hassle free, simply purchase the desired option(s) and install the option activation key(s) provided by Anritsu. No need to send the instrument into a service department because all hardware and calibrations required are already built into the S820E before it leaves the factory.



Site Master™

S331P Compact handheld cable & antenna analyzer: 150 kHz to 6.0 GHz

Ultraportable Cable & Antenna Analyzer Featuring Classic and Advanced Modes

- Smallest, lightest, and fastest Site Master™
- Direct connection to DUTs eliminating the need for phase stable cables
- Powered through USB interface (No battery required)
- Rugged and reliable
- Impact, dust and splash resistant
- Compatible with Anritsu Software tools including easyTest™ Tools
- Factory calibration at the test port enables immediate measurement capability

The S331P is an ultraportable version of the industry-leading Site Master series of cable and antenna analyzers. It is the smallest, lightest, fastest, and most cost-effective instrument in the Site Master family. No battery is required since the USB port of Windows 7, 8, and 10 tablet devices, laptops, or desktop PCs power it. Available with two frequency ranges it is the only small, headless Site Master product capable of measurements down to 150 kHz for low frequency radio communications applications and up to 6 GHz for higher frequency applications like LTE-U in the 5 GHz unlicensed spectrum.



Signal Analyzer

MS2690A 50 Hz to 6 GHz

Signal analyzer with excellent fundamental performance

- Frequency coverage up to 6 GHz
- Total level accuracy: ± 0.3 dB (typ.)
- Dynamic range: 177 dB, TOI: $\geq +22$ dBm, DANL: -155 dBm/Hz
- Signal Analyzer
 - Analysis bandwidth: 31.25 MHz (standard), 62.5 MHz/125 MHz (option)
 - Modulation analysis software: 5G, LTE/LTE-Advanced, WLAN (802.11a/b/g/n/j/p/ac), etc.
 - Capture and Playback function
 - Level accuracy: ± 0.3 dB (typ.)
 - BER function, Internal AWGN generator



The MS2690A has the excellent total level accuracy and dynamic range. Not only can it capture wideband signals but FFT technology supports multifunction signal analyses in both the time and frequency domains.

Signal Analyzer

MS2850A series (MS2850A-047/046) 9 kHz to 32 GHz/44.5 GHz

Wideband signal analysis using excellent dynamic range and flatness

- Excellent Flatness Performance
 - Amplitude flatness: ± 1.2 dB (nom.), Phase flatness: 5° p-p (nom.)
 - Center Frequency: 28 GHz, at Center Frequency ± 500 MHz
- Wide Dynamic Range
 - Better than 140 dB@28 GHz
 - The difference between the ADC clipping level and DANL
- Analysis Bandwidth: 255 MHz (Standard), 510 MHz (Option), 1 GHz (Option)
- Measurement applications (Options): Modulation Analysis (5G, LTE, LTE-Advanced, W-CDMA, TD-SCDMA, GSM, Vector Modulation, etc.), Phase Noise, Noise Figure, Noise Floor Reduction, etc.



The MS2850A-047/046 is a spectrum analyzer/signal analyzer with a maximum analysis bandwidth of 1 GHz and excellent flatness performance. With this performance, the MS2850A supports high-accuracy amplitude and phase measurements for each signal in wideband next-generation communications systems, such as 5G mobile and satellite. In addition to signal analysis, 1 GHz analysis bandwidth can be utilized as a digitizer application that monitors multiple frequencies in satellite communication. The large amounts of digitized data captured can be transferred to an external PC 100 times faster than conventional method by External Interface for High Speed Data Transfer PCIe/USB3.0 MS2850A-053/054 option.

Signal Analyzer

MS2840A series (MS2840A-040/041) 9 kHz to 3.6 GHz/6 GHz

Top Class Phase Noise Performance at Middle-Price Range

- Phase Noise: -140 dBc/Hz@150 MHz, 10 kHz offset (MS2840A-066, meas.)
 - -138 dBc/Hz@1 GHz, 10 kHz offset (MS2840A-066, meas.)
 - -123 dBc/Hz@1 GHz, 10 kHz offset (Standard)
- Analysis Bandwidth: 31.25 MHz (Standard), 125 MHz max. (Option)
- Measurement applications (Options): Phase Noise, Noise Figure, Vector and Analog Modulation Analysis, Noise Floor Reduction, Built-in Vector/Analog Signal Generator, BER



MS2840A-041

Installing the MS2840A-066 option in the MS2840A-040/041 supports excellent phase noise performance exceeding that of high-end models. It offers high cost-performance in fields including development and manufacturing of narrowband wireless equipment and oscillators with built-in wireless, as well as wireless fundamental research. Additionally, it is ideal for substitute replacement of first-generation and earlier legacy high-end models. It has a built-in signal analyzer function with a wide 31.25 MHz analysis bandwidth using FFT technology for versatile analyses in both the time and frequency domains, etc. Moreover, installing the internal vector signal generator and analog signal generator options provides all-in-one support for TRx measurements of wireless equipment.

Signal Analyzer

MS2840A series (MS2840A-044/046) 9 kHz to 26.5 GHz/44.5 GHz

Excellent Phase Noise Performance Using New Synthesizer Design

- Phase Noise: -123 dBc/Hz@1 GHz, 10 kHz offset
 - -100 dBc/Hz@79 GHz, 10 kHz offset (with high performance waveguide mixer, meas.)
- Support high performance waveguide mixer (50 GHz to 90 GHz) or harmonic mixer (up to 325 GHz)
- Analysis Bandwidth: 31.25 MHz (Standard), 125 MHz max. (Option)
- Measurement applications (Options): Pulse Radar Analysis, Phase Noise, Noise Figure, Vector and Analog Modulation Analysis, Noise Floor Reduction, BER



MS2840A-046

The MS2840A-044/046 is a spectrum analyzer offering top-class phase noise performance in a middle-price-range model. This excellent phase noise performance supports measurement of wideband transmitters, such as VHF and UHF LMR/PMR, where the measurement instrument performance is key to measurement of close-in spurious, as well as measurement of microwave wireless backhaul, satellite, radar, etc. Connection to two available high-performance waveguide mixers covers both V-band (50 GHz to 75 GHz) and E-band (60 GHz to 90 GHz) measurements with the highest phase noise performance.

