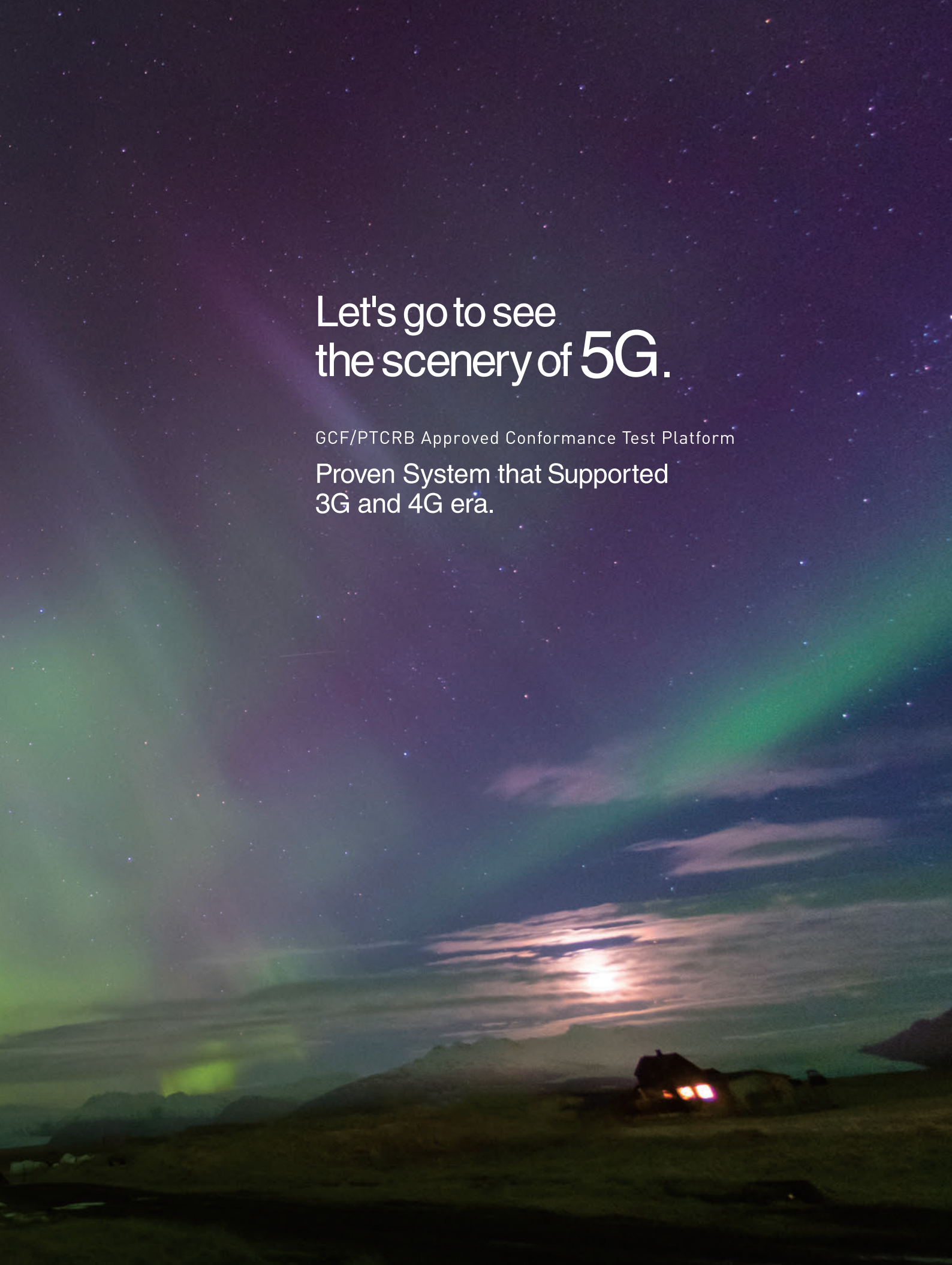


Anritsu envision : ensure

New Radio RF Conformance Test System ME7873NR





A night landscape featuring a starry sky, aurora borealis, and a small cabin with lights. The aurora is visible as a green and blue glow in the sky. The cabin is a small, dark structure with two bright lights glowing from its windows. The overall scene is dark and atmospheric, with a mix of natural light from the aurora and stars, and artificial light from the cabin.

