

Anritsu Advancing beyond

Radio Communication Test Station MT8000A



All-in-One 5G NR RF Measurements, Protocol Tests and Application Tests

5G, Official Start

Anritsu is releasing its new platform for developing 5G communications terminals, chipsets and devices.

With support for both RF measurements and protocol tests, this all-in-one platform can be configured easily for various tests, including RF measurements, protocol and application tests matching the module construction.

Anritsu — the leader in 4G testing — is also now taking the lead in 5G.



Flexibility

Measurement Module Configurations Matching Test Application

The all-in-one MT8000A supports RF measurements, protocol and application tests with a single unit while its flexible expandability not only meets future wider application needs but also helps cut-back new instrument investment and training costs for more efficient cost-performance.

FR1 (to 7.125 GHz) — FR2

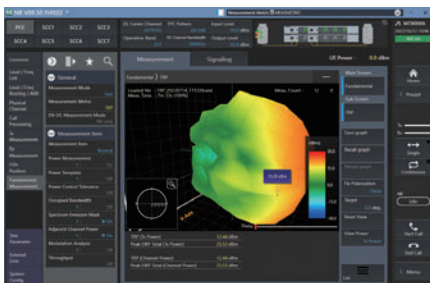
Comprehensive Test Coverage from mmWave RF Measurements to Beamforming Tests

As well as supporting the FR1 (to 7.125 GHz) used by 5G, combining the MT8000A with OTA chambers also supports the FR2 (mmWave band) RF measurements and beamforming tests.

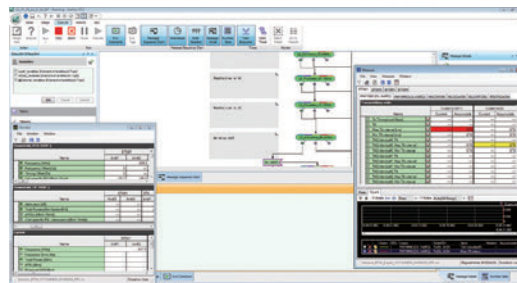
MT8000A



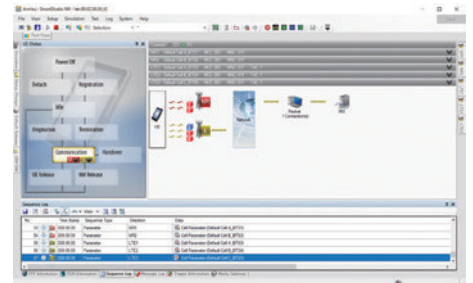
Software



RF Measurement Software



RTD for 5G NR



Function and Application Tests Software:
SmartStudio NR

*: The design, explanation and appearance are subject to change without notice.

The Wireless Communication Test Station for 5G Device Development

Radio Communication Test Station MT8000A Features

All-in-One Support for FR1 (to 7.125 GHz) and Millimeter Wave Bands

With a 5G base station emulation function, a single MT8000A test platform supports both the FR1 (to 7.125 GHz) and the FR2 (28 GHz/39 GHz/43.5 GHz) bands used by 5G. Combining it with the RF Chamber enables both millimeter wave band RF measurements and beamforming tests using call connections specified by 3GPP.

Example of Supported Band

| Band | n71 (600 MHz) | n41 (2.5 GHz) | n78-79 (3.5 G/4.5 GHz) | n257 (28 GHz) | n260 (39 GHz) | n259 (43.5 GHz) |
|------|---------------|---------------|------------------------|---------------|---------------|-----------------|
| | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

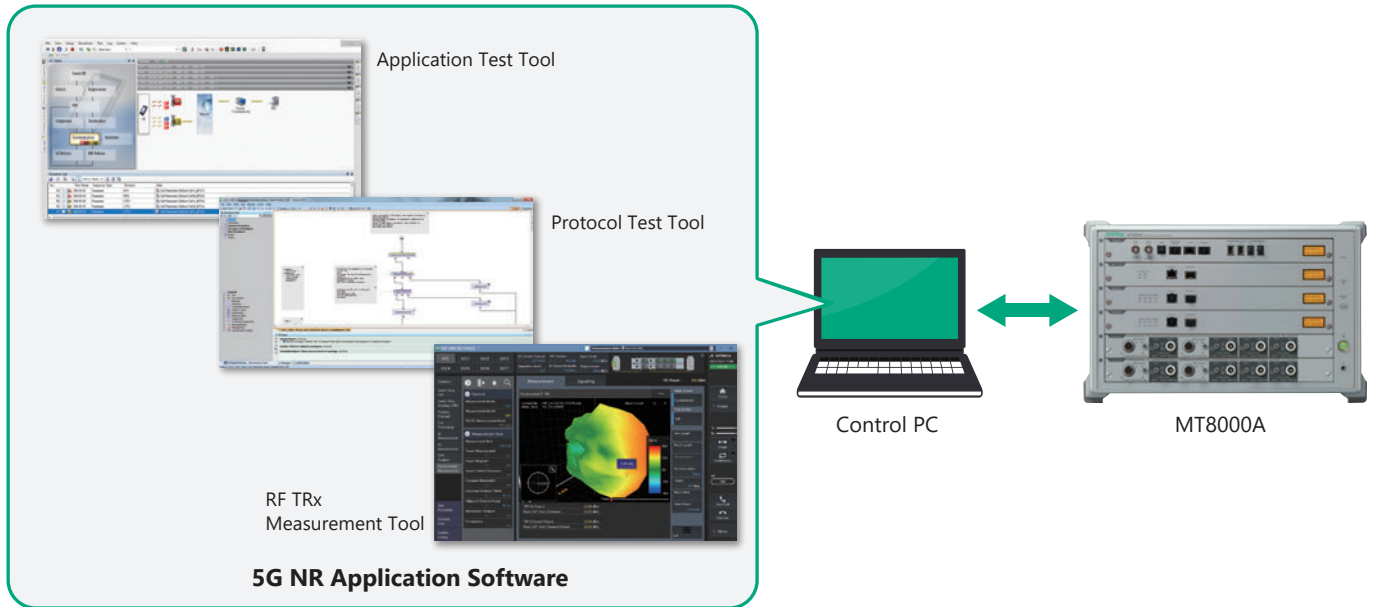
*: Please enquire about other supported bands.

Flexible Platform using Modular Architecture

Both Non-signalling and Signalling RF TRx measurements and protocol tests are supported by switching the test application at the common hardware platform.

In addition to supporting high-order MIMO (4x4 MIMO) and carrier aggregation (8CA) for implementing enhanced Mobile Broadband (eMBB), new 5G test needs, such as Ultra-Reliable and Low Latency Communications (URLLC) and massive Machine Type Communications (mMTC) are supported by the leading-edge design with flexibility and expandability based on the modular architecture.

A futureproof, flexible test environment is provided for a wide application range.

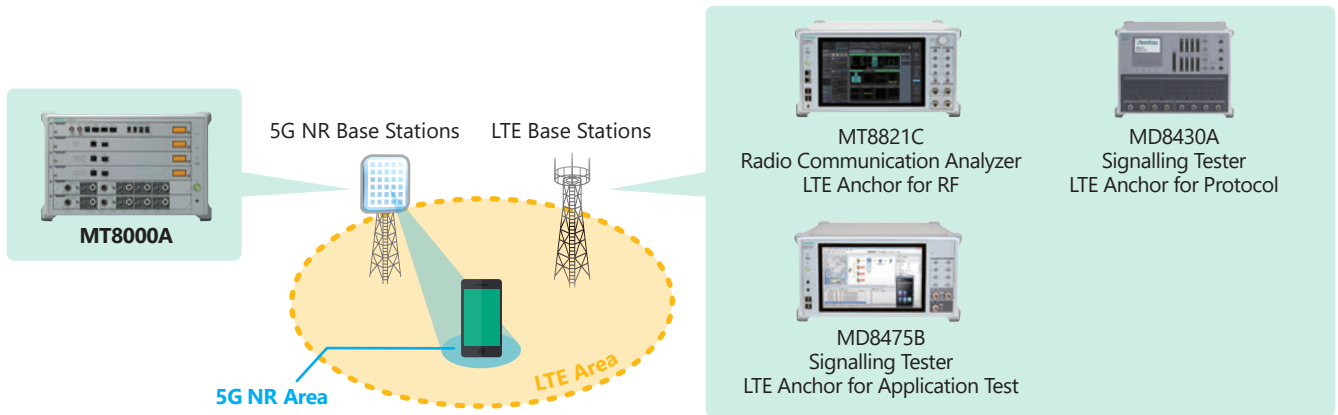


The Wireless Communication Test Station for 5G Device Development

Radio Communication Test Station MT8000A Features

Supports Existing LTE Test Environment

A comprehensive test environment is provided by using Anritsu's LTE test platform offering leading-edge functions based on the company's long experience in this market. Easy configuration of a linked environment for simulating the 5G Non-Standalone (NSA) mode with LTE makes best use of measurement assets, such as the customer's test environment and test scenarios. (For RF, Protocol and Application tests, it is also possible to build an LTE test environment using the MT8000A.)



Radio Communication Test Station MT8000A Features

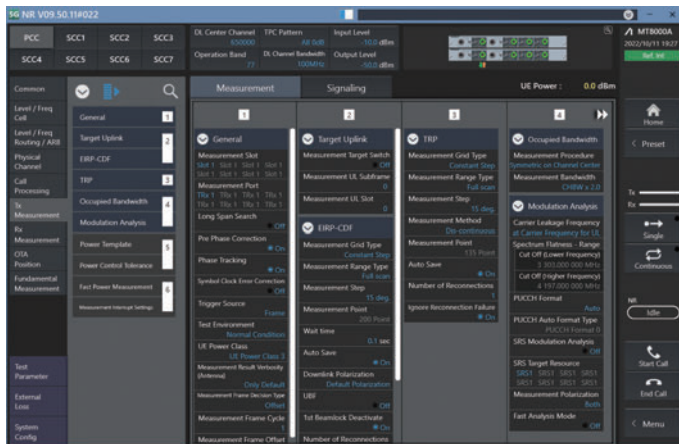
RF TRX Measurement GUI : MX800010A

3GPP RF Tests

Development and testing of mobile terminals and chipsets as well as network operator acceptance inspection tests, etc., are essential for evaluating compliance of the mobile terminal TRx performance with the 3GPP standards. With the increasing complexity of mobile terminal circuitry due to the use of more frequency bands, such as mmWave, the MX800010A software is an ideal solution for testing various aspects in support of 5G NR Mobile terminal RF TRx tests.

Flexible Parameter Settings

The easy to change MX800010A parameter settings also support RF parametric tests and simplified protocol tests.



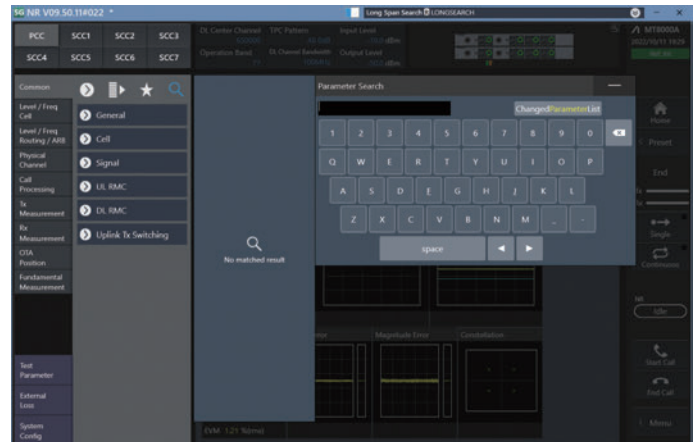
Typical Parameters (5G NR)

Supports NSA Mode Tests

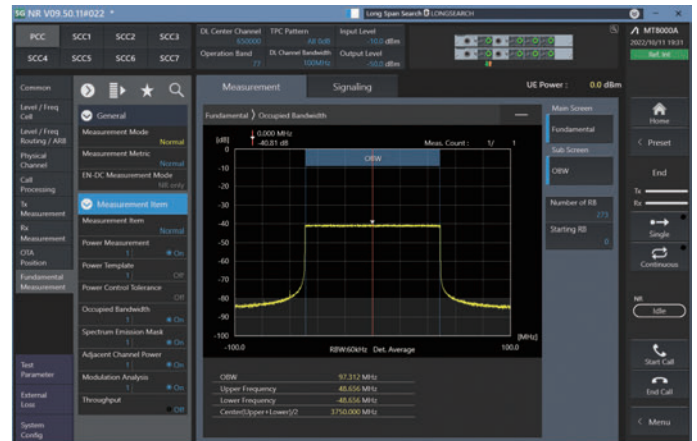
The 5G NR Non-Standalone (NSA) mode is supported. In the NSA mode, as well as using the Radio Communication Analyzer MT8821C as an LTE Anchor, the MT8000A with MX800010A-070 software option also supports NSA call connection and RF tests.

Enhanced GUI for Efficient Operability

The MX800010A has the same easy to use and easy to understand GUI as the MT8821C. In addition to one-touch switching of listed and individual graph displays as well as summary and detailed displays of measurement results, the MX800010A supports convenient parameter setting functions such as, parameter searching and bookmarking for frequently used parameters.



Parameter Search Function



Graph Display

Radio Communication Test Station MT8000A Features

RF TRX Measurement GUI : MX800010A

OTA (Over The Air) Tests

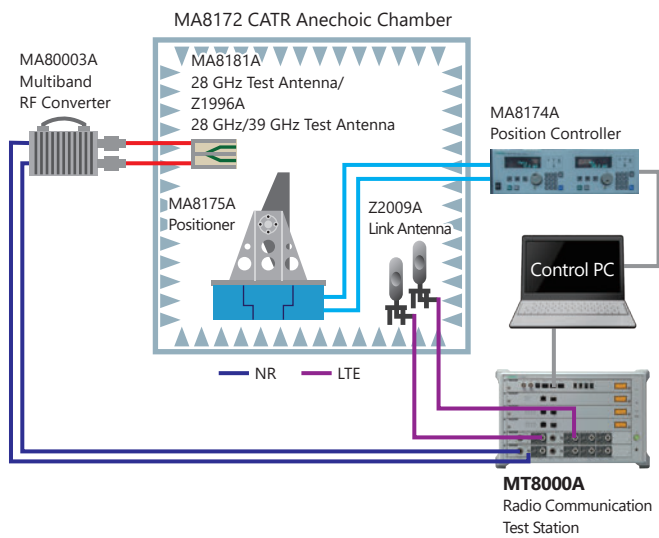
OTA evaluation is required because the TRx performance of mobile terminals is influenced by factors such as the terminal form and antenna characteristics, etc.

There are two main types of 5G NR OTA test as follows:

- mmWave RF TRx Test
- Evaluating Mobile Terminal General TRx Performance Including Antenna

<mmWave RF TRx Test>

Since 5G NR uses an antenna array for sending and receiving signals in the mmWave band, evaluation of the RF TRx performance is performed using an OTA connection without an RF cable connection like that for LTE. Anritsu provides a turnkey mmWave RF TRx measurement solution including the RF chamber.

