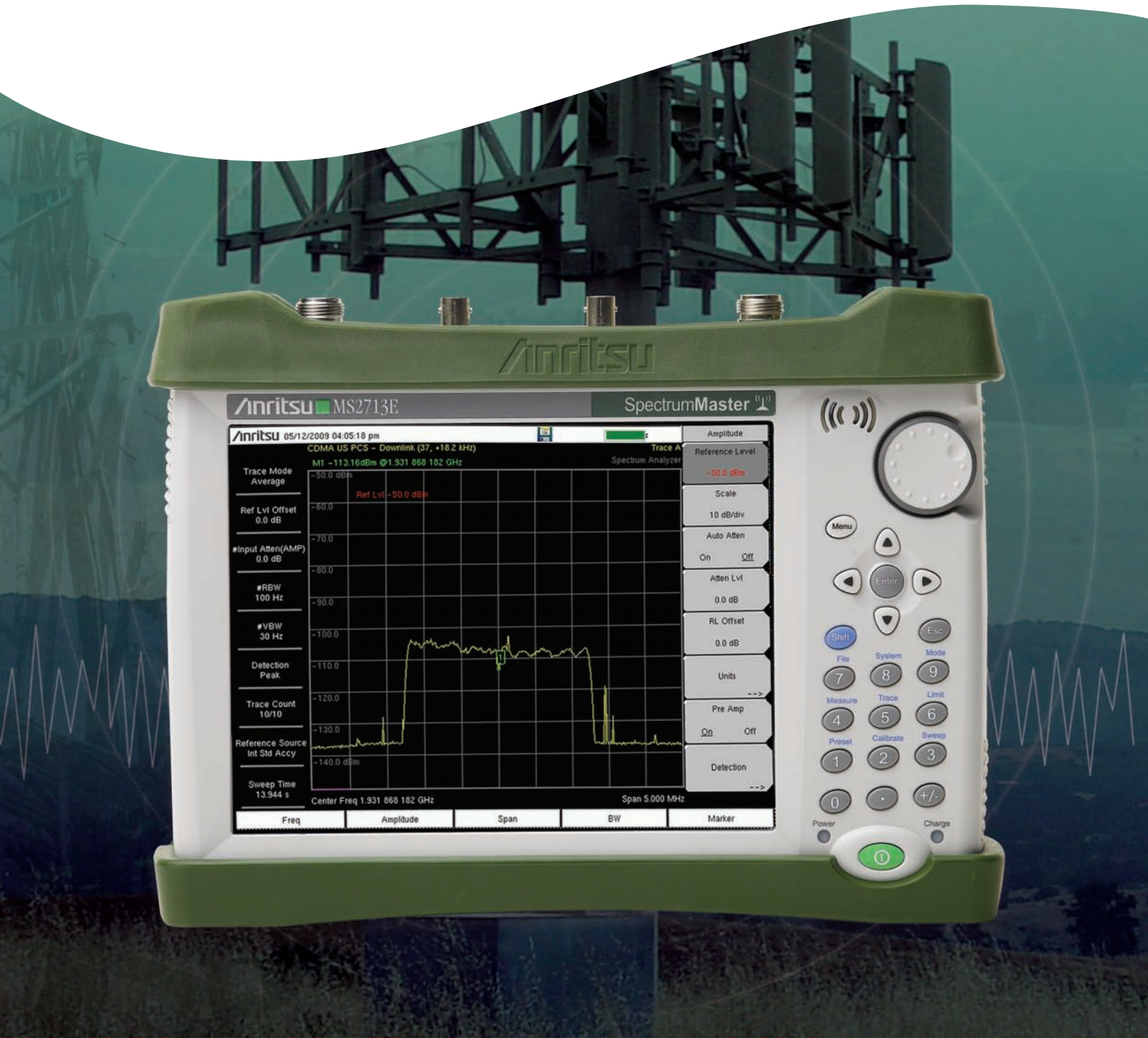
Product Brochure

Spectrum Master™

Compact Handheld Spectrum Analyzer

MS2712E	MS2713E
100 kHz to 4 GHz	100 kHz to 6 GHz



ANRITSU INTRODUCES ITS NEXT GENERATION COMPACT SPECTRUM ANALYZER

The wireless communications market is rapidly growing as the telecommunications and defense sectors continue to evolve. Whether you are installing, troubleshooting, or solving problems for military communications facilities, public safety providers, or wireless service providers, Anritsu has a solution.

Anritsu's new Spectrum Master has been designed for technicians, installers, field radio frequency (RF) engineers, and contractors who struggle with both keeping track of the growing number of interfering signals and assessing signal quality on a wide range of increasingly complex signals. Easy-to-use, integrated and high performing, the Spectrum Master helps users address those challenges and more. Its feature-rich and compact design helps users comply to regulatory requirements, manage and maximize efficiency, improve system up-time, and increase revenue – all in a rugged and field-proven device designed to withstand even the most punishing conditions.

This next generation of Anritsu's best-in-class Spectrum Master series is ideal for spectrum monitoring, interference analysis, RF and microwave measurements, field strength measurements, transmitter spectrum analysis, electromagnetic field strength, signal strength mapping, and overall field analysis of cellular 2G/3G/4G, land mobile radio, Wi-Fi, and broadcast signals.

DESIGNED FOR FIELD USE

The Spectrum Master was designed specifically for field environments. Weighing less than 3.45 kg, it is small and compact and easy to carry. Its field replaceable Li-Ion battery typically lasts for more than 3 hours, and a new bright 8.4-inch color display provides visibility even in broad daylight. With an operating temperature range from -10 °C to 55 °C, a rugged case and splash proof design, the Spectrum Master works in the most extreme weather conditions with guaranteed performance anywhere and anytime.

INTEGRATED SOLUTION

The Spectrum Master is a multifunctional instrument that eliminates the need for you to carry and learn multiple instruments. It can be configured to across a broad range of parameters, including a 4 GHz or 6 GHz spectrum analyzer, an interference analyzer, 2-port transmission measurement with built-in 32V bias tee, channel scanner, power meter, high accuracy power meter, and GPS receiver for time/location stamping and accuracy enhancements.

EASY-TO-USE

The new Spectrum Master leverages the user interface from Anritsu's popular MS2721B analyzer, giving users intuitive spectrum analyzer menus. A touchscreen keypad combination provides you with an intuitive menu-driven interface designed to give a familiar menu structure with quick access to popular measurements.

