Product Brochure

Anritsu Advancing beyond

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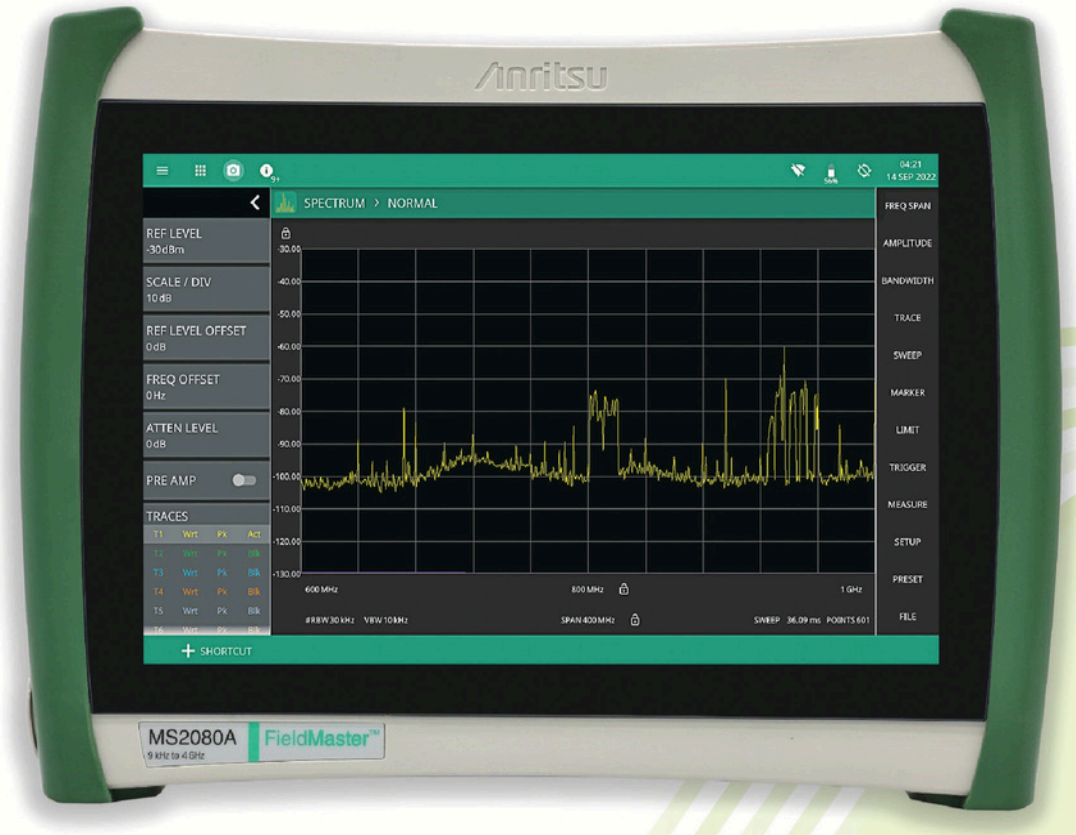
Field Master™

Handheld RF Spectrum Analyzer
MS2080A

9 kHz to 4/6 GHz



We've Got You Covered

The New Field Master™ MS2080A

The performance you need with the measurements you demand in a field portable spectrum analyzer

Better

Protection with >5 watts RF damage level, IP52 environmental protection, and IK08 rated 10-inch, high-resolution, multi-touch screen.

Faster

Full span sweep speeds of over 45 GHz per second provide maximum insight into all RF signals.

Smarter

Measurements including spectrum analysis, RTSA, Cable & Antenna Analyzer, High Accuracy Power Meter, 5GNR/LTE demods, and coverage mapping.

Field Master MS2080A

Field Master MS2080A

Key Features

Feature Spectrum Analysis from	Comment
9 kHz to 4 GHz and 6 GHz	
Spectrogram	For coverage of common commercial RF communications bands
RTSA	To capture and record intermittent and drifting signals
Tracking Generator	For real-time spectrum analysis with 2.5 µs POI
AM/FM Modulation Measurements	Sweep, Offset Sweep, CW Fixed, CW Coupled Modes
Smart Measurements	AM/FM modulation quality, audio output, audio spectrum and audio oscilloscope
Spectrum Record and Playback	Includes channel power, occupied bandwidth, adjacent channel power, spectral emissions, C/I, THD, and field strength measurements
IQ Capture and Streaming	To record traces and play back at slow speed to track all spectrum activity
Channel Scanner	Capture IQ data to the instrument or a PC
USB Power Sensor Support	Bar chart, Strip chart, Mapping modes with up to 60 channels
Site Master™ Cable and Antenna Analyzer	For precision power measurements of transmitters
Zero Span	For RF cable and antenna testing at transmitter sites
TDR Measurements	For pulse measurements
Quasi-Peak Detector	TDR Ohm and TDR Linear
Interference Hunting	For CISPR compliant interference measurements
Cellular Measurements	With directional antenna and eCompass handle
10-Inch, Multi-Touch Display	WCDMA, 5GNR FR1, and LTE FDD/TDD transmitter measurement suites
GNSS	Provides quick and easy configuration and results presentation
Report Generation	GPS, Galileo, GLONASS, BeiDou
	Integrated PDF/HTML report generator for CAA trace files, photographs and screen images

Key Specifications

Performance Sweep Speed Phase	
Noise DANL Maximum Input Signal	32 GHz/s, 45 GHz/s with Option 102
Damage Level Frequency Accuracy	–97 dBc/Hz @ 1 GHz Freq and 100 kHz Offset (typical)
Amplitude Accuracy Resolution	< –165 dBm (with Preamp on, typical)
Bandwidth in Sweep Mode Resolution	+30 dBm
Bandwidth in Zero Span RTSA	5 Watts
Bandwidth	Aging: ±1.0 x 10–6 per Year Accuracy: ±0.28 x 10–6 (–10 °C ±55 °C) Plus Aging
	±1 dB (±0.5 dB typical)
	1 Hz to 5 MHz
	10 Hz to 20 MHz with Option 102
	20 MHz standard, 40 MHz with Option 102

Multifunctional Instrument

The Field MasterMS2080A is a spectrum analyzer that integrates RF field technician's most commonly used instruments into a single package. That means less for you to carry and a single user interface to learn, making your time in the field more productive. The applications available are:

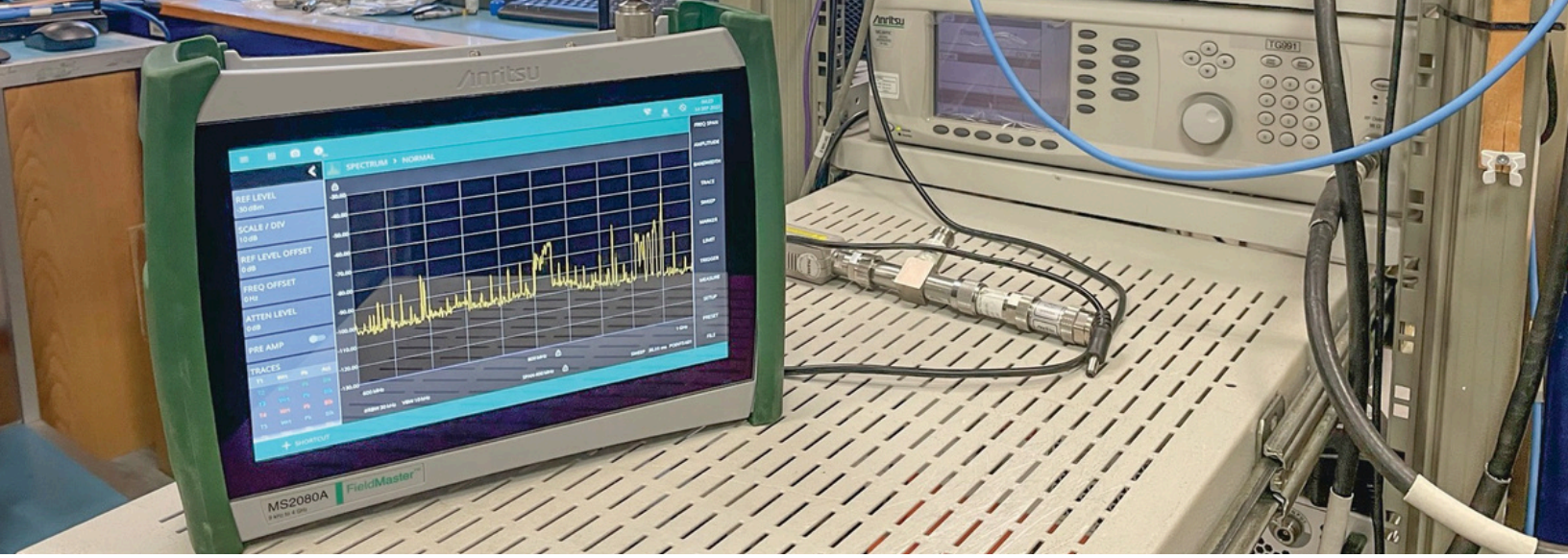
- Spectrum Analyzer
- Tracking Generator
- Real-Time Spectrum Analyzer (RTSA)
- Interference Analyzer
- True Power Meter
- Cable and Antenna Analyzer
- Channel Scanner
- AM/FM Modulation Measurements
- 5GNR FR1 Analyzer
- LTE FDD/TDD Analyzer
- WCDMA FDD Analyzer
- Coverage Mapping