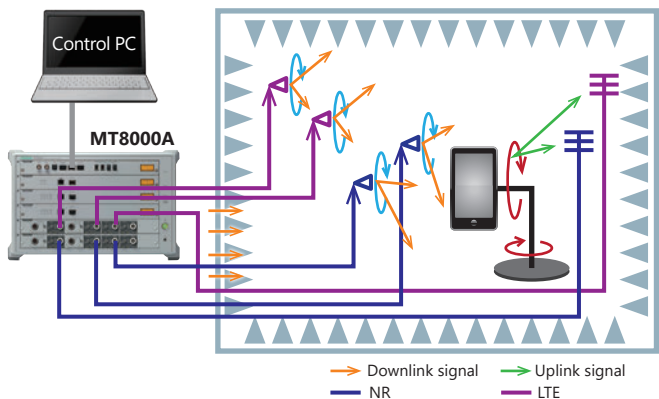


Can be constructed by combining MT8000A and MT8821C.

mmWave RF TRx Measurement Environment

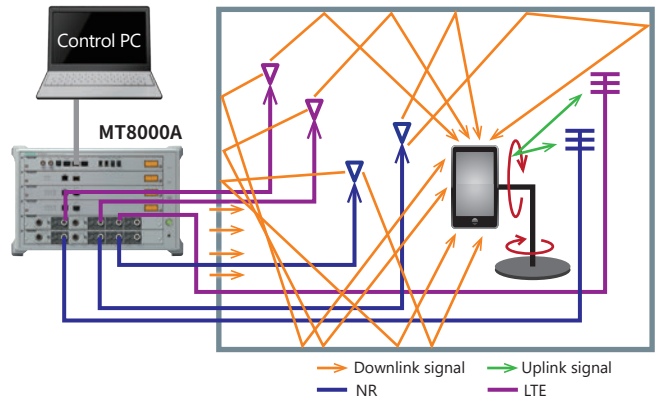
<Evaluating Mobile Terminal General TRx Performance Including Antenna>

There are two antenna test methods: Total Radiated Power (TRP), and Total Radiated Sensitivity (TRS); various test systems using the MT8000A are available from OTA vendors.



Can be constructed by combining MT8000A and MT8821C.

Radiowave Anechoic Chamber

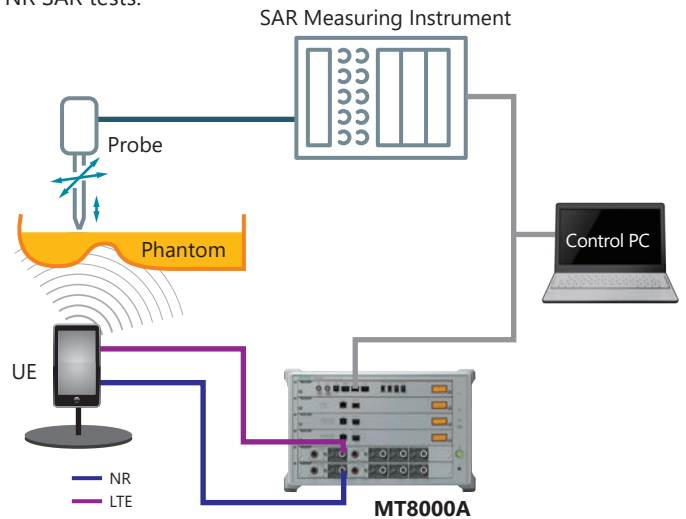


Can be constructed by combining MT8000A and MT8821C.

Reverberation Chamber

SAR (Specific Absorption Rate) Test

The SAR test evaluates the amount of energy in the electromagnetic spectrum radiated from the mobile terminal absorbed by a jig known as a 'phantom', mimicking the human body. The purpose of this test is to help protect handheld users from adverse effects of electromagnetic waves on health. The specified amount of permissible absorbed energy is regulated by national and regional standards. The MT8000A fully supports 5G NR SAR tests.



Can be constructed by combining MT8000A and MT8821C.

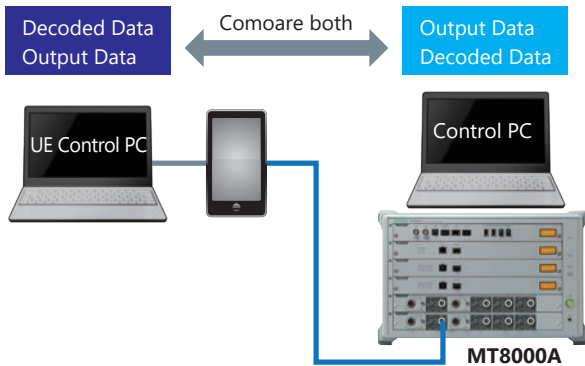
SAR Test Configuration

Radio Communication Test Station MT8000A Features

NR Protocol Test Solutions

Encoding/Decoding Test

The 5G NR terminal encoding/decoding test is performed by connecting the equipment as follows using an RF cable.



Encoding/Decoding Test Configuration (RF, Serial Control Test)

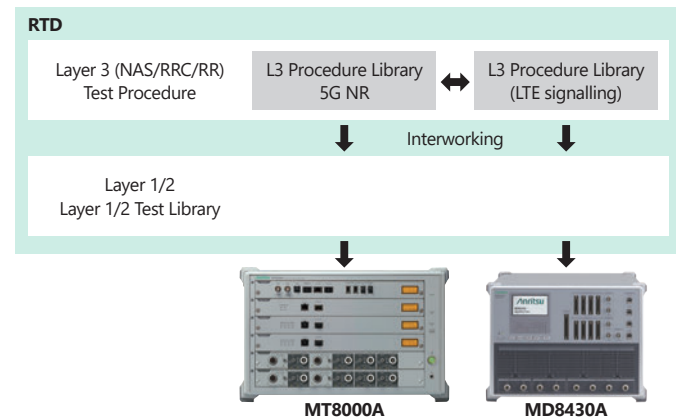
The Rapid Test Designer Platform (RTD) MX800050A and the NR Protocol Firmware MX800051A have built-in support for the digital baseband input/output function. Using the function supports high-reproducibility encoding/decoding tests without dependence on the performance of the RF section for stable baseband evaluation of 5G NR chipsets. In addition, 5G NR encoding/decoding tests are performed certainly because the baseband chip is evaluated at a slow clock below the clock frequency.

Cuts Test Case Developer Training

With a full range of test procedures for Layer 1/2 and Layer 3 tests, the RTD software eliminates the need for specialist knowledge about TTCN code and unique simulator APIs, etc. Moreover, each procedure automatically sets the Layer 1/2 (L1/L2) connection conditions based on the complex 3GPP standards. Since the MD8430A can be controlled directly, 5G NR and LTE NSA test environments can be configured easily. Furthermore, the full range of available reference test samples with confirmed connections supports development of test cases using a library.

Shortens Test Case Development Time

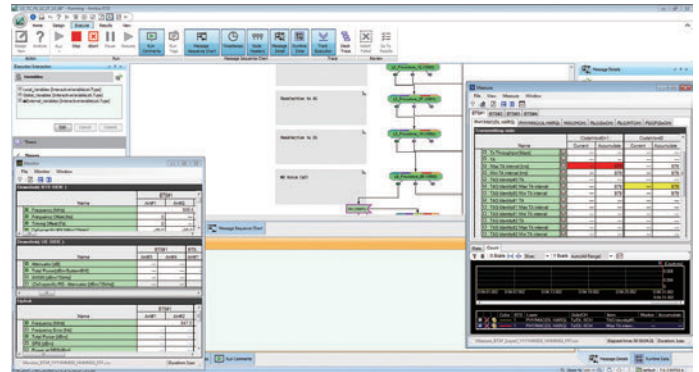
The RTD GUI makes it easy to create test cases using intuitive operations to connect procedures. Additionally, each procedure has a screen for setting various parameters, such as network conditions and message information, to increase test case variations using simple operation. Lastly, an analysis function checks for program mistakes prior to testing, and any code edits or changes are reflected immediately in the executed test.



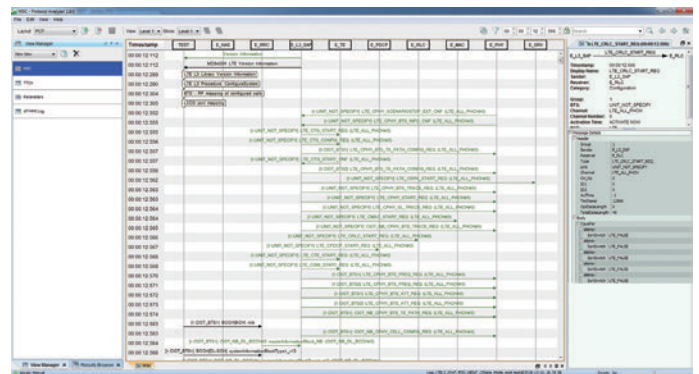
RTD Procedure Block

Efficient Execution, Evaluation and Analysis

Test sequences can be confirmed in real-time during test execution and completed test results can be confirmed at a glance because Pass/Fail evaluations are defined within the test case. Moreover, detailed analysis is supported by integration of an HTML-based protocol analyzer with the RTD. Additionally, export of logs into HTML enables logs to be opened on any PC in the same manner as the protocol analyzer.



Test Execution Screen (RTD)



Log Analysis Screen (RTD)

Radio Communication Test Station MT8000A Features

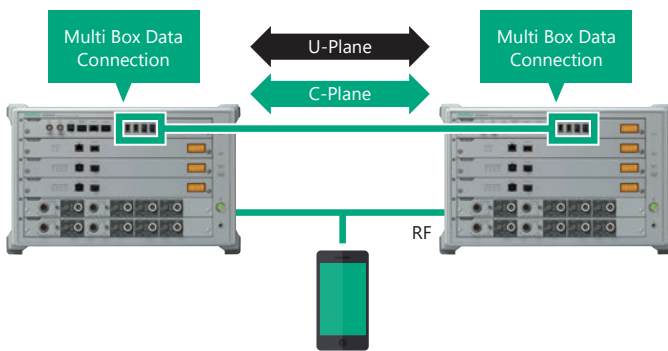
NR Protocol Test Solutions

Throughput Tests at Various Conditions

Combining the MX800030A with the Data Test Module MT8000A-012 supports IP throughput tests. Sample scenarios bundled with the software can be used to change parameters, such as bandwidth, scheduling, HARQ, etc., easily for running 5G NR IP throughput tests under various conditions.

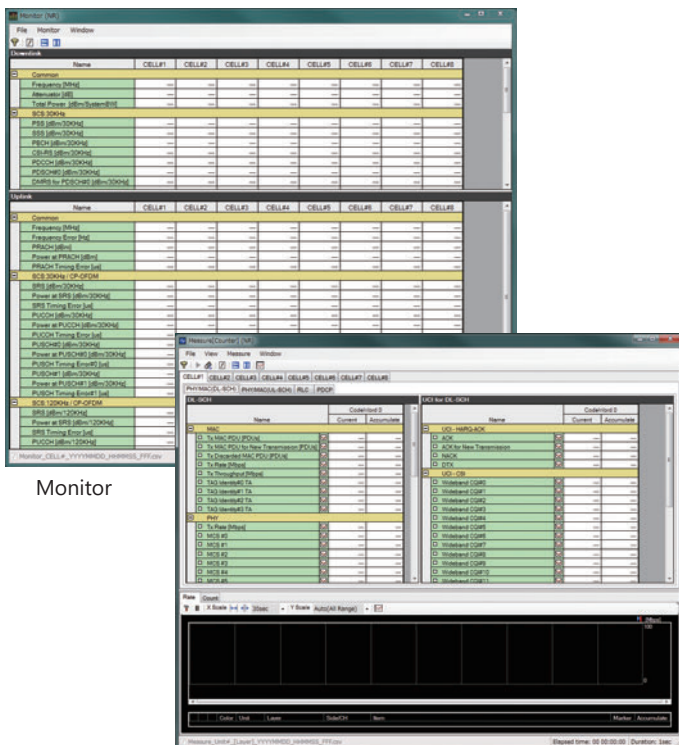
Handover Tests at Various Conditions

With support for up to 8 cells, handover tests between 5G NR 4CA cells are possible using only one MT8000A. Moreover, installing the Multi Box Data Connection MT8000A-009 option in the MT8000A enables up to 8CA 2x2 MIMO handover tests by connecting two MT8000A units. Lastly, combined use with the Signalling Tester MD8430A supports LTE interworking, helping maximize customers' investment in their existing hardware.



Fully Versatile L1/L2 Monitoring Functions

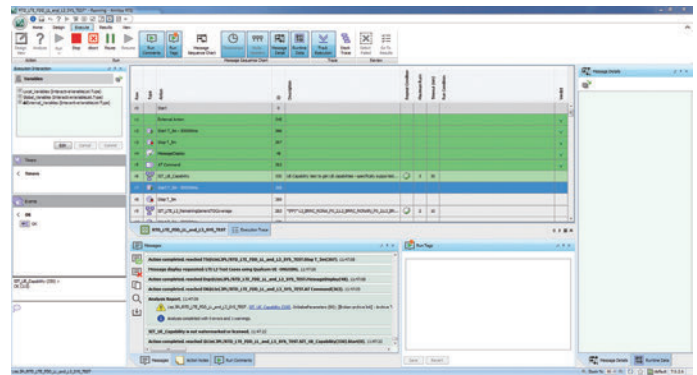
To support the development of 5G terminals that process large volumes of low-layer data at very high speeds, the software enhances a full line of versatile power monitoring, throughput monitoring and log analysis functions. The Measure (Counter) functions can monitor Layer 1/2 (L1/L2) throughputs in real time by counting parameter values such as ACK/NACK/DTX/CQI.



Measure (Counter, Throughput Monitor)

Powerful Test Automation

With support for mobile terminal control interfaces, the RTD software simplifies test automation. In addition, continuous multiple test case execution and automatic test report creation as well as various functions including repeat operation for a set number of times provide powerful support for automated testing.



Example of Continuous Test Case Execution

Easy Test Case Maintenance

Test cases created using the RTD software are easily updated for new 3GPP standard releases, helping cut test-case editing workloads. Moreover, recompiling is unnecessary because test cases maintain compatibility even after firmware updates. Consequently, test-case maintenance costs at commercial release of new mobile terminals are greatly reduced for pre-inspection regression tests and interoperability tests (IOT) with networking equipment.

5G NR/4G LTE Fading Tests

In cooperation with a fading PC, one MT8000A supports NR downlink fading tests up to 4CA 2x2 MIMO or 2CA 4x4 MIMO. Using two MT8000A units extends NR fading test support up to 8CA 2x2 MIMO or 4CA 4x4 MIMO. Furthermore, by adding one MT8000A for LTE BTS, it also supports the EN-DC fading test up to LTE 6CA 8x4 MIMO*. The fading software includes 3GPP channel models which are compliant with TS38.521 for 5G NR (TDL), TS36.521 for 4G LTE. The channel models can be edited as necessary.

*: Requires additional PC for LTE fading.

Radio Communication Test Station MT8000A Features

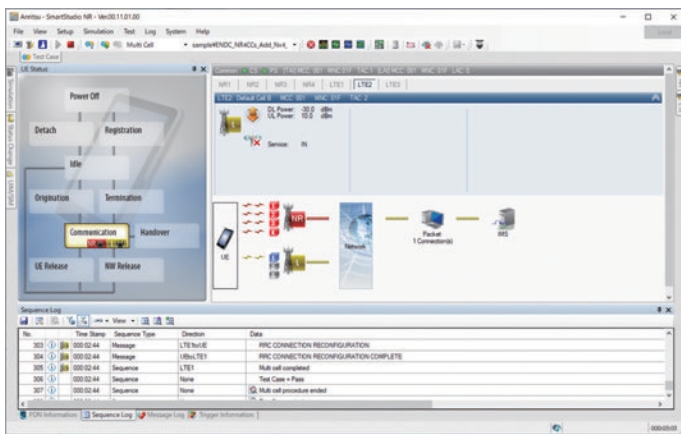
Application and Regression Tests for 5G devices: SmartStudio NR MX800070A

5G Device Application Tests

With an interactive GUI, SmartStudio NR MX800070A supports FR1/FR2 UE call connections, IP throughput tests, and IMS VoLTE testing, as well as Internet connections, live server application tests, and various mobility tests without requiring difficult scenario development. Moreover, user-generated test cases can be executed automatically using the SmartStudio Manager external control tool or an external control interface.