Let's go to see the scenery of 5G.

GCF/PTCRB Approved Conformance Test Platform

Proven System that Supported
3G and 4G era.

3G, 4G, and... now 5G

3G

ME7873F



The globalized mobile 3G and 4G market depends increasingly on conformance tests to assure reliable interoperability. With its support for both W-CDMA and LTE mobiles, the ME7873F/L/LA series is a trusted conformance test system offering reliable results to many Anritsu customers worldwide.

The world-beating early release of the New Radio RF Conformance Test System ME7873NR inherits the same design concept as its predecessor ME7873 series while extending support to 5G RF/RRM tests.

The ME7873NR are based on the latest 3GPP communications standards and supporting both the FR1 and the FR2 bands. Moreover, it has many built-in functions for R&D testing.

4G

ME7873LA



5G

New Radio RF Conformance Test System

ME7873NR



Easy-to-use

The intuitive easy-to-use GUI supports simple creation and editing of test sequences, system environment settings, and changes to parameters for mobile-device settings and test cases.

Moreover, automatic extraction of Fail test items, and Retry and Log display functions, etc., not only support compliance testing but also help increase R&D efficiency.

Stability and Reliability

Both basic correction at installation and automatic correction at measurement execution are supported.

Stable and reliable measurements with high reproducibility are obtained by eliminating temperature-change-related measurement system variability.

Expandability

Hardware can be configured flexibly to match executed test cases and can easily be upgraded to higher-order CA/MIMO specifications.



New Radio RF Conformance Test System ME7873NR Features

Pioneered 5G NR RF/RRM Conformance Test System

Pioneering for GCF*/PTCRB*2 5G Validation

The New Radio RF Conformance Test System ME7873NR test platform is GCF/PTCRB certified. After its market-leading*3 release in November 2018, it became the first system to start GCF certification for 5G tests in January 2019 and subsequently started PTCRB certification tests in February. Since then, the number of supported test cases has been increasing at each quarterly GCF/PTC RB meeting.

The ME7873NR executes 5G NR Standalone and Non-Standalone mode RF/RRM tests with various types of measuring equipment and dedicated test software when used with the Radio Communication Test Station MT8000A simulating a 5G NR base station and the Signalling Tester MD8430A simulating an LTE base station.

*1: GCF (Global Certification Forum):

Certifies conformance to standards for mobile terminals and test systems.

Composed mainly of operators, mobile terminal vendors and chipset vendors and performs certification for frequency bands used in Europe.

*2: PTCRB (PCS Type Certification Review Board):

A similar test system certification organization to GCF composed mainly of N. American carriers and UE vendors and performing conformance certification for frequency bands used in N. America.

*3: According to our research result on the news releases of each company.

Supports Latest 3GPP Standards

It supports execution of 3GPP-compliant 5G mobile RF TRx and RRM performance tests in accordance with the latest 3GPP standards updated every 3 months. Tested items cover Transmitter and Receiver Characteristics (3GPP TS 38.521-1 Chapter 6 and Chapter 7, respectively) as well as Transmitter and Receiver Characteristics (3GPP TS 38.521-3 Chapter 6 and Chapter 7, respectively). Also supported measurement items cover Demodulation performance and CSI reporting requirements (3GPP TS 38.521-4 Chapter 5 and 6, respectively) as well as EN-DC with PSCell in FR1 and NR standalone in FR1 (3GPP TS 38.533 Chapter 4 and Chapter 6, respectively).

Supports Carrier Acceptance Tests

In addition to 3GPP RF/RRM Conformance Tests, North-American carrier acceptance tests are also supported, offering a wider application range with the same platform.

