Product Brochure

Anritsu

MD8430A

Signalling Tester

MX786201A Rapid Test Designer (RTD)

Early Support for Developing LTE FDD & TDD Chipsets and Mobile UEs

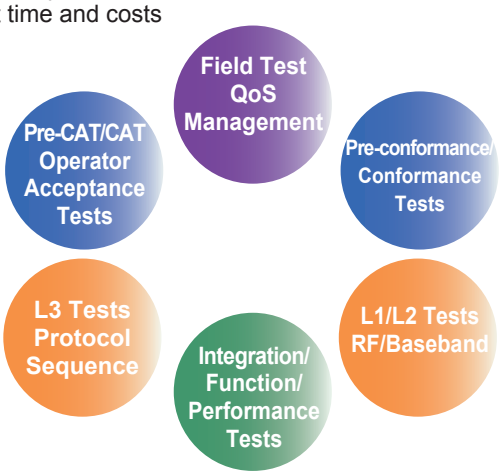
Mobile UEs are quickly becoming fast multimedia terminals due to widespread adoption of the LTE radio communications standard. The MD8430A Signalling Tester is a key LTE base station simulator for developing LTE-compliant chipsets and mobile devices. Using its extensive experience in 3G markets, Anritsu has developed the MD8430A as a powerful LTE protocol R&D test solution to help developers bring LTE terminals to market as fast as possible.

Key Features

- Early support for 3GPP LTE (FDD/TDD) Release 9 (MBMS, Positioning RS, Transmission Mode 8: Dual Layer Beamforming)
- Early support for Carrier Aggregation, which is a key feature of 3GPP LTE-Advanced (FDD)
- One MD8430A support 2×2 MIMO Intra-RAT handover and 4×2 MIMO with 300 Mbps (Carrier Aggregation) DL and 50 Mbps UL speeds
- Inter-RAT tests making effective use of previous MD8480C (UTRAN/GERAN), and MD8470A (CDMA2000) hardware investments
- Optimized investment from first R&D to protocol conformance testing
- Full development and analysis toolset cuts L1, L2, and L3 scenario development time and costs

Main Applications

- Coding/Decoding tests (RF/Baseband)
- Protocol sequence tests
- Throughout and stress tests (Performance test)
- Intra-RAT/Inter-RAT performance tests
- LTE Pre-conformance/Conformance tests
- Network interoperability tests
- LTE network operator acceptance tests (CAT)
- Troubleshooting field test problems
- Terminal QC inspection



MD8430A

Signalling Tester

MX786201A Rapid Test Designer (RTD)

Main Test Functions

- LTE Intra-RAT performance test (Hard handover)
- LTE ↔ UTRAN/GERAN Inter-RAT handover test
- LTE/CDMA2000 Interworking test
- Digital baseband slow clock test
- Protocol sequence analysis (Log analysis)
- Throughput monitoring
- UE Scheduling function (Time/MCS/Lowest RB/RB)
- H-ARQ Test (ACK/NACK/DTX)
- VoLTE Test (SPS, TTI Bundling, DRX, RoHC)

Basic Functions (LTE)

- Transmit Downlink (DL) signal
- Receive Uplink (UL) signal
- Call processing
- Transmit Power Control (TPC)
- Baseband interface
- Hard handover (HTM, STM, PTM)*
- 2×2 MIMO (MTM, STM, PTM)*
- 4×2 MIMO (PTM)*
- Encryption (option)

*: Please refer to page 6 for specifications of MD8430A models.

Supports Newest UE Categories

The MD8430A supports UE categories 1 to 4, 6 and will support all new future categories.
3GPP TS 36.306 V10.3.0 (2011-09)

LTE (DL)

UE Category	Maximum number of DL-SCH transport block bits received within a TTI	Maximum number of bits of a DL-SCH transport block received within a TTI	Total number of soft channel bits	Maximum number of supported layers for spatial multiplexing in DL
Category 1	10296	10296	250368	1
Category 2	51024	51024	1237248	2
Category 3	102048	75376	1237248	2
Category 4	150752	75376	1827072	2
Category 5	299552	149776	3667200	4
Category 6	301504	149776 (4 layers) 75376 (2 layers)	3654144	2 or 4
Category 7	301504	149776 (4 layers) 75376 (2 layers)	3654144	2 or 4
Category 8	2998560	299856	35982720	8

LTE (UL)

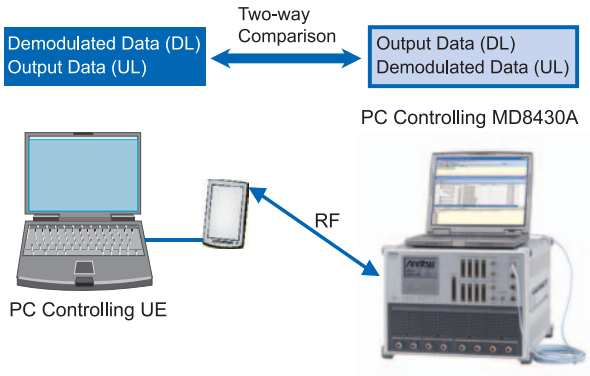
UE Category	Maximum number of UL-SCH transport block bits transmitted within a TTI	Maximum number of bits of an UL-SCH transport block transmitted within a TTI	Support for 64QAM in UL
Category 1	5160	5160	No
Category 2	25456	25456	No
Category 3	51024	51024	No
Category 4	51024	51024	No
Category 5	75376	75376	Yes
Category 6	51024	51024	No
Category 7	102048	51024	No
Category 8	1497760	149776	Yes