Interactive GUI

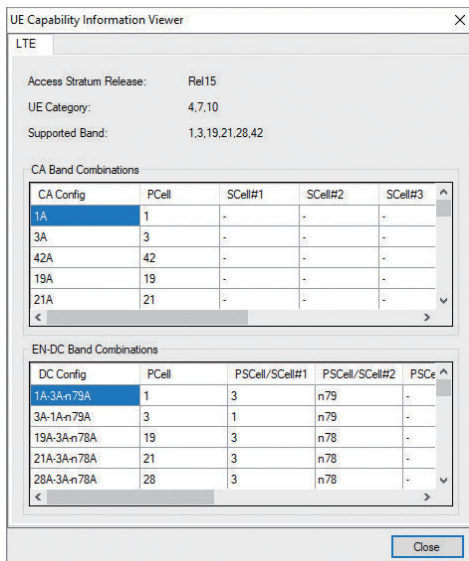
The easy-to-use interactive GUI requires no knowledge of high-level protocols, and the current UE real-time status is displayed on the UE Status screen along with detailed protocol messages and sequences under the Log Display screen. Additionally, PDN settings, creation of test cases, etc., are supported.



SmartStudio NR Main Screen

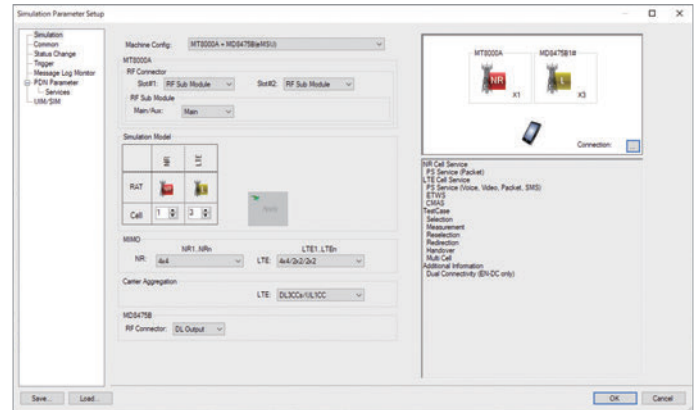
Easy UE Capability Confirmation

UE Capability data are managed automatically and displayed at the UE Capability Information screen for easy confirmation during testing of UE-supported patterns, etc., of combinations of categories, bands, and CAs.



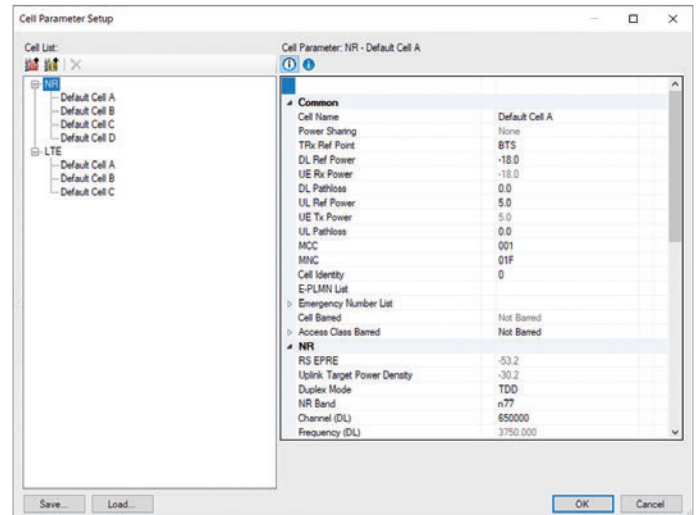
Test Environment and Base Station Settings

The number of base stations in use, RAT, and antennas are set at the Simulation Parameter screen. In addition, an RF cable setup diagram based on set parameters is displayed, providing strong support for configuring the user's test environment. SIM and other user parameters are also set easily.



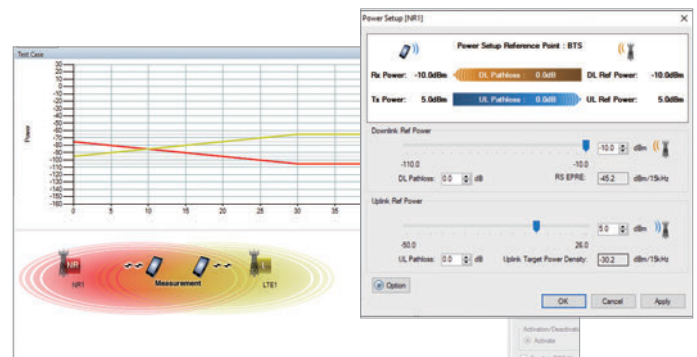
Simulation Parameter Settings Screen

Detailed parameters for each base station in use can be set at the Cell Parameter screen, where settings such as the band, frequency, bandwidth, UL/DL power, QAM, MCS, etc., can be set, saved, and loaded.



Cell Parameter Settings Screen

The base station TRx power can be changed during the simulation. In addition, base station transmissions can be stopped when executing the out of signal area test, and power can be controlled from the Test Case screen.

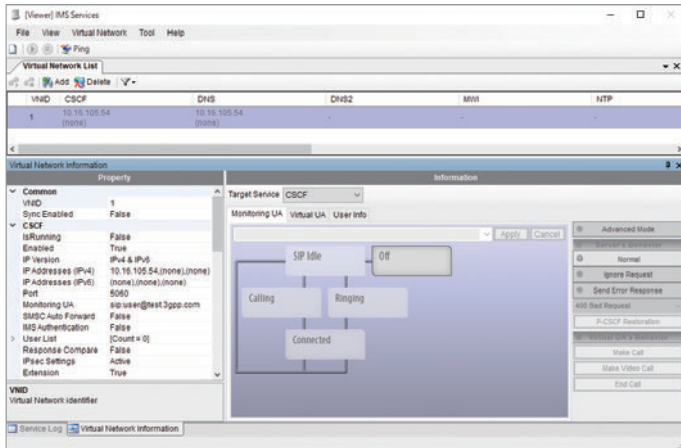


Radio Communication Test Station MT8000A Features

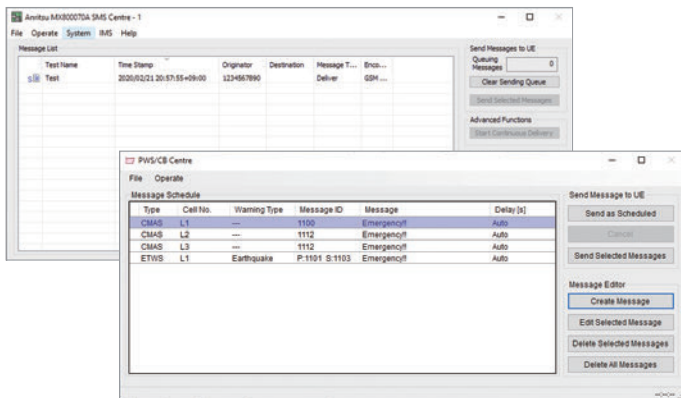
Application and Regression Tests for 5G devices: SmartStudio NR MX800070A

Built-in IMS/PWS Service

With built-in IMS/PWS Service, the SmartStudio NR MX800070A supports VoLTE and SMS tests without requiring users to configure complex environments. Moreover, PWS Service tests, such as ETWS and CMAS, which are difficult to execute on a live network, are implemented easily, and message contents can also be edited.



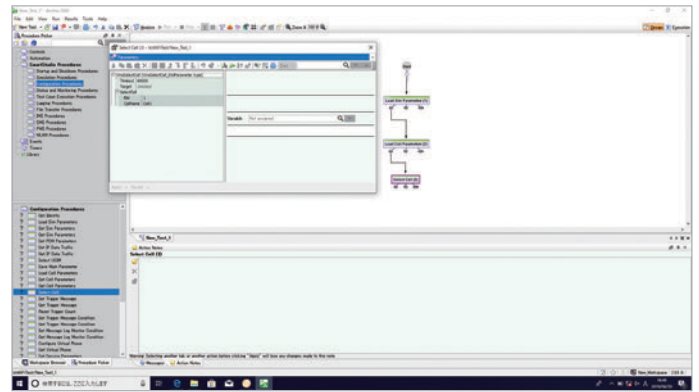
IMS Service Settings Screen



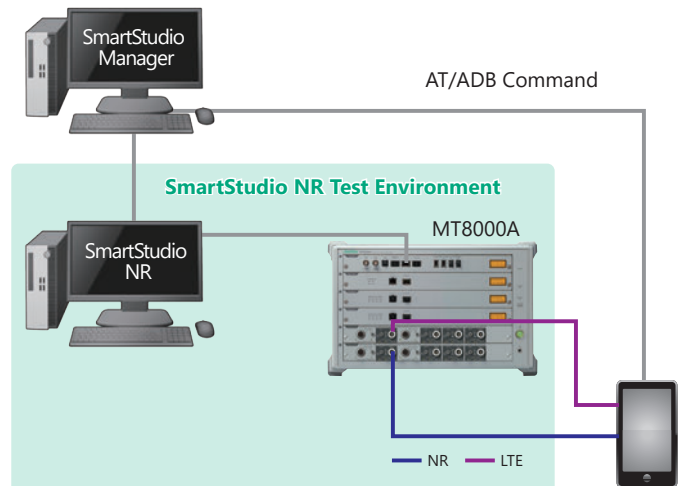
SMS/PWS Service Screen

Test Automation

Studio NR and the UE can be controlled externally using SmartStudio Manager to configure an automated general test system. In addition to bundled test cases, users can create their own test cases with easy Pass/Fail confirmation after execution.



SmartStudio Manager Test Case Creation Screen



Can be constructed by combining MT8000A and MD8475B.

SmartStudio Manager Test Environment Example

Radio Communication Test Station MT8000A Layout

MT8000A Front Panel

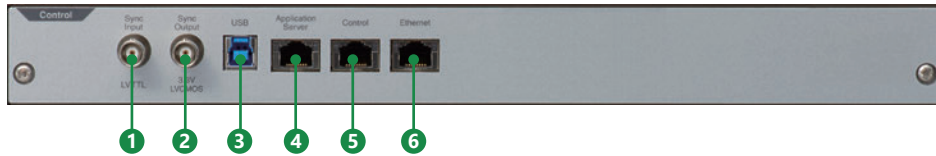


- 1 Ground Terminal**
Functional ground terminal used as a measure against electrostatic discharge while using the MT8000A.
- 2 Power Switch**
Switches power-on and standby. When the MT8000A is in the power on status, the LED lights up (green).
- 3 Standby LED**
When the MT8000A is in the standby status of which the AC power is on, the LED lights (orange).
- 4 Recover LED/Recover Switch**
Switch to recover MT8000A in case of emergency. Recovery LED lights up (orange) when the recovery function is enabled.
- 5 Caution LED**
Lights up (orange) when MT8000A detects abnormality.
- 6 Ready LED**
Lights up (green) when MT8000A startup is completed after power-on.
- 7 Control Module MT8000A-001 (with Multi-box Data Connection MT8000A-009)**
Controls the entire MT8000A, processes upper layers, downloads firmware, and start MT8000A. Optical ports are used for connecting multiple MT8000As.
- 8 Data Test Module MT8000A-012**
Performs data transfer for IP throughput test.
- 9 Baseband Module MT8000A-011**
Performs baseband processing (L1/L2) in protocol test.
- 10 RF Base Module MT8000A-033**
Converts digital signals into analog signals.
Functions as RF interface for the external RF Converter or for RF signals in 2 GHz to 7.125 GHz.

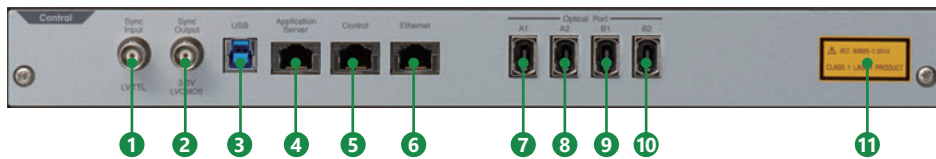
Radio Communication Test Station MT8000A Layout

MT8000A Modules

Control Module MT8000A-001



Control Module MT8000A-001 + Multi-box Data Connection MT8000A-009



- 1 Sync Input Connector**
BNC connector for inputting synchronizing signal.
- 2 Sync Output Connector**
BNC connector for outputting synchronizing signal.
- 3 USB Connector**
USB (Type B) connector to connect the external PC.
- 4 Application Server Connector**
RJ-45 connector to connect the external PC for Application Server.
- 5 Control Connector**
RJ-45 connector for connecting the MT8000A and Control PC.
- 6 Ethernet Connector**
RJ-45 connector for connecting the external PC, etc.
- 7 Optical Port A1 Connector**
MPO connector A1 for connecting multiple MT8000As when MT8000A-009 Multi-box Data Connection is installed.
- 8 Optical Port A2 Connector**
MPO connector A2 for connecting multiple MT8000As when MT8000A-009 Multi-box Data Connection is installed.
- 9 Optical Port B1 Connector**
MPO connector B1 for connecting multiple MT8000As when MT8000A-009 Multi-box Data Connection is installed.
- 10 Optical Port B2 Connector**
MPO connector B2 for connecting multiple MT8000As when MT8000A-009 Multi-box Data Connection is installed.
- 11 Explanatory Label**
Indicates that the Optical Port A1, A2, B1, and B2 are Class 1 laser products.

Radio Communication Test Station MT8000A Layout

MT8000A Modules

Data Test Module MT8000A-012



- 1 Data Test Status LED**
Indicates the Data Test status.
- 2 Ethernet Connector for Data Test**
RJ-45 connector for Data Test.
- 3 SFP/SFP+ Connector**
Connector to insert SFP or SFP+ (application parts) into.
- 4 Explanatory Label**
Indicates that the device is a Class 1 laser product when SFP or SFP+ are installed.

Baseband Module MT8000A-011

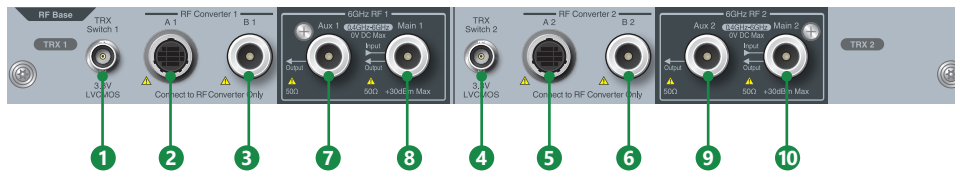


- 1 Baseband Status LED**
Indicates the Baseband status.
- 2 Ethernet Connector for Baseband**
RJ-45 connector for Baseband.
- 3 SFP/SFP+ Connector**
Connector to insert SFP or SFP+ (application parts) into.
- 4 Explanatory Label**
Indicates that the device is a Class 1 laser product when SFP or SFP+ are installed.

Radio Communication Test Station MT8000A Layout

MT8000A Modules

RF Base Module MT8000A-020 + 0.4 GHz-6 GHz RF Sub Module MT8000A-021



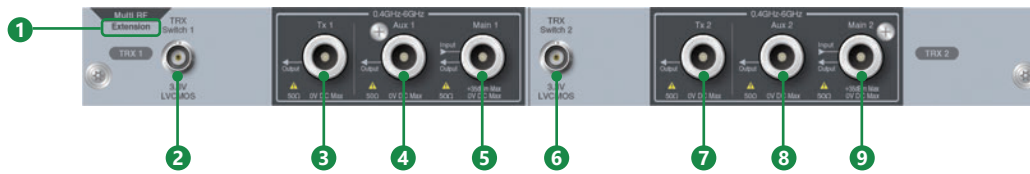
- 1 TRX Switch 1 connector**
BNC connector that outputs signals to control the external amplifier, etc.
- 2 RF Converter 1 A1 connector**
Multi-contact connector that controls the external RF Converter.
- 3 RF Converter 1 B1 connector**
N connector that input/output the external RF Converter and RF signals.
- 4 TRX Switch 2 connector**
BNC connector that outputs signals to control the external amplifier, etc.
- 5 RF Converter 2 A2 connector**
Multi-contact connector that controls the external RF Converter.
- 6 RF Converter 2 B2 connector**
N connector that inputs/outputs the RF signals between the external RF Converter and MT8000A.
- 7 6 GHz RF1 Aux 1 connector**
RF auxiliary connector (output) when 0.4 GHz-6 GHz RF Sub Module option is installed.
- 8 6 GHz RF1 Main 1 connector**
RF main connector (input/output) when 0.4 GHz-6 GHz RF Sub Module option is installed.
- 9 6 GHz RF2 Aux 2 connector**
RF auxiliary connector (output) when 0.4 GHz-6 GHz RF Sub Module option is installed.
- 10 6 GHz RF2 Main 2 connector**
RF main connector (input/output) when 0.4 GHz-6 GHz RF Sub Module option is installed.