Easy Upgrade from ME7873LA

A cost-effective easy upgrade to the ME7873NR from the LTE-Advanced RF Conformance Test System ME7873LA*4 is readily available by adding the minimum required hardware. Upgrading to the ME7873NR not only adds 5G NR test items but also keeps support for the ME7873LA test items too.

*4: LTE-Advanced RF Conformance Test System ME7873LA:

Platform supporting tests of 3GPP LTE/LTE-Advanced terminal RF TRx characteristics with certified compliance with 3GPP standards, such as performance. Supports acceptance tests by N. American operators in addition to LTE-Advanced Pro test items, such as LAA and CAT-M/NB-IoT.

Supports Global Mobile Terminals

In addition to supporting GCF/PTCRB-certified bands (5G NR bands and LTE bands in 5G NSA mode) now being deployed or expected to be deployed in North America, Europe, and Asia, 3GPP-defined FR1 and FR2 bands are also widely supported. Currently supported bands are shown below. Currently unsupported bands are expected to be supported one-by-one according to market demand.

Please consult our business section for more details.

[NR Band]

Operating Band	UL Frequencies (MHz)	DL Frequencies (MHz)
FR1		
n1	1920 to 1980	2110 to 2170
n2	1850 to 1910	1930 to 1990
n3	1710 to 1785	1805 to 1880
n5	824 to 849	869 to 894
n7	2500 to 2570	2620 to 2690
n8	880 to 915	925 to 960
n28	703 to 748	758 to 803
n41	2496 to 2690	2496 to 2690
n48	3550 to 3700	3550 to 3700
n66	1710 to 1780	2110 to 2200
n71	663 to 698	617 to 652
n77	3300 to 4200	3300 to 4200
n78	3300 to 3800	3300 to 3800
n79	4400 to 5000	4400 to 5000
FR2		
n257	26500 to 29500	26500 to 29500
n258	24250 to 27500	24250 to 27500
n260	37000 to 40000	37000 to 40000
n261	27500 to 28350	27500 to 28350

[LTE Band]

Operating Band	UL Frequencies (MHz)	DL Frequencies (MHz)
1	1920 to 1980	2110 to 2170
2	1850 to 1910	1930 to 1990
3	1710 to 1785	1805 to 1880
4	1710 to 1755	2110 to 2155
5	824 to 849	869 to 894
7	2500 to 2570	2620 to 2690
8	880 to 915	925 to 960
9	1749.9 to 1784.9	1844.9 to 1879.9
10	1710 to 1770	2110 to 2170
11	1427.9 to 1447.9	1475.9 to 1495.9
12	698 to 716	728 to 746
13	777 to 787	746 to 756
14	788 to 798	758 to 768
17	704 to 716	734 to 746
18	815 to 830	860 to 875
19	830 to 845	875 to 890
20	832 to 862	791 to 821
21	1447.9 to 1462.9	1495.9 to 1510.9
24	1626.5 to 1660.5	1525 to 1559
25	1850 to 1915	1930 to 1995
26	814 to 849	859 to 894
27	807 to 824	852 to 869
28	703 to 748	758 to 803
30	2305 to 2315	2350 to 2360
31	452.5 to 457.5	462.4 to 467.5
33	1900 to 1920	1900 to 1920
34	2010 to 2025	2010 to 2025
35	1850 to 1910	1850 to 1910
36	1930 to 1990	1930 to 1990
37	1910 to 1930	1910 to 1930
38	2570 to 2620	2570 to 2620
39	1880 to 1920	1880 to 1920
40	2300 to 2400	2300 to 2400
41	2496 to 2690	2496 to 2690
42	3400 to 3600	3400 to 3600
43	3600 to 3800	3600 to 3800
44	703 to 803	703 to 803
48	3550 to 3700	3550 to 3700
66	1710 to 1780	2110 to 2200
71	663 to 698	617 to 652

New Radio RF Conformance Test System ME7873NR Features

Focus on Improving Test Efficiency, Measurement Stability and Reliability

Easy Control of External Devices

The system software has built-in functions for controlling the DC power supply* and temperature chamber* in the same way as selecting test items. Using these standard functions makes automation easy.

