Solutions Catalog

Anritsu

LTE Test & Measurement Solutions

Anritsu's LTE Measurement Solutions

Anritsu has developed based on its active participation in 3GPP standardization and close work with major infrastructure, chipset, terminal, and base station developers, are helping improve time to market and cost-of-manufacturing of LTE devices and systems.

Here we've put together LTE sections focused on the latest technologies to provide you essential reference material to appropriate test solutions.

It is the perfect test solution for bringing LTE terminals to market as quickly as possible based on Anritsu's extensive knowledge of 3G/3.5G technologies.

Mobile Terminal Test Solutions

Core Technology Development Tests	Integration R&D Tests	Conformance Tests	IOT Operator Acceptance Tests	Production Line Tests
MD8430A+RTD				
MG3700A				
MS269xA/MS2830A				
	MF6900A			
	MD8475A			
	MT8820C			
		ME7834		
		ME7873L		

Base Station Test Solutions

Core Technology Development Tests	Production Line Tests	Field Tests & Maintenance
MG3700A		
MS269xA/MS2830A		
MS272xB/C MS2712E/13E		
MT8221B/22B MT8212E/13E		
MP2100A		

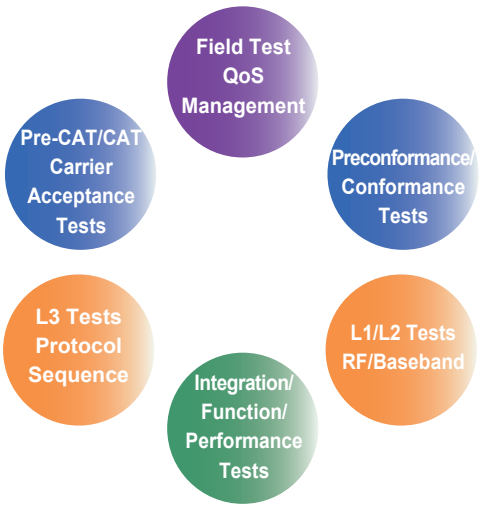
LTE logo is a trademark of the European Telecommunications Standards Institute (ETSI).

MD8430A/MX786201A
Signalling Tester/Rapid Test Designer (RTD)

FDD TDD

Supports LTE FDD/TDD Chipsets Ideal Mobile Development Solution

The MD8430A Signalling Tester is an essential base station simulator for developing LTE chipsets and mobile terminals. The built-in 3GPP Rel-8 E-UTRA-compliant RF interface and digital IQ interface support all LTE terminal performance tests required for early development, including coding and decoding, protocol, packet communications with external server, and throughput tests.
In addition, the integrated Rapid Test Designer (RTD) tool with intuitive GUI makes it easy to create, execute, and analyze LTE terminal test cases. A system for testing handover with existing systems is easily configured by combining the MD8430A with the MD8480C (UTRAN/GERAN) and MD8470A (CDMA2000).



Features

- Responsive support for latest 3GPP LTE FDD/TDD standard
- One unit supports 2×2 MIMO Intra-RAT handover and 4×2 MIMO DL: 100 Mbps/UL: 50 Mbps
- Maximizing existing hardware investment (MD8480C, MD8470A CDMA2000) with Inter-RAT handover tests
- Investment tailored to applications ranging from R&D to protocol conformance tests
- Easy L3 protocol R&D and full range of analysis tools

Purpose

- Coding and Decoding tests (RF/Baseband)
- Protocol sequence tests
- Throughput and Stress tests
- Inter-RAT and Intra-RAT handover tests

Key Applications

- Protocol conformance and Pre-conformance tests
- Network interoperability tests
- Network operator acceptance tests (CAT)
- Fault troubleshooting
- QA terminal operation evaluation

MF6900A
Fading Simulator

FDD TDD

Digital Fading Simulator Supporting LTE FDD/TDD 2×2 MIMO 2-cell or 4×2 MIMO

The MF6900A Fading Simulator supports LTE and W-CDMA/HSPA mobile terminals with a full range of preset 3GPP fading profiles as well as easy configuration of fading performance and stress test environments. The dedicated digital interface for connecting the MD8430A or MD8480C Base Station Simulator guarantees high simulation reproducibility, easy maintenance, and calibration-free stability. Dual LTE 2×2 MIMO and 4×2 MIMO tests are made easy by this all-in-one unit.

Features

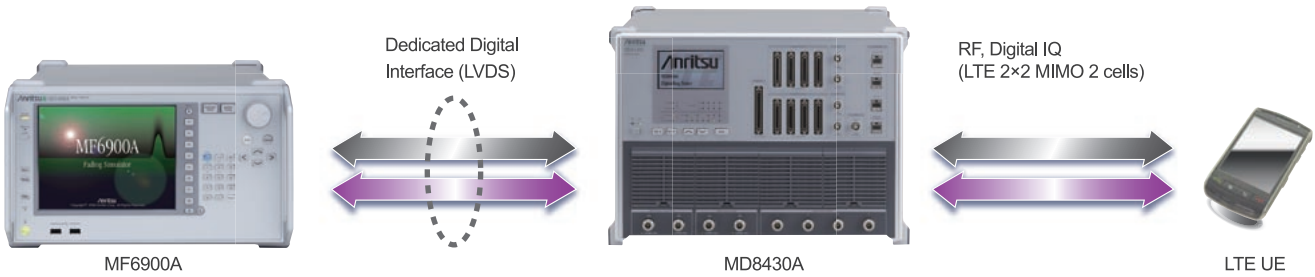
- High reproducibility and maintainability due to full digital baseband processing
- All-in-one unit supports LTE 2×2 MIMO 2-cell or LTE 4×2 MIMO test environment
- Easy fading settings using dedicated interface with MD8430A/ MD8480C Signalling Tester
- Highly extendible hardware platform