Note: The frequency range indicated on the panel is "0.4 GHz-6 GHz" when 0.4 GHz-6 GHz RF Sub Module MT8000A-021 is installed. RF Converter 1 and RF Converter 2 cannot be used simultaneously with 6 GHz RF 1 and 6 GHz RF 2 respectively.

Radio Communication Test Station MT8000A Layout

MT8000A Modules

Multi RF Module MT8000A-031/Multi RF Extension MT8000A-032

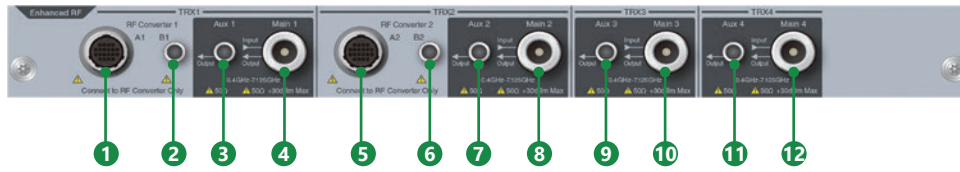


- 1 Extension marking**
Mark for Multi RF Extension MT8000A-032. No mark for Multi RF Module MT8000A-031.
- 2 TRX Switch 1 connector**
BNC connector that outputs signals to control the external amplifier, etc.
- 3 Tx 1 connector**
RF transmission connector (output) for 0.4 GHz-6 GHz signal.
- 4 Aux 1 connector**
RF auxiliary connector (output) for 0.4 GHz-6 GHz signal.
- 5 Main 1 connector**
RF main connector (input/output) for 0.4 GHz-6 GHz signal.
- 6 TRX Switch 2 connector**
BNC connector that outputs signals to control the external amplifier, etc.
- 7 Tx 2 connector**
RF transmission connector (output) for 0.4 GHz-6 GHz signal.
- 8 Aux 2 connector**
RF auxiliary connector (output) for 0.4 GHz-6 GHz signal.
- 9 Main 2 connector**
RF main connector (input/output) for 0.4 GHz-6 GHz signal.

Radio Communication Test Station MT8000A Layout

MT8000A Modules

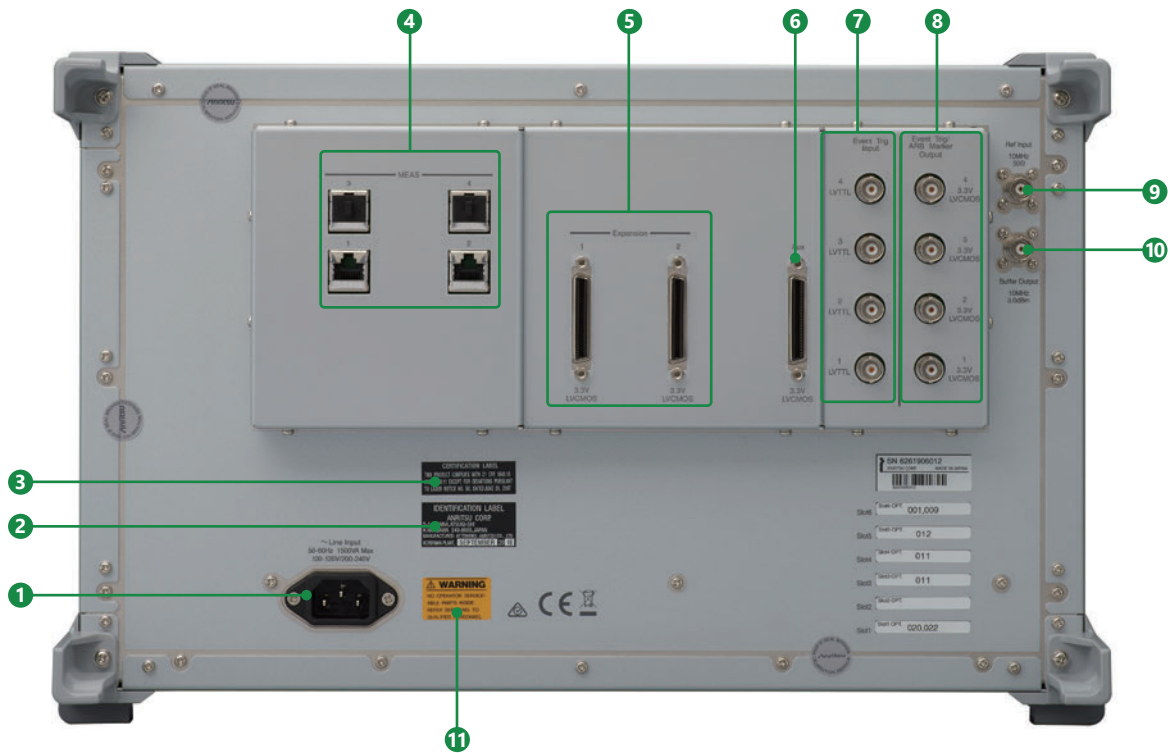
0.4 GHz-7.125 GHz Enhanced RF Module MT8000A-033



- 1 RF Converter 1 A1 connector**
Multi-contact connector that controls the external RF Converter.
- 2 RF Converter 1 B1 connector**
SMA connector that input/output the external RF Converter and RF signals.
- 3 Aux 1 connector**
RF auxiliary connector (output) for 0.4 GHz-7.125 GHz signal.
- 4 Main 1 connector**
RF main connector (input/output) for 0.4 GHz-7.125 GHz signal.
- 5 RF Converter 2 A2 connector**
Multi-contact connector that controls the external RF Converter.
- 6 RF Converter 2 B2 connector**
SMA connector that input/output the external RF Converter and RF signals.
- 7 Aux 2 connector**
RF auxiliary connector (output) for 0.4 GHz-7.125 GHz signal.
- 8 Main 2 connector**
RF main connector (input/output) for 0.4 GHz-7.125 GHz signal.
- 9 Aux 3 connector**
RF auxiliary connector (output) for 0.4 GHz-7.125 GHz signal.
- 10 Main 3 connector**
RF main connector (input/output) for 0.4 GHz-7.125 GHz signal.
- 11 Aux 4 connector**
RF auxiliary connector (output) for 0.4 GHz-7.125 GHz signal.
- 12 Main 4 connector**
RF main connector (input/output) for 0.4 GHz-7.125 GHz signal.

Radio Communication Test Station MT8000A Layout

MT8000A Rear Panel



1 Power Inlet

Power cable connector for 100 VAC to 120 VAC or 200 VAC to 240 VAC (50 Hz/60 Hz) (auto-switching). Power consumption: 1500 VA or less.

2 Identification Label

Identifies the manufacturer of laser products.

3 Certification Label

Certifies that the MT8000A conforms to 21 CFR 1040.10 AND 1040.11 except Laser Notice No.50.

4 Ethernet Connector for Measure

RJ-45 connector for measurement.

5 Expansion Connector

Used for input/output of trigger signals.

6 Aux Connector

Auxiliary connector to output frame timing signals.

7 Event Trigger Input Connector

BNC connector to input event triggers from external devices. Can input event trigger signals of 4 systems.

8 Event Trigger Output Connector

BNC connector to output event triggers to external devices. Can output event trigger signals of 4 systems. Can be used also as output of ARB marker.

9 Reference signal input connector

BNC connector to input 10 MHz reference signal from external devices.

10 Reference Signal Output Connector

BNC connector to output 10 MHz reference signal built in the MT8000A.

11 Safety Label

WARNING label for safe operation of MT8000A. Observe the description on the label.

Radio Communication Test Station MT8000A Layout

System Configuration



- 1 Radio Communication Test Station MT8000A**
All-in-one test platform supporting 5G RF measurements and protocol tests.
- 2 28 GHz RF Converter MA80001A/39 GHz RF Converter MA80002A/Multiband RF Converter MA80003A**
Convert frequency of RF signal output from MT8000A to 28 GHz and 39 GHz band.
- 3 RF Chamber MA8171A**
For 5G protocol tests in OTA environment.
For 5G RF measurement, please use MA8172A (Refer to the OTA Product Catalog for details).
- 4 Position Controller MA8174A**
Controls the Positioner MA8175A rotational angle inside the RF Chamber MA8171A.

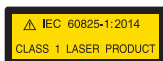
Radio Communication Test Station MT8000A Specifications

Radio Communication Test Station MT8000A

| | | |
|--------------------------|---|---|
| Reference Oscillator | Reference frequency: 10 MHz Start-up characteristics: $\pm 5 \times 10^{-8}$ (3 min. after power-on. Referenced to frequency 1 hour after power-on) Aging rate: $\pm 1 \times 10^{-8}$ /day (referenced to frequency 48-hour after power-on) $\pm 1 \times 10^{-7}$ /year (referenced to frequency 10-day after power-on) Temperature characteristics: $\pm 2 \times 10^{-8}$ Frequency adjusted at shipment: $\pm 2.2 \times 10^{-8}$ (+18°C to +28°C, referenced to frequency 1 hour after power-on) 10 MHz Buffer Output Frequency: 10 MHz Connector: BNC (f) Impedance: 50Ω (nom.) Output Level: ≥ 0 dBm (AC coupling) 10 MHz Ref Input Frequency: 10 MHz Operating range: ± 1 ppm Connector: BNC (f) Impedance: 50Ω (nom.) Input level: -15 dBm \leq level \leq +20 dBm (AC coupling) | |
| External Interface | MEAS 1 to 4: RJ45, 1000Base-T, for slot 1 to 4 Event TRIG Input 1 to 4: BNC (f), LVTTTL Event TRIG/ARB Maker Output 1 to 4: BNC (f), 3.3 V LVCMOS Expansion 1, 2: DX20A (3.3 V LVCMOS) Aux: DX20A (3.3 V LVCMOS) | |
| Power Supply | Rated voltage: 100 VAC to 120 VAC/200 VAC to 240 VAC (Operating voltage is $-15\%/+10\%$ of rated voltage, however, lower limit is 90 V, upper limit is 250 V) Rated frequency: 50 Hz/60 Hz Power consumption: ≤ 1500 VA (include all options and modules) | |
| Dimensions and Mass | Dimensions: 426 (W) \times 265 (H) \times 578 (D) mm (excluding projections) Mass: ≤ 50 kg (including all options) | |
| Environmental Conditions | Operating temperature range: +5°C to +40°C (without condensation) Storage temperature: -20°C to +71°C (without condensation) | |
| CE | EMC | 2014/30/EU, EN61326-1, EN61000-3-2 |
| | LVD | 2014/35/EU, EN61010-1 |
| | RoHS | 2011/65/EU, (EU) 2015/863, EN IEC 63000: 2018 |
| UKCA | EMC | S.I. 2016 No.1091, EN 61326-1, EN61000-3-2 |
| | LVD | S.I. 2016 No.1101, EN 61010-1 |
| | RoHS | S.I. 2012 No.3032, EN IEC 63000:2018 |
| Laser Safety* | IEC 60825-1 Class 1 FDA 21CFR1040.10 and 1040.11 Excludes deviations caused by conformance to LASER Notice No.50 dated June 24, 2007 | |

*: Safety measures for laser products

This option complies with optical safety standards in IEC 60825-1, 21CFR1040.10 and 1040.11; the following descriptive labels are affixed to the product.



THIS PRODUCT COMPLIES WITH 21 CFR 1040.10 AND 1040.11 EXCEPT FOR DEVIATIONS PURSUANT TO LASER NOTICE NO. 50, DATED JUNE 24, 2007

Control Module MT8000A-001

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| External Interface | USB: USB (Type-B) Application Server: RJ-45 (1000Base-T) Control: RJ-45 (1000Base-T) Ethernet: RJ-45 (1000Base-T) Sync Input: BNC (f) (LVTTTL) Sync Output: BNC (f) (3.3 V LVCMOS) |
|--------------------|---|

Multi-box Data Connection MT8000A-009

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| External Interface | Optical Port A1, A2, B1, B2: MPO optical adapter (m), 24 cores |
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Radio Communication Test Station MT8000A Specifications

Baseband Module MT8000A-011

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| External Interface | Ethernet: RJ-45 (1000Base-T) SFP/SFP+: SFF-8431, SFF-8472 compliant IEEE 802.3ae-2002, IEEE 802.3-2008 compliant |
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Data Test Module MT8000A-012

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| External Interface | Ethernet: RJ-45, 1000Base-T SFP/SFP+: SFF-8431, SFF-8472 compliant IEEE 802.3ae-2002, IEEE 802.3-2008 compliant |
|--------------------|---|

RF Base Module MT8000A-020

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|---------------------------|---|
| IF Input/Output Connector | RF Converter B1, B2 Connector: N (f) Impedance: 50Ω (nom.) |
| External Interface | RF Converter A1, A2: Round multiway type connector TRX Switch 1, 2: BNC (f) (3.3 V LVCMOS) |

0.4 GHz-6 GHz RF Sub Module MT8000A-021

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|---------|---|
| General | <p>RF input/output connector Main 1, Main 2 Connector: N (f) Impedance: 50Ω (nom.) VSWR At 0.4 GHz ≤ setting frequency < 3 GHz ≤1.5 (0.4 GHz ≤ frequency < 3.1 GHz) At 3 GHz ≤ setting frequency ≤ 6 GHz ≤1.5 (2.9 GHz ≤ frequency ≤ 6.1 GHz)</p> <p>RF output connector Aux 1, Aux 2 Connector: N (f) Impedance: 50Ω (nom.) VSWR At 0.4 GHz ≤ setting frequency < 3 GHz ≤1.6 (0.4 GHz ≤ frequency < 3.1 GHz) At 3 GHz ≤ setting frequency ≤ 4.2 GHz ≤1.9 (2.9 GHz ≤ frequency ≤ 4.3 GHz) At 4.2 GHz < setting frequency ≤ 6 GHz ≤2.0 (4.1 GHz < frequency ≤ 6.1 GHz)</p> |
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Radio Communication Test Station MT8000A Specifications