KEY FACTS

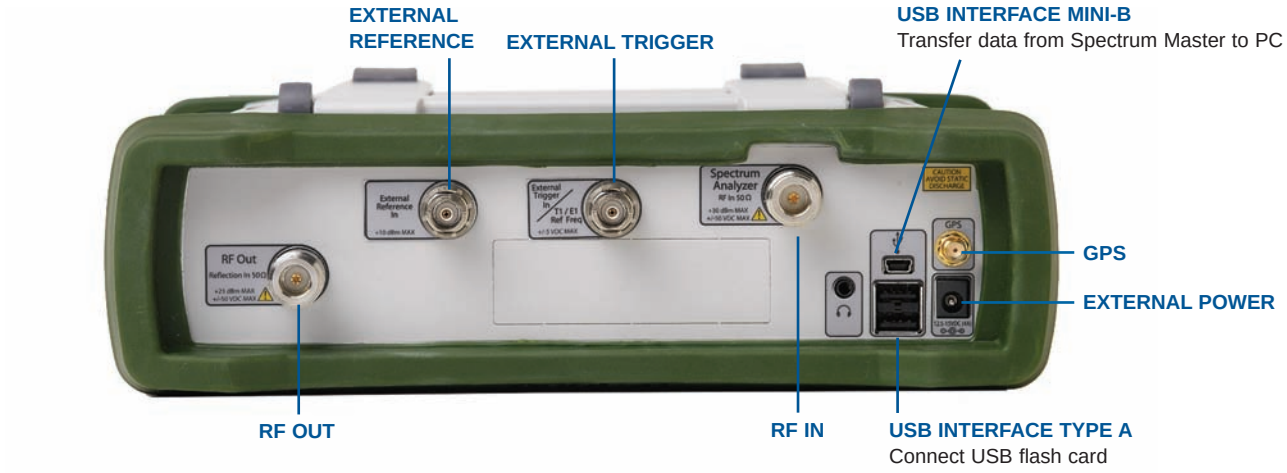
- 100 kHz to 4 GHz (MS2712E)
- 100 kHz to 6 GHz (MS2713E)
- One-button measurements: ACPR, Channel Power, Field Strength, Occupied BW, AM/FM/SSB Demod
- Interference Analyzer: Spectrogram, Signal Strength, RSSI, Signal ID
- DANL: > -162 dBm typical DANL (normalized to 1 Hz)
- Dynamic range: >95 dB
- +33 dBm TOI typical @ 6 GHz
- < Phase Noise: -100 dBc/Hz @ 10 kHz offset
- Frequency accuracy: < ± 50 ppb with GPS on
- Detection methods: Peak, RMS, Negative, Sample, Quasi-peak
- Save-on-event: automatically saves a sweep when crossing a limit line or at the end of the sweep
- Gated sweep: view pulsed or burst signals only when they are on, or off
- Three hours of battery life
- Touch-screen display
- USB port
- 8.4-inch Touchscreen TFT display
- Lightweight: <3.45 kg

