

**Anritsu** envision : ensure

# Signal Analyzer Spectrum Analyzer Selection Guide



## Anritsu Signal Analyzers/Spectrum Analyzers

Solve all your measurement needs with Anritsu's wide line-up of signal and spectrum analyzers, ranging from high-performance and multi-function, high-end models for R&D to handheld types for field use.

### Supported Frequencies

Model/Name	Frequency Coverage						Remarks
	50 Hz	9 kHz	1 GHz	10 GHz	25 GHz	50 GHz	
Signal Analyzer MS2690A/91A/92A							50Hz to 6 GHz/13.5 GHz/26.5 GHz
Signal Analyzer MS2840A series							9 kHz to 3.6 GHz/6 GHz 9 kHz to 26.5 GHz/44.5 GHz: 50 GHz to 90 GHz with high performance waveguide mixer 325 GHz maximum with harmonic mixer
Signal Analyzer MS2830A series							9 kHz to 3.6 GHz/6 GHz/13.5 GHz 9 kHz to 26.5 GHz/43 GHz: 50 GHz to 90 GHz with high performance waveguide mixer 325 GHz maximum with harmonic mixer
Spectrum Master MS2720T							9 kHz to 9 GHz/13 GHz/20 GHz/32 GHz/43 GHz
BTS Master MT8220T							150 kHz to 7.1 GHz
Cell Master MT8212E/13E							9 kHz to 4 GHz/6 GHz
Spectrum Master MS2712E/13E							9 kHz to 4 GHz/6 GHz
Spectrum Master MS2711E							9 kHz to 3 GHz
Remote Spectrum Monitor MS27101A							9 kHz to 6 GHz
Remote Spectrum Monitor MS27102A							9 kHz to 6 GHz
Remote Spectrum Monitor MS27103A							9 kHz to 6 GHz

### Application Comparison Chart (Modulation Analysis)

Measurement Applications	Bench-top			Handheld				
	MS2690A/ 91A/92A	MS2840A series	MS2830A series	MS2720T	MT8220T	MT8212E/13E	MS2712E/13E	MS2711E
LTE	✓		✓	✓*	✓*	✓*	✓*	
W-CDMA/HSPA	✓		✓	✓*	✓*	✓*	✓*	
HSPA Evolution	✓		✓					
GSM/EDGE	✓		✓	✓*	✓*	✓*	✓*	
EDGE Evolution	✓		✓					
CDMA2000	✓*		✓*	✓*	✓*	✓*	✓*	
1xEV-DO	✓*		✓*	✓*	✓*	✓*	✓*	
TD-SCDMA/HSDPA	✓		✓	✓*	✓*	✓*	✓*	
Fixed WiMAX				✓*	✓*	✓*	✓*	
Mobile WiMAX	✓		✓	✓*	✓*	✓*	✓*	
WLAN	✓		✓					
Flexible Digital Modulation Analysis	✓	✓	✓					
ISDB-T	✓		✓			✓	✓	
ISDB-Tmm/ ISDB-Tsb	✓		✓					
DVB-T/H						✓	✓	
Phase Noise	✓	✓	✓					
Noise Figure	✓	✓	✓					
AM/FM tune and listen				✓	✓	✓	✓	✓
AM/FM/PM Demodulator		✓	✓	✓			✓	✓
Audio Analyzer/Generator			✓					
CPRI RF					✓	✓	✓	