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| Transmission Characteristics | <p>Frequency Setting range: 0.4 GHz to 6 GHz Setting resolution: 1 Hz Accuracy: Depend on accuracy of reference oscillator</p> <p>Level Setting range Main 1, Main 2 -110 to -10 dBm (0.4 GHz ≤ setting frequency ≤ 6 GHz) Aux 1, Aux 2 -110 to 0 dBm (0.4 GHz ≤ setting frequency ≤ 6 GHz) Setting resolution: 0.1 dB</p> <p>Accuracy Main 1, Main 2 After Cal, with CW, 0.4 GHz ≤ setting frequency < 3 GHz, output level ≥ -100 dBm ±0.7 dB (typ.) ±1.0 dB (+18°C to +28°C) ±1.3 dB (+5°C to +40°C) After Cal, with CW, 3 GHz ≤ setting frequency ≤ 6 GHz, output level ≥ -100 dBm ±1.0 dB (+18°C to +28°C) ±1.3 dB (+5°C to +40°C) Aux 1, Aux 2 After Cal, with CW, 0.4 GHz ≤ setting frequency < 3 GHz, output level ≥ -100 dBm ±0.7 dB (typ.) ±1.0 dB (+18°C to +28°C) ±1.3 dB (+5°C to +40°C) After Cal, with CW, 3 GHz ≤ setting frequency ≤ 4.2 GHz, output level ≥ -100 dBm ±1.0 dB (+18°C to +28°C) ±1.3 dB (+5°C to +40°C) After Cal, with CW, 4.2 GHz < setting frequency ≤ 6 GHz, output level ≥ -100 dBm ±1.5 dB (+18°C to +28°C) ±2.0 dB (+5°C to +40°C)</p> <p>Signal purity Non-harmonic spurious With CW, 0.4 GHz ≤ setting frequency < 0.6 GHz, maximum output level, setting frequency ±10 MHz (exclude <0.4 GHz), exclude setting frequency ±2.5 MHz ≤-40 dBc With CW, 0.6 GHz ≤ setting frequency < 3.3 GHz, maximum output level, non-harmonic on setting frequency ±100 MHz, exclude setting frequency ±2.5 MHz ≤-40 dBc With CW, 3.3 GHz ≤ setting frequency ≤ 6 GHz, maximum output level, non-harmonic on setting frequency ±200 MHz, exclude setting frequency ±2.5 MHz ≤-40 dBc With CW, 0.4 GHz ≤ setting frequency < 0.6 GHz, maximum output level, 0.4 GHz ≤ non-harmonic frequency ≤ 6 GHz, exclude setting frequency ±10 MHz ≤-30 dBc With CW, 0.6 GHz ≤ setting frequency < 3.3 GHz, maximum output level, 0.4 GHz ≤ non-harmonic frequency ≤ 6 GHz, exclude setting frequency ±100 MHz ≤-30 dBc With CW, 3.3 GHz ≤ setting frequency ≤ 6 GHz, maximum output level, 0.4 GHz ≤ non-harmonic frequency ≤ 6.2 GHz, exclude setting frequency ±200 MHz ≤-30 dBc Harmonic spurious With CW, 0.4 GHz ≤ setting frequency ≤ 3 GHz, maximum output level ≤-25 dBc Maximum modulation bandwidth 20 MHz (0.4 GHz ≤ setting frequency < 0.6 GHz) 200 MHz (0.6 GHz ≤ setting frequency < 3.3 GHz) 400 MHz (3.3 GHz ≤ setting frequency ≤ 6 GHz)</p> |
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Radio Communication Test Station MT8000A Specifications

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| Receiving Characteristics | <p>Frequency Setting range: 0.4 GHz to 6 GHz Setting resolution: 1 Hz</p> <p>Level Maximum input level: +30 dBm, 0 VDC (0.4 GHz ≤ setting frequency ≤ 6 GHz, with CW) Setting range: -50 to +26 dBm Setting resolution: 0.1 dB</p> <p>Amplitude Measurement resolution: 0.01 dB Measurement accuracy After Cal, with CW, 0.4 GHz ≤ setting frequency < 3 GHz, measurement bandwidth is 100 MHz, at the signal equal to the setting frequency and the setting level ±0.5 dB (Setting level ≥ -20 dBm, typical) ±0.7 dB (Setting level ≥ -40 dBm, typical) ±1.0 dB (Setting level ≥ -40 dBm, +18°C to +28°C) ±1.3 dB (Setting level ≥ -50 dBm, +18°C to +28°C) After Cal, with CW, 3 GHz ≤ setting frequency ≤ 6 GHz, measurement bandwidth is 100 MHz, at the signal equal to the setting frequency and the setting level ±1.0 dB (Setting level ≥ -40 dBm, +18°C to +28°C) ±1.3 dB (Setting level ≥ -50 dBm, +18°C to +28°C)</p> |
|---------------------------|--|

3 GHz-12 GHz RF Sub Module MT8000A-022
Extend RF 2.4 GHz-3 GHz MT8000A-023
Extend RF 6 GHz-7.125 GHz MT8000A-024

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| General | <p>RF input/output connector Main 1, Main 2 Connector: N (f) Impedance: 50Ω (nom.) VSWR At 2.4 GHz ≤ setting frequency < 3 GHz, with MT8000A-023 ≤1.7 (2.3 GHz ≤ frequency < 3.1 GHz) At 3 GHz ≤ setting frequency ≤ 6 GHz ≤1.5 (2.9 GHz ≤ frequency ≤ 6.1 GHz) At 6 GHz < setting frequency ≤ 7.125 GHz, with MT8000A-024 ≤1.7 (5.9 GHz < frequency ≤ 7.225 GHz)</p> <p>RF output connector Aux 1, Aux 2 Connector: N (f) Impedance: 50Ω (nom.) VSWR At 2.4 GHz ≤ setting frequency ≤ 4.2 GHz, with MT8000A-023 ≤1.8 (2.3 GHz ≤ frequency ≤ 4.3 GHz) At 3 GHz ≤ setting frequency ≤ 4.2 GHz, without MT8000A-023 ≤1.8 (2.9 GHz ≤ frequency ≤ 4.3 GHz) At 4.2 GHz < setting frequency ≤ 6 GHz ≤2.0 (4.1 GHz < frequency ≤ 6.1 GHz) At 6 GHz < setting frequency ≤ 7.125 GHz, with MT8000A-024 ≤2.2 (5.9 GHz < frequency ≤ 7.225 GHz)</p> |
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Radio Communication Test Station MT8000A Specifications

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|-------------------------------------|---|
| <p>Transmission Characteristics</p> | <p>Frequency Setting range: 2 GHz to 12 GHz Setting resolution: 1 Hz Accuracy: Depend on accuracy of reference oscillator</p> <p>Level Setting range Main 1, Main 2 -110 to -10 dBm (2 GHz ≤ setting frequency ≤ 6 GHz) -110 to -18 dBm (6 GHz < setting frequency ≤ 12 GHz) Aux 1, Aux 2 -110 to 0 dBm (2 GHz ≤ setting frequency ≤ 6 GHz) -110 to -8 dBm (6 GHz < setting frequency ≤ 12 GHz) Setting resolution: 0.1 dB</p> <p>Accuracy Main 1, Main 2 After Cal, with CW, 2.4 GHz ≤ setting frequency < 3 GHz, output level ≥ -100 dBm, with MT8000A-023 ±0.7 dB (typ.) ±1.0 dB (+18°C to +28°C) ±1.3 dB (+5°C to +40°C) After Cal, with CW, 3 GHz ≤ setting frequency ≤ 6 GHz, output level ≥ -100 dBm ±1.0 dB (+18°C to +28°C) ±1.3 dB (+5°C to +40°C) After Cal, with CW, 6 GHz < setting frequency ≤ 7.125 GHz, output level ≥ -100 dBm, with MT8000A-024 ±1.3 dB (+18°C to +28°C) ±1.6 dB (+5°C to +40°C) Aux 1, Aux 2 After Cal, with CW, 2.4 GHz ≤ setting frequency < 3 GHz, output level ≥ -100 dBm, with MT8000A-023 ±0.7 dB (typ.) ±1.0 dB (+18°C to +28°C) ±1.3 dB (+5°C to +40°C) After Cal, with CW, 3 GHz ≤ setting frequency ≤ 4.2 GHz, output level ≥ -100 dBm ±1.0 dB (+18°C to +28°C) ±1.3 dB (+5°C to +40°C) After Cal, with CW, 4.2 GHz < setting frequency ≤ 6 GHz, output level ≥ -100 dBm ±1.5 dB (+18°C to +28°C) ±2.0 dB (+5°C to +40°C) After Cal, with CW, 6 GHz < setting frequency ≤ 7.125 GHz, output level ≥ -100 dBm, with MT8000A-024 ±1.5 dB (typ.) ±1.8 dB (+18°C to +28°C) ±2.3 dB (+5°C to +40°C)</p> <p>Signal purity Non-harmonic spurious With CW, maximum output level, setting frequency ±100 MHz, exclude setting frequency ±2.5 MHz ≤-40 dBc (2.4 GHz ≤ setting frequency ≤ 6 GHz, with MT8000A-023) ≤-40 dBc (3 GHz ≤ setting frequency ≤ 6 GHz, without MT8000A-023) ≤-40 dBc (2.4 GHz ≤ setting frequency ≤ 7.125 GHz, with MT8000A-023 and MT8000A-024) ≤-40 dBc (3 GHz ≤ setting frequency ≤ 7.125 GHz, without MT8000A-023, with MT8000A-024) With CW, maximum output level, exclude setting frequency ±100 MHz ≤-30 dBc (2.4 GHz ≤ setting frequency ≤ 6 GHz, 2.3 GHz ≤ non-harmonic frequency ≤ 6.1 GHz, with MT8000A-023) ≤-30 dBc (3 GHz ≤ setting frequency ≤ 6 GHz, 2.9 GHz ≤ non-harmonic frequency ≤ 6.1 GHz, without MT8000A-023) ≤-30 dBc (2.4 GHz ≤ setting frequency ≤ 7.125 GHz, 2.3 GHz ≤ non-harmonic frequency ≤ 7.225 GHz, with MT8000A-023 and MT8000A-024) ≤-30 dBc (3 GHz ≤ setting frequency ≤ 7.125 GHz, 2.9 GHz ≤ non-harmonic frequency ≤ 7.225 GHz, without MT8000A-023, with MT8000A-024) Maximum modulation bandwidth: 200 MHz (2 GHz ≤ setting frequency ≤ 6 GHz) 1 GHz (6 GHz < setting frequency ≤ 12 GHz)</p> |
| <p>Receiving Characteristics</p> | <p>Frequency Setting range: 2 GHz to 12 GHz (Center frequency setting range of measurement software) Setting resolution: 1 Hz</p> <p>Level Maximum input level: +35 dBm, 0 VDC (2.4 GHz ≤ setting frequency ≤ 6 GHz, with CW, with MT8000A-023) +35 dBm, 0 VDC (3 GHz ≤ setting frequency ≤ 6 GHz, with CW, without MT8000A-023) +30 dBm, 0 VDC (6 GHz < setting frequency ≤ 12 GHz, with CW) Setting range: -50 to +26 dBm Setting resolution: 0.1 dB</p> <p>Amplitude Measurement resolution: 0.01 dB Measurement accuracy: At the signal equal to the setting frequency and the setting level After Cal, with CW, 2.4 GHz ≤ setting frequency < 3 GHz, measurement bandwidth is 100 MHz, with MT8000A-023 ±0.5 dB (Setting level ≥ -20 dBm, typ.) ±0.7 dB (Setting level ≥ -40 dBm, typ.) ±1.0 dB (Setting level ≥ -40 dBm, +18°C to +28°C) ±1.3 dB (Setting level ≥ -50 dBm, +18°C to +28°C) After Cal, with CW, 3 GHz ≤ setting frequency ≤ 6 GHz, measurement bandwidth is 100 MHz ±1.0 dB (Setting level ≥ -40 dBm, +18°C to +28°C) ±1.3 dB (Setting level ≥ -50 dBm, +18°C to +28°C) After Cal, with CW, 6 GHz < setting frequency ≤ 7.125 GHz, measurement bandwidth is 100 MHz, with MT8000A-024 ±1.3 dB (Setting level ≥ -40 dBm, +18°C to +28°C) ±1.6 dB (Setting level ≥ -50 dBm, +18°C to +28°C)</p> |

Radio Communication Test Station MT8000A Specifications

0.4 GHz-6 GHz Multi RF Module MT8000A-031, 0.4 GHz-6 GHz Multi RF Extension MT8000A-032

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|------------------------------|--|
| General | <p>RF input/output connector Main 1, Main 2 Connector: N (f) Impedance: 50Ω (nom.) VSWR: ≤1.5 (0.4 GHz ≤ frequency ≤ 6 GHz)</p> <p>RF output connector Aux 1, Aux 2, Tx 1, Tx 2 Connector: N (f) Impedance: 50Ω (nom.) VSWR: ≤1.6 (0.4 GHz ≤ frequency ≤ 3.1 GHz) ≤1.9 (3.1 GHz < frequency ≤ 4.3 GHz) ≤2.0 (4.3 GHz < frequency ≤ 6.0 GHz)</p> |
| Transmission Characteristics | <p>Frequency Setting range: 0.4 GHz to 6.0 GHz (Frequency setting range of measurement software) Setting resolution: 1 Hz Accuracy: Depend on accuracy of reference oscillator</p> <p>Level Setting range Main 1, Main 2 -110 to -10 dBm (0.4 GHz ≤ setting frequency ≤ 6 GHz) Aux 1, Aux 2, Tx 1, Tx 2 -110 to 0 dBm (0.4 GHz ≤ setting frequency ≤ 6 GHz) Setting resolution: 0.1 dB</p> <p>Accuracy Main 1, Main 2 After Cal, with CW, 0.4 GHz ≤ setting frequency < 3 GHz, Setting level ≥ -100 dBm ±0.7 dB (Typ.) ±1.0 dB (+18°C to +28°C) ±1.3 dB (+5°C to +40°C) After Cal, with CW, 3 GHz ≤ setting frequency ≤ 6 GHz, Setting level ≥ -100 dBm ±1.0 dB (+18°C to +28°C) ±1.3 dB (+5°C to +40°C)</p> <p>Aux 1, Aux 2, Tx 1, Tx 2 After Cal, with CW, 0.4 GHz ≤ setting frequency < 3 GHz, Setting level ≥ -100 dBm ±0.7 dB (Typ.) ±1.0 dB (+18°C to +28°C) ±1.3 dB (+5°C to +40°C)</p> <p>After Cal, with CW, 3 GHz ≤ setting frequency ≤ 4.2 GHz, Setting level ≥ -100 dBm ±1.0 dB (+18°C to +28°C) ±1.3 dB (+5°C to +40°C)</p> <p>After Cal, with CW, 4.2 GHz < setting frequency ≤ 6 GHz, Setting level ≥ -100 dBm ±1.5 dB (+18°C to +28°C) ±2.0 dB (+5°C to +40°C)</p> <p>Signal purity Non-harmonic spurious: With CW, maximum out level ≤ -40 dBc (0.4 GHz ≤ setting frequency < 0.6 GHz, non-harmonic spurious within setting frequency ±10 MHz, exclude setting frequency < 0.4 GHz, exclude non-harmonic spurious within setting frequency ±2.5 MHz) ≤ -40 dBc (0.6 GHz ≤ setting frequency ≤ 6 GHz, non-harmonic spurious within setting frequency ±100 MHz, exclude non-harmonic spurious within setting frequency ±2.5 MHz) ≤ -30 dBc (0.4 GHz ≤ setting frequency < 0.6 GHz, 0.4 GHz ≤ non-harmonic spurious ≤ 6 GHz, exclude non-harmonic spurious within setting frequency ±10 MHz) ≤ -30 dBc (0.6 GHz ≤ setting frequency < 3.3 GHz, 0.4 GHz ≤ non-harmonic spurious ≤ 6 GHz, exclude non-harmonic spurious within setting frequency ±100 MHz) ≤ -30 dBc (3.3 GHz ≤ setting frequency ≤ 6 GHz, 0.4 GHz ≤ non-harmonic spurious ≤ 6.1 GHz, exclude non-harmonic spurious within setting frequency ±100 MHz)</p> <p>Harmonic spurious: With CW, maximum out level ≤ -25 dBc (0.4 GHz ≤ setting frequency ≤ 3 GHz)</p> <p>Maximum modulation bandwidth 20 MHz (0.4 GHz ≤ setting frequency < 0.6 GHz) 200 MHz (0.6 GHz ≤ setting frequency ≤ 6 GHz)</p> |
| Receiving Characteristics | <p>Frequency Setting range: 0.4 GHz to 6 GHz (Frequency setting range of measurement software) Setting resolution: 1 Hz</p> <p>Level Maximum input level: +35 dBm, 0 VDC (with CW, 0.4 GHz ≤ setting frequency ≤ 6 GHz) Setting range: -50 to +26 dBm Setting resolution: 0.1 dB</p> <p>Amplitude Measurement resolution: 0.01 dB Measurement accuracy: After Cal, with CW, at the signal equal to the setting frequency and the setting level 0.4 GHz ≤ setting frequency ≤ 0.6 GHz, measurement bandwidth 10 MHz ±0.5 dB (setting level ≥ -20 dBm, typ.) ±0.7 dB (setting level ≥ -40 dBm, typ.) ±1.0 dB (setting level ≥ -40 dBm, +18°C to +28°C) ±1.3 dB (setting level ≥ -50 dBm, +18°C to +28°C)</p> <p>0.6 GHz < setting frequency < 3 GHz, measurement bandwidth 100 MHz ±0.5 dB (setting level ≥ -20 dBm, typ.) ±0.7 dB (setting level ≥ -40 dBm, typ.) ±1.0 dB (setting level ≥ -40 dBm, +18°C to +28°C) ±1.3 dB (setting level ≥ -50 dBm, +18°C to +28°C)</p> <p>3 GHz ≤ setting frequency ≤ 6 GHz, measurement bandwidth 100 MHz ±1.0 dB (setting level ≥ -40 dBm, +18°C to +28°C) ±1.3 dB (setting level ≥ -50 dBm, +18°C to +28°C)</p> |

