Field Master Pro™ MS2090A
9 kHz to 9/14/20/26.5/32/43.5/54 GHz

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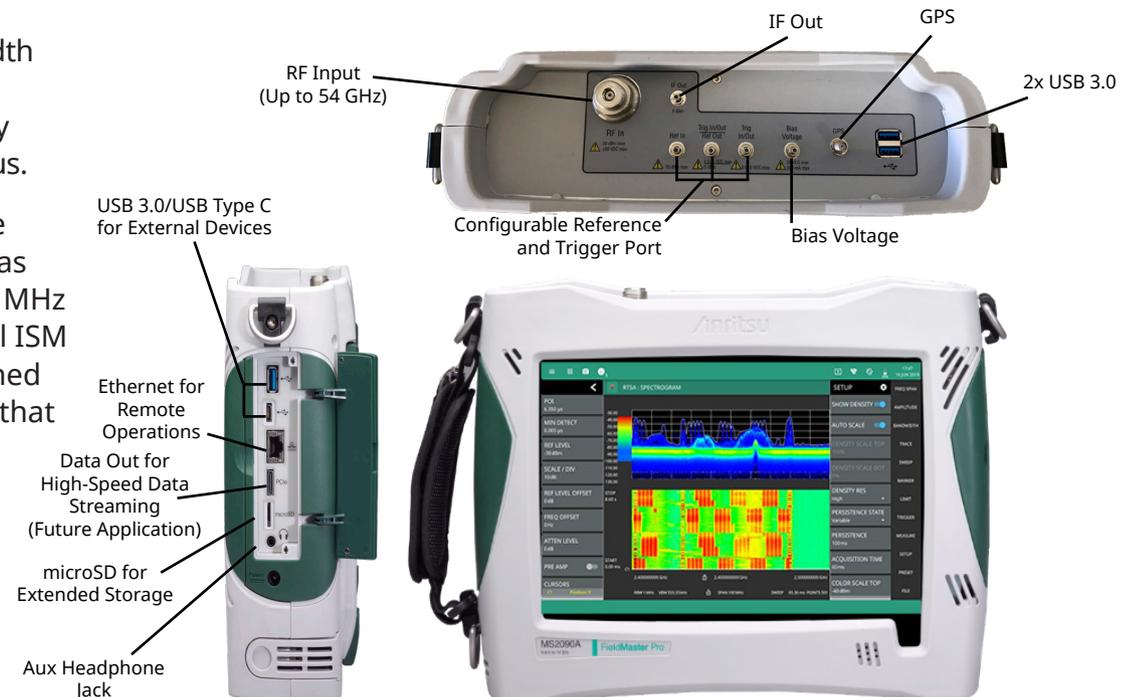
High-Performance Real-Time Spectrum Analyzer

Anritsu's Field Master Pro MS2090A real-time spectrum analyzer delivers performance never previously available in a compact, handheld instrument. With continuous frequency coverage from 9 kHz to 54 GHz, the Field Master Pro MS2090A is specifically designed to meet the challenges of 5G test while maintaining support for a full range of other wireless technologies in use today, including: wireless backhaul, aerospace/defense, satellite systems, and radar.

The Field Master Pro MS2090A delivers the highest levels of RF performance available in a handheld, touchscreen spectrum analyzer, with a displayed average noise level (DANL) of -164 dBm and Third Order Intercept (TOI) of +20 dBm (typical). This makes measurements such as spectrum clearing, radio alignment, harmonic, and distortion even more accurate than previously possible. For modulation measurements on digital systems, 100 MHz modulation bandwidth coupled with best-in-class phase noise performance maximizes measurement precision, while ±0.5 dB typical amplitude accuracy provides confidence when testing transmitter power and spurious.

Ruggedized for field use, all versions provide a comprehensive range of features to speed and simplify measurement as well as enhance usability. The RTSA options offer spans of 22, 55, 110 MHz to provide capability for cellular interference monitoring to full ISM band signal analysis. In addition to being a full span swept-tuned spectrum analyzer, all versions include a spectrogram display that helps monitor the RF spectrum for intermittent or interfering signals. Integrated channel power and occupied bandwidth measurements simplify the measuring and characterizing of common radio transmission.