Field Master MS2080A with Power Sensor, Site Master S331P, and Handheld InterferenceHunter™ MA2700A

Designed for the Field

The Field Master MS2080A builds on Anritsu's pioneering history of developing reliable and dependable instruments for the world's most demanding RF measurements in the toughest environments. Designed to withstand the knocks and blows inevitable when working at remote transmitter sites. Weighing less than 4 kg, the Field Master MS2080A is small, compact, and easy to carry. An optional shoulder harness attaches to the supplied soft case to ease long-term use outdoors, especially with over six hours of continuous operation when adding the extended power pack. An environmental rating of IP52 in the soft case protects the instrument from dust and water, ensuring it is always ready to make the measurements you need in the location you need them.

Field Master MS2080A Delivers over Three Hours of Field Use with Built in Battery



The RF Performance of the Field Master MS2080A Makes it Ideal for General Purpose Lab Applications

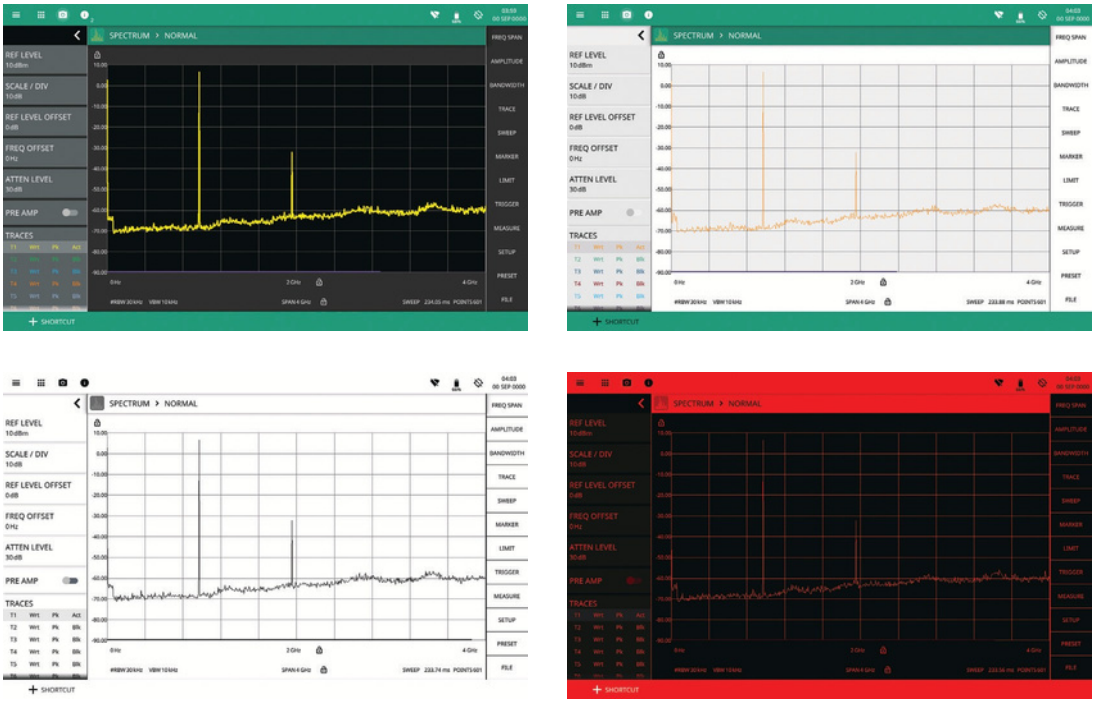
At Home in the Lab

For use on the bench, the hard case with rubberized easy grip bumpers and integrated kick stand makes the Field Master MS2080A an ideal instrument for general purpose lab measurements where portability and space are at a premium.

High Resolution Multi-Touch Display

The Field MasterMS2080A integrates the Anritsu standard high resolution, multi-touch display to deliver a familiar

user experience. The large, 10-inch, 1280 x 800 resolution display presents measurement results in large and clear formats. Common functions are always accessible and side menus collapse to maximize graphical results display. The toughened display conforms to IK08 protection standards preventing damage from accidental knocks or drops of tools onto the screen. A variety of screen color themes provide the optimum viewing experience in direct sunlight, nighttime operation and normal indoor use. Up to five shortcut tabs along the bottom of the screen give quick access to your favorite measurement set ups, reducing test time and measurement errors.



Four Selectable Color Themes Optimize Viewing for Indoor, Outdoor, High-Contrast, and Nighttime Conditions

Flexible Charging Options

The built-in battery provides over three hours of run time. For extended operation in the field, the optional accessory power pack fits into the soft case pocket to extend run time to over six hours. An accessory automotive DC/DC power adaptor connects to a standard 12-volt output to provide continuous operation when performing extensive coverage mapping runs.

Field Master MS2080A with Standard Battery and AC Charger Plus Accessory Power Pack

Fully Featured Spectrum Analyzer

From HF military radio through 100 MHz broadcast FM, Land Mobile Radio at 400 MHz, and LTE and 5G cellular radio, the RF spectrum is becoming increasingly crowded. A spectrum analyzer is the primary instrument for field engineers to monitor, maintain, and optimize the performance of RF communications systems.
The Field Master MS2080A is designed with the requirements of RF field engineers in mind. Building on 30 years' experience developing handheld spectrum analyzers, the Field Master MS2080A brings together all of our knowledge into a portable and rugged instrument with a familiar multi-touch interface. The typical DANL with a built in preamplifier of < –165 dBm, coupled with a TOI of +14 dBm and typical level accuracy of ±0.5 dB enable the full range of signals to be captured and displayed with confidence.

Measuring the Channel Power of an LTE Carrier between Adjacent Carriers

Common measurements are simplified with quick setups provided for Channel Power, Occupied Bandwidth, Total Harmonic Distortion and Adjacent Channel Power.

Multi-Trace, Multi-Marker Features

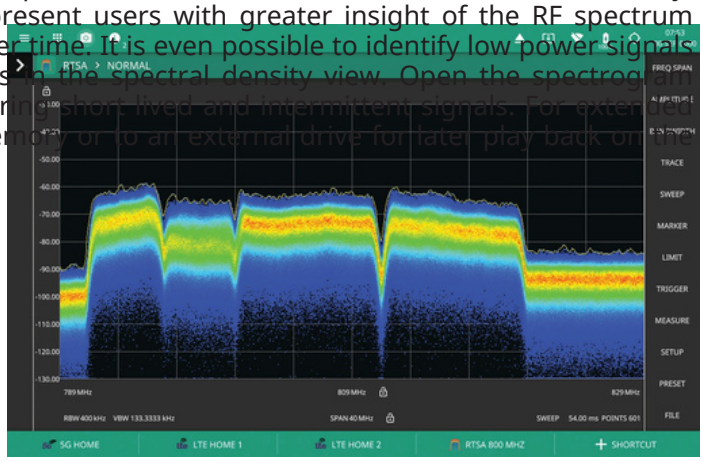
Display up to six traces simultaneously with different detectors and averaging applied to each. Up to 12 markers are provided to highlight signals of interest and monitor how they vary over time, relative to themselves and other signals. Alerts for new interfering or lost signals are generated automatically with limit save on event functionality to optimize long-term monitoring of the spectrum.

Use Zero Span to View Radar Pulses and TDD Transmitters

Analyze pulsed or TDD signals in real time using up to 40 MHz zero span analysis bandwidth with 20 MHz RBW. Coupled with a 60 ns minimum sweep time the Field Master MS2080A allows viewing of pulses as narrow as 50 ns. This enables analysis of all common pulsed radar and TDD communications systems.