Signal Analyzer

MS2830A series (MS2830A-040/041/043) 9 kHz to 3.6 GHz/6 GHz/13.5 GHz

Supports TRx evaluations of various wireless equipment plus spurious measurements of narrowband wireless equipment

- Total level accuracy: ± 0.3 dB (typ.) (300 kHz to 4 GHz)
- SSB phase noise: -109 dBc/Hz@500 MHz, 1 kHz offset*
 -118 dBc/Hz@500 MHz, 10 kHz offset*
 -133 dBc/Hz@500 MHz, 100 kHz offset*
 *: Requires Low Phase Noise Performance MS2830A-066

Measurement applications (Options):

Modulation Analysis (LTE/LTE-Advanced, Analog Modulation, Vector Modulation, etc.), Noise Figure, Built-in Audio Analyzer, Built-in Vector/Analog Signal Generator, BER, Internal Signal Generator Control Function, etc.

With support for various measurements, the high cost-performance of the MS2830A series makes it ideal for various applications. As well as TRx tests of different wireless equipment including digital and analog LMR/PMR/Transceiver Modules, and cellular and WLAN, it also supports spurious measurements of narrowband wireless equipment typified by LMR/PMR. And the built-in Noise Figure (NF) measurement function plus the Internal Signal Generator Control Function (for evaluating filter and amplifier transmission characteristics) expand the application range even further. Finally, Anritsu's unique Capture & Playback Function can regenerate wireless equipment Tx signals.



MS2830A-041

Signal Analyzer

MS2830A Microwave series (MS2830A-044/045) 9 kHz to 26.5 GHz/43 GHz

For the Development & Manufacturing of the Millimeter-Wave Wireless Transmitters. Spectrum Analyzer + Signal Analyzer

- Total level accuracy: ± 0.3 dB (typ.) (300 kHz to 4 GHz)
- Dynamic range*: 159 dB@25 GHz *: (TOI-DANL)
 TOI: +13 dBm@25 GHz
 DANL: -146 dBm/Hz@25 GHz
- SSB phase noise: -115 dBc/Hz@500 MHz, 100 kHz offset
- Measurement applications (Options): Modulation Analysis (LTE/LTE-Advanced, Vector Modulation, etc.), Noise Figure, BER, etc.

The MS2830A-044/045 spectrum analyzer has an upper frequency limit of 26.5 GHz/43 GHz, which can be extended to 325 GHz using the high-performance waveguide mixer and external mixer. It can be customized to support various measurement applications.

- Confirming microwave signal frequency, phase, amplitude, instantaneous spectrum fluctuations, etc., in signal analyzer mode
- Measuring weak signals at microwave preamplifiers
- Measuring true spurious of increasingly wideband mm-Wave communications equipment using high IF (1.875 GHz) and high-performance waveguide mixer



MS2830A-045

High Performance Waveguide Mixer

MA2806A/MA2808A 50 GHz to 75 GHz/60 GHz to 90 GHz

Spectrum Analysis of Increasingly Wideband mm-Wave Transmitters

- Easy set-up with one coaxial cable connection to MS2850A/MS2840A/MS2830A signal analyzer
- Wide dynamic range using excellent minimum Rx sensitivity and P1dB performance
- High IF and PS Function (patent pending) eliminating Image response effects at wideband signal measurement
- High phase noise performance of -100 dBc/Hz@79 GHz with 10 kHz offset (meas.) at connection with MS2840A
- Easy loading of conversion loss data from accessory USB memory stick into signal analyzer for reflection in the measurement values

The MA2806A/MA2808A is a high-performance waveguide mixer for connection to the MS2850A, MS2840A-044/046 and MS2830A-044/045. With high dynamic range performance, it is ideal for evaluating the true spurious of increasingly wideband mm-Wave transmitters. Moreover, when used with the high IF of the MS2850A/MS2840A/MS2830A*, it not only supports image-response-free measurements, but can also be used for spectrum mask measurements of wideband signals, such as wireless backhaul and automobile radar, over a wide measurement span. Using the newly developed, patent-pending, PS Function, supports measurements without image responses up to a measurement span of 7.5 GHz.

*: MS2850A/MS2840A: 1.8755 GHz, MS2830A: 1.875 GHz



MA2808A

Field Master Pro™

MS2090A 9 kHz to 9/14/20/26.5/32/43.5/54 GHz

Compact and Ruggedized for Field Use

- DANL: -164 dBm (with preamp)
- TOI: +20 dBm (typical)
- Analysis bandwidth: 100 MHz
- Amp range: DANL to +30 dBm
- Phase noise at 1 GHz:
 -110 dBc/Hz @ 100 kHz offset (typical)
- Demodulation: 5GNR, LTE FDD, RF, and modulation quality plus SSB signal analysis
- Resolution bandwidth (RBW): 1 Hz to 10 MHz
- RTSA bandwidth: 22, 55, 110 MHz (option dependent)
- Amplitude accuracy: <14 GHz ± 1.3 dB (± 0.5 dB, typical)
- Zero span with 60 ns minimum span
- IQ capture and streaming

The MS2090A real-time spectrum analyzer delivers the highest levels of RF performance available in a handheld, touchscreen spectrum analyzer. With continuous frequency coverage from 9 kHz to 54 GHz, the MS2090A is specifically designed to meet the unique needs of technologies used in 5G networks (millimeter-wave (mmWave) frequencies, active antenna systems, beamforming, and dynamic physical layer attributes) while maintaining support for the full range of requirements of today's wireless industries such as wireless service providers, broadcasting, regulatory authorities, aerospace/defense, satellite systems, and radar.