Field Master Pro MS2090A Highlights

- RTSA bandwidth: 20 MHz (standard) up to 110 MHz (optional)
- RTSA POI: 22 MHz = 7 µs, 55 MHz = 4.45 µs, 110 MHz = 2.06 µs
- 9 kHz to 9/14/20/26.5/32/43.5/54 GHz
- DANL: -164 dBm (with preamp)
- TOI: +20 dBm (typical)
- Analysis bandwidth: up to 100 MHz
- Amp range: DANL to +30 dBm
- Phase noise at 1 GHz: -110 dBc/Hz @ 100 kHz offset (typical)
- Demodulation: 5GNR, modulation quality with SSB signal analysis and auto SSB detect
- Resolution bandwidth (RBW): 1 Hz to 10 MHz (up to 40 MHz in RTSA)
- Amplitude accuracy at < 14 GHz: ± 1.3 dB (± 0.5 dB, typical)
- Zero span with 60 ns minimum sweep time

RF Input (Up to 54 GHz)
IF Out
GPS
2x USB 3.0
Configurable Reference and Trigger Port
Bias Voltage
USB 3.0/USB Type C for External Devices
Ethernet for Remote Operations
Data Out for High-Speed Data Streaming (Future Application)
microSD for Extended Storage
Aux Headphone Jack

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Key Specifications

Performance	
Frequency Range	MS2090A-0709 - 9 kHz to 9 GHz MS2090A-0714 - 9 kHz to 14 GHz MS2090A-0720 - 9 kHz to 20 GHz MS2090A-0726 - 9 kHz to 26.5 GHz MS2090A-0732 - 9 kHz to 32 GHz MS2090A-0743 - 9 kHz to 43.5 GHz MS2090A-0754 - 9 kHz to 54 GHz
DANL (w/preamp)	-164 dBm
TOI	+20 dBm
Analysis bandwidth	Up to 100 MHz
Demodulation	5G NR SSB measurements (RSRP, RSRQ, SINR, EVM)
Amp range	DANL to +30 dBm
Phase noise at 1 GHz	-110 dBc/Hz @ 100 kHz offset (typical)
Resolution bandwidth (RBW)	1 Hz to 10 MHz with 0.1 Hz resolution
Input SWR	1.5
Amplitude accuracy	< 14 GHz ±1.3 dB (±0.5 dB, typical)
RTSA bandwidth	22 MHz, 55 MHz, or 110 MHz (option dependent)

Key Features

Feature	Specification
Display	10.1 in, 1280 x 800 color capacitive touchscreen
Traces	6
Detectors	Avg/RMS, Peak, Negative
Gated sweep	For time gated spectrum measurements
Markers	12 markers assignable to any trace
Limit lines	Complex limit lines with Pass/Fail
5G waveform IQ capture	Capture and export
Connectivity	802.11 and Bluetooth
GNSS	GPS and GLONASS
Interfaces	USB 3.0 Ethernet
Battery life	> 2 hours (function dependent)
Size	314 mm x 235 mm x 95 mm (12.4 in x 9.25 in x 3.74 in)
Weight	MS2090A-0709, -0714, -0720: 5.06 kg (11.15 lb) MS2090A-0726, -0732, -0743, -0754: 5.4 kg (11.9 lb)

Standard Accessories

Part Number	Description
2000-1371-R	Ethernet cable, 7ft/213 cm
2000-1931-R	Stylus
3-2000-1928	Shoulder strap
633-75	Li-Ion Battery
40-204-R	AC/DC power supply (Field Master™ series)
2000-1859-R	USB cable, USB 3.0 Type-A to Type-C, 1m
2000-1938-R	SMB plug to BNC jack adapter
806-366-R	BNC to SMB cable, 1 m
	Certificate of Calibration and Conformance

Instrument Options

Model Number	Description
MS2090A-0031	GPS Receiver (Requires GPS Antenna, sold separately) - 2000-1528-R GPS Antenna, SMA(m) with 5 m (15 ft) cable, requires 5 VDC - 2000-1652-R GPS Antenna, SMA(m) with 0.3 m (1 ft) cable, requires 3.3 or 5 VDC - 2000-1760-R GPS antenna, SMA(m) with no cable, 2.5 to 3.7 VDC
MS2090A-0103	50 MHz analysis bandwidth (for MS2090A 9, 14, 20, or 26.5 GHz units only)
MS2090A-0104	100 MHz analysis bandwidth (for MS2090A 9, 14, 20, or 26.5 GHz units only
MS2090A-0199	Real-time spectrum analyzer
MS2090A-0888	5G NR downlink measurements (requires Option 31)
MS2090A-0089	Zero Span IF Out
MS2090A-0024	Interference Finder
MS2090A-xxxx-0097	Accredited calibration to ISO17025 and ANSI/NCSL Z540-1 (xxxx is the frequency option number)
MS2090A-xxxx-0098	Standard calibration to ISO17025 and ANSI/NCSL Z540-1 (xxxx is the frequency option number)
MS2090A-xxxx-0099	Premium calibration to ISO17025 and ANSI/NCSL Z540-1 plus test data (xxxx is the frequency option number)

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