Real-Time Spectrum Analyzer (RTSA) (Option 199)

The Field MasterMS2080A features an optional RTSA with up to 40 MHz analysis bandwidth. Ideal for capturing short duration and digitally modulated signals that can be hard to identify in standard spectrum analyzer mode, the RTSA enhances the interference hunting capability of the Field Master MS2080A. With a capture rate of 527,000 FFT/s, signals down to 2.5 µs are displayed at full amplitude and down to 9 ns with reduced level accuracy. A spectrum density display uses color to maintain and present users with greater insight of the RF spectrum activity by maintaining the image of spectral occupancy over time. It is even possible to identify low power signals that would otherwise be masked by higher power signals in the spectral density view. Open the spectrogram display to view a history of activity in the spectrum, capturing short lived and intermittent signals. For extended time monitoring and analysis, record traces to internal memory or to an external drive for later play back on the instrument or offline.



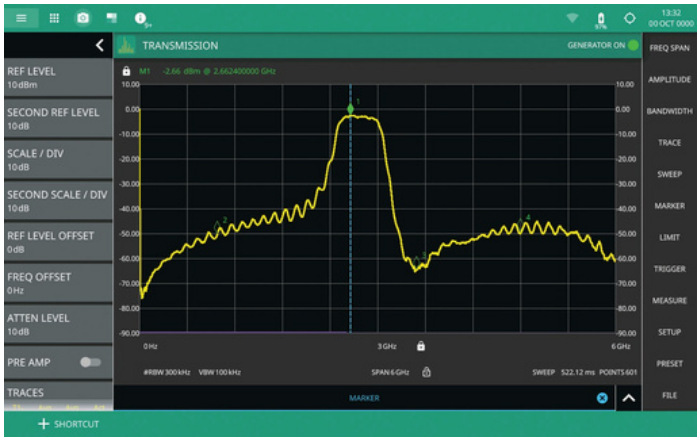
Multiple LTE Carriers Viewed with the RTSA

Tracking Generator (Option 20)

The optional tracking generator is fully featured to support the testing of filters and amplifiers in the field. An offset sweep feature enables the performance of frequency conversion devices such as mixers and downconverters to be verified in location without taking them to specialized test facilities. The tracking generator offers four operational modes:

- Sweep (TG output equals SPA input)
- Offset Sweep (TG output sweeps at a fixed offset frequency from the SPA input)
- CW Fixed (TG output is a CW source at a user defined frequency)
- CW Coupled (TG output is a CW source that is always tuned to the center frequency of the SPA)

Measurement performance and accuracy is assured with the provision of trace normalization to remove the loss of test port cables from results. The tracking generator output level range from –45 dBm to +9 dBm means it can be optimized for maximizing dynamic range when filter testing or set to low levels when measuring the gain and response of amplifiers.



Bandpass Filter Measurement with Tracking Generator

Interference Hunting

Radio frequency communications are central to many aspects of our modern life. In addition to our personal smartphone communication needs, health care monitors, logistics tracking, first responders, and smart factories have all become dependent on reliable radio communications networks. As demand for radio spectrum expands, the chances of interference from unintended or illegal sources grow. To ensure reliability of service, owners of RF communications networks and devices need tools to help identify, locate, and mitigate against interference. The Field Master MS2080A has been designed to provide an array of features to support field technicians in detecting and locating interfering signals. Because interference originates from many sources, multiple tools are required to complete the task.

Up to 45 GHz/s sweep speed in standard spectrum analyzer mode (with Option 102), coupled with a spectrogram display, maximizes the probability of seeing short duration or TDD interferers. Switching to an RTSA mode when the frequency of the interferer has been validated ensures detection of the shortest interfering burst, or even signals below the power level of the wanted carrier that can still downgrade system performance.

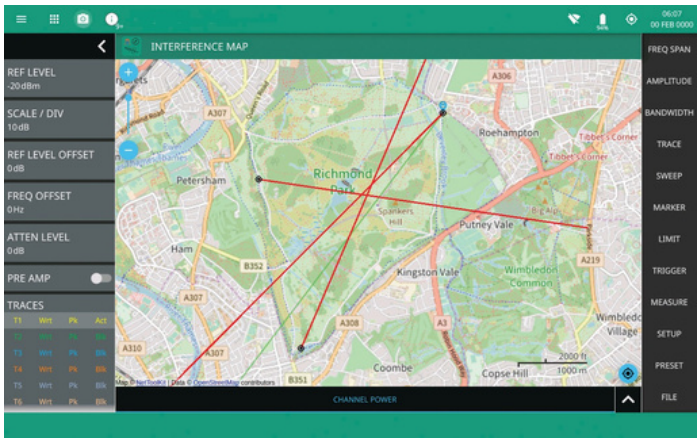
For regulators, evaluating the impact of pulsed or TDD interfering signals, the Field Master MS2080A Quasi Peak detector provides CISPR 16-1-1 compliant measurements of all signals identified with markers.

Interference Finder (Option 24)

Option 24 includes AM/FM audio demodulation of interfering signals, interference hunting tone for direction finding, and geolocation of interferes on a digital map. When the interfering signal has been identified, AM/FM audio demodulation provides greater insight into the possible cause. Speech or music on the signal indicates an illegal transmitter or intermodulation with other networks. Noise or clicks may suggest heavy industrial machinery that is not suppressed, or cables insecurely attached to transmitter towers.

AM/FM Signal Demodulation at Marker Frequency

The interference hunting tone outputs a variable frequency tone that increases in pitch as the signal strength increase. When used in conjunction with a directional antenna, this facilitates the precise location of signals of interest. When coupled with the InterferenceHunter MA2700A handle and directional antenna, the Field Master MS2080A provides interference mapping for geolocation of the signal. The InterferenceHunter MA2700A includes an eCompass, which indicates the direction it is pointing on a digital map downloaded onto the instrument screen. Rotating through 360 degrees builds a polar plot of signals from all directions at your current position.



Map Triangulation

EMF Measurements (9 kHz to 6 GHz) (Option 444)

Option 444 uses the spectrum analyzer sweep and a tri-axial isotropic antenna to measure field strength in frequency-specific bands in all spatial directions. This is useful for both LTE and 5G FR1 to ensure radios are not transmitting excessive power. Three antennas are supported, providing frequency coverage from 9 kHz to 6 GHz. Antennas are individually calibrated and the instrument reads the calibration data through the USB interface. The same interface is used to switch rapidly between the three antennas orientations to provide complete three axis isotropic measurements. The Field Master MS2080A displays the results of each axis on the spectrum display and a table presents a summary of measurements including peak and average field strength and measurement time. The total measurement time and axis dwell time and limits are user settable or can be defaulted to ICNIRP values.

EMF Results Show Power from each Antenna Axis and Summary Results for Peak and Average Power over a Defined Time Period

AM/FM Modulation Measurements (Option 509)

Option 509 adds a comprehensive AM/FM modulation quality measurement suite to support national regulators and AM and FM transmitter owners. Broadcast and LMR channels are becoming increasingly crowded driving a need to perform regular measurements on transmitters to confirm they are not over deviating or interfering with adjacent carriers in a very crowded spectrum.

The AM/FM Modulation Measurements Screen Provides a Unique Simultaneous Display of Results and RF and Audio Spectrum

Option 509 AM/FM Modulation Measurement provides a comprehensive analog transmitter measurement suite in a field portable spectrum analyzer. A single screen displays the RF spectrum, the audio frequency spectrum, the demodulated audio in oscilloscope format and numeric results for key parameters. All these results are updated in parallel providing the best possible real time view of the AM or FM transmitter performance.

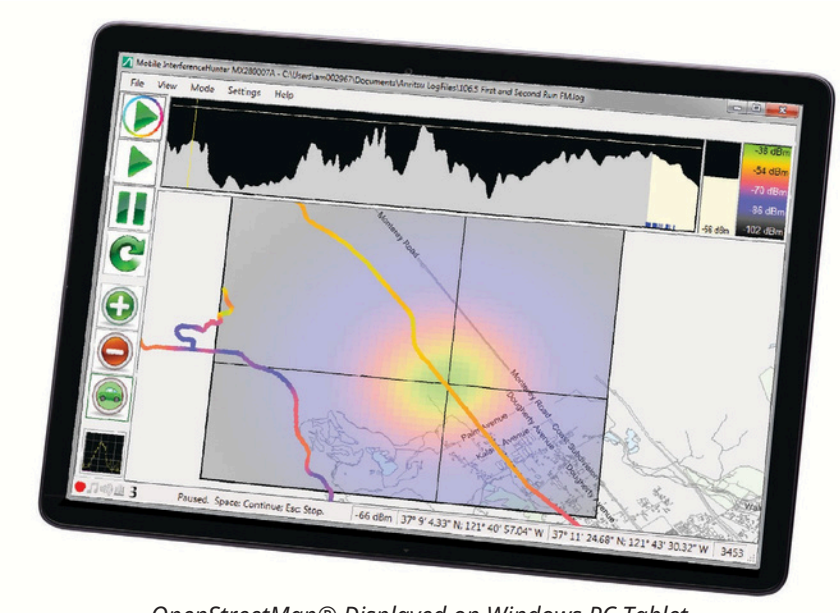
For broadcast FM, the audio spectrum trace highlights the mono audio, stereo pilot, left-right stereo channels and RDS sub carrier. At the same time, an audio oscilloscope displays the demodulated voice or music and the RF spectrum trace shows channel occupancy. This captures all the essential transmitter information on a single screen to provide the best possible overview of transmitter performance.