L1/L2 Tests
RF/Baseband

For Developing LTE Chipsets and Mobile UE RF/Baseband Tests

Coding/Decoding Test

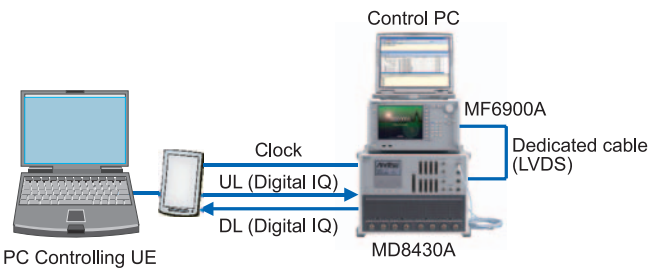
Coding/Decoding tests of LTE terminals are performed by making the RF connections shown in the following diagram.



Coding/Decoding Test Example (RF, Patch Test)

The MD8430A supports digital baseband I/O as standard functions. Using the baseband interface offers high-reproducibility coding/decoding tests free from the RF section, supporting stable evaluation of LTE chipset baseband performance.

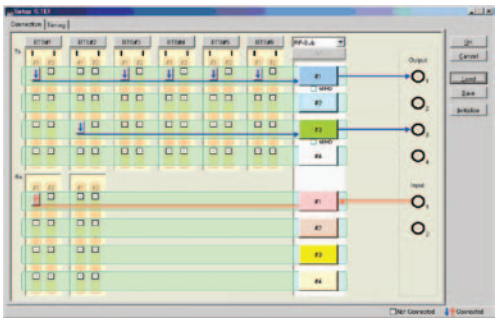
Moreover, LTE coding/decoding tests are supported because the baseband chip can be evaluated using a slower clock than the clock frequency. And connecting the MF6900A Fading Simulator to the digital baseband interface supports slow clock evaluations in a fading environment, which are difficult to perform with an RF fading simulator.



Slow Clock Test Setup (Digital Baseband, Fading)

Easy MIMO Test Configuration Settings

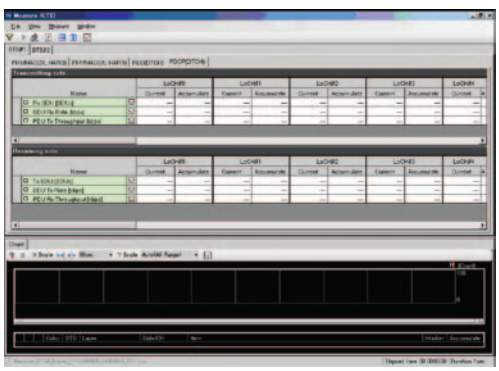
The MD8430A has 8 main and sub RF connectors as well as 8 digital IQ connectors as standard equipment for use with the MX843010A LTE Control Software to easily configure and monitor various settings, including RF parameters, channel power, MIMO, fading, connector selections, frame timing, BTS cell selections, etc.



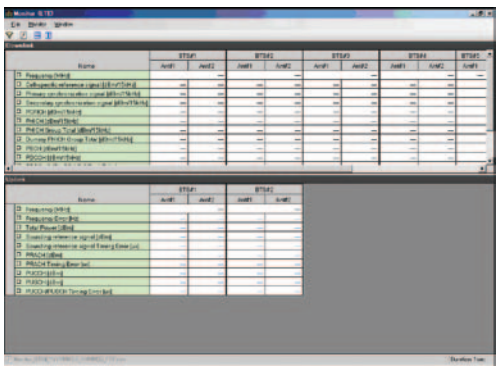
Setup Screen Example

Fully Versatile L1/L2 Monitoring Functions

The MX843010A software supports LTE development by processing large volumes of low-layer data at very high speeds using a full line of versatile power monitoring, throughput monitoring and log analysis functions. The Measure (Counter) functions can monitor Layer 1 and Layer 2 throughputs in real time by counting parameter values such as ACK/NACK/DTX/CQI.



Measurement (Counter and Throughput) Screens



Monitor Screen Example

L3 Tests Protocol Sequence

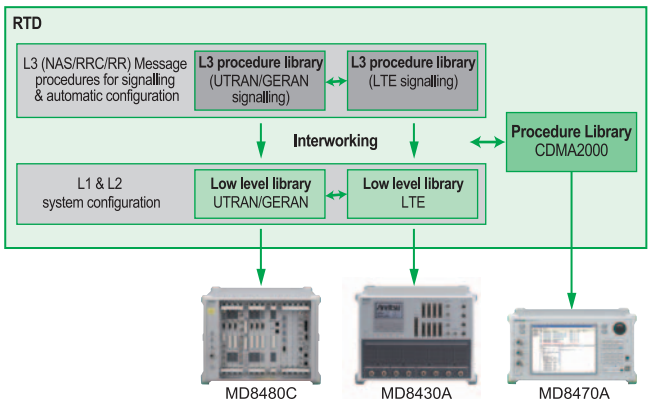
Complete LTE Protocol Test Environment

Intelligent Test Creation

The MX786201A Rapid Test Designer (RTD) software tools gives users power to create tests that cannot be done with traditional language based tools. RTD Supports L1/L2/L3 testing using Lower Layer Configuration library and Layer 3 procedure library of UE development.
Moreover, each procedure auto-sets the connection with the lower Layers (L1/L2) based on full compliance with the 3GPP standards. RTD can simulater LTE↔UMTS InterRAT and LTE↔CDMA2000 Interworking.
The Reference Library test cases provides a reference to build the customized test cases and libraries with ease.