Purpose

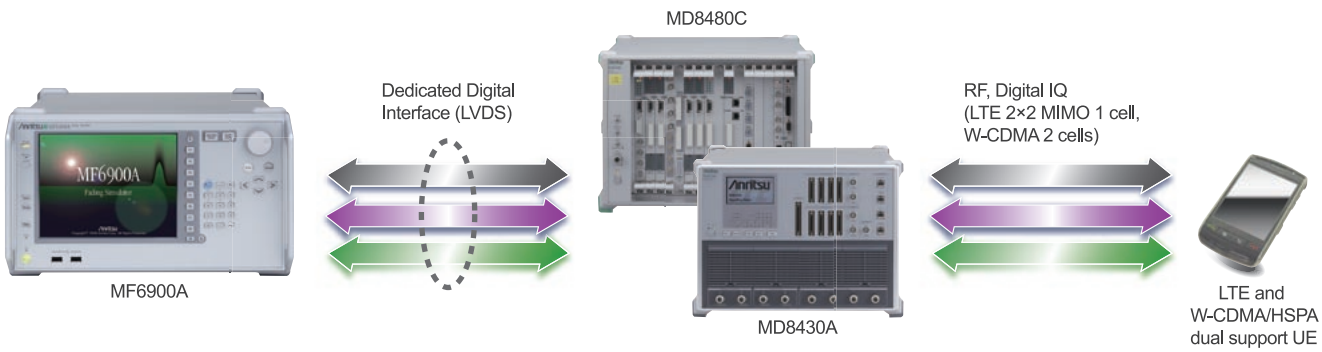
- Coding and Decoding tests (RF/Baseband)
- Fading performance tests
- Throughput performance tests

Key Applications

- RF Conformance and Pre-conformance tests
- Network interoperability tests
- Network operator acceptance tests (CAT)
- QA terminal operation evaluation



The MD8480C Signalling Tester for W-CDMA supports all-in-one LTE/W-CDMA inter-system handover tests (with MF6900A-001 option installed).



ME7834
Mobile Device Test Platform

FDD TDD

Protocol Test System for Mobile Device Development, Conformance, Carrier Acceptance and Behavior Analysis for Multi-RAT

- Flexible platform for multiple technologies and applications
- High quality, advanced and dependable
- Reliable and robust hardware renowned for high quality solutions
- Handset R&D, integration, conformance, interoperability and validation

3GPP TS 36.523 LTE Protocol Conformance Solution (PCT)

ME7834 Protocol Test System is integrated with the MD8430A LTE Signalling Tester and GCF Protocol Conformance Test Toolkit which eliminates troublesome setup, such as cable connections, software installation, and level correction, to maximize protocol conformance testing efficiency and shorten time to market.
The ME7834 is registered as GCF TP119 and tracks TS 36.523 for LTE and TS 34.123 for UTRAN and meets critical deadlines set by the industry. The system may also be configured to meet tests mandated by several network operators.
An existing ME7832A and ME7832L systems can also be upgraded to ME7834 for LTE, providing a Multi-RAT solution for Operators IOT.

Carrier Acceptance Testing for Network Operators (CAT)

Network operators are making use of the ME7834 and its intelligent test tools to ensure that terminals behave correctly on their networks. Terminal development teams simulate conditions in networks that may be thousands of miles away and may not yet support the new functionality present in new handsets.

Test packages for network requirements
Anritsu is able to provide and support a number of network operator specific tests. ME7834 users now have the ability to purchase network operator test packages outright or subscribe to them on an annual basis to suit their fiscal needs.
ME7834 validated network operators test packages are fully documented, watermarked, automated with fading simulation and Pass/Fail test results.

Handset development from R&D to conformance and beyond
Additional to the 3GPP TTCN-3 scripting language development in ME7834, the RTD tool provides a unique graphical flow chart design tool that is an intuitive and fast way to simulate many different networks scenarios, including;