Integrated software routines calculate the essential audio quality measurements of AM depth and FM deviation. SINAD and THD are measured automatically when modulating the transmitter with a fixed frequency tone, typically 1 kHz. Use the built in speaker to listen to demodulated audio continuously and in real time at even as traces are updated.

Mobile InterferenceHunter™ MX280007A

Anritsu's Mobile Interference Hunter (MIH) MX280007A software is a field proven application for identifying the location of interfering signals over a wide area. Mobile interference hunting is achieved by applying proprietary algorithms to channel power data captured with geolocation positioning information during an area drive in a vehicle. MIH can distinguish between multiple signal sources, reflections, RF shadows, drifting signals, bursty signals, and multi-path transmitters making it a cost effective solution for a wide range of interferers.

MIH Vehicle Setup with Magnetic Mount Omni Antenna on Roof of Truck



OpenStreetMap® Displayed on Windows PC Tablet. InterferenceHunter Screen Capture. Dots Shown Along Drive Path are Colored According to Signal Strength.

Vision™ Monitor (Option 400)
Vision High Speed Port Scanner (Option 407)
Enable Vision PC Software (Options 4xx)

Vision Monitor software offers a range of applications for monitoring the RF spectrum over a period of time and storing results to a database. Vision Monitor is an ideal tool for long-term interference monitoring. Limits can be set with automated alarms for limit violations to capture short-term or intermittent signals. Other features include a scanner option that enables the monitoring of a range of frequency bands or channels over time with unique settings for each channel being monitored. A multi-trace view shows the spectrum for all channels being monitored on the same display.

The Vision Monitor application is fully automated.

Measurements can be captured and periodically uploaded to a database for further processing. Depending on need and storage capacity, users can store spectrum history over many months or years with a user-defined capture assigned schedule.

All spectrum measurement databases are searchable,

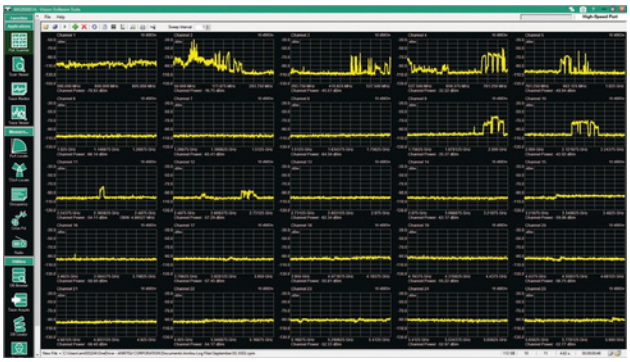
allowing the user to quickly locate patterns of signal activity relevant to an investigation. The spectrum history can also potentially be used in legal proceedings for documenting illegal or unlicensed broadcast activity. Other functions provided by Vision Monitor include:

- Threshold and trace mask settings for alarm generation
- Email alert sent when threshold violation generates an alarm
- Reporting on spectrum integrity on a daily or weekly basis
- Vision runs on a PC/laptop using the Windows® operating system

The high speed port scanner option maximizes the

capability of the Field Master MS2080A spectrum analyzer by configuring multiple channels for high speed sequential monitoring. This facilitates the monitoring of multiple radio spectrum channels, such as satellite downlinks, TETRA, P25 or broadcast FM for activity and conformance with a single instrument.

Vision Monitor Simultaneously Displays Current Spectrum, Spectrogram, and Pass/Fail History over an Extended Time Period on a Single Screen



Use the High Speed Port Scanner Monitor Multiple RF Channels with a Single MS2080A on a Single PC Monitor

5GNR and LTE Modulation Quality and Transmitter Measurements

From the first roll out of GSM networks in the 1980's through 3G and LTE, Anritsu has been at the forefront of providing instruments to enable the installation and maintenance of cellular networks. Now with the introduction of 5GNR networks, Anritsu remains at the leading edge of cellular network testing.

The Field Master MS2080A integrates all the essential instruments for 5G base station testing in the field into a single field portable instrument. Modulation quality, transmitter quality, coverage mapping, and RF cable and antenna line sweep measurements are all included. Simple mode switching between instruments provides a common user experience and results are saved to a single location to ease report generation.

Whether you are rolling out a new network as an operator or contractor, installing a private 5G network, providing network optimization, or confirming regulatory compliance, the Field Master MS2080A delivers the measurements and features you need to get the job done fast.

5GNR Downlink Measurements (Option 888)

Installing and maintaining 5G base stations require testing of signal quality and transmitter measurements. With the introduction of active antenna systems to create the beamforming signal patterns common to 5G base stations, the availability of test access connectors has reduced. Measurements are more commonly made Over-the-Air (OTA).

The Field Master MS2080A supports direct connect and OTA measurement of 5G base stations. When testing OTA, the Field Master MS2080A may see signals from multiple base stations at different locations. In this case, the results are clearly identified by each individual physical cell ID (PCI) and the relative performance and time of arrival are displayed on the results screen.

For signal quality measurements, the Field Master MS2080A identifies the location of the synchronization signal block (SSB) which is used as the basis of all signal quality measurements. For FR1 5G signals, the SSB has a bandwidth of 3.6 MHz for subcarrier spacing of 15 kHz and 7.2 MHz for subcarrier spacing of 30 kHz.

Summary of 5G Downlink Signal Quality Measurements		
PCI Cell, Sector ID, Cell Group	SS-RSRP/RSRQ/SINR/RSSI	Time Offset
Frequency Error	Modulation Quality (SS-EVM)	Difference in Time Offset
Beam ID	PBCH Constellation	OTA Multi PCI Scanner
Channel Power	Occupied Bandwidth	Carrier Aggregation (eight carriers)
Adjacent Channel Power (ACP)	Spectral Emissions Mask (SEM)	Coverage Mapping
LTE/5G	TDD Uplink Interference with Gated Spectrum	SIB Decoding of MCC and MNC

5G OTA Results

5G Channel Power Results in 5G Mode

Use the standard spectrum analyzer mode for basic transmitter quality measurements or 5G mode for time gated measurements focused on the SSB.
The Field Master MS2080A has many advanced features to simplify the testing of 5G base stations. An autodetect SSB capability searches across the 5G frame to identify the location and offset of the SSB element if it is unknown. The carrier aggregation mode displays results for up to eight carriers on a single screen. Carrier aggregation is often used to increase the capacity of any given operator using distributed frequency spectrum. The single results screen summarizes the overall network performance in a convenient format.
National regulating authorities often require a measurement of EIRP to validate that total transmitted power is within statutory requirements. The Field Master MS2080A EIRP measurement corrects for signal path loss, antenna gain, and summing of vertical and horizontal powers to deliver a 3GPP compliant result.

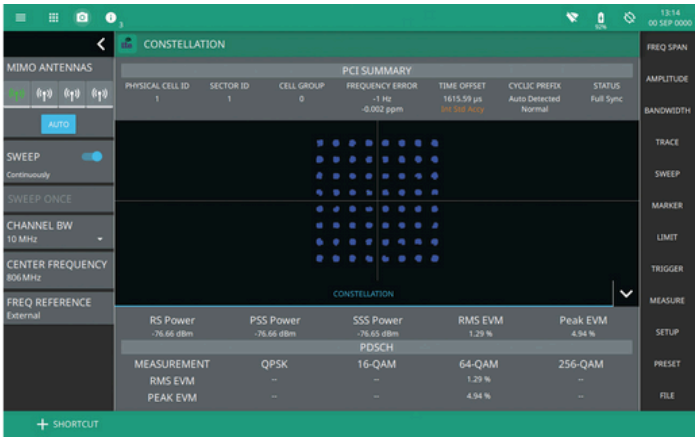
LTE FDD/TDD Measurements (Option 883)

LTE remains at the heart of many national cellular networks and often provides the signaling control plane for 5G non-standalone (NSA) networks. Field technicians require a test instrument that includes 5G and LTE measurements.