Cuts Test Case Development Time

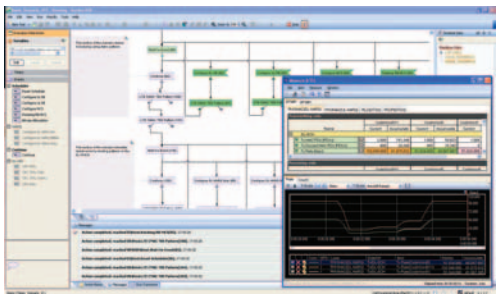
The RTD GUI offers intuitive test case creation by linking procedures with parameters, such as network conditions and message data, at easy-to-understand setting screens, quickly increasing the number of working test cases.
In addition, the Built-in Analyzer function checks for programming errors prior to testing, which can start immediately without recompiling after editing and changing settings.



RTD Procedure Block

Flexibility in Testing & Analysis

When the test finishes the execution, the RTD provides a preliminary judgment against predetermined criteria. This avoids the need to study complex message sequences and can show a test outcome explained in a local language. The Integrated protocol analyzer with RTD supports very detailed Message Sequence Analysis and provides a facility to export the Protocol Test logs in to HTML format which can be viewed at any PC with a Browser without a RTD license.



Test Execution Screen (RTD)

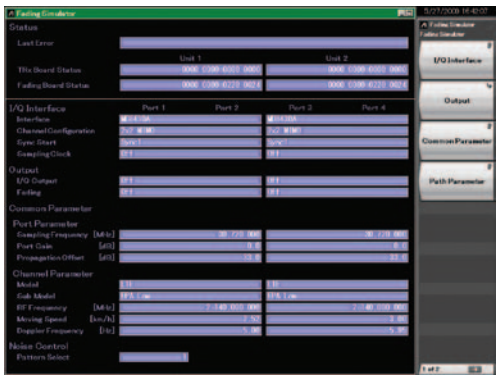
Log Analysis Screen (RTD)

Integration/ Function/ Performance Tests

Efficient UE Integration and Performance Tests

Testing Throughput for Various Conditions

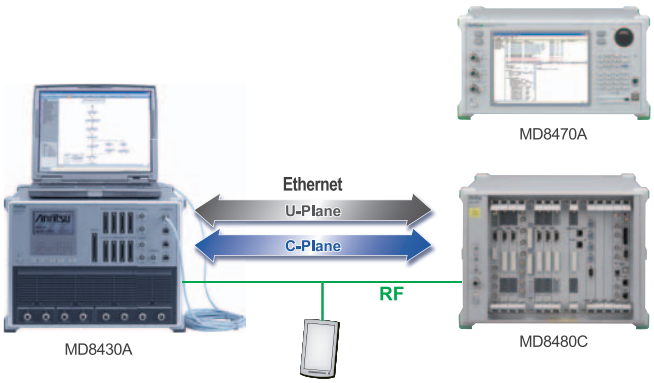
The MD8430A supports the latest UE categories with download speeds of 150 Mbps and uploads speeds of 50 Mbps.
The bundled sample scenarios make it easy to change parameters such as bandwidth, scheduling, HARQ, etc., for evaluating LTE throughputs under various conditions.
In addition, combination with the MF6900A Fading Simulator supporting LTE MIMO via the dedicated digital interface simplifies complex power control procedures for easy throughput testing in a fading environment with simple test setup.



Fading Setting Screen (MF6900A Fading Simulator)

Handover Tests Optimizing Hardware Investment

The MD8430A supports up to six cells (two active cells) allowing handover tests between two LTE BTS with one tester. In addition, LTE-UTRAN/GERAN Inter-RAT handover tests are supported by connecting the MD8480C W-CDMA Signalling Tester. And the MD8430C is not limited to the globally dominant W-CDMA technology but also supports the HSPA/HSPA Evolution and GSM/ GPRS/EGPRS technologies.
When combined with the MD8470A Signalling Tester, CDMA2000 Interworking tests are supported too, maximizing support for both worldwide communications technologies and investment in hardware.



LTE-UTRAN/GERAN Handover Test Setup

Connecting three MF6900A units permits fading simulations for each of six cells.

Specifications of MD8430A Signalling Tester Models

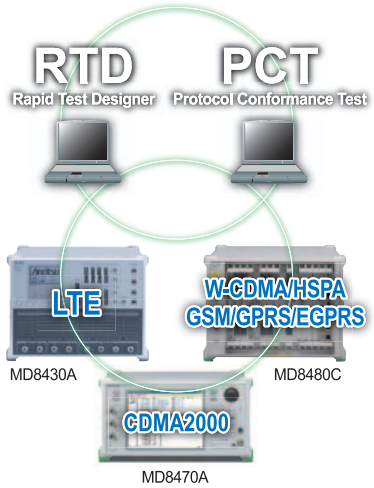
Model/Name	MD8430A-010 LTE Function Test Model (FTM)	MD8430A-012 LTE MIMO Test Model (MTM)	MD8430A-014 LTE Handover Test Model (HTM)	MD8430A-020 LTE Standard Test Model (STM)	MD8430A-030 LTE Performance Test Model (PTM)
Interface	RF, Digital IQ				
Frequency Band	Max. 20 MHz				
UE Category	Category 1, 2, 3			Category 1, 2, 3, 4, 6	
Max. Data Rate (DL)	75 Mbps	100 Mbps	75 Mbps	300 Mbps*1	
Max. Data Rate (UL)	50 Mbps				
No. of Simultaneous Tx Frequencies	1		2 (2×2 MIMO), 4 (SISO)		
MIMO	No	2×2 MIMO	No	2×2 MIMO	2×2 MIMO, 4×2 MIMO
Max. No. of Base Station	Active + Adjacent BTS: 1 (Max. Active BTS: 1)		Active + Adjacent BTS: 4 (Max. Active BTS: 2)		Active + Adjacent BTS: 6*2 (Max. Active BTS: 2)
Hard Handover (inc. at MIMO)	No		Between same frequency and different frequencies		
Carrier Aggregation No. of Component Carrier (DL)*4	No			2*3	
Carrier Aggregation No. of Component Carrier (UL)*4	No			1*3	