- Throughput Performance Tests
- Protocol Performance Tests

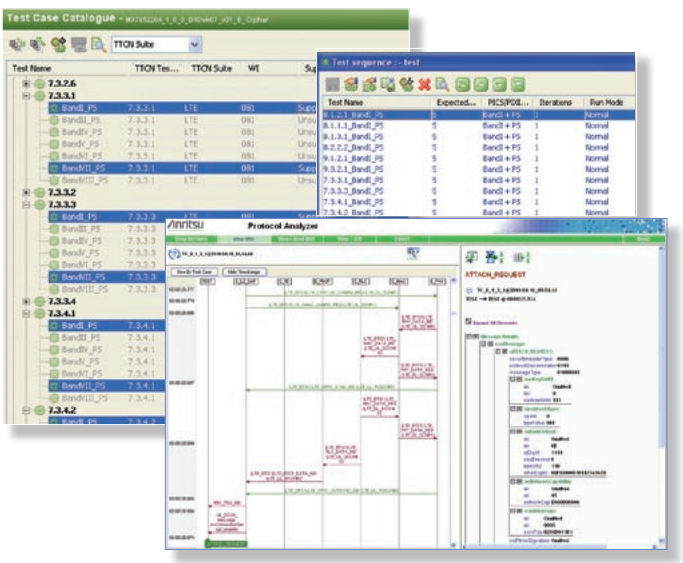
RTD has the ability to create almost limitless network simulations and is now complimented by the MD8430A for LTE and MD8470A for CDMA2000.

Key Benefits

- Flexible test sequence creation and execution using GUI
- Validated test case library with automation
- Fast & Reliable test execution
- Integrated protocol analyzer
- Test report generation to industry formats including TOM

Features

- Covers test cases for W-CDMA/LTE UE protocol conformance test and carrier acceptance testing in single system
- Intelligent test sequencer to schedule tests using drag and drop graphical interface for campaign execution
- Extensive library of GCF & PTCRB test cases for 3G/LTE
- Analyze results by Pass/Fail verdict and easily re-run any failed tests
- Protocol analyzer shows entire test sequence of all layers, with time stamps for analysis
- Ability to view/edit/re-run TTCN-3 and RTD tests
- Detailed protocol log analysis of any message highlights difference in expected and received data



ME7873L
LTE RF Conformance Test System

FDD TDD

Supports FDD/TDD LTE UE RF Conformance Tests

The ME7873L test platform is for testing RF TRx characteristics, performance requirements, and RRM performance of LTE mobile terminals in compliance with the requirements of 3GPP TS 36.521-1 Chapter 6 (Transmitter Characteristics), Chapter 7 (Receiver Characteristics), Chapter 8 (Performance Requirement), Chapter 9 (Reporting of Channel State Information) and TS 36.521-3 RRM including LTE→GSM/UMTS/CDMA2000 Inter-RAT tests.*1, *2
Moreover, support for UMTS→LTE Inter-RAT tests is planned.
China's planned TDD service is also supported.*2

Supporting Most GCF*3/PTCRB*4 Approved Test Cases*5

This GCF/PTCRB-compatible test platform targets the most and first Test Cases approved at quarterly GCF/PTCRB meetings.
It uses the MD8430A Signalling Tester as a LTE base station simulator, and is configured from various test instruments and dedicated software.
It supports RF/RRM tests while communicating with LTE mobile terminals.

LTE and W-CDMA Parallel Test Capability

Parallel LTE and W-CDMA Testing
Supports parallel independent LTE and W-CDMA RF Conformance tests with upgrade from ME7873F W-CDMA TRX/Performance Conformance Test System or ME7874F RRM Conformance Test System.
Simultaneous parallel measurement of LTE and W-CDMA terminals cuts test times and optimizes equipment cost-performance investment.

Measurement Functions for Efficient R&D

The easy-to-use GUI supports a search mode for Rx and performance tests, automatic retry for specific tests, SS log viewer, and simple parameter changes for efficient R&D and approval tests.

Supports Global Mobile Terminals

Not only are GCF/PTCRB-approved Bands planned for use in Europe and North America fully supported, but the following bands defined by 3GPP are also supported too.
Unlisted bands can be supported by request.

E-UTRA Operating Band	UL Operating Band (MHz)	DL Operating Band (MHz)	Operation Area
1	1920 to 1980	2110 to 2170	Europe, Asia
2	1850 to 1910	1930 to 1990	North America
3	1710 to 1785	1805 to 1880	Europe, Asia
4	1710 to 1755	2110 to 2155	North America
5	824 to 849	869 to 894	North America, Asia
7	2500 to 2570	2620 to 2690	Europe
8	880 to 915	925 to 960	Europe
9	1749.9 to 1784.9	1844.9 to 1879.9	Japan
10	1710 to 1770	2110 to 2170	North America
11	1427.9 to 1447.9	1475.9 to 1495.9	Japan
12	698 to 716	728 to 746	North America
13	777 to 787	746 to 756	North America
14	788 to 798	758 to 768	North America
17	704 to 716	734 to 746	North America
20	832 to 862	791 to 821	Europe
33	1900 to 1920	1900 to 1920	TBD
34	2010 to 2025	2010 to 2025	TBD
35	1850 to 1910	1850 to 1910	North America
36	1930 to 1990	1930 to 1990	North America
37	1910 to 1930	1910 to 1930	North America
38	2570 to 2620	2570 to 2620	Asia
39	1880 to 1920	1880 to 1920	Asia
40	2300 to 2400	2300 to 2400	Asia

∗1 RRM: Radio Resource Management
∗2 In principle, defined by GCF Work Item*6 and targeting measurement items certified by GCF/PTRCB.
(Contact our sales staff for timing of supported items and option configurations.)
∗3 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.
∗4 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.
∗5 As of July, 2011.
∗6 Work Item:
Name of function test items selected by GCF for mobile terminal approval.