The Field Master MS2080A includes a full suite of LTE signal quality and transmitter measurements. OTA and direct connect test methods are supported with OTA results showing all detected PCIs from available base stations.

LTE Overall Capability		
FDD and TDD Network Support	MIMO Antenna Power Carrier	MIMO Time Alignment
Resource Block Usage	Aggregation (eight carriers)	Multi PCI Scanner
Adjacent Channel Power (ACP)	Spectral Emissions Mask (SEM)	Control Channel Measurements
Constellation Diagrams for PBCH and PDSCH	SIB Decoding of MCC and MNC	
LTE Signal Measurements		
Cell ID, Sector ID, Cell Group	Frequency Error	Time Offset
PBCH, RS and SS Power	TDD UL/DL Interference	PBCH
PDSCH EVM (all modulation formats)	Time Alignment Error	OFDM Symbol Transmit Power
LTE Transmitter Measurements		
Channel Power	Channel Spectrum	Coverage Mapping

Use Carrier Aggregation Mode for Over-the-Air (OTA) Capture of Multiple LTE Signals

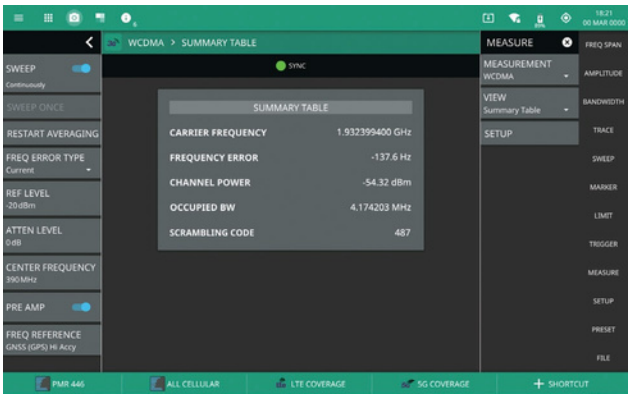


LTE Modulation Quality EVM Measurement on PBCH and PDSCH

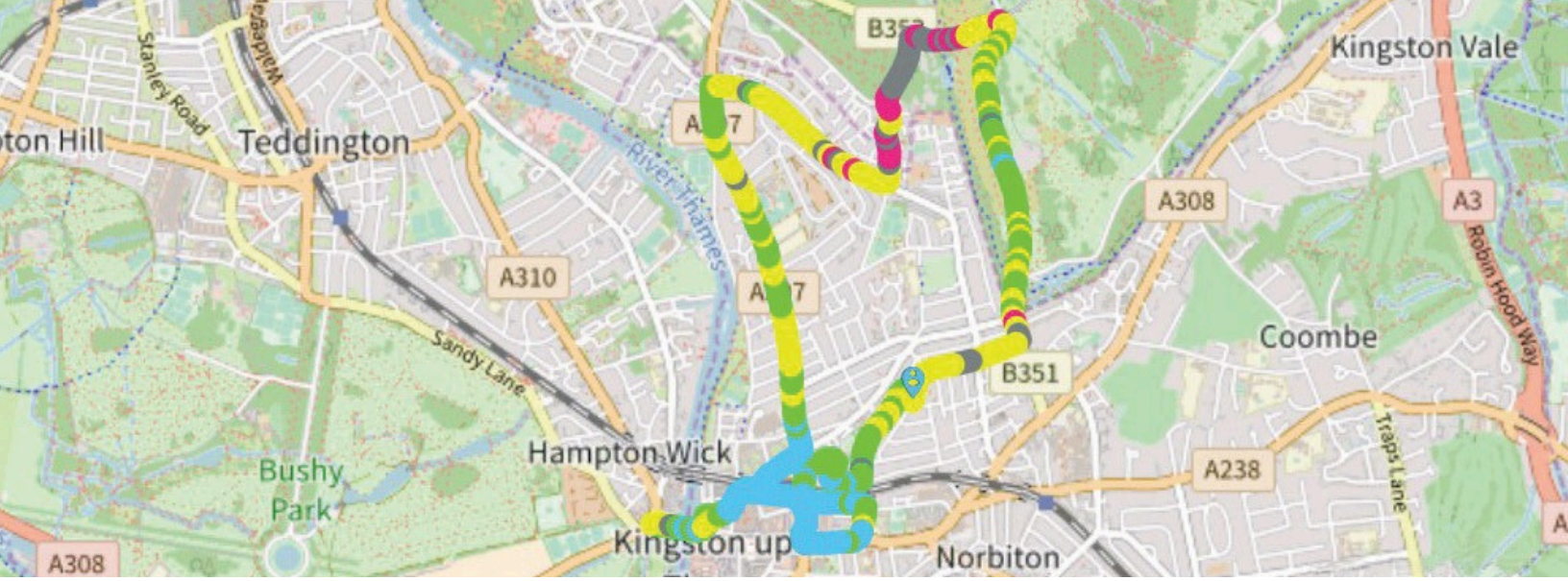
WCDMA Base Station Measurements (Option 871)

Network operators with legacy 3GPP WCDMA networks continue to need field maintenance instruments. The WCDMA base station measurement option includes the essential measurements required for base station maintenance. This provides field engineers a single test instrument that supports the most common technologies in a network. WCDMA measurements supported include:

- Occupied Bandwidth
- Spectral Emission Mask
- Channel Power
- Adjacent Channel Power
- Carrier Frequency
- Frequency Error
- Scrambling Code



WCDMA Summary Table

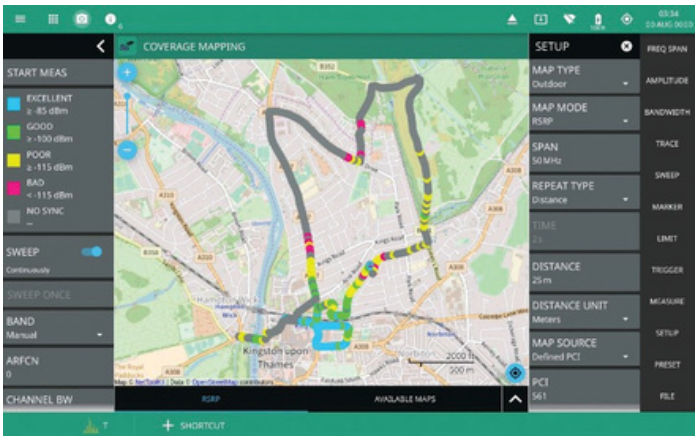


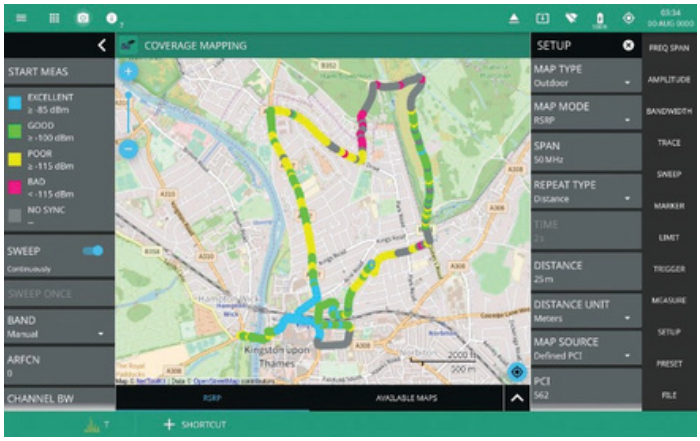
Coverage Mapping (Option 431)

As well as measuring the performance of the 5G and LTE base stations, operators need to understand the coverage that is being achieved from each sector at each cell site. Modeling predicts coverage, but changes in the real-world environment can result in areas with limited or no network coverage.

The Field Master MS2080A coverage mapping option plots colored “breadcrumbs” that represent the signal strength of the cellular signal at any given map data point. Maps are quickly downloaded directly from a web service into the instrument memory using the Wi-Fi or Ethernet interface, eliminating the need to create maps on a PC and transfer them by memory stick.

Signal coverage can be mapped based on a number of base station metrics; transmitter channel power, spectral density, and RSSI measurements or 5G/LTE signal quality RSRP/RSRQ/SINR results. When mapping based on 5G or LTE signal quality such as RSRP is selected, the results can be filtered for any individual PCI. This enables users to understand the coverage from specific antennas and specific base station masts.