∗1: For Layer-1 testing; 150 Mbps for Layer-2 (or upper) testing.
∗2: For 4×2 MIMO, the maximum number of base stations is 1, the number of active base stations + number of adjacent base stations is 5.
∗3: The active base station is used as the component carrier.
∗4: Requires MD8430A-085.

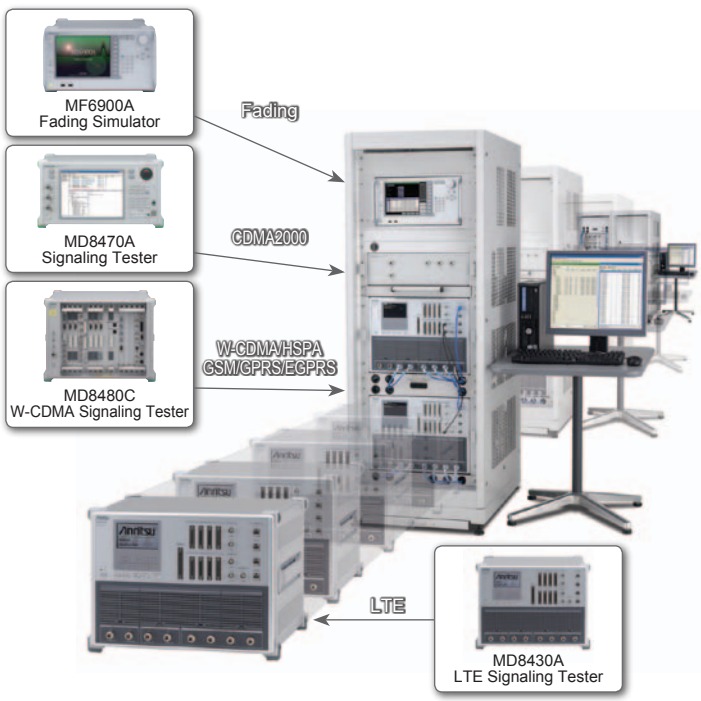
Powerful Platform for Both Conformance and Operator Acceptance Tests

Optimized Hardware Investment

A choice of five MD8430A models designed for early chipset and UE development, function tests, and performance tests ranging from carrier acceptance tests to protocol conformance tests as well as retrofit upgrades between models allows developers to tailor their hardware investment to current needs with future flexible upgrade options.
The Protocol Conformance Test Toolkit (PCT) with MD8430A and GCF/PTCRB approved TTCN test package provide an optimum environment for LTE protocol conformance testing. Hence, a Single Hardware Platform that extends its usage from Platform development to Conformance Testing and Operater Acceptance Test.



Full Line of Versatile L3 Analysis Tools



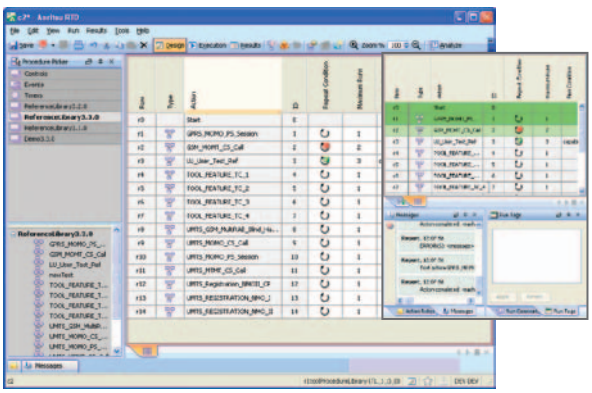
Used as a component for test system

Instant Firmware Switching

Because the MD8430A saves up to five firmware versions, the right firmware is selected easily at startup. There is no need to install/uninstall firmware when executing a test case that determines the firmware version.

Powerful Automated Testing

The RTD software supporting the UE control interface makes it easy to setup automated test systems. Furthermore, multiple test cases can be executed continuously and test reports generated automatically, and many functions, including repeat testing under different conditions with multiple settings, can be automated, offering carriers, etc., an ideal turnkey solution for acceptance testing.