*: Users must provide the DC power supply and temperature chamber.
Refer to the ordering information for recommended models.

Improve Reliability using Correction Function

System measurement stability and reliability are improved by the following three calibration and correction methods:

- Basic calibration at acceptance inspection
- Auto-calibration at work start
- Individual measurement correction

Individual measurement correction immediately before measurement eliminates temperature-related drift and greatly improves the reliability of measurements.

In addition, Anritsu engineers perform basic calibration when installing the system at acceptance inspection, eliminating the need for operators to perform this complex calibration and correction work.

Detailed Support System

An Anritsu Support Service contract keeps the system operating at peak performance, maximizing return on investment, minimizing downtime, and keeping work on schedule.

- Latest software updates matching the latest changes to the 3GPP standards
- Information on 3GPP trends, consultation and technical support for troubleshooting test problems
- Free hardware repair and maintenance with a back-up loan unit

Specifications

New Radio RF Conformance Test System ME7873NR

FR1 Configuration

Input and Output connector	N-type, 50Ω	
Max. Input Level	+35 dBm	
Reference Oscillator	MS2692A as standard External oscillator signal input available (Frequency: 10 MHz, Connector: BNC)	
Frequency Range	450 MHz to 6 GHz	
Temperature Range	15°C to 35°C (operating), 0°C to 50°C (storage)*1	
Power Supply (Rating)	Select either 100 V(ac) to 120 V(ac) or 200 V(ac) to 240 V(ac), 50 Hz/60 Hz ≤7950 VA*2 (Full system configuration)	
Dimensions	2 racks configuration 1140 (W) × 1980 (H) × 797 (D) mm*3 3 racks configuration 1710 (W) × 1980 (H) × 797 (D) mm*3 (Full system configuration)	
Mass	≤830 kg*4 (Full system configuration)	
CE	EMC	2014/30/EU, EN61326-1, EN61000-3-2
	LVD	2014/35/EU, EN61010-1
	RoHS	2011/65/EU, EN50581

FR2 Configuration

Reference Oscillator	MS2840A/MS2850A as standard External oscillator signal input available (Frequency: 10 MHz, Connector: BNC)	
Frequency Range	450 MHz to 6 GHz (LTE Anchor) 24.25 GHz to 29.5 GHz, 37 GHz to 43.5 GHz	
Temperature Range	15°C to 30°C (operating), 0°C to 50°C (storage)*1	
Power Supply (Rating)	Select either 100 V(ac) to 120 V(ac) or 200 V(ac) to 240 V(ac), 50 Hz/60 Hz ≤8000 VA*2 (Full system configuration)	
Dimensions	OTA Chamber part 2200 (W) × 1980 (H) × 1200 (D) mm System rack part 570 (W) × 1980 (H) × 797 (D) mm*3	
Mass	≤1600 kg*4 (Total of system rack part and OTA Chamber part)	
CE	EMC	2014/30/EU, EN61326-1, EN61000-3-2
	LVD	2014/35/EU, EN61010-1
	RoHS	2011/65/EU, EN50581

Key specifications are listed. Contact your sales representative for details.

*1: Ambient temperature

Basic calibration at acceptance inspection must meet this requirement.
Use in air-conditioned room recommended for stable measurement.

*2: Power consumption

Sufficient power (600 VA) for basic calibration at acceptance inspection as well as for ME7873NR must be supplied.

*3: Topple prevention

Secure using hooks at rack top recommended.

*4: Mass/Floor Loads

The installation location must be able to safely bear the above floor loads plus 100 kg for basic calibration equipment at acceptance inspection.