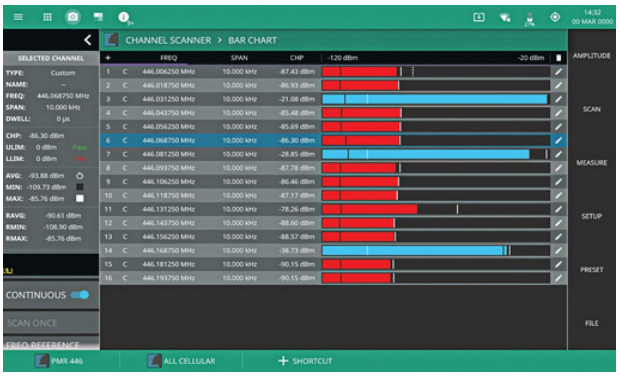




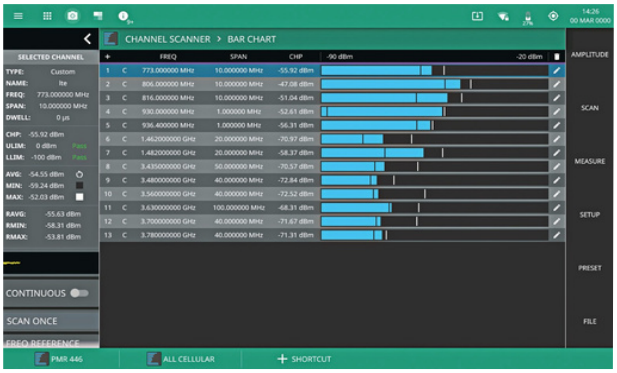
Following a Coverage Mapping Drive, Filter by Specific PCIs to See Coverage from Individual Base Stations or Antennas

Channel Scanner (Option 27)

Spectrum analyzers are the ideal instrument to monitor multiple transmitter frequencies continuously on a single screen. The Field Master MS2080A channel scanner displays the current power of up to 20 channels on a single screen, and up to 60 channels over multiple pages. The channels can have a regular frequency increment or can be configured for any combination of frequencies and spans. A regular channel plan is ideal for monitoring the activity in LMR networks such as P25 or TETRA. The custom configuration is used to monitor the activity in areas that contain different radio standards such as GSM, 3G, LTE and 5G networks.
The screen to the right shows the current signal level of GSM, LTE and 5G cellular networks on a single screen. Each channel has a unique bandwidth the center frequency covers the 800 MHz, 1.4 GHz and 3.5 GHz bands.

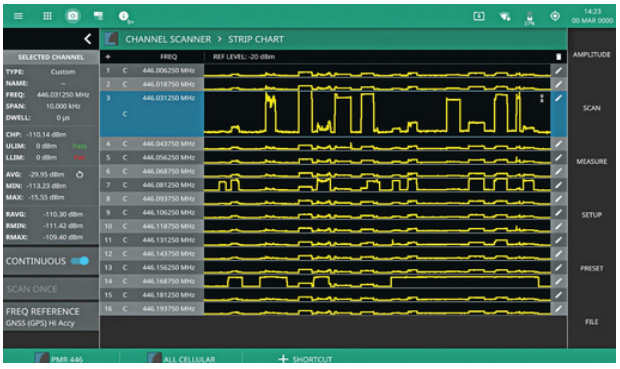


The Bar Chart Displays the Current Signal Level of up to 20 Channels on a Single Screen



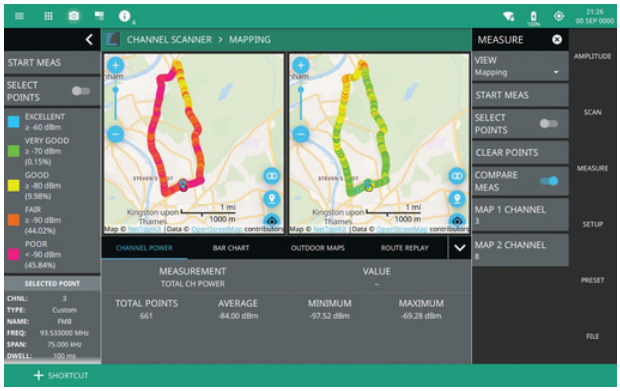
Bar Chart Display Monitoring GSM, LTE, and 5G Cellular Bands

Use the strip chart mode to monitor activity in all channels over an extended period of time. For LMR networks this provides insight into the activity, or occupancy of all the available channels.
The Field Master's large, 10-inch display is perfect for viewing detail of 20 channels at a glance.

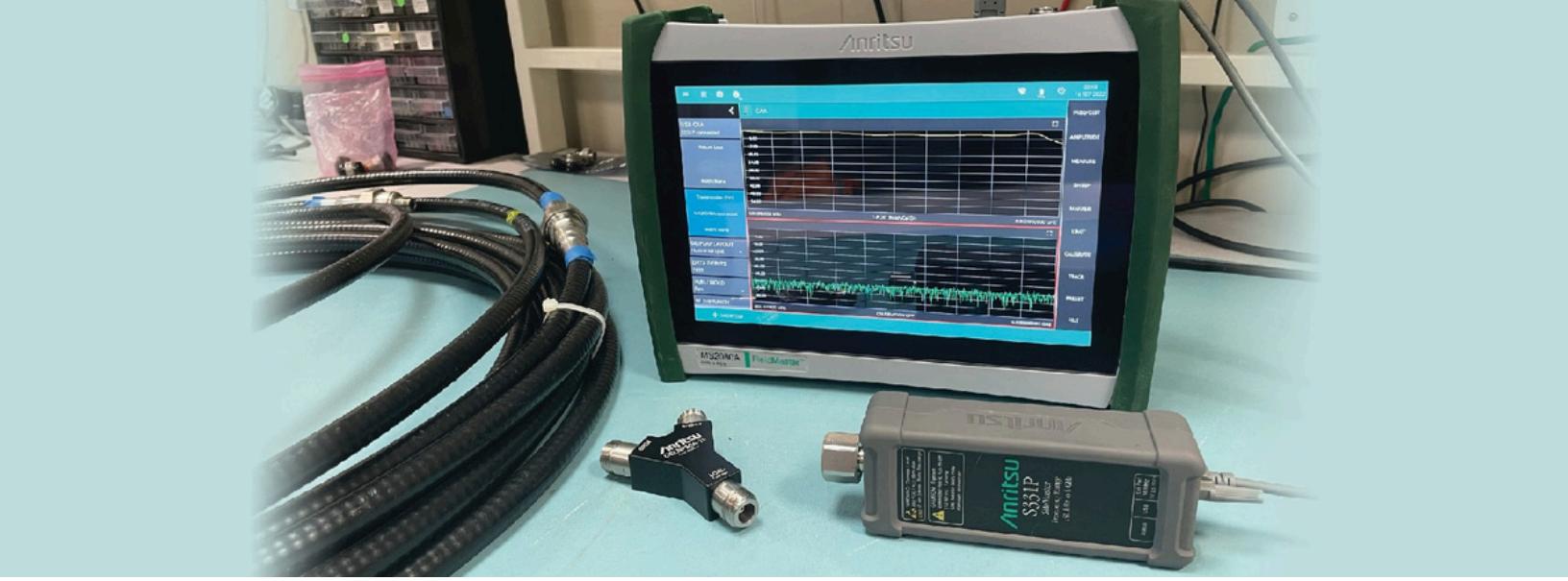


The Strip Chart Mode Tracks Signal Level of All Channels over Time

When entering the channel scanner mapping mode, the channel power for all configured channels is recorded along with the GNSS location of the measurement. Channel power level for any selected channel is displayed in the form of colored breadcrumbs that represent the signal level. Additionally, because the channel scanner is capturing data for multiple channels at the same time, a dual map mode enables the side-by-side view of channel power from any two channels in the route capture.