MD8475A
Signalling Tester

FDD

Supports Global UE Networks with One Unit

The MD8475A Signalling Tester is a multi-system base station simulator supporting all the world's major mobile communications technologies, including LTE FDD, W-CDMA/HSPA, GSM/GPRS/EGPRS, and CDMA2000 1X/1x EV-DO Rev. A.
It is operated using a simple GUI, eliminating scenario-based operations required by conventional base station simulators. It easily handles both simple tests, such as voice and packet, as well as more complex tests, such as handover and multi-call.

Features

- Support LTE/W-CDMA/GSM/CDMA2000
- Support LTE 2×2 MIMO DL100 Mbps throughput
- Inter-RAT test for LTE to legacy system
- Windows 7 Ultimate installed

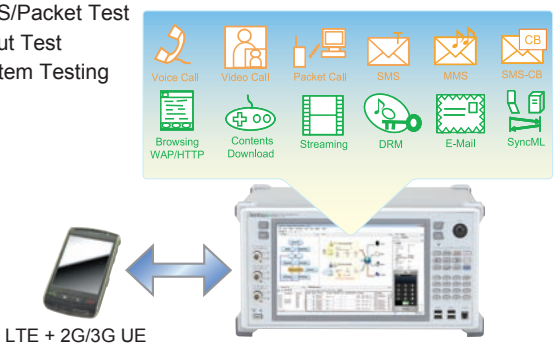
• Windows® is a registered trademark of Microsoft Corporation in the USA and other countries.
• CDMA2000® is a registered trademark of the Telecommunications Industry Association (TIA-USA).

Purpose

- R&D for LTE UE
- Remote Command for Automation

Key Applications

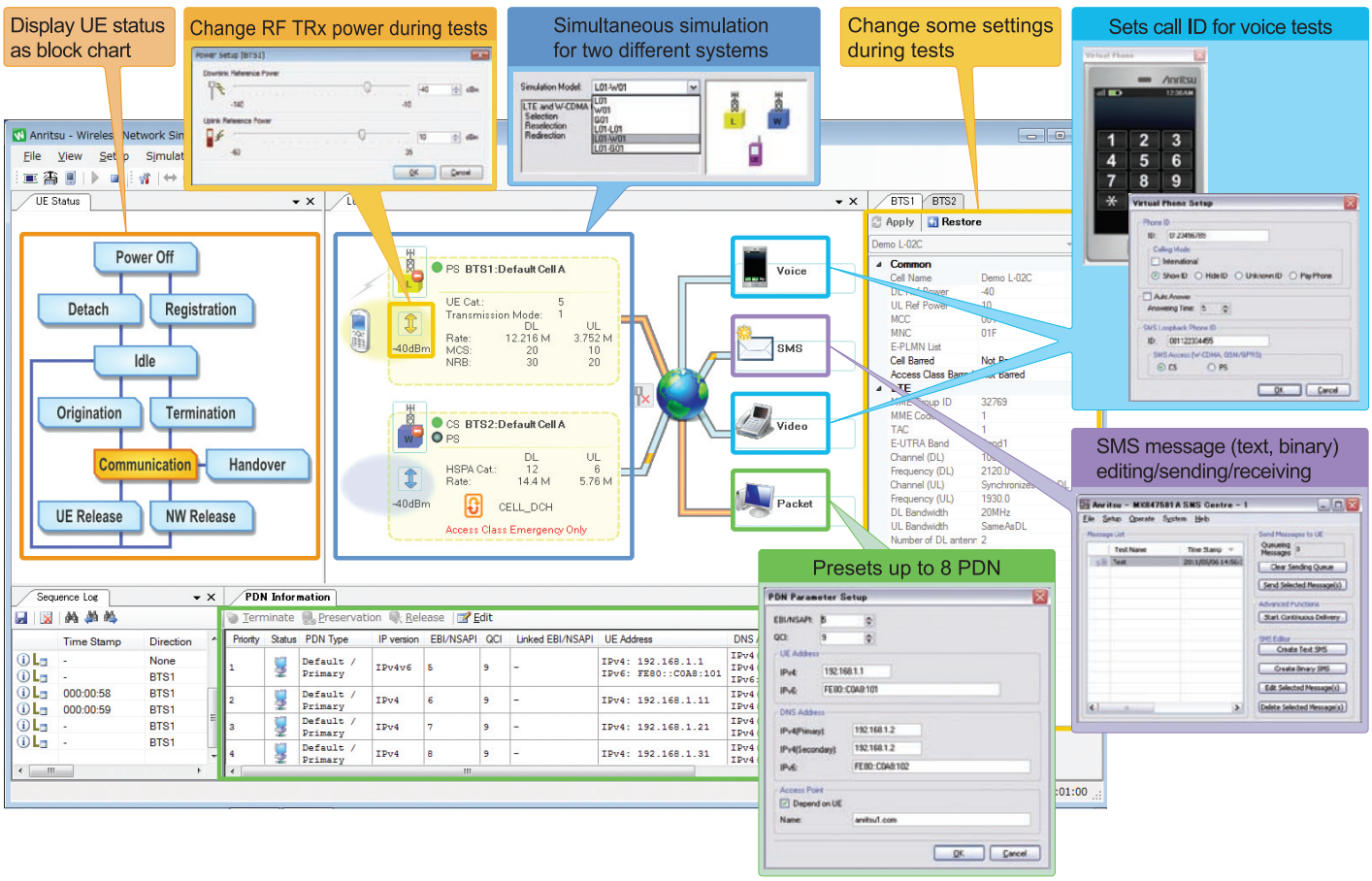
- Voice/SMS/Packet Test
- Throughput Test
- 2-cell System Testing