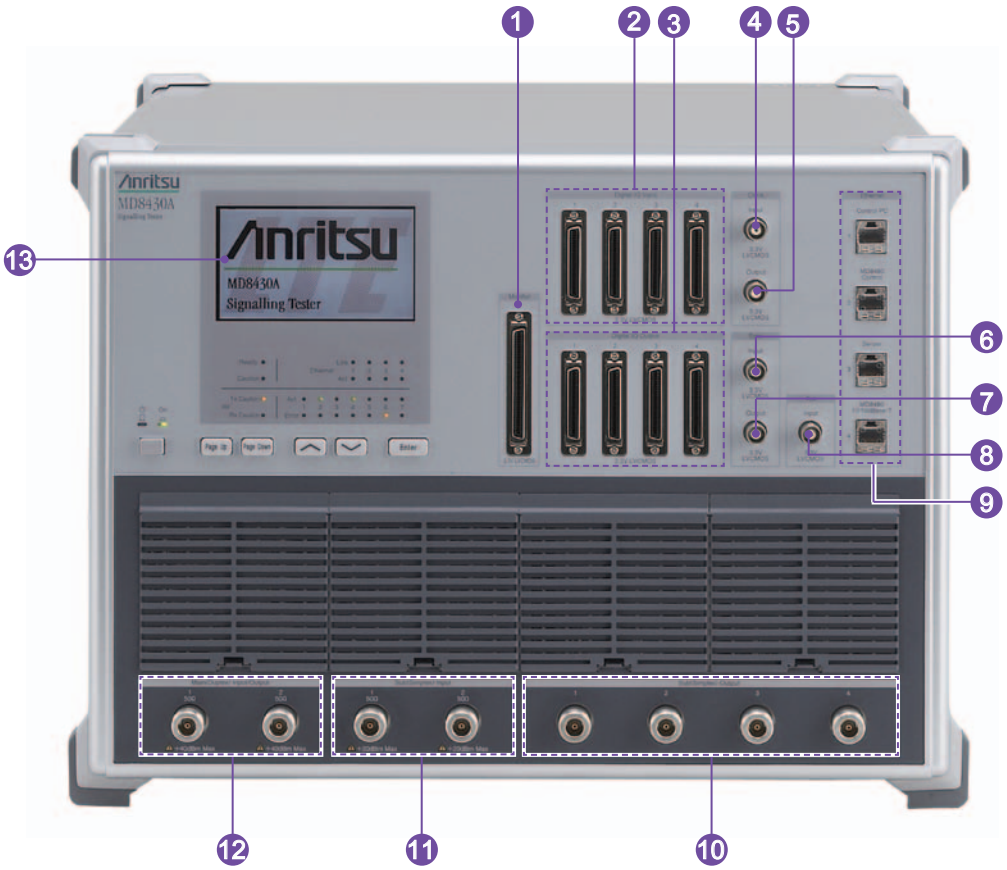
Example of Test Case Campaign

Easy Test Case Maintenance

Test cases created by the RTD software can be updated easily when new 3GPP standard evolves, reducing the need for re-editing. In addition, guaranteed test case compatibility even when the MD8430A firmware version is changed removes the need to recompile, etc., resulting in greatly reduced costs for maintaining test cases to support regression testing when rolling out new terminals and performing pre-IOT to assure compatibility with network equipment worldwide.

Panel Layout

Front Panel



1 Monitor
Connector outputting signal internal data and status to accessory Monitor Board

2 Digital IQ Input
Connector for inputting digital IQ signal

3 Digital IQ Output
Connector for outputting digital IQ signal

4 Clock Input
BNC connector for inputting system clock to operate using external clock

5 Clock Output
BNC Connector for outputting system clock

6 Sync Input
BNC Connector for inputting and operating using external sync signal

7 Sync Output
BNC Connector for outputting sync signal

8 Aux Input
BNC Input connector reserved for adding future functions

9 Ethernet
(1) Ethernet connector for connecting external PC controller
(2) Ethernet connector for connecting MD8480C controller using 'Control PC' connector
(3) Ethernet connector for server
(4) Ethernet connector for connecting MD8480C using '10/100BASE-T' connector

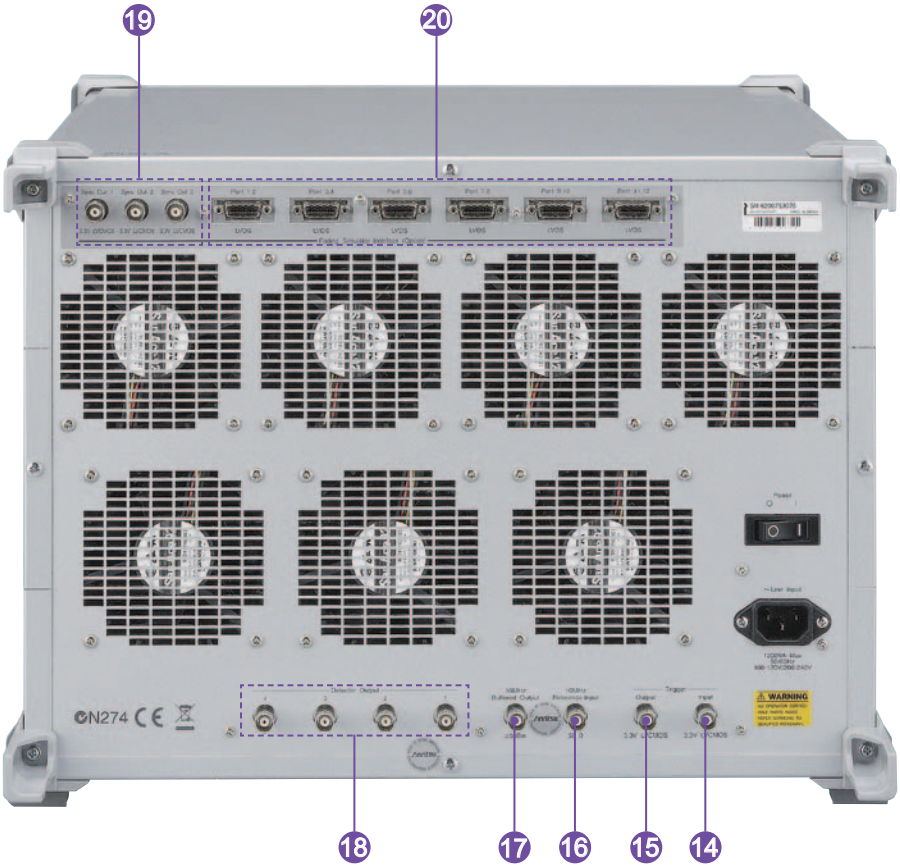
10 Sub (Simplex) Output
N-type connector for RF output