\*: Down link/Forward link only

## Key Specifications

### Bench-top Type

Overview		MS2690A/91A/92A	MS2840A-040/041	MS2840A-044/046	MS2830A-040/041/043	MS2830A-044/045
Performance		◆◆◆◆◆	◆◆◆◆◆	◆◆◆◆◆	◆◆◆◆	◆◆◆◆
Frequency Range		50 Hz to 6 GHz/ 13.5 GHz/26.5 GHz	9 kHz to 3.6 GHz/6 GHz	9 kHz to 26.5 GHz/ 44.5 GHz (325 GHz)	9 kHz to 3.6 GHz/ 6 GHz/13.5 GHz	9 kHz to 26.5 GHz/ 43 GHz (325 GHz)
Phase Noise		-116 dBc/Hz (2 GHz, 100 kHz offset)	-133 dBc/Hz*1 (500 MHz, 10 kHz offset)	-123 dBc/Hz (1 GHz, 10 kHz offset)	-118 dBc/Hz*1 (500 MHz, 10 kHz offset)	-115 dBc/Hz (500 MHz, 100 kHz offset)
TOI (1 GHz, without preamp)		+22 dBm	+16 dBm	+16 dBm	+15 dBm	+15 dBm
Displayed Average Noise	1 GHz, without preamp	-155 dBm	-151 dBm	-150 dBm/Hz	-151 dBm	-150 dBm
	1 GHz, with preamp	-166 dBm	-165 dBm	-164 dBm/Hz	-162 dBm	-161 dBm
	5 GHz, without preamp	-152 dBm	-146 dBm	-144 dBm/Hz	-146 dBm	-144 dBm
Standard Attenuator Range/Step		60 dB/2 dB step	60 dB/2 dB step	60 dB/ 2 dB step (044) 10 dB step (046)	60 dB/2 dB step	60 dB/ 2 dB step (044) 10 dB step (045)
Overall Amplitude Accuracy		±0.5 dB	±0.5 dB	±0.5 dB	±0.5 dB	±0.5 dB
Resolution Bandwidth		SPA: 30 Hz to 31.25 MHz VSA: 1 Hz to 10 MHz*1	SPA: 1 Hz to 31.25 MHz VSA: 1 Hz to 10 MHz	SPA: 1 Hz to 31.25 MHz (044) 10 MHz (046) VSA: 1 Hz to 10 MHz	SPA: 1 Hz to 31.25 MHz*1 VSA: 1 Hz to 10 MHz*1	SPA: 1 Hz to 31.25 MHz*1 (044) 10 MHz (045) VSA: 1 Hz to 10 MHz*1
Standard Analysis Bandwidth		31.25 MHz	—	31.25 MHz	—	—
Optional Analysis Bandwidth		125 MHz	125 MHz*2	125 MHz*2	125 MHz*2	125 MHz*2
Maximum Digitize Time (10 MHz span)		5 sec. (std.) 4 hours (opt.)	5 sec.	5 sec.	5 sec.	5 sec.
Signal Generator Option		✓	✓	—	✓	—
Tracking Generator Option		—	—	—	—	—
Battery		—	—	—	—	—