LTE + 2G/3G UE

User Interface

- One button terminal tests, such as voice call and packet communications
- Supports complex 2-cell tests without scenario



MT8820C
Radio Communication Analyzer

FDD TDD

All-in-one RF Tx/Rx Measurement Solution for LTE FDD/TDD Mobile Terminal R&D and Manufacturing

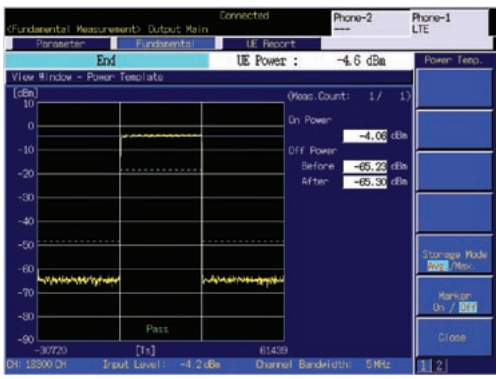
The MT8820C combines high-level signalling and high-performance RF measurement technologies in a single hardware platform covering a wide frequency range from 30 MHz to 2.7 GHz. Installing the LTE FDD Measurement Software MX882012C (LTE TDD Measurement Software MX882013C) and LTE FDD Measurement Hardware MT8820C-008 in the MT8820C supports high-speed and high-accuracy RF Tx/Rx testing LTE FDD (TDD) terminals with UE category 1 and 5 on production lines in either the UE-connected mode or Test mode.

Features

- Supports RF Tx and Rx tests in UE-connected and test modes
- Supports 3GPP-standard test signals
- All-in-one unit supporting LTE/3G/2G R&D and manufacturing

LTE FDD/TDD UE Evaluation

RF Tx and Rx testing in UE-connected and test mode
All RF Tx and Rx tests recommended by 3GPP (TS 36.521-1 chapters 6 and 7) can be performed in both the LTE FDD/TDD UE-connected mode and Test mode (UE not connected). In addition, various RF Tx and Rx test-related parameters can be changed.

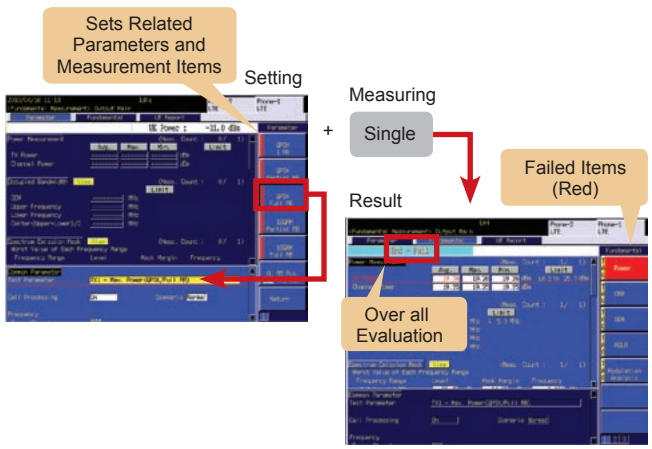


Transmitter Measurement (LTE FDD)

Receiver Measurement (LTE FDD)

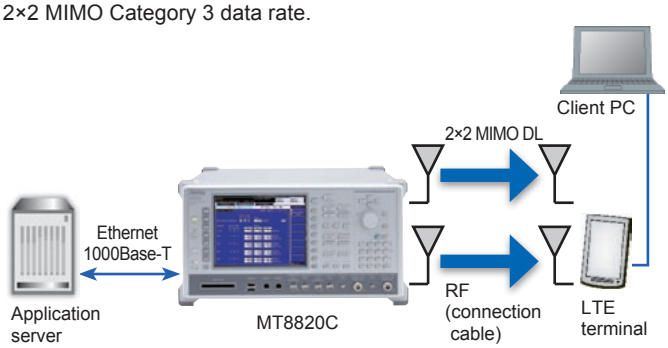
One-touch Setting of Tx Test Items

Settings for 3GPP-compliant main Tx tests are made by one touch operation. Evaluation starts when measurement is completed by pressing “Single”, continuously, allowing even novices to perform accurate measurements successfully. In addition, control programs can be created simply and test speed can be faster using relevant GPIB commands.



IP Data Transfer Test (2×2 MIMO)

Simultaneous installation of the MX882012C-006 LTE FDD IP Data Transfer (MX882013C LTE TDD IP Data Transfer) option and the LTE FDD (TDD) 2×2 MIMO DL option supports connection with an external server and enables IP data communication at the maximum 2×2 MIMO Category 3 data rate.