Radio Communication Test Station MT8000A Specifications

0.4 GHz-7.125 GHz Enhanced RF Module MT8000A-033

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|------------------------------|---|
| General | <p>RF input/output connector Main 1, Main 2, Main 3, Main 4 Connector: N (J) type Impedance: 50Ω (nom.) VSWR: ≤1.7 (0.4 GHz ≤ frequency ≤ 0.6 GHz) ≤1.5 (0.6 GHz < frequency ≤ 5.0 GHz) ≤1.9 (5.0 GHz < frequency ≤ 7.6 GHz)</p> <p>RF output connector Aux 1, Aux 2, Aux 3, Aux 4 Connector: N (J) type Impedance: 50Ω (nom.) VSWR: ≤1.8 (0.4 GHz ≤ frequency ≤ 0.6 GHz) ≤1.7 (0.6 GHz < frequency ≤ 3.0 GHz) ≤1.9 (3.0 GHz < frequency ≤ 4.2 GHz) ≤2.0 (4.2 GHz < frequency ≤ 6.0 GHz) ≤2.2 (6.0 GHz < frequency ≤ 7.6 GHz)</p> |
| IF Input/Output Connector | <p>RF Converter B1, B2 Connector: SMA (f) Impedance: 50Ω (nom.)</p> |
| External Interface | <p>RF Converter A1, A2: Round multiway type connector</p> |
| Transmission Characteristics | <p>Frequency Setting range: 0.4 GHz to 5.0 GHz (Internal signal generator Tx-A) 0.4 GHz to 7.125 GHz (Internal signal generator Tx-B) Setting resolution: 1 Hz (Tx-A, Tx-B) Accuracy: Depend on accuracy of reference oscillator</p> <p>Level Setting range Main 1, Main 2, Main 3, Main 4 -110 to -10 dBm (0.4 GHz ≤ frequency ≤ 7.125 GHz) Aux 1, Aux 2, Aux 3, Aux 4 -110 to 0 dBm (0.4 GHz ≤ frequency ≤ 7.125 GHz) Setting resolution: 0.1 dB Accuracy Main 1, Main 2, Main 3, Main 4 After calibration, CW, 0.4 GHz ≤ Set frequency ≤ 0.6 GHz, -100 dBm ≤ Output Level, Use of either Tx-A or Tx-B signal output, Use of both Tx-A and Tx-B signal output, Each output with a signal level difference between Tx-A and Tx-B ≤ 25 dB ±0.7 dB (Typ.) ±1.0 dB (+18°C to +28°C) ±1.4 dB (+5°C to +40°C) After calibration, CW, 0.6 GHz < Set frequency ≤ 3.0 GHz, -100 dBm ≤ Output Level, Use of either Tx-A or Tx-B signal output, Use of both Tx-A and Tx-B signal output, Each output with a signal level difference between Tx-A and Tx-B ≤ 25 dB ±0.7 dB (Typ.) ±1.0 dB (+18°C to +28°C) ±1.3 dB (+5°C to +40°C) After calibration, CW, 3.0 GHz < Set frequency ≤ 5.0 GHz, -100 dBm ≤ Output Level, Use of either Tx-A or Tx-B signal output, Use of both Tx-A and Tx-B signal output, Each output with a signal level difference between Tx-A and Tx-B ≤ 25 dB ±1.0 dB (+18°C to +28°C) ±1.3 dB (+5°C to +40°C) After calibration, CW, 5.0 GHz < Set frequency ≤ 7.125 GHz, -100 dBm ≤ Output Level Use of either Tx-A or Tx-B signal output, Use of both Tx-A and Tx-B signal output, Each output with a signal level difference between Tx-A and Tx-B ≤ 25 dB ±1.0 dB (+18°C to +28°C) ±1.5 dB (+5°C to +40°C) Aux 1, Aux 2, Aux 3, Aux 4 After calibration, CW, 0.4 GHz ≤ Set frequency ≤ 0.6 GHz, -100 dBm ≤ Output Level Use of either Tx-A or Tx-B signal output, Use of both Tx-A and Tx-B signal output, Each output with a signal level difference between Tx-A and Tx-B ≤ 25 dB ±0.7 dB (Typ.) ±1.0 dB (+18°C to +28°C) ±1.5 dB (+5°C to +40°C) After calibration, CW, 3.0 GHz < Set frequency ≤ 4.2 GHz, -100 dBm ≤ Output Level Use of either Tx-A or Tx-B signal output, Use of both Tx-A and Tx-B signal output, Each output with a signal level difference between Tx-A and Tx-B ≤ 25 dB ±1.0 dB (+18°C to +28°C) ±1.3 dB (+5°C to +40°C) After calibration, CW, 4.2 GHz < Set frequency ≤ 6.0 GHz, -100 dBm ≤ Output Level Use of either Tx-A or Tx-B signal output, Use of both Tx-A and Tx-B signal output, Each output with a signal level difference between Tx-A and Tx-B ≤ 25 dB ±1.0 dB (nom.) ±1.5 dB (+18°C to +28°C) ±2.0 dB (+5°C to +40°C) After calibration, CW, 6 GHz < Set frequency ≤ 7.125 GHz, -100 dBm ≤ Output Level Use of either Tx-A or Tx-B signal output, Use of both Tx-A and Tx-B signal output, Each output with a signal level difference between Tx-A and Tx-B ≤ 25 dB ±1.5 dB (Typ.) ±1.8 dB (+18°C to +28°C) ±2.3 dB (+5°C to +40°C)</p> |

Radio Communication Test Station MT8000A Specifications

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|---|--|
| <p>Transmission Characteristics (continued)</p> | <p>Signal purity Non-harmonic spurious CW, use of either Tx-A or Tx-B signal output, Max Output Level, other output levels are OFF 0.4 GHz ≤ Set frequency ≤ 0.6 GHz, 0.4 GHz ≤ Non-harmonic of Set frequency ≤ 7.125 GHz, except Set frequency within ±10 MHz ≤ -40 dBc CW, use of either Tx-A or Tx-B signal output, Max Output Level, other output levels are OFF 0.6 GHz < Set frequency ≤ 7.125 GHz, 0.4 GHz ≤ Non-harmonic of Set frequency ≤ 7.125 GHz, except Set frequency within ±100 MHz ≤ -40 dBc Harmonic spurious CW, use of either Tx-A or Tx-B signal output, Max Output Level, other output levels are OFF 0.4 GHz ≤ Set frequency ≤ 3.5625 GHz ≤ -25 dBc Maximum modulation bandwidth 20 MHz (Set frequency ≤ 0.6 GHz) 400 MHz (0.6 GHz < Set frequency)</p> |
| <p>Receiving Characteristics</p> | <p>Frequency Setting range: 0.4 GHz to 7.125 GHz Setting resolution: 1 Hz Level Maximum input level: CW, +30 dBm (0.4 GHz ≤ Set frequency ≤ 7.125 GHz), 0 VDC Setting range: -60 to +30 dBm Setting resolution: 0.1 dB Amplitude measurement Measurement resolution: 0.01 dB Measurement accuracy After calibration, CW, 0.4 GHz ≤ Set frequency ≤ 0.6 GHz, Measurement Bandwidth 10 MHz, Measured signal with the same frequency as the set frequency, Measured signal at the same level as the set level With the Main output connector selected, Total power of Tx-A and Tx-B ≤ -20 dBm ±0.5 dB (setting level ≥ -20 dBm, typ.) ±0.7 dB (setting level ≥ -40 dBm, typ.) ±1.0 dB (setting level ≥ -40 dBm, +18°C to +28°C) ±1.3 dB (setting level ≥ -50 dBm, +18°C to +28°C) ±1.6 dB (setting level ≥ -60 dBm, +18°C to +28°C) After calibration, CW, 0.6 GHz < Set frequency ≤ 1.3 GHz, Measurement Bandwidth 20 MHz, Measured signal with the same frequency as the set frequency, Measured signal at the same level as the set level With the Main output connector selected, Total power of Tx-A and Tx-B ≤ -20 dBm ±0.5 dB (setting level ≥ -20 dBm, typ.) ±0.7 dB (setting level ≥ -40 dBm, typ.) ±1.0 dB (setting level ≥ -40 dBm, +18°C to +28°C) ±1.3 dB (setting level ≥ -50 dBm, +18°C to +28°C) ±1.6 dB (setting level ≥ -60 dBm, +18°C to +28°C) After calibration, CW, 1.3 GHz < Set frequency ≤ 3.0 GHz, Measurement Bandwidth 100 MHz, Measured signal with the same frequency as the set frequency, Measured signal at the same level as the set level With the Main output connector selected, Total power of Tx-A and Tx-B ≤ -20 dBm ±0.5 dB (setting level ≥ -20 dBm, typ.) ±0.7 dB (setting level ≥ -40 dBm, typ.) ±1.0 dB (setting level ≥ -40 dBm, +18°C to +28°C) ±1.3 dB (setting level ≥ -50 dBm, +18°C to +28°C) ±1.6 dB (setting level ≥ -60 dBm, +18°C to +28°C) After calibration, CW, 3 GHz < Set frequency ≤ 5 GHz, Measurement Bandwidth 100 MHz, Measured signal with the same frequency as the set frequency, Measured signal at the same level as the set level ±1.0 dB (setting level ≥ -40 dBm, +18°C to +28°C) ±1.3 dB (setting level ≥ -50 dBm, +18°C to +28°C) ±1.6 dB (setting level ≥ -60 dBm, +18°C to +28°C) After calibration, CW, 5 GHz < Set frequency ≤ 6 GHz, Measurement Bandwidth 100 MHz, Measured signal with the same frequency as the set frequency, Measured signal at the same level as the set level ±1.0 dB (setting level ≥ -40 dBm, +18°C to +28°C) ±1.3 dB (setting level ≥ -50 dBm, +18°C to +28°C) ±1.6 dB (setting level ≥ -60 dBm, +18°C to +28°C) After calibration, CW, 6 GHz < Set frequency ≤ 7.125 GHz, Measurement Bandwidth 100 MHz, Measured signal with the same frequency as the set frequency, Measured signal at the same level as the set level ±1.0 dB (setting level ≥ -40 dBm, +18°C to +28°C) ±1.3 dB (setting level ≥ -50 dBm, +18°C to +28°C) Linearity After calibration, CW, 0.4 GHz ≤ Set frequency ≤ 0.6 GHz, Set level ≥ -10 dBm, Measurement Bandwidth 100 MHz, Measured signal with the same frequency as the set frequency, Measured signal up to the level 40 dB lower than the set level ±0.15 dB (Typ.) After calibration, CW, 0.6 GHz < Set frequency ≤ 7.125 GHz, Set level ≥ -10 dBm, Measurement Bandwidth 20 MHz, With the Main output connector selected, Total power of Tx-A and Tx-B ≤ -20 dBm, Measured signal with the same frequency as the set frequency, Measured signal up to the level 40 dB lower than the set level ±0.15 dB (Typ.) After calibration, CW, 0.6 GHz < Set frequency ≤ 7.125 GHz, Set level ≥ -10 dBm, Measurement Bandwidth 100 MHz, Measured signal with the same frequency as the set frequency, Measured signal up to the level 20 dB lower than the set level ±0.15 dB (Typ.) Measured signal up to the level 30 dB lower than the set level ±0.34 dB (Typ.)</p> |

Radio Communication Test Station MT8000A Specifications

Peripherals

28 GHz RF Converter MA80001A

| | | |
|------------------------------|--|---|
| RF Input/Output Connector | Port 1, Port 2 Connector: K (m) Impedance: 50Ω (nom.) VSWR (when transmitted): ≤2.5 (23.75 GHz ≤ frequency ≤ 30 GHz) VSWR (when received): ≤2.5 (23.45 GHz ≤ frequency ≤ 30.3 GHz) | |
| Transmission Characteristics | Frequency Setting range: 24.25 GHz to 29.5 GHz (Center frequency setting range of measurement software) Setting resolution: 1 Hz Accuracy: Depend on accuracy of MT8000A reference oscillator Level Setting range: -90 to +5 dBm Setting resolution: 0.1 dB Accuracy: ±1.5 dB (+18°C to +28°C, after Cal, with CW) Signal purity Non-harmonic spurious With CW, maximum output level ≤-40 dBc (non-harmonic on setting frequency ±500 MHz, non-harmonic, exclude setting frequency ±50 MHz) ≤-30 dBc (23.75 GHz ≤ non-harmonic frequency ≤ 30 GHz, exclude setting frequency within ±500 MHz and -4500 MHz) Maximum modulation bandwidth: 1 GHz | |
| Receiving Characteristics | Frequency Setting range: 24.25 GHz to 29.5 GHz (Center frequency setting range of measurement software) Setting resolution: 1 Hz Level Maximum input level: +20 dBm, 0 VDC (with CW) Setting range: -70 to +5 dBm Setting resolution: 0.1 dB Amplitude Measurement resolution: 0.01 dB Measurement accuracy: At the signal equal to the setting frequency and the setting level After Cal, with CW, 24.25 GHz ≤ setting frequency ≤ 29.5 GHz, measurement bandwidth 100 MHz, +18°C to +28°C ±1.5 dB (-50 dBm ≤ setting level ≤ +5 dBm) ±2.5 dB (-70 dBm ≤ setting level < -50 dBm) | |
| IF Input/Output Connector | Connect to MT8000A: B Connector: N (f) Impedance: 50Ω (nom.) | |
| External Control Connector | Round multiway type connector | |
| DC Input Connector | Voltage: 12 VDC Current: ≤3 A | |
| Dimensions and Mass | Dimensions: 92 (W) × 175 (H) × 260 (D) mm (excluding projections) Mass: ≤6 kg | |
| Environmental Conditions | Operating temperature range: +5°C to +40°C (without condensation) Storage temperature range: -20°C to +71°C (without condensation) | |
| CE | EMC | 2014/30/EU, EN61326-1, EN61000-3-2 |
| | LVD | 2014/35/EU, EN61010-1 |
| | RoHS | 2011/65/EU, (EU) 2015/863, EN IEC 63000: 2018 |
| UKCA | EMC | S.I. 2016 No.1091, EN 61326-1, EN61000-3-2 |
| | LVD | S.I. 2016 No.1101, EN 61010-1 |
| | RoHS | S.I. 2012 No.3032, EN IEC 63000:2018 |