### Handheld Type

Overview		MS2720T (9 GHz)	MS2720T (13 GHz/20 GHz/ 32 GHz/43 GHz)	MT8220T	MT8212E/13E (4 GHz/6 GHz)	MS2712E/13E (4 GHz/6 GHz)	MS2711E
Performance		◆◆◆◆◆	◆◆◆◆◆	◆◆◆◆◆	◆◆◆◆	◆◆◆◆	◆◆◆
Frequency Range		9 kHz to 9 GHz	9 kHz to 43 GHz	150 kHz to 7.1 GHz	9 kHz to 6 GHz	9 kHz to 6 GHz	9 kHz to 3 GHz
Phase Noise (1 GHz, 10 kHz offset)		-108 dBc/Hz	-102 dBc/Hz	-100 dBc/Hz	-100 dBc/Hz	-100 dBc/Hz	-90 dBc/Hz
TOI (1 GHz, without preamp)		+20 dBm*3	+20 dBm*3	+8 dBm*3	+25 dBm*3	+25 dBm*3	+25 dBm*3
Displayed Average Noise	1 GHz, without preamp	-146 dBm	-145 dBm	-137 dBm	-141 dBm	-141 dBm	-141 dBm*4
	1 GHz, with preamp	-160 dBm	-161 dBm	-161 dBm	-157 dBm	-157 dBm	-157 dBm*4
	5 GHz, without preamp	-140 dBm	-142 dBm	-130 dBm	-134 dBm	-134 dBm	—
Standard Attenuator Range/Step		65 dB/5 dB step	65 dB/5 dB step	65 dB/5 dB step	55 dB/5 dB step	55 dB/5 dB step	55 dB/5 dB step
Overall Amplitude Accuracy		±1.3 dB	±1.3 dB	±1.25 dB	±1.25 dB	±1.25 dB	±1.25 dB
Resolution Bandwidth		1 Hz to 10 MHz	1 Hz to 10 MHz	1 Hz to 3 MHz	1 Hz to 3 MHz	1 Hz to 3 MHz	100 Hz to 3 MHz
Standard Analysis Bandwidth		—	—	20 MHz	20 MHz	—	—
Optional Analysis Bandwidth		20 MHz	20 MHz	—	—	20 MHz	—
Maximum Digitize Time (10 MHz span)		—	—	—	—	—	—
Signal Generator Option		—	—	✓	✓	—	—
Tracking Generator Option		✓*5	✓*5	—	✓	✓	✓
Battery		✓	✓	✓	✓	✓	✓
VNA Function		—	—	✓	✓	—	—

\*1: Option

\*2: An image response is received when setting the bandwidth to more than 31.25 MHz.

This can be used when not inputting a signal frequency outside the MS2840A/MS2830A analysis bandwidth (125 MHz max.).

The MS2690A/91A/92A Signal Analyzer series is recommended for other measurement purposes.

\*3: Typical value

\*4: Normalized to 1 Hz RBW

\*5: Available only 9 GHz, 13 GHz and 20 GHz models

Key Specifications

Remote Spectrum Monitor

Overview		MS27101A	MS27102A	MS27103A
Performance		Compact ½ rack model	Weather-proof IP-67 enclosure model	12 (optionally 24) RF IN ports model
Frequency Range		9 kHz to 6 GHz	9 kHz to 6 GHz	9 kHz to 6 GHz
Phase Noise (1 GHz, 10 kHz offset)		−99 dBc/Hz (typ.)	−99 dBc/Hz (typ.)	−99 dBc/Hz (typ.)
TOI (1 GHz, without preamp)		+10 dBm	+10 dBm	+10 dBm
Displayed Average Noise*	1 GHz, without preamp	−145 dBm	−145 dBm	−140 dBm
	1 GHz, with preamp	−162 dBm	−162 dBm	−157 dBm
	5 GHz, without preamp	−138 dBm	−138 dBm	−130 dBm
Standard Attenuator Range/Step		0 to 50 dB (5 dB step)	0 to 50 dB (5 dB step)	0 to 50 dB (5 dB step)
Overall Amplitude Accuracy		±2.5 dB	±2.5 dB	±2.5 to 3.5 dB
Resolution Bandwidth		10 Hz to 3 MHz	10 Hz to 3 MHz	10 Hz to 3 MHz
Standard Analysis Bandwidth		—	—	—
Optional Analysis Bandwidth		—	—	—
Maximum Digitize Time (10 MHz span)		6.7 s	6.7 s	6.7 s
Signal Generator Option		—	—	—
Tracking Generator Option		—	—	—
Battery		—	—	—