INTEGRATED MEASUREMENT CAPABILITIES

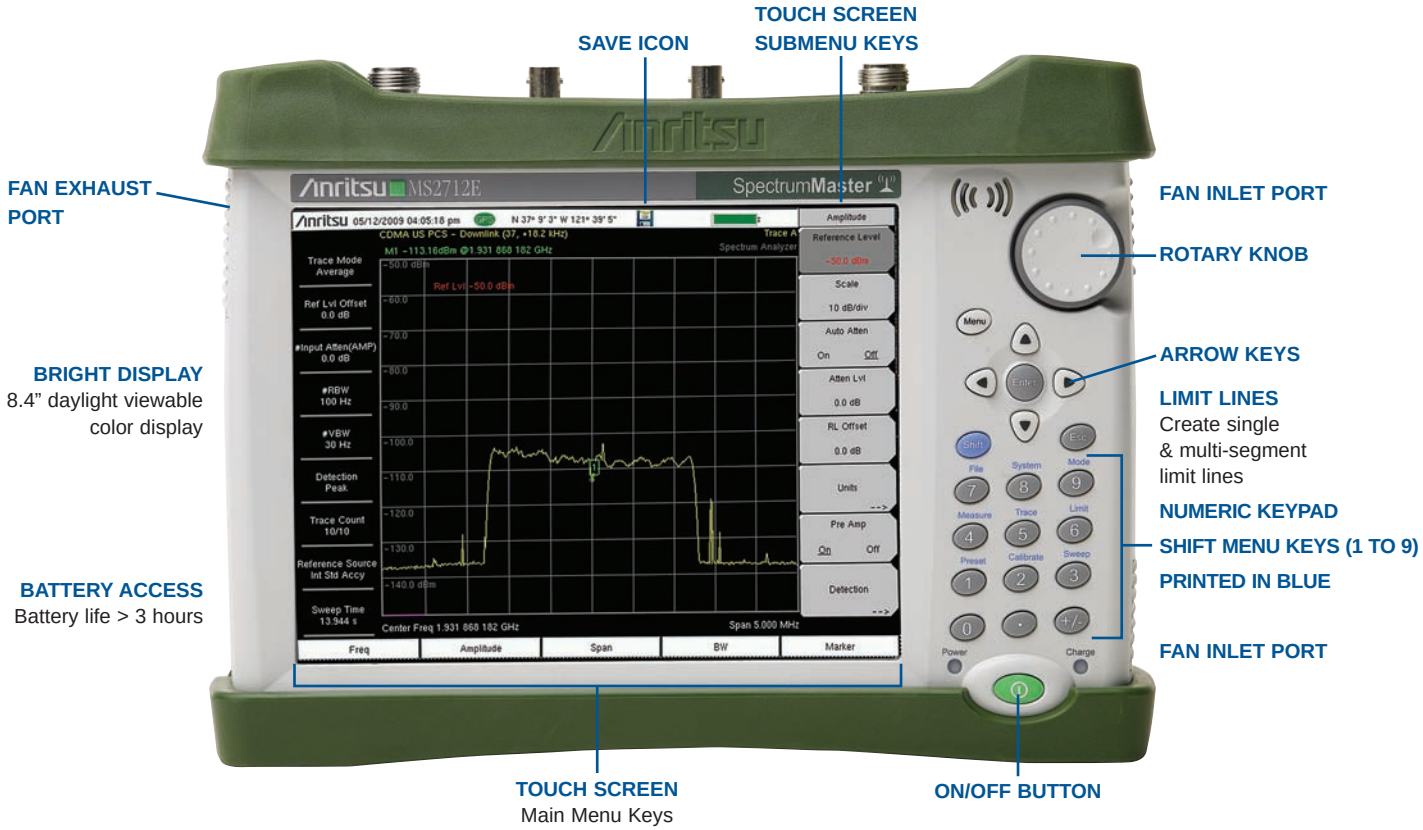
CONFIGURATION OVERVIEW

FUNCTION	DESCRIPTION
Spectrum Analyzer, 100 kHz to 4/6 GHz	Locates and identifies various signals over a wide frequency range. Detects signals as low as -152 dBm with phase noise better than -100 dBc/Hz.
Interference Analyzer (Option 25)	Includes everything you need to monitor, identify, and locate interference using the spectrogram display, RSSI, Signal ID, and signal strength meter.
GPS receiver (Option 31)	Provides location and UTC time information. Also improves the accuracy of the reference oscillator.
2-port Transmission Measurement (Option 21)	Offers high and low power settings for both active and passive measurements. Better than 80 dB dynamic range.
Bias Tee (Option 10)	Possesses a built-in 32 V bias tee that can be turned on as needed and applied to the RF In port.
High Accuracy Power Meter (Option 19)	Connects high accuracy 4, 6, 8, and 18 GHz USB power sensors with better than +/-0.16 dB accuracy.
Power Meter (Option 29)	Makes channelized transmitter power measurements.
Channel Scanner (Option 27)	Measures the power of multiple transmitted signals. Scans up to 1200 channels using Script Master.
CW Signal Generator (Option 28)	Provides CW source to test low noise amplifiers and repeaters. (Needs external CW generator kit.)
Gated Sweep (Option 90)	Views pulsed or burst signals such as WiMAX, GSM, and TD-SCDMA only when they are on.

DESIGNED FOR THE FIELD



ALL CONNECTORS ARE CONVENIENTLY LOCATED ON THE TOP PANEL, LEAVING THE SIDES CLEAR FOR HANDHELD USE.



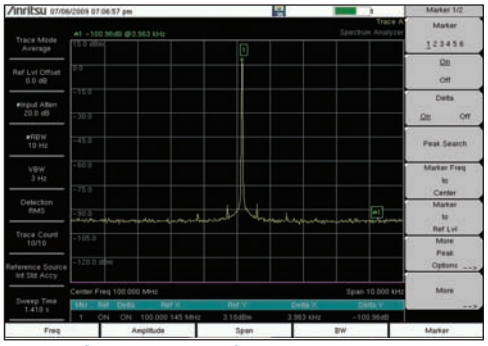
CONVENIENT SOFT CASE AND TILT BAIL

TILT BAILS ARE INTEGRATED INTO THE CASE AND SOFT CASE FOR BETTER SCREEN VIEWING

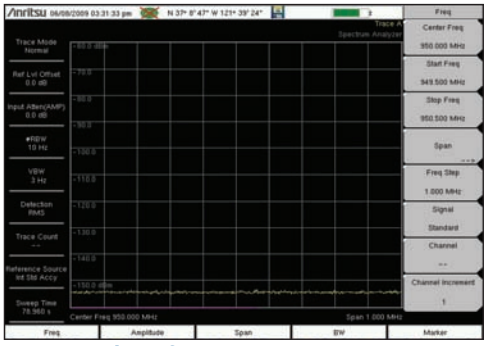
BEST PERFORMANCE IN ITS CLASS

Anritsu's MS2712E and MS2713E Spectrum Master spectrum analyzers provide users with high-performance for field environments and for applications requiring mobility. There is no other spectrum analyzer in this class that can deliver the same performance.

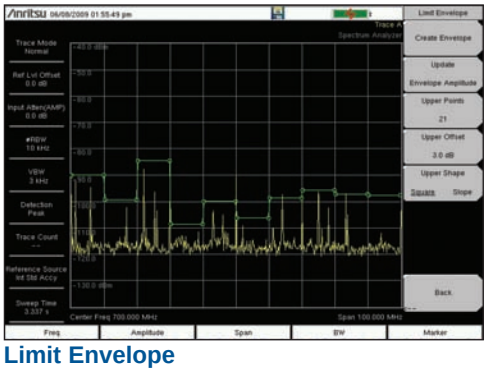
The combination of its performance and compact design makes it ideal for a broad range of activities, including spectrum monitoring, interference analysis, field strength measurements, transmitter spectrum analysis, electromagnetic field strength, signal strength mapping, and overall field analysis of cellular 2G/3G/4G, land mobile radio, Wi-Fi, and broadcast signals.



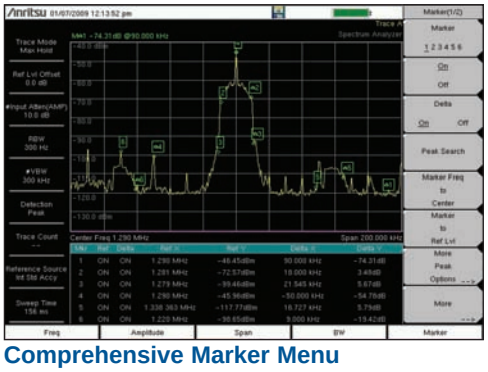
Dynamic Range Performance



Low Level Performance



Limit Envelope



Comprehensive Marker Menu

HIGH PERFORMANCE

The dynamic range is better than 95 dB in 10 Hz RBW, enabling measurement of very small signals in the presence of much larger signals. The picture demonstrates the dynamic range in the Spectrum Master

DISPLAYED AVERAGE NOISE LEVEL

Spectrum Master delivers impressive and best-in-class DANL performance. With the built-in pre-amp, better than -152 dBm DANL can typically be realized in 10 Hz RBW and -162 dBm when normalized to 1 Hz. This low-level performance capability is essential when looking for low-level interference signals.

GPS-ASSISTED FREQUENCY ACCURACY

With GPS Option 0031 the frequency accuracy is < 50 ppb. This additional accuracy is important when characterizing 3GPP signals using counted frequency markers. Also all measurements can be GPS tagged for exporting to maps.

SIMPLE BUT POWERFUL FOR FIELD USE

Convenience is a must in the field. This is why the Spectrum Master is equipped with features that will enhance productivity in the field.

The Spectrum Master is equipped with limit lines for all user levels. You can create single limit lines and segmented limit lines in one step using the one-button limit envelope feature.

The Spectrum Master automatically sets the fastest sweep possible while still ensuring accurate measurements. This allows users to rely on the instrument to optimize accuracy and consistency.

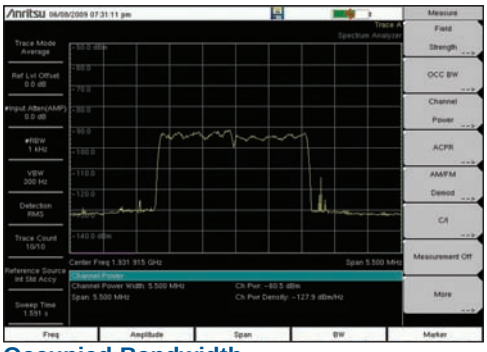
Auto Attenuation ties the input attenuation to the reference level eliminating the need for the user to determine how much attenuation is needed.