Spectrum Master™ Ultraportable Spectrum Analyzer



MS2760A/MS2762A 9 kHz to 170 GHz

The Future of Performance and Affordability

- Broadband mmWave capabilities for 5G, wireless backhaul, 802.11ad, satcom, and more
- Ultraportable form factor enables measurements right at the device under test
- Measure: channel power, adjacent channel power, occupied bandwidth
- Patented NLTL technology provides >100 dB dynamic range
- -141/-136/-129/-122 dBm DANL to 90/110/145/170 GHz (Spectrum Master MS2762A)
- Up to 6 traces, 3 trace detectors, and 12 markers
- Dynamic Range: >103 dB from 6.15 GHz up to 70 GHz



Our Spectrum Master™ MS276xA family of ultraportable spectrum analyzers is the first solution of its kind to provide continuous coverage to 170 GHz. This family now offers:

- The MS2760A models: providing full broadband coverage from 9 kHz to 170 GHz with excellent dynamic range and DANL performance.
- The MS2762A models: providing increased dynamic range and DANL performance than the MS2760A models for the most demanding sensitivity requirements, these units frequency coverage range is from 6 GHz to 170 GHz.

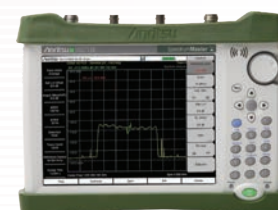
The MS2760A and MS2762A solutions deliver the best-in-class price/performance ratio unmatched by traditional benchtop instruments. The MS276xA series are pocket-sized, yet big on performance with leading dynamic range, sweep speed, and amplitude accuracy.

Spectrum Master™

MS2711E/MS2712E/MS2713E 9 kHz to 3 GHz/4 GHz/6 GHz

Compact Handheld Spectrum Analyzer

- Spectrum analyzer: 9 kHz to 6 GHz
- Interference analyzer with interference mapping
- High accuracy power meter, 2-port transmission measurements (MS2712E/MS2713E only)
- Coverage mapping, Channel scanner, GPS, AM/FM/PM analyzer (No coverage mapping for MS2711E)
- 3GPP, 3GPP2, WiMAX, ISDB-T, DVB-T/H signal analyzers (MS2712E/MS2713E only)
- Tracking generator: 500 kHz to 4 GHz



MS2711E

Regulatory requirements are growing. You're under increasing pressure to cut costs. And improving system uptime is always a top priority. The MS271xE helps you do all of this and more. Whether you are performing complex interference analysis or assessing signal quality, the MS271xE delivers the ease of use, rich functionality, and best-in-class price/performance you've come to expect from Anritsu. Designed to handle the most punishing field conditions, the MS271xE allows you to monitor, locate, identify, and analyze a broad range of cellular, 2G/3G/4G, land mobile radio, Wi-Fi, and broadcast signals. With a rich array of configuration options, the multifunctional MS271xE eliminates the need for you to learn and carry multiple instruments when locating and identifying signals over wide frequency ranges.

Spectrum Master™

MS2720T 9 kHz to 9 GHz/13 GHz/20 GHz/32 GHz/43 GHz

High-performance Handheld Spectrum Analyzer

- Frequency coverage: 9 kHz to 9 GHz, 13 GHz, 20 GHz, 32 GHz, and 43 GHz
- Broadband preamplifiers over the whole frequency range for increased sensitivity approx. 17 dB
- Three sweep modes: Improved sweep speed, up to 100 times faster
- Resolution and video bandwidths from 1 Hz to 10 MHz
- New triggering choices, including hysteresis, hold-off, and delay
- More zero-span capabilities including 10 MHz RBW & VBW
- Enhanced spectrum analyzer touch-screen GUI, including large marker display choice
- Choice of display options for readability: normal, black on white, night vision, color on white, or high contrast
- On-screen interference mapping as part of the interference analysis option



The MS2720T represents one of the company's highest performance handheld spectrum analyzer. Exciting new features and options bring more value and speed to the user. The MS2720T features over 30 analyzers in one to meet virtually every measurement need.

Remote Spectrum Monitor



MS27101A/MS27102A/MS27103A 9 kHz to 6 GHz

For Remote RF Signal Monitoring

- Frequency coverage: 9 kHz to 6 GHz
- Sweep speed up to 24 GHz/s
- Integrated web server to view, control and conduct measurements via web browser
- Watchdog timer to insure long-term stability for remotely deployed monitors
- Low spurious levels for accurate signal discovery
- 20 MHz instantaneous FFT bandwidth

Our three models of remote spectrum monitoring products are designed to both mitigate interference problems and to identify illegal or unlicensed signal activity. The MS27101A is housed in a 1/2 rack enclosure with 1U height, designed exclusively for indoor applications. MS27102A is an IP67 rated device which operates outdoors, with the ability to be mounted on poles or walls (using the included mounting bracket). The MS27103A is a multi-port spectrum monitor (12 RF In ports or optionally 24 RF In ports) which is ideal for cellular, DAS and other applications requiring the use of multiple antennas.



MS27101A



MS27102A



MS27103A

VectorStar™ Microwave VNA

MS4640B 10 MHz to 20 GHz/40 GHz/70 GHz

Premium Family of RF to Microwave and Millimeter-wave Vector Network Analyzers

- Broadest frequency span from a single coaxial test port covering 10 MHz to 70 GHz in a single instrument and 70 kHz to 145 GHz in the broadband configuration. Extendable to 1.1 THz
- IMDView™ software coupled with the internal combiner option offers the ability to switch from S-parameters to IMD measurements in a single connection
- Highest performance pulse measurements — PulseView™ offers 2.5 ns pulse resolution with 100 dB dynamic range
- 4-port single-ended or balanced measurements using DifferentialView™ analysis
- Superior dynamic range: up to 142 dB



The VectorStar™ family is Anritsu's premium VNA line, providing the highest overall performance on a modern platform. The MS4640B offers the broadest coverage in a single instrument, 70 kHz to 70 GHz. The additional two decades at the low-end are even more impressive than the guaranteed 70 GHz coverage on the high-end.

VectorStar™ Broadband VNA

ME7838A/A4/E/D/G series 70 kHz to 110 GHz/145 GHz/220 GHz

High-performance, Broadband Network Analysis Solutions

- The ME7838A or E version can easily be upgraded to 220 GHz
- All versions may be configured to include banded mmWave modules up to 1.1 THz
- Industry-best calibration and measurement stability: 0.1 dB vs. 0.6 dB over 24 hours
- All versions support the 3744x-Rx receiver for noise figure measurements to 125 GHz
- Compact, lightweight mmWave modules (0.6 lb. vs. 7+ lbs. and 1/50 the volume) offer low cost installation on smaller probe stations

The ME7838 series system provides high-performance in a compact millimeter-wave (mmWave) module with industry-best calibration stability. While other broadband systems continue to provide raw performance with negative directivity in critical frequency bands, the ME7838 series is the only broadband system with positive raw directivity in all bands.