Radio Communication Test Station MT8000A Specifications

Peripherals

39 GHz RF Converter MA80002A

| | | |
|------------------------------|---|---|
| RF Input/Output Connector | Port 1, Port 2 Connector: K (m) Impedance: 50Ω (nom.) VSWR: ≤2.9 (36.2 GHz ≤ frequency ≤ 40.0 GHz) | |
| Transmission Characteristics | Frequency Setting range: 37.0 GHz to 42.5 GHz (Center frequency setting range of measurement software) Setting resolution: 1 Hz Accuracy: Depend on accuracy of MT8000A reference oscillator Level Setting range: -90 to +5 dBm Setting resolution: 0.1 dB Accuracy: ±1.5 dB (typ., after Cal, with CW, 37.0 GHz ≤ setting frequency ≤ 40.0 GHz) ±2.0 dB (+18°C to +28°C, after Cal, with CW, 37.0 GHz ≤ setting frequency ≤ 40.0 GHz) Signal purity Non-harmonic spurious With CW, maximum output level, 37.0 GHz ≤ setting frequency ≤ 40.0 GHz ≤-40 dBc (non-harmonic on setting frequency ±500 MHz, exclude non-harmonic frequency >40.0 GHz and setting frequency ±50 MHz) ≤-30 dBc (36.5 GHz ≤ non-harmonic frequency ≤ 40.0 GHz, exclude setting frequency ±500 MHz) Maximum modulation bandwidth: 1 GHz | |
| Receiving Characteristics | Frequency Setting range: 37.0 GHz to 42.5 GHz (Center frequency setting range of measurement software) Setting resolution: 1 Hz Level Maximum input level: +17 dBm, 0 VDC (with CW) Setting range: -70 to +5 dBm Setting resolution: 0.1 dB Amplitude Measurement resolution: 0.01 dB Measurement accuracy: At the signal equal to the setting frequency and the setting level After Cal, with CW, 37.0 GHz ≤ setting frequency ≤ 40.0 GHz, measurement bandwidth 100 MHz ±1.5 dB (-50 dBm ≤ setting level ≤ +5 dBm, typ.) ±2.0 dB (-70 dBm ≤ setting level < -50 dBm, typ.) ±2.0 dB (-50 dBm ≤ setting level ≤ +5 dBm, +18°C to +28°C) ±2.5 dB (-70 dBm ≤ setting level < -50 dBm, +18°C to +28°C) | |
| IF Input/Output Connector | Connect to MT8000A: B Connector: N (f) Impedance: 50Ω (nom.) | |
| External Control Connector | Round multiway type connector | |
| DC Input Connector | Voltage: 12 VDC Current: ≤4 A | |
| Dimensions and Mass | Dimensions: 92 (W) × 175 (H) × 304 (D) mm (excluding projections) Mass: ≤6 kg | |
| Environmental Conditions | Operating temperature range: +5°C to +40°C (without condensation) Storage temperature: -20°C to +71°C (without condensation) | |
| CE | EMC | 2014/30/EU, EN61326-1, EN61000-3-2 |
| | LVD | 2014/35/EU, EN61010-1 |
| | RoHS | 2011/65/EU, (EU) 2015/863, EN IEC 63000: 2018 |
| UKCA | EMC | S.I. 2016 No.1091, EN 61326-1, EN61000-3-2 |
| | LVD | S.I. 2016 No.1101, EN 61010-1 |
| | RoHS | S.I. 2012 No.3032, EN IEC 63000:2018 |

Radio Communication Test Station MT8000A Specifications

Peripherals

Multiband RF Converter MA80003A

| | | |
|------------------------------|--|--|
| RF Input/Output Connector | Port 1, Port 2 Connector: V (m) Impedance: 50Ω (nom.) VSWR: ≤2.5 (22.65 GHz ≤ frequency ≤ 31.1 GHz) ≤2.9 (35.4 GHz ≤ frequency ≤ 43.5 GHz) ≤2.9 (43.5 GHz < frequency ≤ 45.1 GHz, typ.) | |
| Transmission Characteristics | Frequency Setting range: 24.25 GHz to 29.5 GHz, 37.0 GHz to 43.5 GHz Setting resolution: 1 Hz Accuracy: Depend on accuracy of MT8000A reference oscillator Level Setting range: -70 to +15 dBm Setting resolution: 0.1 dB Accuracy: After Cal, with CW, Setting level ≤ ±10 dBm ±1.5 dB (24.25 GHz ≤ setting frequency ≤ 29.5 GHz, +18°C to +28°C) ±1.5 dB (37.0 GHz ≤ setting frequency ≤ 40.0 GHz, typ.) ±2.0 dB (37.0 GHz ≤ setting frequency ≤ 40.0 GHz, +18°C to +28°C) ±1.5 dB (40.0 GHz < setting frequency ≤ 43.5 GHz, typ.) ±2.0 dB (40.0 GHz < setting frequency ≤ 43.5 GHz, +18°C to +28°C) Signal purity Non-harmonic spurious: With CW, Setting level = +10 dBm In-band Specification: ≤-40 dBc (non-harmonic on setting frequency ±500 MHz, exclude setting frequency ±500 MHz and non-harmonic frequency < 24.25 GHz, 29.5 GHz < non-harmonic frequency < 37.0 GHz and non-harmonic frequency > 43.5 GHz) Specification for interference signal source: ≤-37 dBc (non-harmonic on setting frequency ±1.5 GHz, exclude setting frequency ±500 MHz and non-harmonic frequency < 24.25 GHz, 29.5 GHz < non-harmonic frequency < 37.0 GHz and non-harmonic frequency > 43.5 GHz) Out-of-band Specification: ≤-30 dBc (24.25 GHz ≤ setting frequency ≤ 29.5 GHz, 24.25 GHz ≤ non-harmonic frequency ≤ 29.5 GHz and 37.0 GHz ≤ non-harmonic frequency ≤ 43.5 GHz, exclude setting frequency ±1.5 GHz, setting frequency - 4.5 GHz ±10 MHz and setting frequency + 4.5 GHz ±10 MHz) ≤-30 dBc (37.0 GHz ≤ setting frequency ≤ 43.5 GHz, 24.25 GHz ≤ non-harmonic frequency ≤ 29.5 GHz and 37.0 GHz ≤ non-harmonic frequency ≤ 43.5 GHz, exclude setting frequency ±1.5 GHz) Maximum modulation bandwidth: 1 GHz | |
| Receiving Characteristics | Frequency Setting range: 24.25 GHz to 29.5 GHz, 37.0 GHz to 43.5 GHz Setting resolution: 1 Hz Level Maximum input level: +20 dBm, 0 VDC (with CW) Setting range: -70 to +10 dBm Setting resolution: 0.1 dB Amplitude Measurement resolution: 0.01 dB Measurement accuracy: After Cal, with CW, measurement bandwidth 100 MHz, at the signal equal to the setting frequency and the setting level 24.25 GHz ≤ setting frequency ≤ 29.5 GHz ±1.0 dB (-50 dBm ≤ setting level ≤ +10 dBm, typ.) ±2.0 dB (-70 dBm ≤ setting level < -50 dBm, typ.) ±1.5 dB (-50 dBm ≤ setting level ≤ +10 dBm, +18°C to +28°C) ±2.5 dB (-70 dBm ≤ setting level < -50 dBm, +18°C to +28°C) 37.0 GHz ≤ setting frequency ≤ 40.0 GHz ±1.5 dB (-50 dBm ≤ setting level ≤ +10 dBm, typ.) ±2.0 dB (-70 dBm ≤ setting level < -50 dBm, typ.) ±2.0 dB (-50 dBm ≤ setting level ≤ +10 dBm, +18°C to +28°C) ±2.5 dB (-70 dBm ≤ setting level < -50 dBm, +18°C to +28°C) 40.0 GHz ≤ setting frequency ≤ 43.5 GHz ±1.5 dB (-50 dBm ≤ setting level ≤ +10 dBm, typ.) ±2.0 dB (-65 dBm ≤ setting level < -50 dBm, typ.) ±2.0 dB (-50 dBm ≤ setting level ≤ +10 dBm, +18°C to +28°C) ±2.5 dB (-65 dBm ≤ setting level < -50 dBm, +18°C to +28°C) | |
| IF Input/Output Connector | Connector: N (f) Impedance: 50Ω (nom.) | |
| External Control Connector | Round multiway type connector | |
| DC Input Connector | Voltage: 18 VDC Current: ≤5.5 A | |
| Dimensions and Mass | Dimensions: 83 (W) × 175 (H) × 304 (D) mm (excluding projections) Mass: ≤6 kg | |
| Environmental Conditions | Operating temperature range: +5°C to +45°C (without condensation) Storage temperature range: -20°C to +71°C (without condensation) | |
| CE | EMC | 2014/30/EU, EN61326-1, EN61000-3-2 |
| | LVD | 2014/35/EU, EN61010-1 |
| | RoHS | 2011/65/EU, (EU) 2015/863, EN IEC 63000:2018 |
| UKCA | EMC | S.I. 2016 No.1091, EN 61326-1, EN61000-3-2 |
| | LVD | S.I. 2016 No.1101, EN 61010-1 |
| | RoHS | S.I. 2012 No.3032, EN IEC 63000:2018 |

See **OTA Product Catalog** for detailed information of Shield Box MA8161A, RF Chamber MA8171A and CATR Anechoic chamber MA8172A.

Radio Communication Test Station MT8000A Ordering Information

Please specify the model/order number, name and quantity when ordering.

The names listed in the chart below are Order Names. The actual name of the item may differ from the Order Name.

| Model/Order No. | Name | Model/Order No. | Name |
|-----------------|---|-----------------|--|
| MT8000A | Main Frame Radio Communication Test Station | MX800010A | Software Options NR TDD Measurement Software |
| J1211 | Standard Accessories Power Cord (3.0 m, 100 V, 3 core) : 1 pc | MX800010A-001 | NR TDD SA Call Processing Software |
| J1440A | LAN Cable : 1 pc | MX800010A-002 | NR TDD OTA Measurement Software |
| W3955AE | MT8000A Operation Manual (DVD) : 1 pc | MX800010A-003 | NR IP Data Transfer |
| MX800000A | Platform Software | MX800010A-007 | NR TDD Sub-6 GHz Measurement |
| MT8000A-001 | Options Control Module | MX800010A-008 | NR TDD mmWave Measurement |
| MT8000A-009 | Multi-box Data Connection | MX800010A-009 | NR FDD Measurement |
| MT8000A-011 | Baseband Module | MX800010A-010 | NR Joint CA Measurement for sub-6 GHz |
| MT8000A-012 | Data Test Module | MX800010A-011 | NR FR1 + FR2 Interworking Measurement |
| MT8000A-020 | RF Base Module | MX800010A-012 | NR Supplementary Uplink Measurement |
| MT8000A-021 | 0.4 GHz-6 GHz RF Sub Module | MX800010A-024 | NR BW 200 MHz Per Cell |
| MT8000A-022 | 3 GHz-12 GHz RF Sub Module | MX800010A-026 | EIS-CDF Optimization using Machine Learning |
| MT8000A-023 | Extend RF 2.4 GHz-3 GHz | MX800010A-031 | NR TDD DL 2x2 MIMO Up To Total BW 100 MHz |
| MT8000A-024 | Extend RF 6 GHz-7.125 GHz | MX800010A-032 | NR TDD DL 2x2 MIMO Up To Total BW 200 MHz |
| MT8000A-031 | 0.4 GHz-6 GHz Multi RF Module | MX800010A-033 | NR TDD DL 2x2 MIMO Up To Total BW 400 MHz |
| MT8000A-032 | 0.4 GHz-6 GHz Multi RF Extension | MX800010A-034 | NR TDD DL 2x2 MIMO Up To Total BW 600 MHz |
| MT8000A-033 | 0.4 GHz-7.125 GHz Enhanced RF Module | MX800010A-035 | NR TDD DL 2x2 MIMO Up To Total BW 800 MHz |
| MA80001A | Converter 28 GHz RF Converter | MX800010A-036 | NR TDD DL 4x4 MIMO Up To Total BW 100 MHz |
| MA80002A | 39 GHz RF Converter | MX800010A-037 | NR TDD DL 4x4 MIMO Up To Total BW 200 MHz |
| MA80003A | Multiband RF Converter | MX800010A-038 | NR TDD DL 4x4 MIMO Up To Total BW 400 MHz |
| J1771A | Coaxial Cord (N-N, 1.0 m) | MX800010A-041 | NR TDD DL 2CA For Rx Measurement |
| J1771B | Coaxial Cord (N-N, 3.0 m) | MX800010A-042 | NR TDD DL 3CA For Rx Measurement |
| J1879B | Coaxial Cord (N-SMA, 3.0 m) | MX800010A-043 | NR TDD DL 4CA For Rx Measurement |
| J1772A | Control Cable, 1.0 m | MX800010A-044 | NR TDD DL 5CA For Rx Measurement |
| J1772B | Control Cable, 3.0 m | MX800010A-045 | NR TDD DL 6CA For Rx Measurement |
| ML2437A | Correction Equipments for OTA Measurement Power Meter | MX800010A-046 | NR TDD DL 7CA For Rx Measurement |
| MA2444D | Power Sensor | MX800010A-047 | NR TDD DL 8CA For Rx Measurement |
| MA2445D | Power Sensor | MX800010A-048 | NR TDD DL 9CA For Rx Measurement |
| 41KC-10 | 10 dB Attenuator | MX800010A-051 | NR TDD UL 2x2 MIMO Up To Total BW 100 MHz |
| J0004 | COAXIAL ADAPTOR | MX800010A-052 | NR TDD UL 2x2 MIMO Up To Total BW 200 MHz |
| J0008 | GPIB CABLE, 2.0M | MX800010A-053 | NR TDD UL 2x2 MIMO Up To Total BW 400 MHz |
| K222B | Adaptor | MX800010A-054 | NR TDD UL 2x2 MIMO Up To Total BW 600 MHz |
| Z1974A | Reference Antenna | MX800010A-061 | NR TDD UL 2CA For Tx Measurement |
| MT8821C | Measurement Hardware for NSA Radio Communication Analyzer | MX800010A-062 | NR TDD UL 3CA For Tx Measurement |
| MT8821C-008 | LTE Measurement Hardware | MX800010A-063 | NR TDD UL 4CA For Tx Measurement |
| MX882112C | LTE FDD Measurement Software | MX800010A-064 | NR TDD UL 5CA For Tx Measurement |
| MX882112C-010 | LTE FDD NSA for 5G Anchor | MX800010A-070 | LTE anchor Call Processing Software |
| MX882113C | LTE TDD Measurement Software | MX800010A-071 | LTE TRx Measurement |
| MX882113C-010 | LTE TDD NSA for 5G Anchor | MX800010A-072 | LTE DL 2 to 4CA |
| J1802A | Sync Cable | MX800010A-074 | LTE DL 2x2/4x4 MIMO |
| MD8430A | Signalling Tester | MX800030A | NR Protocol Platform Software |
| MD8430A-005 | Extended Frequency Range to 3.8 GHz Hardware2 | MX800030A-001 | NR TDD Platform |
| MD8430A-035 | LTE Enhanced Test Mode I(ETM) | MX800030A-002 | NR FDD Platform |
| MD8430A-060 | LTE FDD Option | MX800030A-003 | Ciphering |
| MD8430A-061 | LTE TDD Option | MX800030A-004 | Internal Server |
| MD8430A-064 | LTE Anchor For 5G NSA Option | MX800030A-005 | 5G SA Protocol |
| MD8430A-086 | Ciphering Option | MX800030A-006 | NR SDAP |
| MD8430A-SS135 | 1 Year Support Service for LTE FDD (ETM) | MX800030A-007 | NR FDD/TDD Joint CA |
| MD8430A-SS136 | 1 Year Support Service for LTE TDD (ETM) | MX800030A-008 | NR FR1+FR2 DC Protocol |
| Z2017D | Application Parts Standard PC | MX800030A-009 | NR FR1+FR2 CA Protocol |
| Z2035A | Standard PC for SSNR (with monitor) | MX800030A-010 | RF/Fading Driver For Multiple box |
| Z1320E | Standard PC for RTD (with monitor) | MX800030A-027 | Wake Up Indication For Power Saving |
| MT8000A-AK001 | Fading Control PC | MX800030A-028 | Dual Active Protocol Stack Handover For Mobility Enh. |
| MT8000A-AK002 | IP Test Server PC | MX800030A-031 | NR DL 2x2 MIMO BW 50 MHz Per Cell |
| Z1591A | USB Dongle (Protocol) | MX800030A-032 | NR DL 2x2 MIMO BW 100 MHz Per Cell |
| Z2023A | USB Dongle (SmartStudio NR) | MX800030A-033 | NR DL 2x2 MIMO BW 200 MHz Per Cell |
| G0408A | 10 Gig Ethernet SR 850 nm SFP+ | MX800030A-035 | NR DL 4x4 MIMO BW 50 MHz Per Cell |
| J1581A | Optical cable MM LC/PC to LC/PC 3 meter | MX800030A-036 | NR DL 4x4 MIMO BW 100 MHz Per Cell |
| Z1993A | Optical Connector Cleaner (MPO) | MX800030A-041 | NR UL 2x2 MIMO BW 50 MHz Per Cell |
| J0127A | COAXIAL CORD, 1.0M | MX800030A-042 | NR UL 2x2 MIMO BW 100 MHz Per Cell |
| J1398A | N-SMA ADAPTOR | MX800030A-043 | NR UL 2x2 MIMO BW 200 MHz Per Cell |
| J1440A | LAN Cable | MX800030A-051 | NR DL 2CA For Protocol |
| J1773A | AUX Conversion Adapter | MX800030A-052 | NR DL 3CA For Protocol |
| J1798A | GPIB-USB-HS+ | MX800030A-053 | NR DL 4CA For Protocol |
| Z2032A | Reference Antenna | MX800030A-054 | NR DL 5CA For Protocol |
| | | MX800030A-055 | NR DL 6CA For Protocol |
| | | MX800030A-056 | NR DL 7CA For Protocol |
| | | MX800030A-057 | NR DL 8CA For Protocol |
| | | MX800030A-058 | NR DL 9CA For Protocol |
| | | MX800030A-059 | NR DL 10CA For Protocol |
| | | MX800030A-061 | NR UL 2CA For Protocol |
| | | MX800030A-062 | NR UL 3CA For Protocol |
| | | MX800030A-063 | NR UL 4CA For Protocol |
| | | MX800030A-071 | Digital IQ Basic For Protocol |