⌘: Normalized to 1 Hz RBW

## Key Specifications

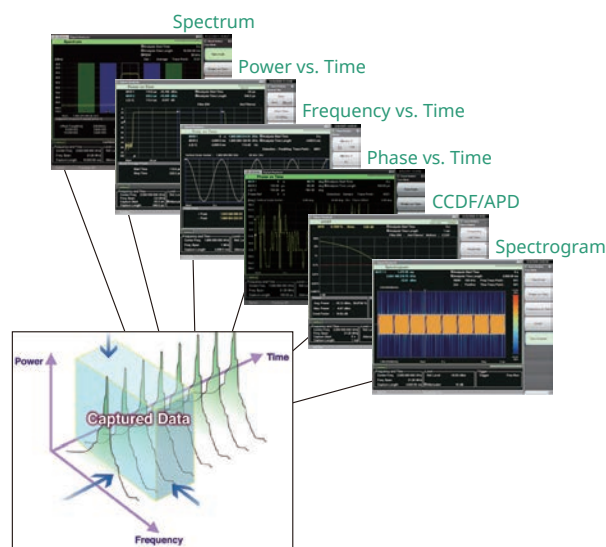
### Signal Analyzer MS2690A/91A/92A, MS2840A series, MS2830A series Recommended Model for Target Market

Market	DUT	Phase	MS2690A/91A/92A	MS2840A series	MS2830A series
Cellular Base Stations - 3GPP LTE, W-CDMA/HSPA, GSM/EDGE ...	RF Devices/Modules	R&D, Production	✓✓		
	Base Stations	R&D	✓✓		
		Production	✓	✓✓*	✓✓
Cellular Handsets - 3GPP LTE, W-CDMA/HSPA, GSM/EDGE. ...	RF Devices/Modules	R&D, Production	✓	✓✓*	✓✓
	Handsets	R&D	✓	✓✓*	✓✓
		Production		✓✓*	✓✓
Mobile WiMAX	RF Devices/Modules	R&D, Production	✓✓		
	Base Stations/Handsets	R&D	✓✓	✓*	✓
		Production	✓	✓✓*	✓✓
WLAN	RF Devices/Modules	Production	✓✓	✓*	✓
Public/Service Communications			✓	✓✓	✓✓
Microwave Links			✓✓	✓✓	✓✓
Other Communications			✓✓	✓	✓
Broadcasting - ISDB-Tmm, ISDB-T, ISDB-Tsb			✓		✓✓
R&D			✓✓	✓	✓
Education			✓	✓	✓✓
Analog (FM/AM/ΦM)				✓	✓✓

★: Available for spectrum measurement without modulation analysis.

### Vector Signal Analysis (VSA) Function

Seamless signal capture and VSA analysis in multiple domains make it easy to evaluate burst-signal responses and capture degraded spectrum transients, etc., which cannot be checked by conventional sweep spectrum analyzers. This greatly improves design verification and troubleshooting efficiency.



## SIGNAL ANALYZER

MS2690A/MS2691A/MS2692A 50 Hz to 6 GHz/13.5 GHz/26.5 GHz

### Next-Generation Signal Analyzer for Wireless Solutions

- Total level accuracy:  $\pm 0.3$  dB (typ.)
- Dynamic range\*: 177 dB ★: (TOI - DANL)  
TOI:  $\geq +22$  dBm, DANL:  $-155$  dBm/Hz
- Analysis bandwidth: 31.25 MHz (Std.), 125 MHz max. (Opt.)
- Modulation Analysis Software  
LTE/LTE-Advanced, WiMAX, WLAN (IEEE802.11ac/a/b/g/n/j/p), GSM/GPRS/EDGE, W-CDMA/HSPA/HSPA Evolution, etc.



Signal Analyzer MS2690A/91A/92A has the excellent total level accuracy, dynamic range and performance of a high-end spectrum analyzer. Not only can it capture wideband signals but FFT technology supports multifunction signal analyses in both the time and frequency domains. Moreover, the built-in signal generator function outputs both continuous wave (CW) and modulated signals for use as a reference signal source.



## 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 (Std.)
- Analysis Bandwidth: 31.25 MHz (Std.), 125 MHz max. (Opt.)
- Measurement applications (options): Phase Noise Measurement, Noise Figure Measurement, Vector and Analog Modulation Analysis, BER Measurement

The MS2840A series of spectrum analyzers offers top-class phase noise performance in a middle-price -range model. In particular, installing the MS2840A-066 option in the MS2840A-040/041 supports excellent phase noise performance exceeding that of high-end models. In addition to applications in development and manufacturing of wireless equipment and Tx devices, the MS2840A-040/041 also offers cost-performance for fundamental future research and development, which could only be supported by top-class analyzers previously. It has a built-in signal analyzer function with a wide 31.25 MHz resolution 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.