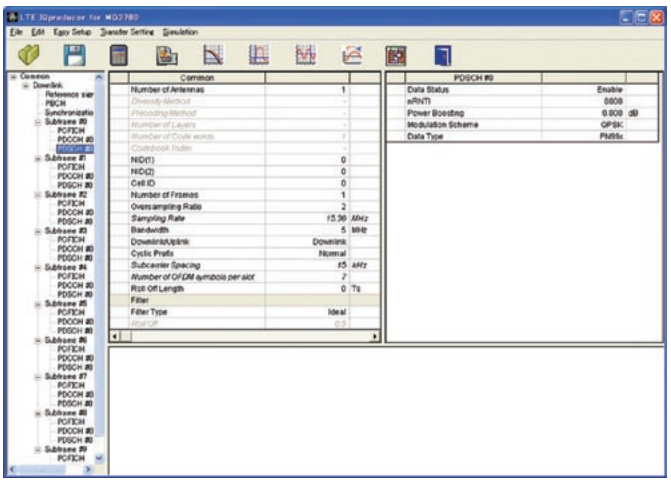


MT8820C Connection Example

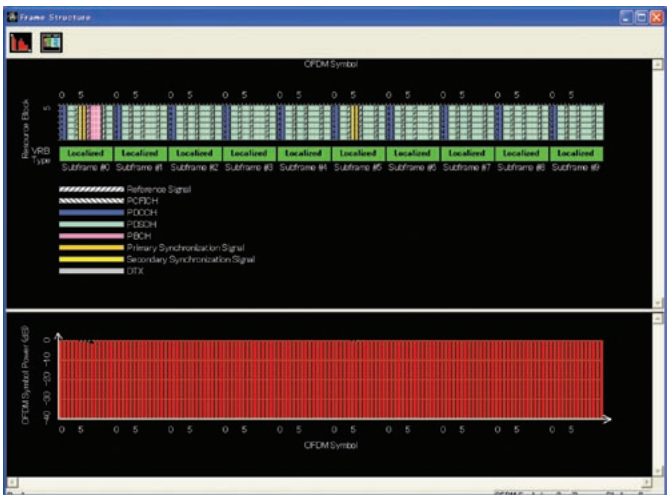
∗ Requires MT8820C-008 and MX882012C (MX882013C) for the main Tx and Rx characteristics of LTE FDD (TDD) terminal with Call Processing function.
∗ Requires MX882042C (MX882043C) for the main Tx characteristics of LTE FDD (TDD) terminal without Call Processing function.
MX882042C (MX882043C) is non-Call Processing product.
Refer to the MX882012C (MX882013C) or MX882042C (MX882043C) catalog for detail.
∗ For terminal connectivity, contact your Anritsu sales representative.

Reference Signal Source for LTE TRx Characteristics Evaluation

The MX370108A LTE IQproducer is GUI-driven PC application software for generating waveform patterns in compliance with 3GPP LTE FDD (Uplink, Downlink).
The MX370110A LTE TDD IQproducer is GUI-driven PC application software for generating waveform patterns in compliance with 3GPP LTE TDD (Uplink, Downlink).
The generated waveform patterns are downloaded to the MG3700A Vector Signal Generator to output signals.
In addition, combination with the separately sold MX370107A Fading IQproducer generates waveform patterns for SISO/SIMO/MISO/MIMO signals.