Supported Test Standards

The system design is based on the following standards:

3GPP TS 36.521-1

NR User Equipment (UE) conformance specification Radio transmission and reception Part 1: Range 1 Standalone

3GPP TS 36.521-3

NR User Equipment (UE) conformance specification Radio transmission and reception Part 3: Range 1 and Range 2 Interworking operation with other radios

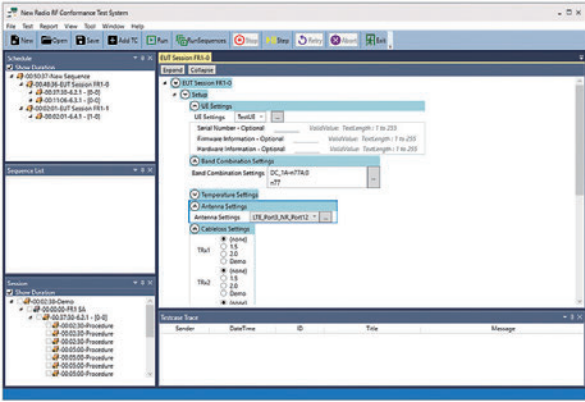
Contact your sales representative for detailed of the supported test standards and versions.

New Radio RF Conformance Test System ME7873NR Functions

Convenient Functions for Wide Range of Applications

Easy-to-use Main Screen for Key Operations

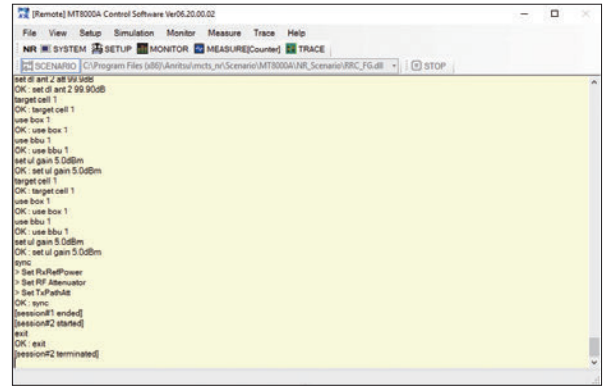
The screen toolbar icons for key operations are easy to understand. Operations are performed using the Toolbar at the top of the Main window using easy-to-understand icons. In addition, test sequence items and execution status are displayed at the left side of the Main window.



Main Window

Check Measurement Progress

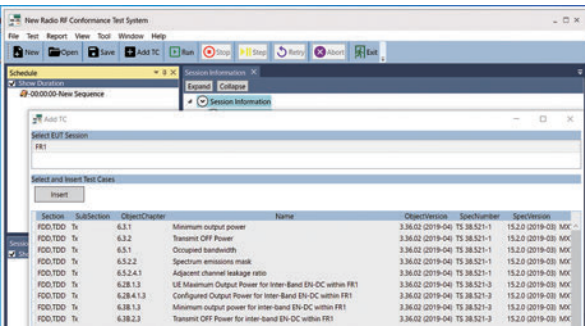
The current measurement progress is easily confirmed because the Radio Communication Test Station MT8000A displays real-time logs during measurement. In addition, failed results are easily seen from the message exchanges between the tester and mobile sides, supporting easy problem troubleshooting.



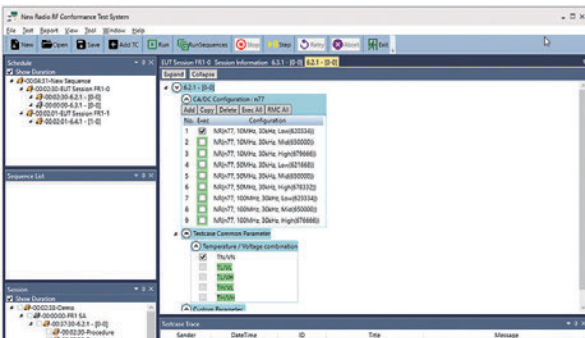
Real-time Trace Log Display

Easy Sequence Creation and Editing

The creation and editing procedure is as easy as selecting the test case to measure from the task pane (below) and clicking [Insert] to create the sequence. Select the created test case and double click [Schedule] at the screen bottom left to display detailed parameters. The measurement frequency and channel bandwidth can be changed here too.