The result is better calibration stability and better measurement stability with significantly longer time between calibrations for accurate measurements and improved productivity. The ME7838D takes high-performance broadband measurements to a new level with the addition of the mmWave module MA25300A. The MA25300A adds the next waveguide band and combines it with the Anritsu developed 0.8 mm coaxial connector offering the world's first broadband VNA operating beyond the limits of W-band in a single sweep.



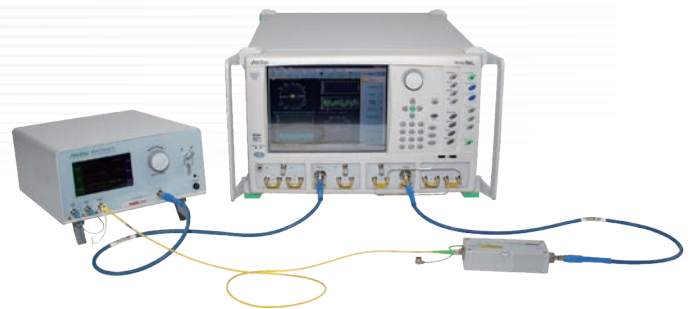
ME7838A

VectorStar™ Opto-Electronic Network Analyzer

ME7848A series 70 kHz to 40 GHz/70 GHz, 850/1310/1550 nm

Opto-electronic network analyzer (ONA) series provides specified, traceable measurements of O/E, E/O, and O/O

- Fast and accurate opto-electronic measurements — ME7848A 200 series ONA enables error-corrected transfer function, group delay, and return loss measurements of E/O and O/E components and subsystems
- O/E Calibration Module MN4765B — The O/E calibration module is a thermally stabilized photodiode reference standard detector that can eliminate drift over temperature. Accurate bias voltage to the photodiode is maintained internally
- Electrical to Optical Converter MN4775A — The E/O converter includes a lithium niobate (LiNbO3) modulator stabilized by a fully automatic bias controller and a tunable or fixed wavelength laser source. Excellent converter stability ensures characteristics remain consistent during measurement of opto-electronic DUT detectors and receivers
- National Institute of Standards and Technology (NIST) derived characterization — Magnitude and phase characterization of the O/E calibration module is obtained using a primary standard characterized by NIST and held in the Anritsu Calibration Lab
- Internal VNA de-embedding for simplified calibration — The built-in application menus provide instructions that guide the user through the set-up and calibrations required for making E/O, O/O, and O/E measurements
- Excellent stability and repeatability — Use of full 12-term calibration with de-embedding results in stable and repeatable measurements of opto-electronic devices using the VectorStar VNA
- Modularity and upgradeability — The VectorStar ONA ME7848A ONA can be easily modified to a different wavelength by adding the appropriate MN4775A E/O converter and MN4765B O/E calibration detector. The VectorStar Opto-Electronic Network Analyzer ME7838A 100 series can be upgraded to a 200 series by including the appropriate E/O converter MN4775A



The ME7848A ONA provides a modular approach to optical measurements of O/E, E/O, and O/O devices operating at 850, 1310, and 1550 nm wavelengths. There are two configurations available: the ME7848A-100 series includes the MN4765B and the ME7848A-200 series adds the MN4775A.

The ME7848A-200 series provides the ability to quickly switch between O/E, E/O, and O/O measurements with specified traceable measurements established by the MN4765B.

The ME7848A can be easily modified to different wavelengths by adding the appropriate MN4775A and MN4765B. The ME7838A-100 series can be upgraded to a 200 series by including the appropriate MN4775A.

ShockLine™ 1-Port VNA

MS46121B series 40 MHz to 4 GHz/150 kHz to 6 GHz

Ideal for Testing Multiple 1-port Devices in Parallel for Improved Test Productivity and Throughput

- 1-port VNA with frequency options from 150 kHz to 6 GHz
- External PC control enables control of multiple MS46121B in parallel for excellent multisite throughput
- Very compact package allows for direct connection to the DUT
- Scalar transmission measurements in a (1-to-1) or (1-to-n) configuration
- No onboard data storage eliminates the need for data purging in secure applications
- Standard bandpass time domain with time gating grants easier and faster fault identification
- A common GUI interface within the ShockLine family reduces switching costs between models

The MS46121B is a series of two PC-controlled 1-port ShockLine Vector Network Analyzers with frequency ranges of 40 MHz to 4 GHz and 150 kHz to 6 GHz. The MS46121B provides performance and accuracy for your 1-port measurements in a low cost and space saving solution that is small enough to directly connect to the device under test. All the members of the MS46121B are aimed at RF and microwave applications in manufacturing, engineering and education. The two MS46121B options both come with 100 ms/point sweep speeds and a measurement accuracy of ± 0.5 dB (-6 dB offset, typ.), making them suitable for your passive device test applications.



ShockLine™ Modular 1-Port Vector Network Analyzer

MS46131A series 1 MHz to 8 GHz/20 GHz/43.5 GHz

Lightweight, Compact, 1-Port VNA

- 1-port VNA with frequency options from 1 MHz to 8/20/43.5 GHz
- Guaranteed performance to 43.5 GHz with Extended-K™ ports
- PC control takes advantage of external computer processing power and functionality
- Small and lightweight package enables direct connection to the DUT
- No on-board data storage eliminates the need for data purging in secure applications
- All ShockLine™ VNAs share common software supporting GUI and program compatibility
- Time domain with time gating option enables easier and faster fault identification

The MS46131A series consists of three modular, PC-controlled 1-port VNAs with frequency ranges from 1 MHz to 8/20/43.5 GHz. Anritsu's patented nonlinear transmission line (NLTL) technology, VNA-on-chip technology, simplifies the internal VNA architecture, reducing the size and cost of the instrument while enhancing accuracy and measurement repeatability. The MS46131A series is small and portable enough to bring the VNA port to the device under test (DUT), improving measurement stability, and simplifying test configuration by eliminating test port cables.