Six regular and six delta markers can be displayed with a marker table that can be turned on as needed. The capability to measure noise level in terms of dBm/Hz or dBµV/Hz is a standard feature of the Spectrum Master.

MASTER TRANSMITTER TESTING

SMART MEASUREMENTS FOR TRANSMITTER SYSTEMS

Commonly needed transmitter measurements are built in and can be accessed easily. These include field strength, occupied bandwidth, channel power, and adjacent channel power ratio (ACPR).



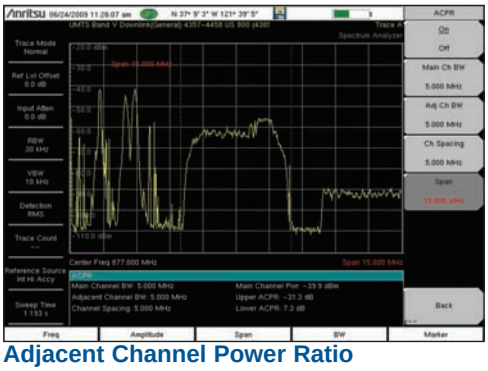
Occupied Bandwidth

OCCUPIED BANDWIDTH

This measurement determines the amount of spectrum used by a modulated signal. The Spectrum Master allows you to choose between two different methods of determining bandwidth: the percent-of-power method or the “x” dB down method.

ADJACENT CHANNEL POWER RATIO

Adjacent Channel Power Ratio is a common transmitter measurement. High ACPR will create interference for neighboring carriers. This measurement can be used to replace the traditional two-tone Intermodulation Distortion (IMD) test for system non-linear behavior.



Adjacent Channel Power Ratio

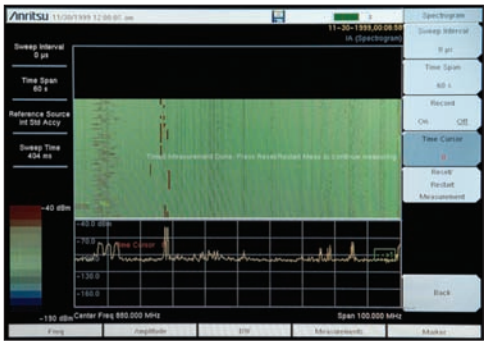
FIELD STRENGTH MEASUREMENTS

The Spectrum Master can determine the effects of electromagnetic fields caused by transmitter systems. Specific antenna factors of the connected antenna are automatically taken into account, and field strength is displayed directly in dBµV/m. The Spectrum Master also supports a wide range of directional antennas. If you are using a different antenna, Master Software Tools can be used to edit the antenna list and upload the custom antenna list to the instrument to accurately measure the maximum field strength.

MASTER THE LOCATION OF INTERFERENCE

As the wireless industry continues to expand, more diverse uses for the radio spectrum emerge, and the number of signals that may potentially cause interference is constantly increasing.

Compounding the problem are the many sources that can generate interference, including intentional radiators, un-intentional radiators, and self interference. Interference causes Carrier-to-Interference degradation robbing the network of capacity. The goal of these measurements is to resolve interference issues as quickly as possible.



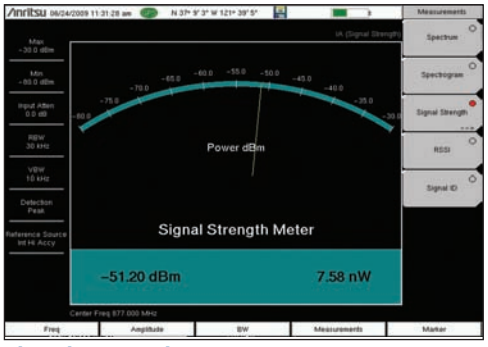
Spectrogram Display

INTERFERENCE ANALYSIS (OPTION 25)

The interference analyzer option provides you with a spectrogram display, RSSI, signal strength meter, and signal ID. Spectrum Master's integrated spectrum analyzer can detect signals as low as -152 dBm.

SPECTROGRAM DISPLAY

This option provides you with a three-dimensional display of frequency, power, and time of the spectrum activity to identify intermittent interference and track signal levels over time. The Spectrum Master allows you to save a history up to 72 hours.



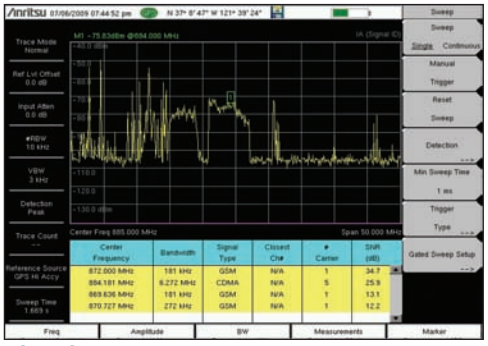
Signal Strength Meter

RECEIVED SINGLE STRENGTH INDICATOR (RSSI)

You can use the Spectrum Master's RSSI measurement to observe the signal strength of a single frequency over time, and collect data for up to 72 hours.

SIGNAL STRENGTH METER

The Spectrum Master's signal strength meter can locate an interfering signal by using a directional antenna and measuring the signal strength. It displays power in Watts or dBm, in the graphical analog meter display and by an audible beep proportional to its strength.



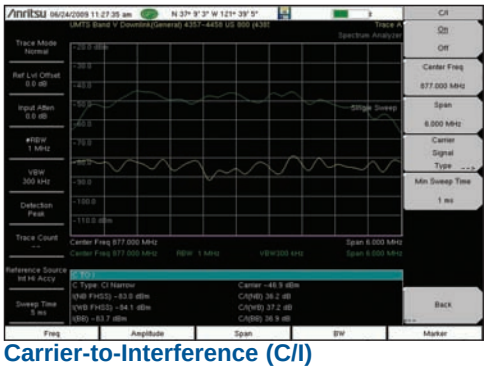
Signal ID

SIGNAL ID

Spectrum Master's signal ID feature in the interference analyzer can help you quickly identify the type of the interfering signal. You can configure this measurement to identify all signals in the selected band or to simply monitor one single interfering frequency. The Spectrum Master then displays results that include center frequency, signal bandwidth, and signal type (FM, GSM/GPRS/EDGE, W-CDMA/HSDPA, CDMA/EV-DO, Wi-Fi).