Sequence Creation Screen



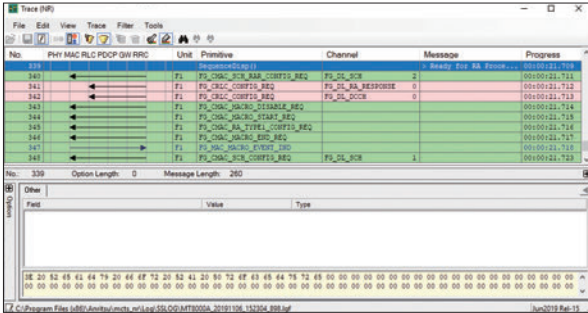
Parameter Changing Screen

New Radio RF Conformance Test System ME7873NR Functions

Convenient Functions for Wide Range of Applications (continued)

Measurement Log Analysis

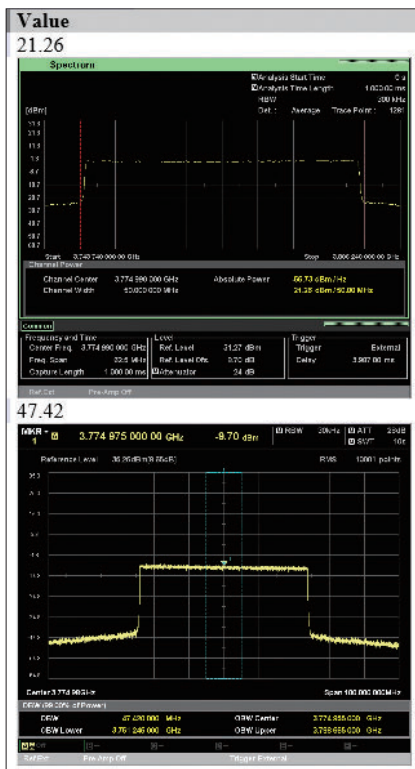
MT8000A measurement logs are saved automatically for detailed checking and troubleshooting with standard log viewer software.



Trace Log Viewer Display

Measured Data Management

Measurement results are confirmed at the Measurement Result screen and saved either as HTML for easy confirmation or as XML/CSV for easy database management. Moreover, HTML report files are linked to the signalling logs for each measurement, cutting search times for required information.



Measurement Report (HTML)

New Radio RF Conformance Test System ME7873NR 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
ME7873NR	Main Frame New Radio RF Conformance Test System
	Configuration Items (FR1)
MT8000A	Radio Communication Test Station
MD8430A	Signalling Tester
MS2692A	Signal Analyzer
MG3692C	2 GHz - 20 GHz Signal Generator
MG3710E	Vector Signal Generator
MA24218A	Universal USB Power Sensor
MN7446A	Filter Unit
MN7446B1	Filter Block
MN7446E	Filter Block4
MN7446F	Filter Block5
MN7446F-001	Additional Filter Block1
MN7447A	LTE Uplink Signal Filter
MN7447B	UL Amplifier
MN7448A	Uplink Signal Filter
MN7462E	RF Front End
MN7463E	Combining Unit
MN7463F	Combiner Unit
Z2014A	System control PC (EN)
Z2015A	System control PC (JP)
	Configuration Items (FR2)
MT8000A	Radio Communication Test Station
MT8821C	Radio Communication Analyzer
MS2840A	Signal Analyzer
MS2850A	Signal Analyzer
MG3697C	Signal Generator
MA8172A	CATR Anechoic Chamber
MN74000A	Spurious Measurement Unit
MN74000B	Spurious Measurement Unit
MN74001A	LTE Anchor Unit
MA80003A	Multiband RF Converter
Z2014A	System control PC (EN)
Z2015A	System control PC (JP)
	Standard Accessory
	ME7873NR Operation Manual (CD-ROM): 1 set
	Options
ME7873NR-001	FR1 Common kit
ME7873NR-002	Antenna Extension
ME7873NR-003	Common Rack (41U) for FR1 System
ME7873NR-006	Additional Rack (41U) for FR1 System
ME7873NR-009	FR2 Common kit
ME7873NR-011	SS1 Accessory
ME7873NR-012	SS2 Accessory
ME7873NR-021	VSG1 Accessory
ME7873NR-022	VSG2 Accessory
ME7873NR-023	CWSG1 Accessory
ME7873NR-031	SS11 Accessory
ME7873NR-035	SS11 Multi RF Accessory
ME7873NR-041	SS21 Accessory
ME7873NR-043	SS25 Accessory
ME7873NR-044	SS26 Accessory
ME7873NR-045	SMU Accessory
ME7873NR-046	LTE Anchor Unit Accessory
ME7873NR-052	Spurious Filter2
ME7873NR-065	Fading Simulator Accessory with PC
ME7873NR-071	SPA Accessory
ME7873NR-072	MWSG Accessory
ME7873NR-074	Converter cable Kit
ME7873NR-AK011	Accessory Kit for Power Supply
ME7873NR-AK012	Accessory Kit for Power Supply
ME7873NR-UG301	Combining kit with ME7873LA
MN74000B-UG101	Hardware Upgrade from MN74000A
MN74000B-UG201	Hardware Upgrade from MN74000A
MX800090A-002	Fading Option