The MS46131A series is ideally suited for 1-port RF and microwave applications in engineering, manufacturing, and education. All three VNA models have fast sweep speed and excellent corrected directivity making them suitable for a variety of 1-port device test applications including measuring passive 5G millimeter-wave (mmWave) components.



Distributed Modular 1-Port Vector Network Analyzer

ME7868A series 1 MHz to 8 GHz/20 GHz/43.5 GHz

2-port USB VNA systems deliver phase synchronized measurements over 100 meters

- 2-port VNA with frequency options from 1 MHz to 8 GHz/20 GHz/43.5 GHz
- Extend remote ports 100+ meters apart with PhaseLync™ synchronization
- Small and lightweight ports enable direct connection to DUT eliminating long cable runs
- Guaranteed performance to 43.5 GHz with Extended-K™ ports
- PC control takes advantage of external computer processing power and functionality
- No on-board data storage makes use in secure applications more convenient
- Common ShockLine™ control software delivers powerful debug and test capabilities

The ME7868A system is the first distributed, fully reversing 2-port VNA solution that provides guaranteed performance from 1 MHz to 43.5 GHz by utilizing Anritsu's Extended-K™ components. Powered by the revolutionary PhaseLync technology, it enables engineers to synchronize two portable ShockLine 1-port Vector Network Analyzer MS46131A VNAs and connect them directly to a device under test (DUT) to conduct vector transmission measurements over distances of 100 meters or more. Whether in a manufacturing, engineering, or education environment, this solution simplifies long-distance S-parameter measurements and VNA test system integration by removing the need to utilize conventional benchtop VNAs with long cable runs, which eliminates insertion loss, improves measurement stability, and lowers setup costs.

The ME7868A offers a configurable VNA setup to maximize hardware utilization. Easily set VNA port count (single 1-port, dual 1-ports, or single 2-ports) from session-by-session to ensure maximum flexibility. With low-pass time domain with time gating option, users have access to a TDR-like display with more resolution than bandpass time domain for characterizing discontinuities. Because there is no onboard data storage, this eliminates the need to purge data for secure applications.



ShockLine™ Compact VNA

MS46122B series 1 MHz to 8 GHz/20 GHz/43.5 GHz

Low-cost Series of 1U High, 2-port Compact Vector Network Analyzers

- World's first series of compact VNAs to 43.5 GHz for cost-effective measurements
- PC control takes advantage of external computer processing power and functionality
- Compact 1U high package for efficient use of bench and rack space
- No onboard data storage eliminates the need for data purging in secure applications
- Time domain with time gating option grants easier and faster fault identification

The MS46122B is a series of three PC-controlled Compact ShockLine Vector Network Analyzers with a frequency range from 1 MHz to 8 GHz/20 GHz/43.5 GHz. The series benefits from patented ShockLine VNA-on-chip technology, which simplifies the internal VNA architecture at high frequencies, reduces instrument cost, and enhances accuracy and measurement repeatability.



ShockLine™ Economy VNA

MS46322B series 1 MHz to 8 GHz/20 GHz/43.5 GHz

Low-cost Series of 2U High, 2-port Economy Vector Network Analyzers

- Ideal for testing RF and microwave devices
- Fast sweep speed and wide dynamic range minimize test times and maximize throughput
- Excellent corrected directivity allows for less measurement uncertainty
- Time domain with time gating option grants easier and faster fault identification
- The LAN interface for remote control is more robust than USB and faster than GPIB
- A common GUI and SCPI interface within the ShockLine family
- USB ports allow for easy connection to user-provided monitor, keyboard, and mouse
- The small 2U packages allows for the efficient use of rack space



The MS46322B is a series of Economy ShockLine Vector Network Analyzers with frequency range from 1 MHz to 8, 20 and 43.5 GHz. It is based on patented ShockLine VNA-on-chip technology, which simplifies the internal VNA architecture at high frequencies, reduces instrument cost, and enhances accuracy and measurement repeatability.

ShockLine™ 2-Port and 4-Port Performance VNA

MS46522B/MS46524B series 50 kHz to 8.5 GHz/20 GHz/43.5 GHz (55 GHz to 92 GHz)

High-performance, 3U High, 2-port and 4-Port VNA Available in a 50 kHz to 43.5 GHz Frequency Range

- High output power allows measurement of high attenuation devices (MS46522B)
- Industry leading dynamic range enables measurement of very low reflection artifacts
- Excellent corrected directivity minimizes measurement uncertainty
- SmartCal™ automatic calibration unit reduces calibration and setup time
- Time domain with time gating option grants easier and faster fault identification
- Modern LAN interface for remote control is faster than GPIB
- A common GUI and SCPI interface within the ShockLine family
- E-band VNA
 - Extended frequency range covering E-band and major parts of V-band
 - Full-assembled test system eliminates setup errors and increases reliability
 - Tethered modules connect directly to the DUT increasing measurement stability
- Simple signal integrity testing of passive multi-port and differential devices
- The compact 3U high chassis allows for the efficient use of rack space



MS46522B



MS46524B



The MS46522B/MS46524B is a series of 2 and 4-port Performance ShockLine Vector Network Analyzers. Delivering an unprecedented level of value and performance, including best-in-class dynamic range, the Performance series lowers cost-of-test and speeds time to market in numerous testing applications up to 92 GHz. These applications include designing and manufacturing mobile network equipment, mobile devices, automotive cables, high-speed data interconnects and system integration components.

VNA Master™

MS203xC 5 kHz to 20 GHz

The Ultimate Handheld VNA Master with a Spectrum Analyzer

Spectrum Analyzer: 9 kHz to 9 GHz/15 GHz/20 GHz (MS203xC)

- Detectors: Peak, Negative, Sample, Quasi-peak, and True-RMS
- Markers: 6, each with a delta marker, or 1 reference with 6 deltas
- Built-in pre-selector for eliminating spurious in displays

The Anritsu VNA Master MS203xC is the industry's highest performance, handheld solution for 2-port, 2-path measurements, anytime, anywhere. It specifically addresses complex coaxial or waveguide measurement needs in the field with accurate, vector corrected 2-port magnitude, phase, and standard distance-to-fault (DTF) measurements (requires firmware V1.16 or higher). The VNA Master MS203xC covers a frequency band from 5 kHz to 20 GHz, which contains a wide variety of radio frequency communications systems.