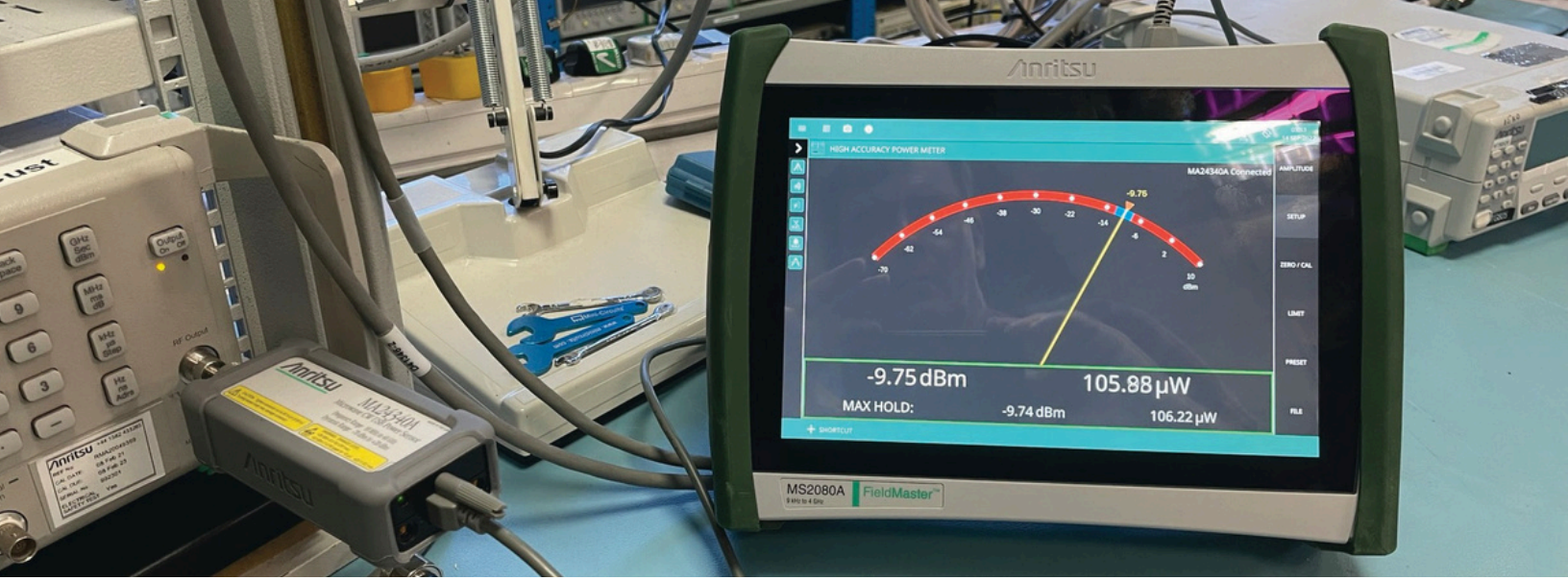
Channel Scanner Mapping Mode



Add Site Master™ S331P for Line Sweep Measurements

TheField MasterMS2080A supports cable and antenna line sweep measurements with the addition of the Site MasterS331P. The Site Master S331P connects to the Field Master MS2080A using a 1.5 meter USB cable that supplies power and a control interface. The Site Master S331P connects directly to the cable or antenna under test due to its small form factor, eliminating the need for a test port cable. Built in factory calibration data means measurements can be taken immediately on connecting to the test system, eliminating the need for a user calibration and reducing overall test time. When testing in extreme conditions and a user calibration is required, a wizard guides the user through an OPEN/SHORT/LOAD calibration cycle. To ensure measurement integrity when testing antennas in an open field environment, the RF immunity mode rejects measurement errors resulting from other sources of RF power in the test environment. The Site Master S331P is available in two frequency ranges, 150 kHz to 4 GHz that covers the common PMR and cellular bands, and the 150 kHz to 6 GHz model covers all of the 5GNR FR1 band. The CAA user interface was developed using over 30 years' experience of line sweeping measurements in the field. The Site Master S331P delivers the fastest sweep speeds in a field portable instrument, making it ideal when searching for faults and monitoring results traces while tapping connectors and cable clamps. A dual measurement display shows VSWR (Return Loss) and Distance-to-Fault (DTF) on a single screen. All common cable performance data is stored in memory and generation of close out reports is simplified with file formats that can be read into Anritsu's industry standard Line Sweep Tools PC results processing application.

Simultaneous Display of Cable and Antenna Return Loss and Distance-to-Fault (DTF)



Field Master MS2080A Supports Integration with USB Power Sensors for Maximum Measurement Accuracy

High Accuracy Power Meter (Option 19)

The Field MasterMS2080A delivers power meter accuracy power measurements when coupled with Anritsu's USB power sensors. Connect a supported USB sensor directly to any of the Field Master MS2080A USB ports.

Microwave CW Power Sensors: MA24330A/MA24340A/MA24350A

Universal Power Sensors: MA24208A/MA24218A

RF CW Power Sensors: MA24108A/MA24118A/MA24126A

Average Power Sensors: MA24106A

Inline Power Sensors: MA24103A/MA24105A

When using the Field Master MS2080A to install a new cellular or LMR base station, it is important to set the transmitter power precisely. Too much transmit power can result in interference with other transmitters or adjacent cells, and too little power results in reduced cell site coverage. Option 19 provides a traditional analog power meter display with a fast-responding needle and complementary digital read out. Limit lines with audible alarms aide testing to defined specifications and a Max Hold feature is ideal when tuning for maximum power. Select the MA241xxA series sensors for RF CW and MA243x0A series sensors for microwave CW measurements. The MA242xxA power sensors have a cascaded diode architecture to enable accurate power measurements on modulated signals. All USB sensors are powered over the USB cable so no additional batteries are required.

Laptop PC Running Remote GUI Application with Wi-Fi Connection to the Field Master MS2080A

Remote Control and Connectivity

Ethernet, Wi-Fi, and USBTMC interfaces are standard on the Field Master MS2080A, providing flexible options for remote control. Use Wi-Fi 802.11b/g/a/n to connect to wireless routers for common applications, including downloading digital maps and automatic software updates. A built in web browser enables internet access, necessary when public Wi-Fi hotspots require browser based network authentication. The USBTMC interface is ideal for controlling the Field Master MS2080A from an Android smartphone, tablet, or PC.
Standard SCPI commands provide a familiar programming language for users who plan to write their own test programs.
The Field Master MS2080A Anritsu Remote and Report Tools (ARRT) offers a remote user interface. Users can take full control of the Field Master MS2080A from any remote location using this PC application. The GUI replicates the instrument touchscreen on a standard PC and can be used for remote instrument control and results and trace monitoring. The tool enables saving of traces directly to the PC file system where markers and limit lines can be added and adjusted retrospectively.

Secure Data (Option 7)

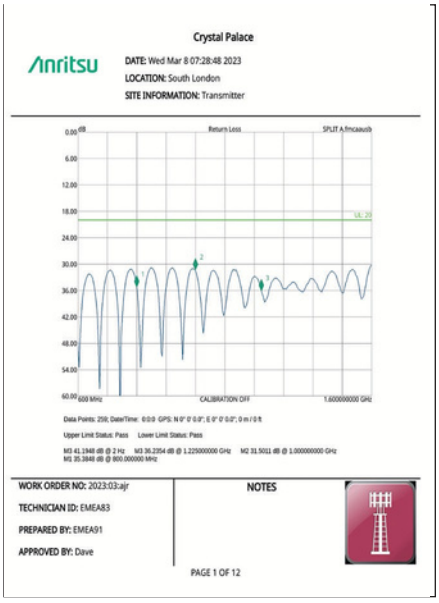
Data security is an essential requirement for many organizations including security agencies and the aerospace & defense industry. Option 7 has been developed to enable operation of the instrument in sensitive areas. The option prevents any data or settings from being saved internally; it will only save to an external drive, including encrypted drives. Additionally, the instrument frequency, amplitude, and settings are masked from the GUI, preventing the exposure of sensitive information. Option 7 also blocks the Ethernet and USBTMC interfaces to prevent unauthorized remote access to the unit.

Secure Communication (Option 17)

In addition to data security the connection between the instrument and a PC must also be secured to prevent any data from being compromised during transmission. Option 17 creates a secure tunnel to allow the PC to communicate with the instrument. This is done by encrypting the data being transferred and using security certificates to verify both the PC and the instrument. User certificates are supported to ensure compliance with internal security requirements. Option 17 is a stand-alone option or can be used to complement Option 7.

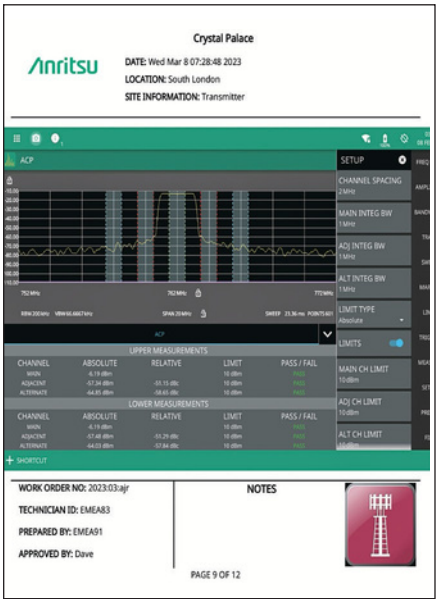
Built-in Report Generator

Field technicians installing or testing base stations typically need to create a “Close Out” report to confirm all tests have been completed and passed limits. Base station installations generate multiple trace results and the creation of the report can be time consuming. The Field Master MS2080A includes a comprehensive built in report generator that simplifies this process.