Model/Order No.	Name
	Software
MX787300NR	Platform Functionality
MX787300NR-001	Band n1 Capability
MX787300NR-002	Band n2 Capability
MX787300NR-003	Band n3 Capability
MX787300NR-005	Band n5 Capability
MX787300NR-007	Band n7 Capability
MX787300NR-008	Band n8 Capability
MX787300NR-028	Band n28 Capability
MX787300NR-041	Band n41 Capability
MX787300NR-048	Band n48 Capability
MX787300NR-066	Band n66 Capability
MX787300NR-071	Band n71 Capability
MX787300NR-077	Band n77 Capability
MX787300NR-078	Band n78 Capability
MX787300NR-079	Band n79 Capability
MX787300NR-257	Band n257 Capability
MX787300NR-258	Band n258 Capability
MX787300NR-260	Band n260 Capability
MX787300NR-261	Band n261 Capability
MX787301NR	LTE Band Capability
MX787301NR-001	Band 1 Capability
MX787301NR-002	Band 2 Capability
MX787301NR-003	Band 3 Capability
MX787301NR-004	Band 4 Capability
MX787301NR-005	Band 5 Capability
MX787301NR-007	Band 7 Capability
MX787301NR-008	Band 8 Capability
MX787301NR-009	Band 9 Capability
MX787301NR-010	Band 10 Capability
MX787301NR-011	Band 11 Capability
MX787301NR-012	Band 12 Capability
MX787301NR-013	Band 13 Capability
MX787301NR-014	Band 14 Capability
MX787301NR-017	Band 17 Capability
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MX787301NR-019	Band 19 Capability
MX787301NR-020	Band 20 Capability
MX787301NR-021	Band 21 Capability
MX787301NR-024	Band 24 Capability
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MX787301NR-026	Band 26 Capability
MX787301NR-027	Band 27 Capability
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MX787301NR-041	Band 41 Capability
MX787301NR-042	Band 42 Capability
MX787301NR-043	Band 43 Capability
MX787301NR-044	Band 44 Capability
MX787301NR-048	Band 48 Capability
MX787301NR-066	Band 66 Capability
MX787301NR-071	Band 71 Capability