AM/FM/SSB DEMODULATION

A built-in demodulator for AM, narrowband FM, wideband FM and single sideband allows you to easily identify the interfering signal.



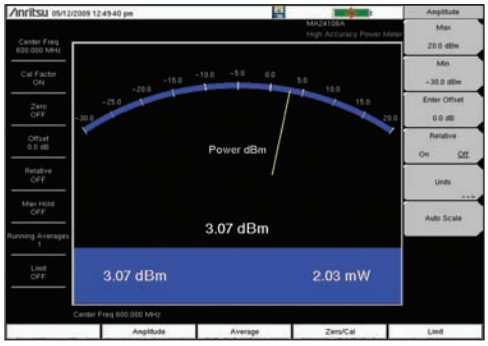
Carrier-to-Interference (C/I)

CARRIER-TO-INTERFERENCE MEASUREMENT

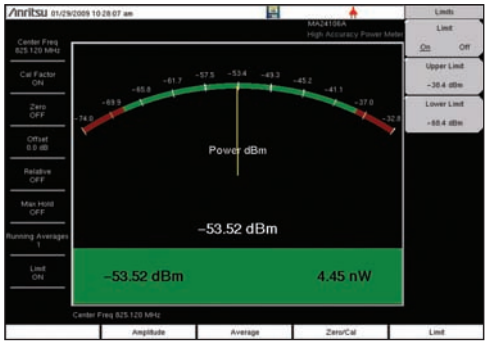
Spectrum Master's carrier-to-interference measurement capability makes it simple for you to determine if the level of interference will affect users in the intended service area.

POWER MEASUREMENTS FOR A WIDE RANGE OF APPLICATIONS

The Spectrum Master supports many different power measurements, including the channel scanner, high accuracy power meter, internal power meter, and channel power measurement.

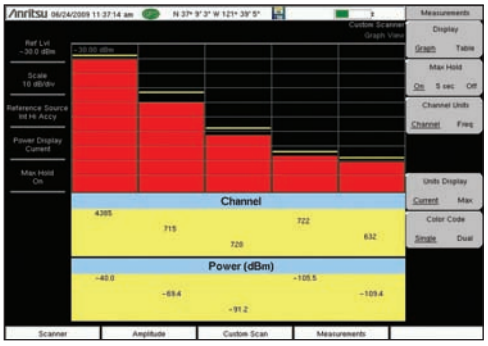


Power Meter



High Accuracy Power Meter

High Accuracy Power Sensors



Channel Scanner

CHANNEL POWER

Use Spectrum Master's channel power measurement to determine the power and power density of a transmission channel. Using the built-in signal standard list, you can meaure the channel power of a wide range of signals.

POWER METER (OPTION 29)

Spectrum Master's internal power meter provides power measurements without any additional tools and is ideal for making channelized power measurements.You can display the results in both dBm and Watts. This option is easy to use and requires limited setup entries.

HIGH ACCURACY POWER METER (OPTION 19)

Anritsu's high accuracy power meter option enables you to make high accuracy RMS measurements. This capability is perfect for measuring both CW and digitally modulated signals such as CDMA/EV-DO, GSM/EDGE, WCDMA/HSDPA, and P25. You can select from a wide range of USB sensors delivering better than ±0.16 dB accuracy. An additional benefit of using the USB connection is that a separate DC supply (or battery) is not needed because the necessary power is supplied by the USB port.

- PSN50 High Accuracy RF Power Sensor, 50 MHz to 6 GHz, -30 to +20 dBm, True-RMS
- MA24104A Inline High Power Sensor, 600 MHz to 4 GHz, +3 to +51.76 dBm (150W), True-RMS
- MA24106A High Accuracy RF Power Sensor, 50 MHz to 6 GHz, -40 to +23 dBm, True-RMS
- MA24108A Microwave USB Power Sensor, 10 MHz to 8 GHz, -40 to +20 dBm, True-RMS
- MA24118A, Microwave USB Power Sensor, 10 MHz to 18 GHz, -40 to +20 dBm, True-RMS

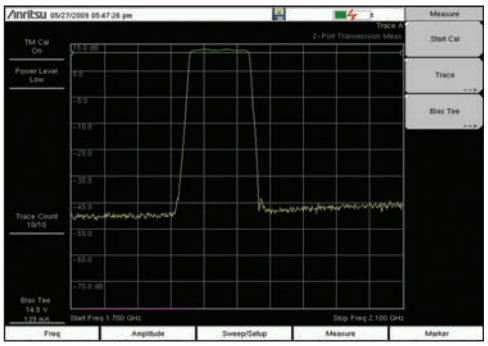
PC POWER METER

These power sensors can be used with a PC running Microsoft Windows® via USB. They come with PowerXpert™ application, a data analysis, and control software. The application has abundant features, such as data logging, power versus time graph, big numerical display, and many more, that enable quick and accurate measurements.

CHANNEL SCANNER (OPTION 27)

The channel scanner option measures the power of multiple transmitted signals, making it very useful for simultaneously measuring channel power of up to 20 channels in GSM, TDMA, CDMA, W-CDMA, HSDPA, and public safety networks. You can select the frequencies or the scanned data to be displayed, either by frequencies or the channel number. And in the custom setup menu, each channel can be custom built with different frequency bandwidth, or with channels from different signal standards. With Script Master, scans can be automated for up to 1200 channels.

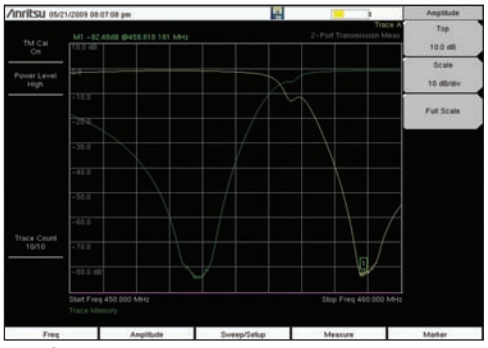
PASSIVE AND ACTIVE 2-PORT MEASUREMENTS



2-Port Transmission Measurements

2-PORT TRANSMISSION MEASUREMENTS (OPTION 21)

Spectrum Master's 2-port transmission measurement capability allows you to make gain, isolation, and insertion loss measurements of passive and active devices such as filters, cables, attenuators, duplexers, and tower-mounted amplifiers. Transmission measurement can also be used to make antenna-to-antenna isolation measurements and for repeater testing. Two power levels provide you with high (~ 0 dBm) and low (~ -30 dBm) power settings.