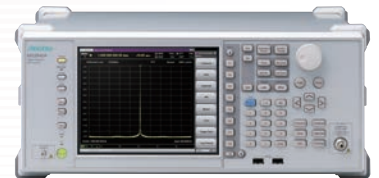
## SIGNAL ANALYZER

MS2840A series (MS2840A-044/046) 9 kHz to 26.5 GHz/44.5 GHz (26.5 GHz to 325 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 external high performance waveguide mixer (50 GHz to 90 GHz) or harmonic mixer (up to 325 GHz)
- Built-in pre-amplifier; 44.5 GHz max. (Opt.)
- Analysis Bandwidth: 31.25 MHz (Std.), 125 MHz max. (Opt.)
- Measurement applications (options): Phase Noise Measurement, Noise Figure Measurement, Vector Modulation Analysis and Analog Measurement (FM/ΦM/AM)

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/UHF business radio, 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. Additionally, spectrum measurements up to 325 GHz are supported by connecting the External Mixer (Harmonic Mixer) MA2740C/MA2750C series.



## SIGNAL ANALYZER

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

### Support Tx Test by Excellent SSB Performance\* Necessary for a Spurious Test and Various Modulation Analysis Software

- Total level accuracy:  $\pm 0.3$  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\*  
\*: Required MS2830A-066
- Modulation Analysis: LTE/LTE-Advanced, Analog Modulation, Digital Modulation, etc.

The MS2830A series of spectrum analyzers is based on the concept of speed, high-performance, and low-cost, coupled with customization by installing signal analyzer, vector signal generator, and analog signal generator options. The optional signal analyzer function captures wideband signals for versatile analyses in the time and frequency domains using FFT technology. Adding options supports analysis of various modulation types as well as audio analyzer and NF measurement functions.



MS2830A-041

## SIGNAL ANALYZER

MS2830A Microwave series (MS2830A-044/045) 9 kHz to 26.5 GHz/43 GHz (26.5 GHz to 325 GHz)

### For the Development & Manufacturing of the Microwave Products. Spectrum Analyzer + Signal Analyzer

- Total level accuracy:  $\pm 0.3$  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

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 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 MS2840A/MS2830A for reflection in the measurement values.



MA2808A

The MA2806A/MA2808A is a high-performance waveguide mixer for connection to the 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 (1.875 GHz) of the MS2840A/MS2830A, it not only supports image-response-free measurements, but can also be used for spectrum mask measurements of wideband signals, such as 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.

### Measurement Method Performance Comparison

Measurement Method	Product Selection Points				
	Min. Sensitivity	Image Response	P1dB	System Config	Mixer Conversion Loss Calibration
<b>Anritsu Solution</b> 	✓ Good	✓ Far	✓ High	✓ Simple	✓ No Need
<b>Harmonic Mixer</b> 	*1 Bad	*2 Very Close	✓ High	✓ Simple	*4 No Need
<b>Down Converter</b> 	✓ Good	✓✓ Very Far	*3 Low	Complex	*5 Need

- \*1: High noise floor level and narrow dynamic range due to high mixer conversion order  
 \*2: Low IF frequency depending on spectrum analyzer causes occurrence of image response generated in measurement range  
 \*3: Narrow dynamic range due to mixer P1dB performance of only  $-10$  to  $-5$  dBm  
 \*4: Different calibration procedure depending on spectrum analyzer used  
 \*5: Requires mixer conversion loss data for measurement range because any IF frequency can be set