11 Sub (Simplex) Input
N-type connector for RF input

12 Main (Duplex) Input/Output
N-type connector for RF input/output

13 LCD
Screen displaying equipment information such as firmware selection and maintenance software screens

Rear Panel



14 Trigger Input
BNC Connector for inputting a trigger signal from external equipment

15 Trigger Output
BNC Connector for outputting event timing to external equipment

16 10 MHz Reference Input
BNC Connector for inputting external reference signal

17 10 MHz Buffered Output
BNC Connector for outputting equipment reference signal

18 Detector Output
BNC Connector for outputting profile signal of RF signal power

19 Sync Out
BNC Connector for outputting sync signal to MF6900A Fading Simulator

20 LVDS
Connector for connecting MF6900A Fading Simulator using Digital IQ

Test Models/Options/Software

Test Models

MD8430A-010 LTE Function Test Model (FTM)
MD8430A-012 LTE MIMO Test Model (MTM)
MD8430A-014 LTE Handover Test Model (HTM)
MD8430A-020 LTE Standard Test Model (STM)
MD8430A-030 LTE Performance Test Model (PTM)
Choose one of the above five models.

∗ Please refer to page 6 for more details.

Test Model Upgrade

Required option when upgrading to higher order model.

Upgrade from Function Test Model (FTM)
Z1398A LTE FTM to MTM Upgrade Kit
Z1399A LTE FTM to HTM Upgrade Kit
Z1342A LTE FTM to STM Upgrade Kit
Z1344A LTE FTM to PTM Upgrade Kit

Upgrade from MIMO Test Model (MTM)
Z1401A LTE MTM to STM Upgrade Kit
Z1402A LTE MTM to PTM Upgrade Kit

Upgrade from Handover Test Model (HTM)
Z1403A LTE HTM to STM Upgrade Kit
Z1404A LTE HTM to PTM Upgrade Kit

Upgrade from Standard Test Model (STM)
Z1343A LTE STM to PTM Upgrade Kit

Options

MD8430A-002 Extended Frequency Range to 3.8 GHz
Required software option when extending maximum frequency of MD8430A (Tx/Rx) to 3.8 GHz.

MD8430A-003 Extended Frequency Range to 3.8 GHz Hardware
Required hardware option when extending maximum frequency of MD8430A (Tx/Rx) to 3.8 GHz.

MD8430A-060 LTE FDD Option
Required option when simulating 3GPP LTE FDD.

MD8430A-061 LTE TDD Option
Required option when simulating TD-LTE.

MD8430A-080 LTE Ciphering Option
Option for adding ciphering function supporting EEA0, EEA1, and EEA2 (TS 33.401, TS 36.323) algorithms to LTE.

MD8430A-081 LTE ROHC Option
Option for adding LTE ROHC function supporting RTP/UDP/IP (RFC3095, RFC4815), UDP/IP (RFC3095, RFC4815), ESP/IP (RFC3095, RFC4815), and IP (RFC3843, RFC4815).
Required this option for VoLTE testing.

MD8430A-082 LTE MBMS Option
Option for adding LTE MBMS function supporting (P) MCH Transmission Scheduling, MCCH Message Transmission, MSI MAC control element Transmission and MTCH Message Transmission described in 3GPP (TS 36.211, TS36.221).

MD8430A-083 LTE ZUC Ciphering Option
Option for adding ciphering function supporting EEA3 and EIA3 (TS 33.401, TS 35.221) algorithms to LTE.

MD8430A-085 LTE Carrier Aggregation Option
Option for adding Carrier Aggregation (CA) function supporting transmission of up to two component carriers on downlink.

Application Products

MF6900A Fading Simulator
This Fading Simulator supports LTE 4×2 MIMO using a dedicated connection with the Anritsu Signalling Tester.

MD8470A Signalling Tester
Base Station Simulator supporting CDMA2000 Multiple Sector/Carrier or 1xEV-DO Rev.A. Realizes Inter-working tests between LTE and CDMA2000 by controlling MD8430A and MD8470A simultaneously from MX786201A Rapid Test Designer (RTD).

MD8480C W-CDMA Signalling Tester
Base Station Simulator supporting HSPA Evolution based on the 3GPP Release 8 specification, W-CDMA and GSM. Realizes Inter-RAT handover tests between LTE and UTRAN/GERAN by controlling MD8430A and MD8480C from MX786201A Rapid Test Designer (RTD).

Software

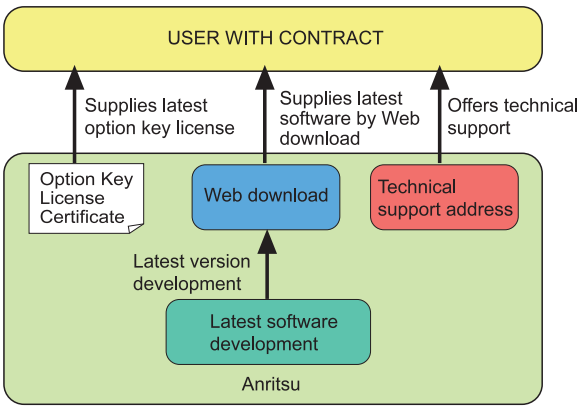
MX843010A LTE Control Software
Software for simulating L1 and L2 with test cases in C.