Duplexer Measurement

BIAS TEE (OPTION 10)

The built-in bias tee can be turned on as needed to place +12V to +32V on the center conductor of the RF In port, eliminating the need for you to carry external supplies in the field.

DUPLEXERS

Fast sweep speeds, 80 dB dynamic range, and easy-to-use trace math menus make the Spectrum Master well suited for duplexer applications.

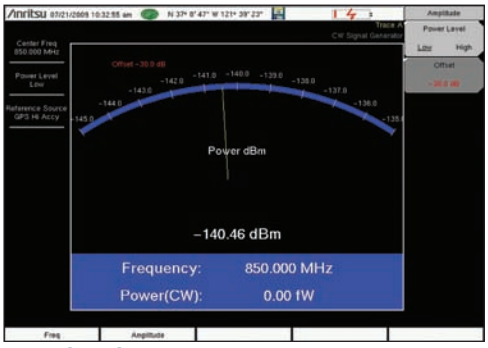
VALUABLE OPTIONS AND FEATURES

GPS Receiver

GPS RECEIVER (OPTION 31)

Spectrum Master's GPS option can be used to confirm the exact measurement location (longitude, latitude, altitude) and Universal Time (UTC) information. Each trace can be stamped with location information to ensure you are taking measurements at the right location.

In addition, the GPS option enhances the frequency accuracy of the internal reference oscillator. Within three minutes of acquiring the GPS satellite, the built-in GPS receiver provides a frequency accuracy to better than 50 ppb.



CW Signal Generator

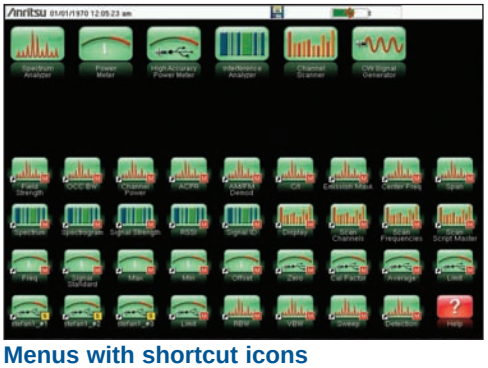
CW SIGNAL GENERATOR (OPTION 28)

This option provides a CW signal generator from 2 MHz to 4 or 6 GHz. The signal at the output port can be set high (approximately 0 dBm) or low (-30 dBm). With the use of the CW Signal Generator Kit's attenuator connected to the RF port, the level can be varied in 1 dB steps, giving you the ability to generate signals as low as -110 dBm for receiver sensitivity measurements. The included splitter divides the signal, allowing for a simultanious power measurement.

Touchscreen keyboard

BUILT-IN KEYBOARD

The built-in touchscreen keyboard gives you access to a fully functional keyboard, saving valuable time in the field when entering trace names. You can create shortcuts to customer-configurable user "quick names" to program frequently used words.



Menus with shortcut icons

MENUS WITH SHORTCUT ICONS

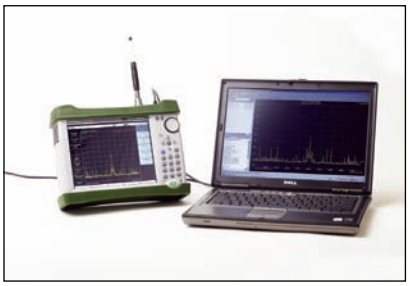
Find your favorite measurements quickly by pressing the menu key. Create shortcuts for popular measurements, setups, and functions by simply holding down any key for more than three seconds. This display shows the menu with standard measurements and with the lower part filled with shortcut icons.

LOCAL LANGUAGE SUPPORT

Spectrum Master features eight languages, including English, Japanese, Chinese, Italian, French, German, Spanish, and Korean. Two custom user-defined languages can be uploaded into the instrument using Master Software Tools.

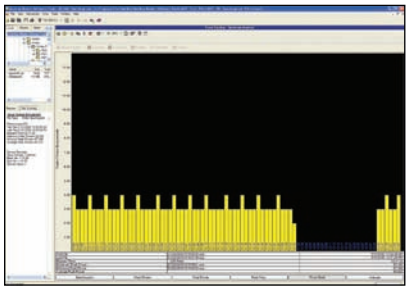
MASTER SOFTWARE TOOLS - THE POWER BEHIND THE SPECTRUM MASTER

Master Software Tools (MST) is a powerful PC software post-processing tool designed to enhance the productivity of technicians in report generation, data analysis, and testing automation.

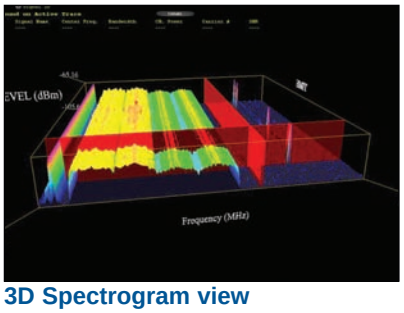


Connect to PC using USB

Report Generation



Histogram



3D Spectrogram view

FAST DOWNLOADS
Download all measurements to MST with a single menu selection.

REPORT GENERATION
Create reports with company logo, GPS tagging information, calibration status, and serial number of the instrument for complete reporting. Add custom company logos.

COMPARE TRACES
Use MST to build a record of all traces. Easy-to-use trace overlay features allow for easy comparison with historical traces.

TRACE RENAMING
Rename hundreds of traces in minutes using the trace rename tool in MST.

SCRIPT MASTER™
Script Master is an automation tool that allows the user to embed the operator's test procedure inside the Spectrum Master. Using Channel Scanner Script Master, the user can create a list of up to 1200 channels and let the Spectrum Master sequence through the channels 20 at a time and automatically make measurements.

INTERFERENCE MONITORING
Data collected on the instrument can be analyzed and diagnosed easily with MST. These applications include: Folder Spectrogram, which creates a composite file of multiple traces for quick review; an *.avi movie can be generated for playback analysis; a Histogram that allows filtering of data and that searches for the number of occurrences and the time of day; and 3D Spectrogram for in-depth analysis with 3-axis rotation viewing and zoom control

PRODUCT UPDATES
The product update tool will ensure that you always use the latest instrument firmware.

GROUP EDIT
Add limit lines and markers to all the traces in one folder with just one click.

FULL TRACE RETRIEVAL
Download and archive hundreds of traces instantly to your PC without opening them.

