

# Field Master Pro™ MS2090A

## 9 kHz to 9/14/20/26.5/32/44/54 GHz

### High-Performance Spectrum Analyzer

Anritsu's Field Master Pro MS2090A RF 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  $\pm 0.5$  dB typical amplitude accuracy provides confidence when testing transmitter power and spurious.

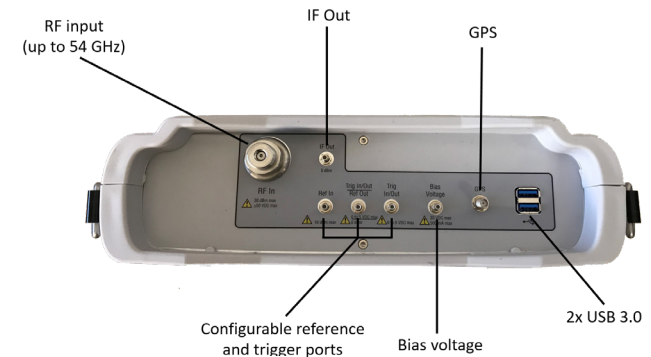
Ruggedized for field use, all versions provide a comprehensive range of features to speed and simplify measurement as well as enhance usability. RTSA spans of up to 100 MHz (optional) provide capability for cellular interference monitoring to full ISM band signal analysis. In addition to being a full 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

- 9 kHz to 9/14/20/26.5/32/44/54 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
- Resolution bandwidth (RBW): 1 Hz to 10 MHz
- RTSA bandwidth: 20 MHz to 100 MHz
- Amplitude accuracy at < 14 GHz:  $\pm 1.3$  dB ( $\pm 0.5$  dB, typical)



Field Master Pro MS2090A



## Quick Fact Sheet

# Field Master Pro MS2090A

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### Key Specifications

| Performance                |   |
|----------------------------|---|
| Frequency Range            | MS2090A-0709 - 9 kHz to 9 GHz<br>MS2090A-0714 - 9 kHz to 14 GHz<br>MS2090A-0720 - 9 kHz to 20 GHz<br>MS2090A-0726 - 9 kHz to 26.5 GHz<br>MS2090A-0732 - 9 kHz to 32 GHz<br>MS2090A-0744 - 9 kHz to 44 GHz*<br>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             | 20 MHz, 50 MHz, or 100 MHz  |

### 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 PCIe, 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)<br>MS2090A-0726, -0732, -0744, -0754: 5.4 kg (11.9 lb) |

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### Standard Accessories

| Part Number | Description                                |
|-------------|--|
| 2000-1371-R | Ethernet cable, 7ft/213 cm                 |
| 2000-1931-R | Stylus                                     |
| 3-2000-1928 | Shoulder strap                             |
| 3-82807-2   | Touchscreen protective film                |
| 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)<br>- 2000-1528-R GPS Antenna, SMA(m) with 5 m (15 ft) cable, requires 5 VDC<br>- 2000-1652-R GPS Antenna, SMA(m) with 0.3 m (1 ft) cable, requires 3.3 or 5 VDC<br>- 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-0105*     | 50 MHz analysis bandwidth (for MS2090A 32, 44, or 54 GHz units only)  |
| MS2090A-0106*     | 100 MHz analysis bandwidth (for MS2090A 32, 44, or 54 GHz units only)   |
| MS2090A-0199      | Real-time spectrum analyzer   |
| MS2090A-0888      | 5G NR downlink measurements (requires Option 31)  |
| 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)   |

\* These options have an ECCN code of 3A002 and are controlled items that may require an export license.

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