LTE IQproducer Main Screen

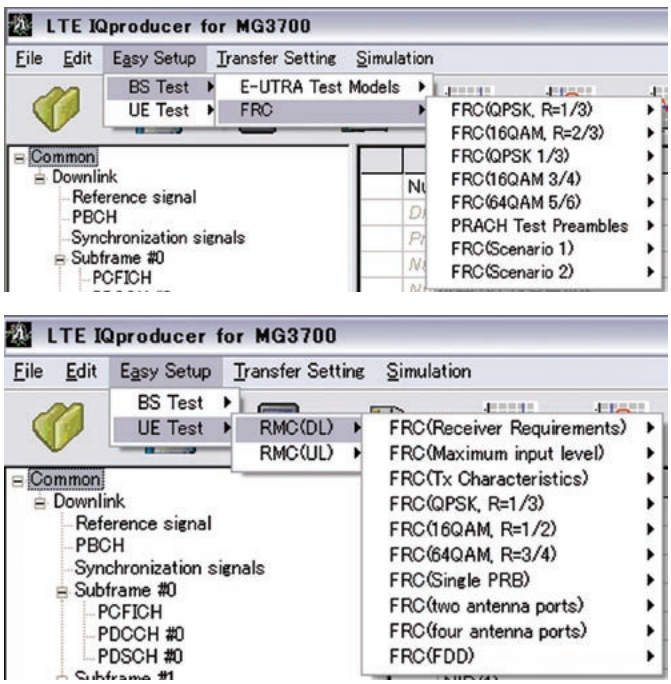


Frame Structure Screen

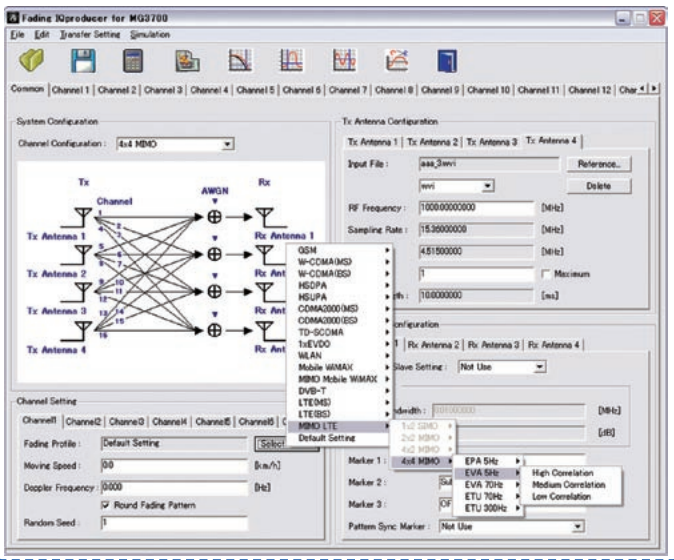
Displays Frame Structure screen for confirming channel allocation status and power of each OFDM Symbol

Easy Setup Function (LTE IQproducer)

Sets batch parameter typical value for 3GPP-defined test signals.



MX370107A Fading IQproducer (Optional)
Supports 1x1 SISO to 4x4 MIMO channel configurations; select pre-set typical parameters for each LTE profile.



One Unit Supports Tx Characteristics Evaluation

MS269xA Signal Analyzer
High-performance and high-function high-end model

MS2830A Signal Analyzer
High-speed and low-cost middle range model

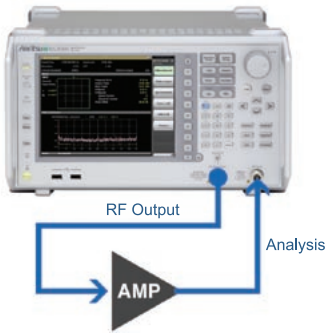
Installing the MX269020A LTE Downlink Measurement Software, MX269021A LTE Uplink Measurement Software, MX269022A LTE TDD Downlink Measurement Software or MX269023A LTE TDD Uplink Measurement Software in the MS269xA or MS2830A supports high-speed high-accuracy evaluation of RF Tx characteristics for LTE base stations and mobile terminals.
In addition, installing the Vector Signal Generator option supports simple measurement system setup and cuts the equipment footprint, investment, and running costs (calibration, maintenance and power).

Measurement Functions

- **Text Display**
  - Frequency Error
  - Output Power
  - EVM (Peak/RMS)
  - Origin Offset
  - Time Offset
  - (Time offset between the trigger input and the head of the frame)
- **Constellation Display**
  - Constellation
- **Spectrum Display**
  - Adjacent Channel Power
  - Channel Power
  - Occupied Bandwidth
  - Spectrum Emission Mask
- **Graphical Display**
  - EVM vs. Subcarrier
  - EVM vs. Symbol
  - Spectral Flatness
  - RE Map [MX269020A only]
  - Power vs. Resource Block [DL only]
  - EVM vs. Resource Block [DL only]
  - Time Based EVM [UL only]
  - EVM vs. Demod-Symbol [UL only]
  - In-Band Emission [UL only]
- **Power vs. Time [MS269xA, MX269022A only]**
  - Off Power
  - On Power
  - Transient Period
  - Power at Mask Edge
  - Mask Judge
  - Power vs. Time Graph

Vector Signal Generator (option)

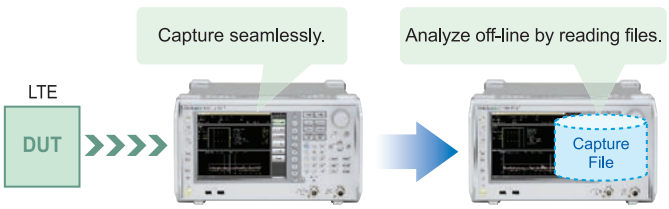
Built-in Spectrum Analyzer and Signal Generator in one unit.



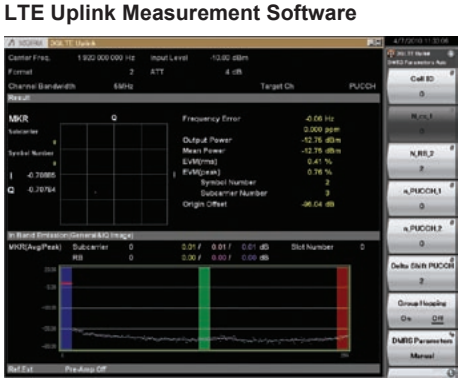
Replay Function for Troubleshooting Faults

LTE signals can be captured as a file for replay by the LTE measurement software to perform analyses, such as EVM measurement.