## SPECTRUM MASTER

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

### High Performance over Frequency Range up to 43 GHz in Compact Size

- Covers microwave band (9 kHz to 43 GHz)
- Dynamic Range: >106 dB\*<sup>1</sup>
- Options for various modulation analyses and RF measurements  
LTE, W-CDMA/HSDPA, CDMA2000, Mobile WiMAX
- Tracking Generator (Signal Source)\*<sup>2</sup>, Interference Analyzer, etc

\*1: 2/3 (TOI – DANL), RBW: 1 Hz, 2.4 GHz

\*2: With 9 GHz/13 GHz/20 GHz models

The MS2720T covers a frequency range from 9 kHz to 43 GHz with high-reproducibility measurements for various fields, including mobile base station registration inspection and microwave circuit maintenance.



## SPECTRUM MASTER

MS2712E/MS2713E 9 kHz to 4 GHz/6 GHz (0 Hz settable)

### The Reliable Field Measurement Partner

- Various measurement functions: Occupied Bandwidth, Channel Power, Field Intensity measurements
- Dynamic Range: >102 dB\*
- High Sensitivity Measurement: -162 dBm (Typ.)
- Large, 8.4-inch bright touch screen
- Fast warm-up time of less than 5 minutes
- Continuous battery operation of more than 3 hours
- CPRI RF (Opt.)

\*: 2/3 (TOI – DANL), RBW: 1 Hz, 2.4 GHz

The MS2712E/13E is a handheld spectrum analyzer with a full range of versatile functions for field measurements. In addition to spectrum analyzer functions, it also supports field strength measurements, interference wave adjustments, and modulation analyses functions for various systems. The easy-to-use, touch-panel GUI simplifies both operation and measurement.



## SPECTRUM MASTER

MS2711E 9 kHz to 3 GHz

### The Reliable Field Measurement Partner

- Compact and lightweight (3.45 kg) with better than 3 hours of continuous battery operation
- Spurious, Occupied Bandwidth, Field Intensity measurements
- Tracking Generator: 500 kHz to 3.0 GHz
- Dynamic Range: >85 dB\*

\*: 2/3 (TOI – DANL), RBW: 100 Hz

The MS2711E is a low-cost, high-performance handheld spectrum analyzer. In addition to general-purpose spectrum analyses, installing various measurement options, such as unwanted wave analysis and channel scanner functions, etc., support this powerful field measurement platform in a compact, lightweight, battery operated handheld case.





## BTS MASTER

MT8220T    150 kHz to 7.1 GHz

### All-in-one Mobile Base Station Measurements

- Frequency Range: 150 kHz to 7.1 GHz (Spectrum Analyzer)  
400 MHz to 6 GHz (Cable and Antenna Analyzer)
- 3G, LTE signal analyzers
- Vector Signal Generator
- High Accuracy USB Power Meter
- Interference Analyzer with Interference Mapping, GPS
- CPRI RF (Opt.)



The MT8220T incorporates a spectrum analyzer, cable/antenna analyzer, and built-in power meter as the basic configuration with options supporting 3G and LTE modulation analyses. Tests of Rx characteristics are also supported by installing the vector signal generator option.

## CELL MASTER

MT8212E/MT8213E    9 kHz to 4 GHz/6 GHz

### Supports 3G to LTE Modulation Analysis

- Frequency Range  
Spectrum Analyzer: 9 kHz to 4 GHz (MT8212E), up to 6 GHz (MT8213E)  
Cable and Antenna Analyzer: 2 MHz to 4 GHz (MT8212E), up to 6 GHz (MT8213E)
- 3G, LTE (Modulation Analysis Bandwidth: 20 MHz max.), WiMAX signal analyzers
- High Accuracy USB Power Meter
- Interference Analyzer with Interference Mapping, GPS
- Indoor and outdoor coverage mapping
- Easy-to-use Touch screen
- CPRI RF (Opt.)