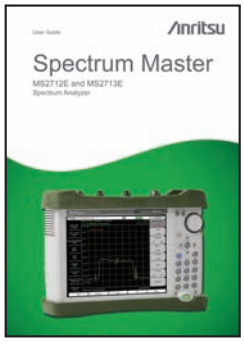
ORDERING INFORMATION

MS2712E	MS2713E	Description
100 kHz to 4 GHz	100 kHz to 6 GHz	Spectrum Analyzer
Options	Options	
MS2712E-0021	MS2713E-0021	2-Port Transmission Measurement
MS2712E-0010	MS2713E-0010	Bias-Tee
MS2712E-0031	MS2713E-0031	GPS Receiver (Requires Antenna P/N 2000-1528-R)
MS2712E-0019	MS2713E-0019	High-Accuracy Power Meter
MS2712E-0029	MS2713E-0029	Power Meter
MS2712E-0025	MS2713E-0025	Interference Analyzer
MS2712E-0027	MS2713E-0027	Channel Scanner
MS2712E-0090	MS2713E-0090	Gated Sweep
MS2712E-0028	MS2713E-0028	CW Signal Generator (Requires Option 0021) (Requires CW Signal Generator Kit, P/N 69793)
MS2712E-0098	MS2713E-0098	Standard Calibration (ANSI 2540-1-1994)
MS2712E-0099	MS2713E-0099	Premium Calibration (ANSI 2540-1-1994 plus test data)

POWER SENSORS (For complete ordering information, see the respective datasheets of each sensor)

Model Number	Description
PSN50	High Accuracy RF Power Sensor, 50 MHz to 6 GHz, +20 dBm
MA24104A	Inline High Power Sensor, 600 MHz to 4 GHz, +51.76 dBm
MA24106A	High Accuracy RF Power Sensor, 50 MHz to 6 GHz, +23 dBm
MA24108A	Microwave USB Power Sensor, 10 MHz to 8 GHz, +20 dBm
MA24118A	Microwave USB Power Sensor, 10 MHz to 18 GHz, +20 dBm

MANUALS (soft copy included on MST CD and at www.us.anritsu.com)



Part Number	Description
10580-00251	Spectrum Master User Guide (Hard copy included with instrument)
10580-00242	2-Port Transmission Measurement - Bias-Tee
10580-00231	Spectrum Analyzer Measurement Guide - Interference Analyzer, Channel Scanner, Gated Sweep, CW Signal Generator
10580-00240	Power Meter Measurement Guide - High Accuracy Power Meter
10580-00256	Programming Manual

STANDARD ACCESSORIES (included with instrument)

Part Number	Description
10580-00251	Spectrum Master User Guide
3-68736	Soft Carrying Case
2300-498	MST CD: Master Software Tools, User/Measurement Guides, Programming Manual, Troubleshooting Guides, Application Notes
633-44	Rechargeable Li-Ion Battery
40-168-R	AC-DC Adapter
806-141-R	Automotive Cigarette Lighter 12 VDC Adapter
3-2000-1498	USB A/5-pin mini-B Cable, 10 feet/305 cm
11410-00511	Spectrum Master™ MS2712E, MS2713E Technical Data Sheet One Year Warranty (Including battery, firmware, and software) Certificate of Calibration and Conformance

OPTIONAL ACCESSORIES

Directional Antennas

Part Number	Description
2000-1411	822-900 MHz, N(f), 10 dBd, Yagi
2000-1412	885-975 MHz, N(f), 10 dBd, Yagi
2000-1413	1710-1880 MHz, N(f), 10 dBd. Yagi
2000-1414	1850-1990 MHz, N(f), 9.3 dBd, Yagi
2000-1415	2400-2500 MHz, N(f), 10 dBd, Yagi
2000-1416	1920-2170 MHz, N(f), 10 dBd, Yagi
2000-1519	500 MHz to 3 GHz, log periodic

Portable Antennas

2000-1200	806-866 MHz, SMA (m), 50 Ω
2000-1473	870-960 MHz, SMA(m), 50 Ω
2000-1035	896-941 MHz, SMA (m), 50 Ω (1/4 wave)
2000-1030	1710 to 1880 MHz, SMA (m), 50 Ω (1/2 wave)
2000-1474	1750 to 1850 MHz with knuckle elbow (1/2 wave)
2000-1031	1850 to 1990 MHz, SMA (m), 50 Ω (1/2 wave)
2000-1475	1920 to 1980 MHz and 2110 to 2170 MHz, SMA (m), 50 Ω
2000-1032	2400 to 2500 MHz, SMA (m), 50 Ω (1/2 wave)
2000-1361	2400 to 2500, 5000 to 6000 MHz, SMA (m), 50 Ω
61532	Antenna Kit (Consists of: 2000-1030, 2000-1031, 2000-1032-R, 2000-1200, 2000-1035, 2000-1361, and carrying pouch)

Bandpass Filters

1030-114-R	806-869 MHz, N(m) - SMA(f), 50 Ω
1030-109-R	824 - 849 MHz, N(m) - SMA (f), 50 Ω
1030-110-R	880 - 915 MHz, N(m) - SMA (f), 50 Ω
1030-105-R	890-915 MHz Band, 0.41 dB loss, N(m) - SMA (f), 50 Ω
1030-111-R	1850 - 1910 MHz, N(m) - SMA (f), 50 Ω
1030-106-R	1710-1790 MHz Band, 0.34 dB loss, N(m) - SMA (f), 50 Ω
1030-107-R	1910-1990 MHz Band, 0.41 dB loss, N(m) - SMA (f), 50 Ω
1030-112-R	2400 - 2484 MHz, N(m) - SMA (f), 50 Ω
1030-155-R	2500-2700 MHz, N(m) – N(f), 50 Ω

Attenuators

3-1010-122	20 dB, 5 W, DC to 12.4 GHz, N(m)-N(f)
42N50-20	20 dB, 5 W, DC to 18 GHz, N(m) - N(f)
42N50A-30	30 dB, 5 W, DC to 18 GHz, N(m) - N(f)
3-1010-123	30 dB, 50 W, DC to 8.5 GHz, N(m)-N(f)
1010-127-R	30 dB, 150 W, DC to 3 GHz, N(m) - N(f)
3-1010-124	40 dB, 100 W, DC to 8.5 GHz, N(m)-N(f), Uni-directional
1010-121	40 dB, 100 W, DC to 18 GHz, N(m)-N(f), Uni-directional
1010-128-R	40 dB, 150 W, DC to 3 GHz, N(m) - N(f)

OPTIONAL ACCESSORIES

Adapters

1091-26-R	SMA(m) - N(m), DC to 18 GHz, 50 Ω
1091-27-R	SMA(f) - N(m), DC to 18 GHz, 50 Ω
1091-80-R	SMA(m) - N(f), DC to 18 GHz, 50 Ω
1091-81-R	SMA(f) - N(f), DC to 18 GHz, 50 Ω
1091-172	BNC(f) - N(m), DC to 1.3 GHz, 50 Ω
510-102	N(m) - N(m), DC to 11 GHz, 50 Ω, 90 degrees right angle