MS2038C

VNA Master™

MS202xB/MS203xB series Vector Network Analyzer: 500 kHz to 6 GHz, Spectrum Analyzer: 9 kHz to 6 GHz

Portable, Powerful Handheld S-Parameters

- 1 path, 2-port vector network analyzer: 500 kHz to 4 or 6 GHz
- Spectrum analyzer: 9 kHz to 4 GHz or 6 GHz
- Fast 850 μ s/data point sweep speed with ultimate flexibility in the number of points from 2 to 4001
- Interference Analyzer: Spectrogram, Signal Strength, RSSI, Signal ID
- Dynamic Range: > 95 dB in 10 Hz RBW
- -162 DANL in 1 Hz RBW (normalized) on VNA Master MS203xB spectrum analyzer combo models



The MS202xB/MS203xB VNA Master + Spectrum Analyzer, the industry's most affordable and compact handheld solution to address cable, antenna, component, and signal analysis needs in the field. All MS202xB/MS203xB VNA Master models offer benchtop accuracy and high performance S-parameter measurements in portable form. With frequency coverage from 500 kHz up to 4 or 6 GHz in a truly handheld, battery-operated, rugged, multi-function instrument, the VNA Master also provides a fieldfriendly touchscreen user interface.

RF/Microwave Signal Generator

MG3690C series 0.1 Hz to 70 GHz/500 GHz

The Ideal Microwave Signal Generators

- Industry best broad frequency coverage
- Industry best phase noise
- Industry best pulse modulation
- Fast switching speed
- Full analog modulation
- High output power
- Highly configurable
- Highly reliable



The MG3690C series of broadband signal generators covers audio, HF, VHF, UHF, RF and microwave frequencies from 0.1 Hz to 70 GHz in single coaxial output and up to 500 GHz or beyond, with external multipliers. In addition, it is easy to operate either through intuitive front panel controls or remotely via GPIB or Ethernet connectivity. Thus, the MG3690C series is an ideal signal source for both RF and microwave requirements, fully configurable for simple to high-performance applications.

Vector Signal Generator

MG3710E 100 kHz to 2.7 GHz/4 GHz/6 GHz

Multi-band, Multi-system, Multi-channel Cut Costs for New Wireless Tests

- Generate and output modulation signals of various communication systems such as 5G NR (sub-6 GHz), LTE-Advanced FDD/TDD (Optional)
- RF modulation bandwidth 160 MHz*/120 MHz
- ACLR: -71 dBc (W-CDMA, TestModel1, 64DPCH, 2 GHz)
- SSB phase noise: <-131 dBc/Hz (typ.) (1 GHz, 20 kHz offset, CW)
- Pre-installed key waveform patterns
- Waveform addition function:
Adds and outputs two signals, such as wanted signal + interference signal or wanted signal + AWGN
- One unit supports two RF outputs max. Ideal for multi-system evaluations.
- Supports BER test function

*: When using MX370111A/MX370111A-002

The MG3710E is a Vector Signal Generator with 6 GHz upper frequency limit and 160 MHz*/120 MHz wide RF modulation baseband generator. The excellent signal generator ACLR and SSB phase noise reduces the effect on wideband and narrow-band measurements to improve test margins and yields. It outputs various wireless systems signals such as 5G, LTE, WLAN and narrowband communications (PMR/LMR).



Analog Signal Generator

MG3740A 100 kHz to 2.7 GHz/4 GHz/6 GHz

Versatile Modulation Functions, Excellent Expandability

- Built-in AM/FM/øM/Pulse modulation function (standard)
- Additional analog modulation input (option)
AM + FM, AM + øM, Internal 1 + Internal 2, Internal + External
*: FM + øM does not support.
- Dual RF Outputs (option)
One unit supports two RF outputs (1st RF/2nd RF) max.
- Narrowband digital modulation function (option)
RF modulation bandwidth: 2 MHz
- BER test function (option), Input bit rate: 100 bps to 40 Mbps
- USB power sensors (sold separately)

The MG3740A has excellent RF specifications, including SSB phase noise, output level, etc., and versatile modulation functions (AM/FM/øM/Pulse). Moreover, the MG3740A supports additional analog modulation by external signal input, dual RF outputs, narrowband digital modulation function for private mobile radio (PMR), BER test function and USB power sensors.





Microwave CW USB Power Sensors

MA24300A series (MA24330A/340A/350A) 10 MHz to 50 GHz

Fast, Accurate Average Power Measurements

- Frequency range from 10 MHz to 50 GHz over 90 dB of dynamic range
- Power measurement range: +20 to -70 dBm
- CW average power measurements
- Fast measurement speed: >2,100 readings/s continuous, >5,600 readings/s buffered
- NIST traceable calibrations
- Silicone protective covering for additional field durability



The MA24300A power sensor family is designed to provide fast, accurate average power measurements from 10 MHz to 50 GHz over 90 dB of dynamic range. The sensor employs high-performance digital processing that enables measurements speeds of >2,100 continuous power readings/s and >5,600 buffered readings/s. A unique, low noise design eliminates the need to zero the sensor before taking measurements for most applications. The sensors have internal and external triggering capability that facilitates timebased measurements and the use of list mode to speed up automated processes. The sensor can be controlled with a PC via remote programming commands or with PowerXpert™, a free software application. These sensors are also compatible with most Anritsu RF and microwave handheld instruments.