New Radio RF Conformance Test System ME7873NR Ordering Information

Model/Order No.	Name
MX787311NR	FDD NR NSA FR1 Test Software
MX787311NR-001	TRx test cases
MX787311NR-002	Performance Test Cases
MX787311NR-003	RRM Test Cases
MX787311NR-004	Performance Test Cases Package2
MX787311NR-005	Performance Test Cases Package3
MX787311NR-006	RRM Test Cases Package2
MX787311NR-011	TRX Test Cases for Contiguous
MX787311NR-061	Supplementary TRx Test Cases Package1 for Verizon
MX787311NR-062	Supplementary TRx Test Cases Package2 for Verizon
MX787311NR-071	Supplementary TRx Test Cases Package1 for ATT
MX787313NR	FDD NR NSA FR1 3CC Test Software
MX787313NR-001	TRX Test Cases (LTE 2CC/NR 1CC)
MX787321NR	FDD NR SA FR1 Test Software
MX787321NR-001	TRx test cases
MX787321NR-002	Performance Test Cases
MX787321NR-003	RRM Test Cases
MX787321NR-004	Performance Test Cases Package2
MX787321NR-005	Performance Test Cases Package3
MX787321NR-006	RRM Test Cases Package2
MX787321NR-007	InterRAT RRM Test Cases Package1
MX787321NR-008	InterRAT RRM Test Cases Package2
MX787361NR	TDD NR NSA FR1 Test Software
MX787361NR-001	TRX Test Cases
MX787361NR-002	Performance Test Cases
MX787361NR-003	RRM Test Cases
MX787361NR-004	Performance Test Cases Package2
MX787361NR-005	Performance Test Cases Package3
MX787361NR-006	RRM Test Cases Package2
MX787361NR-011	TRX Test Cases for Contiguous
MX787361NR-021	TRX Test Cases for Non-Contiguous
MX787363NR	TDD NR NSA FR1 3CC Test Software
MX787363NR-001	TRX Test Cases (LTE 2CC/NR 1CC)
MX787363NR-002	TRX Test Cases (LTE 1CC/NR 2CC)
MX787371NR	TDD NR NSA FR2 Test Software
MX787371NR-002	Performance Test Cases Package1
MX787371NR-003	RRM Test Cases Package1
MX787371NR-004	TRX Test Cases Package1
MX787371NR-005	TRX Test Cases Package2
MX787371NR-060	Supplementary TRx Test Cases for Verizon
MX787371NR-070	Supplementary TRx Test Cases for AT&T
MX787371NR-073	Supplementary RRM Test Cases for AT&T Package1
MX787371NR-080	Supplementary TRx Test Cases for T-Mobile
MX787372NR	TDD NR NSA FR2 UL CA Test Software
MX787372NR-004	TRX Test Cases for UL CA Package1
MX787372NR-005	TRX Test Cases for UL CA Package2
MX787381NR	TDD NR SA FR1 Test Software
MX787381NR-001	TRX Test Cases
MX787381NR-002	Performance Test Cases
MX787381NR-003	RRM Test Cases
MX787381NR-004	Performance Test Cases Package2
MX787381NR-005	Performance Test Cases Package3
MX787381NR-006	RRM Test Cases Package2
MX787381NR-007	InterRAT RRM Test Cases Package1
MX787381NR-008	InterRAT RRM Test Cases Package2

Contact your Anritsu sales representative for detailed ordering information.

In addition to the above-described accessories, the following items are required to use the ME7873NR.

DC Power Supply

One of the following models is required when controlling the power supply using the ME7873NR.

Model	Name	pcs	Manufacturer
N6700C	Main frame	1	Keysight Technologies Inc.
N6732B	8 V, 6.25 A, 50 W DC Power Module*1	4	
N6709C	Low-Profile MPS Mainframe Rack Mount Kit	1	
2306-PJ	Dual-Channel Battery/Charger Simulator with 500 mA Range	2*2	Keithley Instruments Inc.

*1: Up to four modules are required according to connected mobiles.

Filler Panel Kit N6708A is required if the number of DC power modules are less than four.

At rack mounting, the maximum current is 2 A. To draw more than 2 A of current, use a separate cable to supply DC to the terminal. However, since this will prevent rack mounting, decide on the installation location for the DC power supply in advance.

When using other DC power module, ask the power supply manufacturer for details.

*2: Two sets of the 2306-PJ are required when testing up to four mobiles continuously.

Temperature Chamber

One of the following equipments is required to control the temperature chamber from the ME7873NR.

Model	Name	Manufacturer
SH-241*3	Temperature & Humidity Chamber	ESPEC Corp.
SH-242*3		
105*3	Benchtop Temperature Chamber	TestEquity LLC
107*3		
115*3	Temperature Chamber	

*3: GPIB Cable (Double-Shield, 2 m) is required to control this chamber automatically.

Contact your Anritsu sales representative for details.