Trace Files

Photographs



Screen Captures

The reports are created using a Report Generator tool. Reports can include any combination of trace files (typically cable and antenna analyzer traces), screen captures (to include spectrum and 5G results) and photographs (taken on a smartphone and transferred to the instruments file memory).
Each report is user configurable to include essential site information such as GPS location, site name and contractor name. A company logo can be added to further customize the report. Once completed, the report is saved as a PDF and HTML file, for printing or distributing by email.

Ordering Information

Model Number	Description
MS2080A	Field Master Spectrum Analyzer (requires Option 704 or 706) Spectrum Analyzer, 9 kHz to 20 GHz Spectrum Analyzer, 9 kHz to 6 GHz
Options	
MS2080A-0704	
MS2080A-0706	
MS2080A-0003*	Time Domain Reflectometry (TDR) Measurement (requires S331P, sold separately)
MS2080A-0006	Remove Wi-Fi and Bluetooth
MS2080A-0007	Secure Data
MS2080A-0017	Secure Communication
MS2080A-0019*	High Accuracy Power Meter (requires USB power sensor, sold separately)
MS2080A-0020	Tracking Generator
MS2080A-0024*	Interference Finder (Option 31 and directional antenna recommended, sold separately)
MS2080A-0027*	Channel Scanner
MS2080A-0031*	GNSS Receiver (requires GNSS antenna, sold separately)
MS2080A-0090*	Gated Sweep
MS2080A-0102*	40 MHz Analysis Bandwidth
MS2080A-0126*	IQ Waveform Capture (includes MX280005A IQ Signal Master base feature set)
MS2080A-0127*	IQ Waveform Streaming (includes MX280005A IQ Signal Master base feature set) (requires Option 126)
MS2080A-0128*	Enable Vector Signal Analysis (requires Option 126)
MS2080A-0199*	Real-Time Spectrum Analysis (RTSA)
MS2080A-0400*	Enable Vision Monitor
MS2080A-0407*	Enable Vision High-Speed Port Scanner
MS2080A-0431*	Coverage Mapping (requires Option 31, cannot be ordered with Option 9031)
MS2080A-0444*	EMF Measurement (requires Anritsu isotropic antenna, sold separately)
MS2080A-0509*	AM/FM Modulation Measurements
MS2080A-0871*	WCDMA FDD Measurements (requires Option 31)
MS2080A-0883*	LTE FDD/TDD Measurements (requires Option 31)
MS2080A-0888*	5G NR Downlink Measurements (requires Option 31)
MS2080A-xxxx-0097	Accredited Calibration to ISO17025 and ANSI/NCSL Z540-1 (xxxx is the frequency option number)
MS2080A-xxxx-0098	Standard Calibration to ISO17025 and ANSI/NCSL Z540-1 (xxxx is the frequency option number)
MS2080A-xxxx-0099	Premium Calibration to ISO17025 and ANSI/NCSL Z540-1 plus test data (xxxx is the frequency option number)
***Time-Limited Options**	Options marked with an asterisk are offered as a 90-day time limited option by ordering as a –9xxx series option. For example, MS2080A-9888 is the 90-day time limited option for 5 GNR FDD/TDD FR1 Measurements. The option start time begins when the user first activates the option.
Supporting Software	MX280001A Vision™ Monitor MX280005A IQ Signal Master™ Vector Modulation Analysis MX280007A Mobile InterferenceHunter™ ARRT Anritsu Remote and Report Tools
	For a full list of all accessories for the Field Master MS2080A, please refer to the Technical Data Sheet (PN: 11410-01001).

WAVETEL
RENNES | PARIS | LARMOR-PLAGE | LANNION

Contact :
+33(0)2 97 35 36 12 | contact@wavetel.fr | www.wavetel.fr

Anritsu Advancing beyond

Specifications are subject to change without notice.

• **United States**
Anritsu Americas Sales Company
490 Jarvis Drive, Morgan Hill, CA 95037-2809, U.S.A.
Phone: +1-800-Anritsu (1-800-267-4878)

• **Canada**
Anritsu Electronics Ltd.
Americas Sales and Support
490 Jarvis Drive, Morgan Hill, CA 95037-2809, U.S.A.
Phone: +1-800-Anritsu (1-800-267-4878)

• **Brazil**
Anritsu Eletrônica Ltda.
Praça Amadeu Amaral, 27 - 1 Andar
01327-010 - Bela Vista - Sao Paulo - SP, Brazil
Phone: +55-11-3283-2511
Fax: +55-11-3288-6940

• **Mexico**
Anritsu Company, S.A. de C.V.
Blvd Miguel de Cervantes Saavedra #169 Piso 1, Col. Granada
Mexico, Ciudad de Mexico, 11520, MEXICO
Phone: +52-55-4169-7104

• **United Kingdom**
Anritsu EMEA Limited
200 Capability Green, Luton, Bedfordshire, LU1 3LU, U.K.
Phone: +44-1582-433200
Fax: +44-1582-731303

• **France**
Anritsu SA
12 avenue du Québec, Immeuble Goyave,
91140 VILLEBON SUR YVETTE, France
Phone: +33-1-60-92-15-50

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

• **Italy**
Anritsu S.R.L.
Spaces Eur Arte, Viale dell'Arte 25, 00144 Roma, Italy
Phone: +39-6-509-9711

• **Sweden**
Anritsu AB
Kistagången 20 B, 2 tr, 164 40 Kista, Sweden
Phone: +46-8-534-707-00

• **Finland**
Anritsu AB
Technopolis Aviapolis, Teknobulevardi 3-5 (D208.5.),
FI-01530 Vantaa, Finland
Phone: +358-20-741-8100

• **Denmark**
Anritsu A/S
c/o Regus Winghouse, Ørestads Boulevard 73, 4th floor,
2300 Copenhagen S, Denmark
Phone: +45-7211-2200

• **Spain**
Anritsu EMEA GmbH
Representation Office in Spain
Calle Manzanares 4, Primera planta, 28005 Madrid, Spain
Phone: +34-91-572-6761

• **Austria**
Anritsu EMEA GmbH
Am Belvedere 10, A-1100 Vienna, Austria
Phone: +43-(0)1-717-28-710

• **United Arab Emirates**
Anritsu A/S
Office No. 164, Building 17, Dubai Internet City
P. O. Box – 501901, Dubai, United Arab Emirates
Phone: +971-4-3758479

• **India**
ANRITSU INDIA PRIVATE LIMITED
6th Floor, Indiqube ETA, No.38/4, Adjacent to EMC2,
Doddanekundi, Outer Ring Road, Bengaluru – 560048, India
Phone: +91-80-6728-1300
Fax: +91-80-6728-1301

• **Singapore**
ANRITSU PTE LTD
1 Jalan Kilang Timor, #07-04/06 Pacific Tech Centre
Singapore 159303
Phone: +65-6282-2400
Fax: +65-6282-2533

• **Vietnam**
ANRITSU COMPANY LIMITED
16th Floor, Peakview Tower, 36 Hoang Cau Street, O Cho Dua Ward,
Dong Da District, Hanoi, Vietnam
Phone: +84-24-3201-2730

• **P.R. China (Shanghai)**
Anritsu (China) Co., Ltd.
Room 2301-2303, Tower A, New Caohejing International Business
Center No. 391 Gui Ping Road, Shanghai, 200233, P.R. China
Phone: +86-21-6237-0898
Fax: +86-21-6237-0899

• **P.R. China (Hong Kong)**
ANRITSU COMPANY LIMITED
Unit 1302, 13th Floor, New East Ocean Center,
No.9 Science Museum Road, TsimShaTsui East,
Kowloon, Hong Kong
Phone: +852-2301-4980
Fax: +852-2301-3545

• **Japan**
Anritsu Corporation
8-5, Tamura-cho, Atsugi-shi, Kanagawa, 243-0016 Japan
Phone: +81-46-296-6509
Fax: +81-46-225-8352

• **Korea**
Anritsu Corporation Limited
8F, A TOWER, 20, Gwacheondaero 7-gil, Gwacheon-si,
Gyeonggi-do, 13840, Republic of Korea
Phone: +82-2-6259-7300
Fax: +82-2-6259-7301

• **Australia**
Anritsu Pty Ltd
Unit 20, 21-35 Ricketts Road, Mount Waverley, Victoria 3149, 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

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