MX786201A Rapid Test Designer (RTD)
Software for simulating L1 to L3 with test cases described by GUI for automating testing, analyzing test cases and creating reports.

Software Maintenance Contract

Service Provided
- Contract for adding/revising software functions in line with 3GPP revisions
- Technical support for troubleshooting user problems

Annual Support Service (1 year)
Option providing 1 year of service support for LTE functions including web downloads of latest software and technical enquiries. Services depend on option configuration.



MD8430A Support Services

MD8430A Support (FDD)

MD8430A-SS110	1 Year Support Service LTE FDD (FTM)
MD8430A-SS112	1 Year Support Service LTE FDD (MTM)
MD8430A-SS114	1 Year Support Service LTE FDD (HTM)
MD8430A-SS120	1 Year Support Service LTE FDD (STM)
MD8430A-SS130	1 Year Support Service LTE FDD (PTM)

MD8430A Support (TDD)

MD8430A-SS111	1 Year Support Service LTE TDD (FTM)
MD8430A-SS113	1 Year Support Service LTE TDD (MTM)
MD8430A-SS115	1 Year Support Service LTE TDD (HTM)
MD8430A-SS121	1 Year Support Service LTE TDD (STM)
MD8430A-SS131	1 Year Support Service LTE TDD (PTM)

MX843010A LTE Control Software Support

MX843010A-SS120	1 Year Support Service

Specifications

MD8430A Signalling Tester

Reference oscillator	Reference frequency	10 MHz
	Activation characteristics	±5 × 10^{-7} (2 minutes after turning on the power) ±5 × 10^{-8} (5 minutes after turning on the power) ∗ At 25°C, Based on the frequency 24 hours after turning on the power
	Aging rate	±1 × 10^{-8}/day (Specification per day, based on the frequency 48 hours after turning on the power) ±1 × 10^{-7}/year (Specification per day, based on the frequency 10 days after turning on the power)
	Temperature characteristics	±2 × 10^{-8} (0° to 45°C) ∗ Based on the frequency at 25°C
	External reference input	Frequency: 10 MHz Operating range: ±1 ppm Input level: –15 dBm ≤ level ≤ +20 dBm (50Ω, AC coupling) Connector: BNC-J, 50Ω (nominal)
	Internal reference output	Frequency adjusted at shipment: 10 MHz ±0.02 ppm Output level: ≥0 dBm (50Ω, AC coupling) Connector: BNC-J, 50Ω (nominal)
Transmission signal	Maximum level	Main connector: –40 dBm (Maximum setting level at Main connector: –20 dBm) Sub connector: 0 dBm
	Level accuracy	±1.5 dB Main connector: –113 dBm ≤ Level ≤ –40 dBm Sub connector: –113 dBm ≤ Level ≤ 0 dBm ∗ After calibration, 18° to 28°C, for calibration CW
	Frequency	350 MHz to 3.0 GHz* (setting resolution: 100 kHz) ∗: 350 MHz to 3.8 GHz using MD8430A-002.
	Access method	OFDMA
	Modulation method	QPSK, 16QAM, 64QAM
	Modulation accuracy	≤2% Sub output, 0 dBm, 18° to 28°C LTE (OFDM, 64QAM, 20 MHz band)
Received signal	Input level	Setting demodulation range Based on the value set for the Reference Power QPSK: –28 to +15 dB 16QAM: –21 to +15 dB 64QAM: –15 to +15 dB (Input signal: EVM ≤1%, BER ≤1×10^{-12}, 20 MHz band, SC-FDMA) • Main connector input: Reference Power setting range: −20 to +20 dBm However, within the input level range from −30 to +35 dBm • Sub connector input: Reference power setting range: –35 to +5 dBm However, within the input level range from −45 to +20 dBm
	Level accuracy	Main: ±3.0 dB Sub: ±3.0 dB ∗ At 18° to 28°C, for calibration CW, within the Main input level range from −30 to +35 dBm, the Sub input level range from −45 to +20 dBm, and the reference power range of ±15 dB
	Frequency	350 MHz to 3.0 GHz* (setting resolution: 100 kHz) ∗: 350 MHz to 3.8 GHz using MD8430A-002.
	Access method	SC-FDMA
	Modulation method	QPSK, 16QAM, 64QAM
	Synchronization acquirable range	PRACH: ±100 µs PUSCH: ±30 µs
RF connector	Main connector	Type: N Impedance: 50Ω VSWR: ≤1.3
	Sub (Downlink) connector	Type: N Impedance: 50Ω VSWR: ≤1.5
	Sub (Uplink) connector	Type: N Impedance: 50Ω VSWR: ≤1.5