USB Peak Power Sensors

MA24400A series (MA24406A/18A/40A/41A) 50 MHz to 40 GHz

Meeting the Wireless Communications Challenges of Signal Measurement and Characterization

- 6, 18, and 40 GHz models
- Up to 195 MHz VBW and 3 ns rise time
- 100,000 measurements per second
- Real-time processing of power readings
- 100 MS/s continuous and 10 GS/s effective sampling rates
- 100 ps time resolution for rising/falling edge measurements
- Full pulse profiling
- Crest factor, CCDF, and statistical measurements



With industry-leading rise time and video bandwidth (VBW) of up to 195 MHz (sensor dependent), Anritsu's USB peak power sensors are able to measure the peak power of wideband modulated signals, like 802.11ac, as well as pulses as narrow as 10 ns. The MA24400A family also takes measurement speed and resolution to a new level. Other peak power sensors halt measurements while processing captured data. With real-time processing of power readings, these sensors never miss a signal. Sampling rates of 100 megasamples per second continuous and 10 gigasamples per second effective provides best-in-class time resolution of 100 ps and the ability to measure 3 ns rise time. This means that even the smallest change in the signal will be caught and plotted for a full picture of signal behavior.

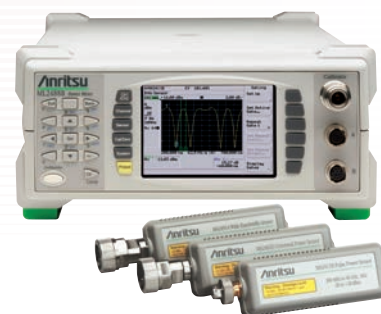
Wideband Peak Power Meter

ML249xA series 100 kHz to 65 GHz

World's most comprehensive range of power meters

- Ideal for measuring radar and communication signals like WiMAX, W-CDMA, WLAN, GSM etc.
- CW and average power measurements as low as -60 dBm
- 20 MHz video bandwidth
- Sampling rate of 64 MS/s with ML249xA series power meters

The ML249xA series are designed for use with the Wideband Peak Power Sensors MA249xA. These power meters and sensors provide peak, crest factor, average power, rise time, fall time, maximum power, minimum power and statistical data of wideband signals.



Power Meter

ML2437A/ML2438A

For Measuring Wide Dynamic Range Power

- Speed accuracy and flexibility in a low cost package
- Portable, rugged, and splash resistant
- Optional Ni-MH battery, providing six hours continuous operation
- Measure and transfer a high speed burst of 200 data points using profile operating mode with sampling rates of 35k per second
- With 99.9% emulation of older meters, the ML2430A series improves ATE system productivity
- Typical test system speed improvement is 2 to 10 times faster system speed
- Single input (ML2437A), Dual input (ML2438A)

The ML2437A/ML2438A combines the advantages of thermal meter accuracy, diode meter speed, and peak power meter display graphics. The result is a single instrument that samples at more than 35k per second and achieves 90 dB dynamic range with a single sensor. This meter includes graphics display capability as a standard feature. The ruggedized housing and optional high-capacity Ni-MH battery bring laboratory quality accuracy to field service applications.



Power Master™

only MS24507A



MA24507A/MA24510A

Frequency Selectable mmWave Power Analyzer

- Low power capability to measure signals as low as -90 dBm
- Excellent for over-the-air testing, especially with mmWave signals that have high propagation loss
- User settings to control measurement speeds and noise floor
- Channel Monitor mode in PowerXpert for monitoring up to six frequency channels at once
- Power Hunter mode in PowerXpert for searching up to six signals within a frequency range
- Mounting holes for direct mounting to connect probes for over-the-air or on-wafer testing

Power Master is an ultraportable, USB-powered mmWave power analyzer that enables simple, numeric, frequency-based measurement of RF power from 9 kHz to 110 GHz and as low as -90 dBm. Traditional power meters are broadband and have limited power ranges, so engineers and technicians are using spectrum analyzers that include many unneeded features, cost hundreds of thousands of dollars, and take up half the test bench just to make simple, frequency-based RF amplitude measurements. The Power Master series enables those measurements in a USB-powered device slightly bigger than a smartphone and at a fraction of the price of a spectrum analyzer.



Inline Peak Power Sensor

MA24105A 350 MHz to 4 GHz

A Standalone, Compact, and Highly Accurate Bi-directional Inline Peak Power Sensor

- Broad frequency range: 350 MHz to 4 GHz
- Covers all major cellular and communication bands, such as GSM/EDGE, CDMA/EV-DO, W-CDMA/HSDPA, WiMAX and TD-SCDMA
- Forward and reverse measurements
- Widest dynamic range inline power sensor in its class
- True-RMS measurements to 150 W
- Standalone, Low cost, Plug and Play device

The MA24105A is designed to take accurate average power measurements over 2 mW to 150 W, from 350 MHz to 4 GHz. The sensor employs a "dual path" architecture that enables True-RMS measurements over the entire frequency and dynamic range allowing users to measure CW, multi-tone and digitally modulated signals such as GSM/EDGE, CDMA/EV-DO, W-CDMA/HSDPA, WiMAX, and TD-SCDMA. The forward direction path also includes a 4 MHz bandwidth channel that has peak and comparator/integrator circuits that add measurement functions such as PEP power, crest factor, CCDF, and burst average power. Another detection circuit on the reverse direction adds reverse power measurement capabilities including reverse power, reflection coefficient, return-loss, and SWR. The presence of a micro-controller along with signal conditioning circuitry, ADC, and power supply in the sensor makes it a complete miniature power meter.



USB Power Sensor

MA24106A True-RMS, 50 MHz to 6 GHz

Handy, Highly Accurate and Reliable USB Sensor for RF Power Measurement

- True-RMS measurements over 63 dB dynamic range enables accurate CW and modulated power measurements
- Ready for use in a wide variety of applications, including installation and maintenance of base stations, testing of 3G/4G devices, cell phones and general purpose RF devices
- High damage power levels and ESD protection circuitry showcases ruggedness and reliability
- Low power consumption (100 mA, typ.) extends laptop battery life
- Worldwide calibration and service centers ensure reduced downtime and local support

The MA24106A is a USB power sensor that eliminates the need of a traditional power meter. It is a highly accurate, standalone instrument that communicates with a PC via USB. The power measurement capability of MA24106A is intended to mimic that of a traditional thermal (thermo-electric) power sensor with a wider dynamic range.