The MT8212E/13E incorporates a spectrum analyzer and cable/antenna analyzer as the basic configuration with options supporting 3G, LTE, and WiMax modulation analyses. In addition, it has all-in-one support for measurements such as cable and antenna VSWR, Distance To Fault (DTF) etc. The easy-to-use touch panel with screen modes for various lighting environments helps improve work efficiency.

## REMOTE SPECTRUM MONITOR

MS27101A 9 kHz to 6 GHz

### Spectrum Analyzer for Monitoring and Inspecting the Causes of Wireless Interference

- Remote control of spectrum analyzer operation
- 1U half-rackmount size for easy system installation
- High-speed sweeping using FFT technology captures instantaneous signals
- Estimates interference source location using TDOA dedicated software
- Supports long-term spectrum monitoring using dedicated software



The MS27101A is a 1U half-rackmount spectrum analyzer especially for spectrum monitoring.

It can be remotely controlled over Ethernet from the back office for on-site radio-wave monitoring. Dedicated software supports long-term recording as well as estimates of inspection target signal source locations using multiple device data.

## REMOTE SPECTRUM MONITOR

MS27102A 9 kHz to 6 GHz

### Spectrum Analyzer for Monitoring and Inspecting the Causes of Wireless Interference

- Remote control of spectrum analyzer operation
- Waterproof construction for outside use
- High-speed sweeping using FFT technology captures instantaneous signals
- Estimates interference source location using TDOA dedicated software
- Supports long-term spectrum monitoring using dedicated software



The MS27102A is a water and corrosion-proof cabinet enables spectrum monitoring at outside locations. It can be remotely controlled over Ethernet from the back office for on-site radio-wave monitoring. Dedicated software supports long-term recording as well as estimates of inspection target signal source locations using multiple device data.

## REMOTE SPECTRUM MONITOR

MS27103A 9 kHz to 6 GHz

### Spectrum Analyzer for Monitoring and Inspecting the Causes of Wireless Interference

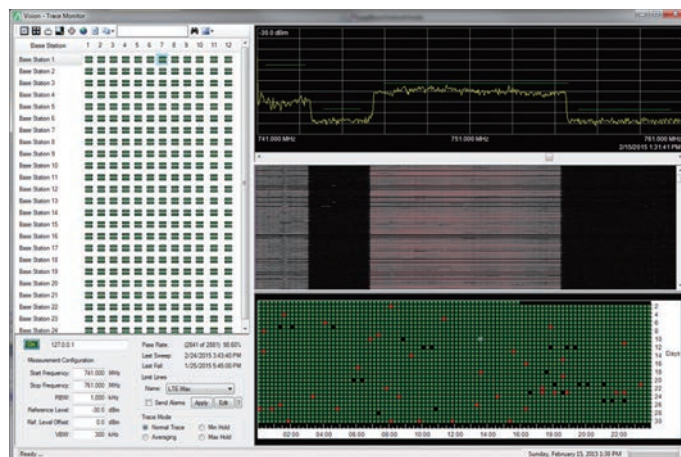
- Remote control of spectrum analyzer operation
- 12 ports as standard with optional expansion to 24 ports eliminates need for external switches
- High-speed sweeping using FFT technology captures instantaneous signals
- Estimates interference source location using TDOA dedicated software
- Supports long-term spectrum monitoring using dedicated software



The MS27103A has 12 RF ports as standard that can be expanded optionally to 24 ports, facilitating multiport spectrum monitoring. Switching antennas at different frequencies using these multi-ports is convenient when monitoring signals by switching directional antennas. It can be remotely controlled over Ethernet from the back office for on-site radio-wave monitoring. Dedicated software supports long-term recording as well as estimates of inspection target signal source locations using multiple device data.

### Vision™ Software MX280001A

The "Vision" dedicated remote spectrum monitoring software records long-term spectrum monitoring data as well as remote monitoring at multiple spectrum analyzers. Captured data is displayed using graphs showing dates and times when limit lines have been exceeded.



**Note:**

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Specifications are subject to change without notice.

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