Front panel interface	Digital IQ I/F	DX20 connector (50 pin) × 8, 3.3 V-CMOS level Digital IQ signal, IQ: 16 bit
	Monitor I/F	DX20 connector (80 pin), 3.3 V-CMOS level Connection with the Monitor board (G0091)
	Sync Out	BNC connector, 3.3 V-CMOS level Internal Sync Start signal output
	Sync In	BNC connector, 3.3 V-CMOS level External Sync Start signal input
	Clock Out	BNC connector, 3.3 V-CMOS level Internal Clock signal output
	Clock In	BNC connector, 3.3 V-CMOS level, 10 kHz to 30.72 MHz External Clock signal input
MF6900 interface	Sync Out	BNC connector × 3, 3.3 V-CMOS level Connection with the MF6900A (Sync Start signal)
	Port	HIB-B16LFYGA connector × 6, LVDS level Connection with the MF6900A (Digital IQ signal)
Specifications related to EMC and LVD	EMC	EN61326-1, EN61000-3-2
	LVD	EN61010-1
Temperature	Operating	0° to +45°C
	Storage	–20° to +60°C
Power supply	Voltage	100 V (ac) to 120 V (ac)/200 V (ac) to 240 V (ac) (Automatic switching system)
	Frequency	50 Hz/60 Hz (Automatically changeover system)
	Power consumption	≤1200 VA
Dimensions, Mass	Dimensions	426 (W) × 310 (H) × 500 (D) mm
	Mass	≤35 kg

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
	LTE Function Test Model
MD8430A	Signalling Tester*
MD8430A-003	Extended Frequency Range to 3.8 GHz Hardware
MD8430A-010	LTE Function Test Model (FTM)
	LTE MIMO Test Model
MD8430A	Signalling Tester*
MD8430A-003	Extended Frequency Range to 3.8 GHz Hardware
MD8430A-012	LTE MIMO Test Model (MTM)
	LTE Handover Test Model
MD8430A	Signalling Tester*
MD8430A-003	Extended Frequency Range to 3.8 GHz Hardware
MD8430A-014	LTE Handover Test Model (HTM)
	LTE Standard Test Model
MD8430A	Signalling Tester*
MD8430A-003	Extended Frequency Range to 3.8 GHz Hardware
MD8430A-020	LTE Standard Test Model (STM)
	LTE Performance Test Model
MD8430A	Signalling Tester*
MD8430A-003	Extended Frequency Range to 3.8 GHz Hardware
MD8430A-030	LTE Performance Test Model (PTM)
	Standard Accessories
	CD-ROM (Operation Manual and Maintenance Software): 1 pc
J1440A	LAN Cable: 2 pcs
J1211	Power Cord, 3.0 m (15 A): 1 pc
J0127A	Coaxial Cord, 1.0 m (BNC-P · RG58A/U · BNC-P): 1 pc
J0576B	Coaxial Cord, 1.0 m (N-P · 5D-2W · N-P): 2 pcs
J1398A	N-SMA Adaptor: 6 units
G0091	Monitor Board: 1 pc
J1005	Monitor Cable 80: 1 pc
J1459A	Digital IQ Cable (50 cm): 1 pc
	Options
MD8430A-002	Extended Frequency Range to 3.8 GHz
MD8430A-060	LTE FDD Option
MD8430A-061	LTE TDD Option
MD8430A-080	LTE Ciphering Option
MD8430A-081	LTE ROHC Option
MD8430A-082	LTE MBMS Option
MD8430A-083	LTE ZUC Ciphering Option
MD8430A-085	LTE Carrier Aggregation Option
MD8430A-103	Extended Frequency Range to 3.8 GHz Hardware Retrofit (for Asia, Oceania)
MD8430A-203	Extended Frequency Range to 3.8 GHz Hardware Retrofit
	Software Options
MX843010A	LTE Control Software
MX786201A	Rapid Test Designer (RTD)
	Main frame Support Service
	[FDD]
MD8430A-SS110	1 Year Support Service LTE FDD (FTM)
MD8430A-SS112	1 Year Support Service LTE FDD (MTM)
MD8430A-SS114	1 Year Support Service LTE FDD (HTM)
MD8430A-SS120	1 Year Support Service LTE FDD (STM)
MD8430A-SS130	1 Year Support Service LTE FDD (PTM)
	[TDD]
MD8430A-SS111	1 Year Support Service LTE TDD (FTM)
MD8430A-SS113	1 Year Support Service LTE TDD (MTM)
MD8430A-SS115	1 Year Support Service LTE TDD (HTM)
MD8430A-SS121	1 Year Support Service LTE TDD (STM)
MD8430A-SS131	1 Year Support Service LTE TDD (PTM)
	LTE Control Software Support Service
MX843010A-SS120	1 Year Support Service

Model/Order No	Name
	Upgrade Options
Z1398A	LTE FTM to MTM Upgrade Kit
Z1399A	LTE FTM to HTM Upgrade Kit
Z1342A	LTE FTM to STM Upgrade Kit
Z1344A	LTE FTM to PTM Upgrade Kit
Z1401A	LTE MTM to STM Upgrade Kit
Z1402A	LTE MTM to PTM Upgrade Kit
Z1403A	LTE HTM to STM Upgrade Kit
Z1404A	LTE HTM to PTM Upgrade Kit
Z1343A	LTE STM to PTM Upgrade Kit
	Application Products
MF6900A	Fading Simulator
MD8470A	Signalling Tester
MD8480C	W-CDMA Signalling Tester

∗: A PC∗1 running Microsoft Visual C++ 2008 Express Edition or Microsoft Visual C++ 2010 Express Edition is required to use the MD8430A. It must be supplied by the customer.

∗1: The PC controller for the MD8430A must meet or exceed the following specifications: OS: Windows XP (SP3), Windows 7 (64 bit) or later
CPU: Intel Core 2 Duo 2 GHz or faster
RAM: 2 GB or more
NIC: 1000 BASE-T

Note:

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Specifications are subject to change without notice.

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