Microwave USB Power Sensor

MA24108A/MA24118A/MA24126A 10 MHz to 8 GHz/18 GHz/26 GHz

Low-cost, Compact, and Highly Accurate Power Sensors for RF and Microwave Applications

- Broad frequency range: 10 MHz to 8 GHz (MA24108A)/18 GHz (MA24118A)/26 GHz (MA24126A)
- True-RMS measurements
- NIST traceable calibration
- Built-in internal and external trigger (only used with PC)
- High power handling (+33 dBm)
- 1 mW calibration need eliminated
- Silicone protective covering for additional field durability

The MA24108A/MA24118A/MA24126A are designed to provide accurate average power measurements from 10 MHz to 8 GHz/18 GHz/26 GHz over 60 dB of dynamic range. These sensors employ a "dual path" architecture that provides (similar to thermal sensor) True-RMS measurements over the entire frequency and dynamic range, enabling users to make highly accurate average power measurements for CW, multi-tone, and digitally modulated signal up to 26 GHz. The sensors have internal and external triggering capability that facilitates individual slot power measurements of TDMA waveforms as well as burst power measurements of periodic and non-periodic waveforms.





Microwave Universal USB Power Sensor

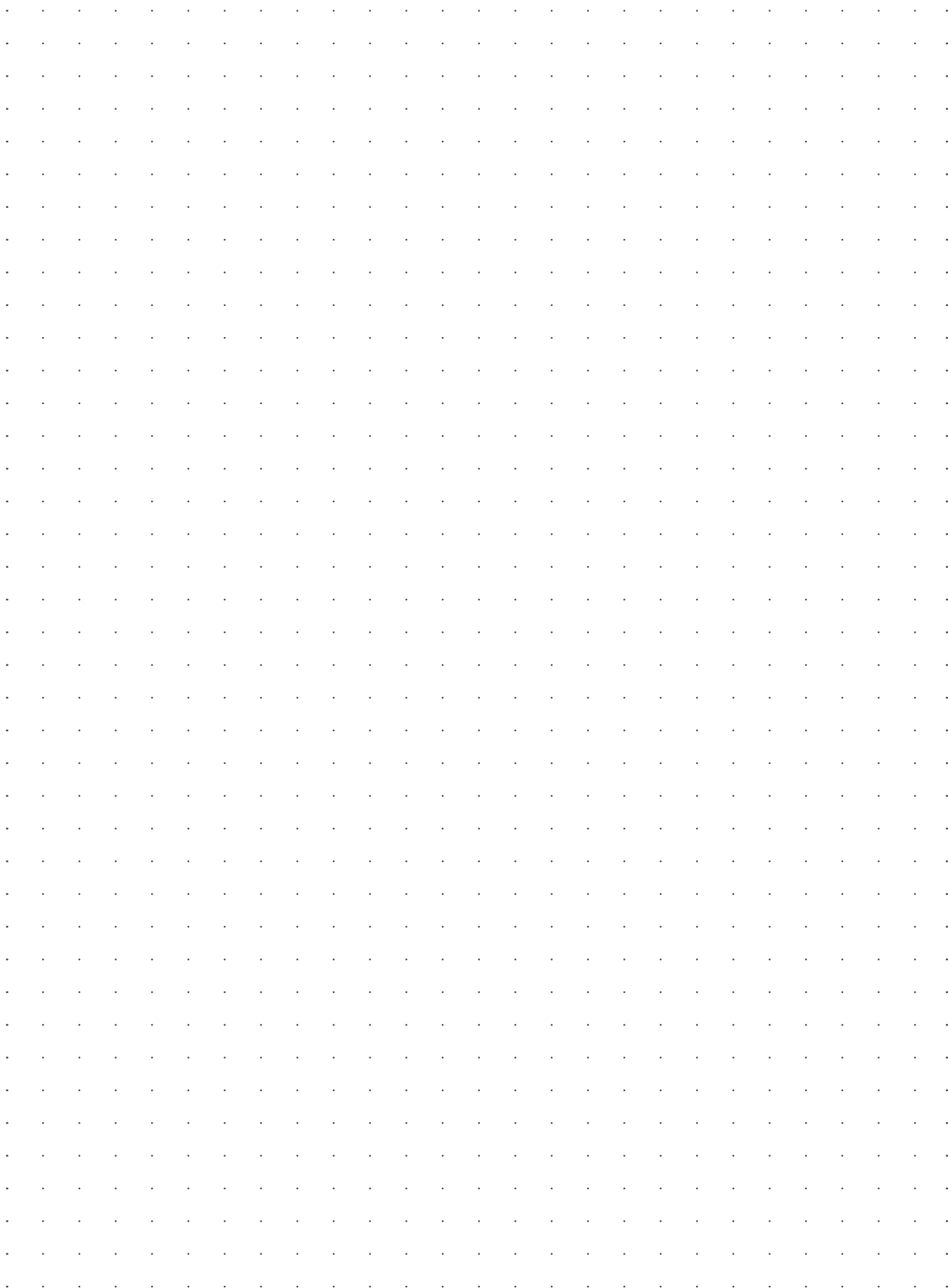
MA24208A/MA24218A 10 MHz to 8 GHz/18 GHz

Low-cost, Compact, and Highly Accurate Power Sensors for RF and Microwave Applications

- Frequency range: 10 MHz to 8 GHz (MA24208A)/18 GHz (MA24218A)
- Power measurement range: +20 to -60 dBm
- True-RMS measurements (modulation independent)
- Fast measurement speed: >1,600 readings/s continuous, >11,000 readings/s buffered
- Able to accept high power levels before being damaged: +30 dBm (CW), +34 dBm (peak <10 μ s)
- No zero required
- NIST traceable calibrations (MA24218A)



The MA24208A and MA24218A are designed to provide fast, accurate average power measurements from 10 MHz to 8 GHz/18 GHz over 80 dB of dynamic range. These sensors employ a patented "triple path" architecture that provides True-RMS measurements (similar to thermal sensors) over the entire frequency and dynamic range, enabling users to make highly accurate average power measurements for CW, multi-tone, and digitally modulated signal up to 18 GHz. These sensors employ high-performance digital processing that enables best-in-class measurements speeds, including >1,600 continuous power readings/s continuous and >11,000 buffered readings/s.





Specifications are subject to change without notice.

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