Precision Adapters

34NN50A	Precision Adapter, N(m) - N(m), DC to 18 GHz, 50 Ω
34NFNF50	Precision Adapter, N(f) - N(f), DC to 18 GHz, 50 Ω

Backpack and Transit Case

67135	Anritsu Backpack (For Handheld Instrument and PC)
760-243-R	Large Transit Case with Wheels and Handle

Miscellaneous Accessories

2000-1528-R	GPS Antenna, SMA(m)
69793	CW Signal Generator Kit
2000-1520-R	USB Flash Drive
2000-1374	External Charger for Li-Ion Batteries

Anritsu Corporation
5-1-1 Onna, Atsugi-shi, Kanagawa, 243-8555 Japan
Phone: +81-46-223-1111
Fax: +81-46-296-1264

• U.S.A.
Anritsu Company
1155 East Collins Boulevard, Suite 100
Richardson, Texas 75081 U.S.A.
Toll Free: 1-800-ANRITSU (267-4878)
Phone: +1-972-644-1777
Fax: +1-972-671-1877

• Canada
Anritsu Electronics Ltd.
700 Silver Seven Road, Suite 120, Kanata
Ontario K2V 1C3, Canada
Phone: +1-613-591-2003
Fax: +1-613-591-1006

• Brazil
Anritsu Electrônica Ltda.
Praca Amadeu Amaral, 27-1 Andar
01327-010 - Paraiso, São Paulo, Brazil
Phone: +55-11-3283-2511
Fax: +55-11-3886940

• Mexico
Anritsu Company, S.A. de C.V.
Av. Ejército Nacional No. 579 Piso 9, Col. Granada
11520 México, D.F., México
Phone: +52-55-1101-2370
Fax: +52-55-5254-3147

• U.K.
Anritsu EMEA Ltd.
200 Capability Green, Luton, Bedfordshire LU1 3LU, U.K.
Phone: +44-1582-433280
Fax: +44-1582-731303

• France
Anritsu S.A.
16/18 Avenue du Québec-SILIC 720
91961 COURTABOEUF CEDEX, France
Phone: +33-1-60-92-15-50
Fax: +33-1-64-46-10-65

• Germany
Anritsu GmbH
Nemetschek Haus, Konrad-Zuse-Platz 1
81829 München, Germany
Phone: +49 (0) 89 442308-0
Fax: +49 (0) 89 442308-55

• Italy
Anritsu S.p.A.
Via Elio Vittorini, 129, 00144 Roma, Italy
Phone: +39-06-509-9711
Fax: +39-06-502-2425

• Sweden
Anritsu AB
Borgafjordsgatan 13, 164 40 Kista, Sweden
Phone: +46-8-534-707-00
Fax: +46-8-534-707-30

• Finland
Anritsu AB
Teknobulevardi 3-5, FI-01530 Vantaa, Finland
Phone: +358-20-741-8100
Fax: +358-20-741-8111

• Denmark
Anritsu A/S
Kirkebjerg Allé 90 DK-2605 Brøndby, Denmark
Phone: +45-72112200
Fax: +45-72112210

• Spain
Anritsu EMEA Ltd.
Oficina de Representación en España
Edificio Veganova
Avda de la Vega, nº 1 (edf 8, pl1, of 8)
28108 ALCOBENDAS - Madrid, Spain
Phone: +34-914905761
Fax: +34-914905762

• Russia
Anritsu EMEA Ltd.
Representation Office in Russia
Tverskaya str. 16/2, bld. 1, 7th floor
Russia, 125009, Moscow
Phone: +7-495-363-1694
Fax: +7-495-935-8962

• United Arab Emirates
Anritsu EMEA Ltd.
Dubai Liaison Office
P O Box 500413 - Dubai Internet City
Al Thuraya Building, Tower 1, Suite 701, 7th Floor
Dubai, United Arab Emirates
Phone: +971-4-3670352
Fax: +971-4-3688460

• Singapore
Anritsu Pte. Ltd.
60 Alexandra Terrace, #02-08, The Comtech (Lobby A)
Singapore 118502
Phone: +65-6282-2400
Fax: +65-6282-2533

• India
Anritsu Pte. Ltd.
India Branch Office
3rd Floor, Shri Lakshminarayan Niwas,
#2726, 80 ft Road, HAL 3rd Stage, Bangalore - 560 075, India
Phone: +91-80-4058-1300
Fax: +91-80-4058-1301

• P. R. China (Hong Kong)
Anritsu Company Ltd.
Units 4 & 5, 28th Floor, Greenfield Tower, Concordia Plaza
No. 1 Science Museum Road, Tsim Sha Tsui East,
Kowloon, Hong Kong, P.R. China
Phone: +852-2301-4980
Fax: +852-2301-3545

• P. R. China (Beijing)
Anritsu Company Ltd.
Beijing Representative Office
Room 2008, Beijing Fortune Building
No. 5 , Dong-San-Huan Bei Road,
Chao-Yang District, Beijing 100004, P.R. China
Phone: +86-10-6590-9230
Fax: +86-10-6590-9235

• Korea
Anritsu Corporation, Ltd.
8F Hyunjuk Bldg. 832-41, Yeoksam-Dong
Kangnam-ku, Seoul, 135-080, Korea
Phone: +82-2-553-6603
Fax: +82-2-553-6604

• Australia
Anritsu Pty Ltd.
Unit 21/270 Ferntree Gully Road, Notting Hill
Victoria, 3168, Australia
Phone: +61-3-9558-8177
Fax: +61-3-9558-8255

• Taiwan
Anritsu Company Inc.
7F, No. 316, Sec. 1, Neihu Rd., Taipei 114, Taiwan
Phone: +886-2-8751-1816
Fax: +886-2-8751-1817

MASTER USERS GROUP

The Master Users Group is an organization dedicated to providing training, technical support, networking opportunities, and links to Master product development teams. As a member, you will receive the Insite Quarterly Newsletter with user stories, measurement tips, new product news and more.

Visit us to register today: www.anritsu.us/smiusignup

Shop Anritsu

To receive a quote to purchase a product or order accessories, visit our online ordering site: www.ShopAnritsu.com

Training at Anritsu

Anritsu has designed courses to help you stay up to date with technologies important to your job.
For available training courses visit: www.us.anritsu.com/training

Catalog No. 11410-00518, Rev. A Printed in United States 2009-08