Radio Communication Test Station MT8000A Ordering Information

| Model/Order No. | Name |
|-----------------|--|
| MX800031A | NR Fading Basic |
| MX800031A-001 | NR Fading 2x2 MIMO |
| MX800031A-002 | NR Fading 4x2/4x4 MIMO |
| MX800031A-003 | NR Fading 2CA-4CA |
| MX800031A-004 | NR Fading 5CA-8CA |
| MX800031A-005 | NR Fading 8x2/8x4 MIMO |
| MX800032A | LTE Protocol Platform Software |
| MX800032A-001 | LTE Anchor For Protocol |
| MX800032A-002 | LTE Advance Features |
| MX800032A-010 | LTE RF/Fading Driver For Multiple box |
| MX800033A | LTE Fading Basic |
| MX800050A | Rapid Test Designer Platform (RTD) |
| MX800050A-001 | 5G NSA Framework For RTD |
| MX800050A-002 | RTD LL/L3 Procedure Libraries (5G) |
| MX800050A-003 | Core LTE Framework For RTD |
| MX800050A-004 | UTRAN/GERAN Framework For RTD |
| MX800050A-005 | IMS Framework For RTD |
| MX800050A-006 | IoT Framework For RTD |
| MX800050A-007 | LTE-A Framework For RTD |
| MX800050A-008 | LTE-A Pro Framework For RTD |
| MX800050A-009 | LTE MIMO Framework For RTD |
| MX800050A-010 | LTE Unlicensed Framework For RTD |
| MX800050A-011 | LTE/UTRAN/GERAN Fading Library For RTD |
| MX800050A-012 | 5G Fading Library |
| MX800050A-013 | 5G SA Framework For RTD |
| MX800050A-014 | eMBMS Framework For RTD |
| MX800050A-020 | 5G NR Advanced Framework For RTD |
| MX800050A-021 | 5G NE-DC Framework For RTD |
| MX800050A-040 | RTD Test Creation and Editing Tools |
| MX800050A-041 | RTD Test Execution Tools |
| MX800050A-042 | RTD Protocol Analyzer |
| MX800050A-051 | RTD Floating (Server Based) License |
| MX800050A-052 | Modem Log Converter For Qualcomm |
| MX800050A-055 | SMIT Advanced Features |
| MX800060A | Control Software |
| MX800060A-001 | NSA Framework For L1/L2 Testing |
| MX800060A-013 | SA Framework For L1/L2 Testing |
| MX800070A | SmartStudio NR |
| MX800070A-001 | 5G NSA Option |
| MX800070A-002 | 5G SA Option |
| MX800070A-003 | LTE Core Option |
| MX800070A-004 | 5G Core Option |
| MX800070A-007 | LTE Control for MT8000A |
| MX800070A-011 | NR TDD Option |
| MX800070A-012 | NR FDD Option |
| MX800070A-013 | SDAP Option |
| MX800070A-014 | NR FR1+FR2 Inter-working Option |
| MX800070A-030 | NR DL 2x2 MIMO BW 100 MHz Per Cell |
| MX800070A-035 | NR DL 4x4 MIMO BW 100 MHz Per Cell |
| MX800070A-040 | NR UL 2x2 MIMO BW 100 MHz Per Cell |
| MX800070A-050 | NR DL 2CA Option |
| MX800070A-051 | NR DL 3CA Option |
| MX800070A-052 | NR DL 4CA Option |
| MX800070A-053 | NR DL 6CA Extension Option |
| MX800070A-054 | NR DL 8CA Extension Option |
| MX800070A-060 | NR UL 2CA Option |
| MX800070A-061 | NR UL 3CA Option |
| MX800070A-062 | NR UL 4CA Option |
| MX800070A-063 | NR UL 5CA Option |
| MX800070A-070 | LTE DL 2x2 MIMO Option |
| MX800070A-071 | LTE DL 4x4 MIMO Option |
| MX800070A-072 | LTE LAA Option |
| MX800070A-073 | LTE 2CA Option |
| MX800070A-074 | LTE 3CA Option |
| MX800070A-080 | IMS Server Option |
| MX800070A-081 | IMS Script Option |
| MX800070A-082 | RTP Control Option |
| MX800070A-083 | IMS Log Import Option |
| MX800070A-090 | NR Neighbour Cell List |
| MX800078A | LTE/NR Platform Software for SmartStudio |
| MX800079A | NR Platform Software for SmartStudio |

| Model/Order No. | Name |
|-----------------|---|
| | Support Services |
| MX800010A-SS101 | 5G NR RF Measurement Support Service (Per Year) |
| MX800010A-SS102 | 5G NR RF OTA Measurement Support Service (Per Year) |
| MX800050A-SS100 | RTD Support Service (Per Year) |
| MX800050A-SS101 | 5G NSA Support Service (Per Year) |
| MX800050A-SS103 | LTE Support Service (Per Year) |
| MX800050A-SS104 | UTRAN/GERAN Support Service (Per Year) |
| MX800050A-SS105 | IMS Support Service (Per Year) |
| MX800050A-SS106 | IoT Support Service (Per Year) |
| MX800050A-SS107 | LTE-A Support Service (Per Year) |
| MX800050A-SS108 | LTE-A Pro Support Service (Per Year) |
| MX800050A-SS109 | MIMO Support Service (Per Year) |
| MX800050A-SS110 | LTE Unlicensed Support Service (Per Year) |
| MX800050A-SS111 | LTE/UTRAN/GERAN Fading Support Service (Per Year) |
| MX800050A-SS112 | 5G Fading Support Service |
| MX800050A-SS113 | 5G SA Support Service (Per Year) |
| MX800050A-SS114 | eMBMS Support Service (Per Year) |
| MX800050A-SS120 | 5G NR Advanced Support Service (Per Year) |
| MX800050A-SS121 | 5G NE-DC Support Service (Per Year) |
| MX800050A-SS152 | Modem Log Converter For Qualcomm Support Service (Per Year) |
| MX800050A-SS155 | SMIT Advanced Features Support Service (Per Year) |
| MX800060A-SS100 | Control Software Support Service (Per Year) |
| MX800060A-SS101 | NSA Framework Support Service (Per Year) |
| MX800060A-SS113 | SA Framework Support Service (Per Year) |
| MX800070A-SS110 | SmartStudio Support Service (Per Year) |
| MX800070A-TS181 | MX800070A-081 1 Year Technical Support Service |

Typical (typ.): Performance not warranted.

Must products meet typical performance.

Nominal (nom.): Values not warranted.

Included to facilitate application of product.

Radio Communication Test Station MT8000A Ordering Information

| Model/Order No. | Name |
|-----------------|---|
| | Term License |
| MX800030A-TL000 | NR Protocol Platform Software |
| MX800030A-TL001 | NR TDD Platform |
| MX800030A-TL002 | NR FDD Platform |
| MX800030A-TL003 | Ciphering |
| MX800030A-TL004 | Internal Server |
| MX800030A-TL005 | 5G SA Protocol |
| MX800030A-TL006 | NR SDAP |
| MX800030A-TL007 | NR FDD/TDD Joint CA |
| MX800030A-TL008 | NR FR1+FR2 DC Protocol |
| MX800030A-TL009 | NR FR1+FR2 CA Protocol |
| MX800030A-TL010 | RF/Fading Driver For Multiple box |
| MX800030A-TL027 | Wake Up Indication For Power Saving |
| MX800030A-TL028 | Dual Active Protocol Stack Handover For Mobility Enh. |
| MX800030A-TL031 | NR DL 2x2 MIMO BW 50 MHz Per Cell |
| MX800030A-TL032 | NR DL 2x2 MIMO BW 100 MHz Per Cell |
| MX800030A-TL033 | NR DL 2x2 MIMO BW 200 MHz Per Cell |
| MX800030A-TL035 | NR DL 4x4 MIMO BW 50 MHz Per Cell |
| MX800030A-TL036 | NR DL 4x4 MIMO BW 100 MHz Per Cell |
| MX800030A-TL041 | NR UL 2x2 MIMO BW 50 MHz Per Cell |
| MX800030A-TL042 | NR UL 2x2 MIMO BW 100 MHz Per Cell |
| MX800030A-TL043 | NR UL 2x2 MIMO BW 200 MHz Per Cell |
| MX800030A-TL051 | NR DL 2CA For Protocol |
| MX800030A-TL052 | NR DL 3CA For Protocol |
| MX800030A-TL053 | NR DL 4CA For Protocol |
| MX800030A-TL054 | NR DL 5CA For Protocol |
| MX800030A-TL055 | NR DL 6CA For Protocol |
| MX800030A-TL056 | NR DL 7CA For Protocol |
| MX800030A-TL057 | NR DL 8CA For Protocol |
| MX800030A-TL058 | NR DL 9CA For Protocol |
| MX800030A-TL059 | NR DL 10CA For Protocol |
| MX800030A-TL061 | NR UL 2CA For Protocol |
| MX800030A-TL062 | NR UL 3CA For Protocol |
| MX800030A-TL063 | NR UL 4CA For Protocol |
| MX800032A-TL000 | LTE Protocol Platform Software |
| MX800032A-TL001 | LTE Anchor For Protocol |
| MX800032A-TL002 | LTE Advance Features |
| MX800032A-TL010 | LTE RF/Fading Driver For Multiple Box |
| MX800050A-TL001 | 5G NSA Framework For RTD (3 months) |
| MX800050A-TL002 | RTD LL/L3 Procedure Libraries (5G) (3 months) |
| MX800050A-TL003 | Core LTE Framework For RTD (3 months) |
| MX800050A-TL004 | UTRAN/GERAN Framework For RTD (3 months) |
| MX800050A-TL005 | IMS Framework For RTD (3 months) |
| MX800050A-TL006 | IoT Framework For RTD (3 months) |
| MX800050A-TL007 | LTE-A Framework For RTD (3 months) |
| MX800050A-TL008 | LTE-A Pro Framework For RTD (3 months) |
| MX800050A-TL009 | LTE MIMO Framework For RTD (3 months) |
| MX800050A-TL010 | LTE Unlicensed Framework For RTD (3 months) |
| MX800050A-TL013 | 5G SA Framework For RTD (3 months) |
| MX800050A-TL020 | 5G NR Advanced Framework For RTD (3 months) |
| MX800050A-TL021 | 5G NE-DC Framework For RTD (3 months) |
| MX800050A-TL040 | RTD Test Creation and Editing Tools (3 months) |
| MX800050A-TL041 | RTD Test Execution Tools (3 months) |
| MX800050A-TL042 | RTD Protocol Analyser (3 months) |
| MX800050A-TL052 | Modem Log Converter For Qualcomm (3 months) |
| MX800050A-TL055 | SMIT Advanced Features (3 months) |
| MX800050A-SS000 | RTD Support Service (3 months) |
| MX800050A-SS001 | 5G NSA Support Service (3 months) |
| MX800050A-SS003 | LTE Support Service (3 months) |
| MX800050A-SS004 | UTRAN/GERAN Support Service (3 months) |
| MX800050A-SS005 | IMS Support Service (3 months) |
| MX800050A-SS006 | IoT Support Service (3 months) |
| MX800050A-SS007 | LTE-A Support Service (3 months) |
| MX800050A-SS008 | LTE-A Pro Support Service (3 months) |
| MX800050A-SS009 | MIMO Support Service (3 months) |
| MX800050A-SS010 | LTE Unlicensed Support Service (3 months) |
| MX800050A-SS013 | 5G SA Support Service (3 months) |
| MX800050A-SS020 | 5G NR Advanced Support Service (3 months) |
| MX800050A-SS021 | 5G NE-DC Support Service (3 months) |
| MX800050A-SS052 | Modem Log Converter For Qualcomm Support Service (3 months) |
| MX800050A-SS055 | SMIT Advanced Features Support Service (3 months) |

| Model/Order No. | Name |
|-----------------|-----------------------------------|
| | Warranty Services |
| MT8000A-ES210 | 2 Years Extended Warranty Service |
| MT8000A-ES310 | 3 Years Extended Warranty Service |
| MT8000A-ES510 | 5 Years Extended Warranty Service |
| MA80001A-ES210 | 2 Years Extended Warranty Service |
| MA80001A-ES310 | 3 Years Extended Warranty Service |
| MA80001A-ES510 | 5 Years Extended Warranty Service |
| MA80002A-ES210 | 2 Years Extended Warranty Service |
| MA80002A-ES310 | 3 Years Extended Warranty Service |
| MA80002A-ES510 | 5 Years Extended Warranty Service |
| MA80003A-ES210 | 2 Years Extended Warranty Service |
| MA80003A-ES310 | 3 Years Extended Warranty Service |
| MA80003A-ES510 | 5 Years Extended Warranty Service |

Radio Communication Test Station MT8000A Ordering Information

Related Products



Radio Communication Analyzer
MT8821C



Signalling Tester
MD8430A



Signalling Tester
MD8475B



Shield Box
MA8161A



RF Chamber
MA8171A



CATR Anechoic Chamber
MA8172A

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