- R&D use: Supports comparison of retrofitting improvement effects
- Production line use: Supports rechecking of performance data for troubleshooting post-shipping faults

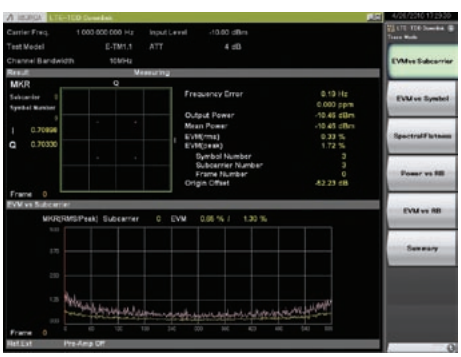


MX269021A
LTE Uplink Measurement Software



In-Band Emission Screen

MX269022A
LTE TDD Downlink Measurement Software



EVM vs. Subcarrier Screen

Spectrum Analyzers for LTE Installation and Maintenance

MS2721B/MS272xC
Handheld Spectrum Analyzer

MS2712E/13E
Spectrum Master

The MS2721B/MS272xC series Spectrum Masters represent Anritsu's highest performance handheld spectrum analyzers with six versions including the industry's first 32 GHz and 43 GHz models. New features and signal analysis options, including LTE, bring more value to the user.

Key Features

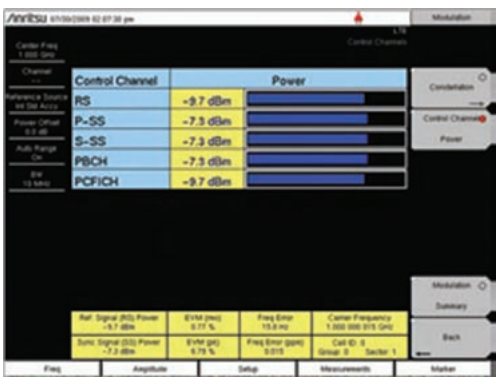
- **20 MHz LTE FDD/TDD Testing***
  RF measurements
  Modulation quality measurements
  Over-the-Air Tx testing
  On-screen coverage mapping
- **Spectrum Analyzer (6 models)**
  9 kHz to 7.1 GHz (MS2721B)
  9 GHz (MS2722C)
  13 GHz (MS2723C)
  20 GHz (MS2724C)
  32 GHz (MS2725C)
  43 GHz (MS2726C)
- **High Accuracy Power Meter Option**
  10 MHz to 26 GHz
- **3GPP Signal Analyzers**
  LTE FDD/TDD, GSM/EDGE, W-CDMA/HSDPA,TD-SCDMA/HSDPA
- **3GPP2 Signal Analyzers**
  cdmaOne, CDMA2000 1X, CDMA2000 1xEV-DO

The Spectrum Masters MS2712E and MS2713E are multifunctional, compact handheld spectrum analyzers that eliminate the need to carry multiple instruments. They can be configured to include a broad range of functionality including LTE analysis.

Key Features

- **10 MHz LTE Testing**
  RF measurements
  Modulation quality measurements
  Over-the-Air testing
- **Spectrum Analyzer**
  100 kHz to 4 GHz (MS2712E)
  100 kHz to 6 GHz (MS2713E)
- **Internal Power Meter**
  10 MHz to 4 GHz (MS2712E)
  10 MHz to 6 GHz (MS2713E)
- **3GPP Signal Analyzers**
  LTE, GSM/EDGE, W-CDMA/HSDPA, TD-SCDMA/HSDPA
- **3GPP2 Signal Analyzers**
  cdmaOne, CDMA2000 1X, CDMA2000 1xEV-DO

LTE Over-the-Air On-screen Mapping



LTE Control Channel Power and Modulation Quality

* 10 MHz in MS2721B

Base Station Analyzers for LTE Installation and Maintenance

MT8221B/22B BTS Master

The BTS Master MT8221B and MT8222B are high-performance handheld base station analyzers that have been specifically developed to support the emerging LTE FDD/TDD standards as well as installed 2G, 3G and WiMAX networks.

Key Features

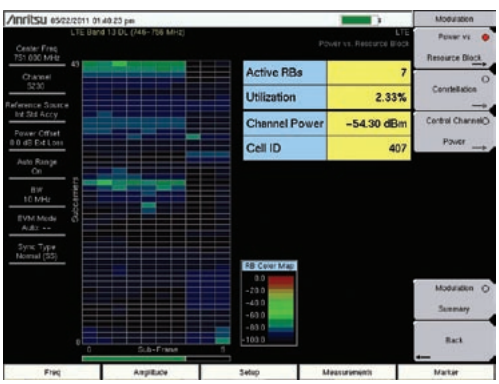
- **20 MHz LTE FDD/TDD Testing**
  RF measurements
  Modulation quality measurements
  Over-the-Air Tx testing
  On-screen coverage mapping
- **Vector Signal Generator**
  400 MHz to 6 GHz
- **2-port Cable and Antenna Analyzer**
  400 MHz to 4 GHz (MT8221B)
  400 MHz to 6 GHz (MT8222B)
- **Spectrum Analyzer**
  150 kHz to 7.1 GHz
- **Internal Power Meter**
  10 MHz to 7.1 GHz
- **3GPP Signal Analyzers**
  LTE FDD/TDD, GSM/EDGE, W-CDMA/HSDPA, TD-SCDMA/HSDPA
- **3GPP2 Signal Analyzers**
  cdmaOne, CDMA2000 1X, CDMA2000 1xEV-DO
- **Backhaul Analyzers**
  E1, T1, T3/T1

MT8212E/13E Cell Master

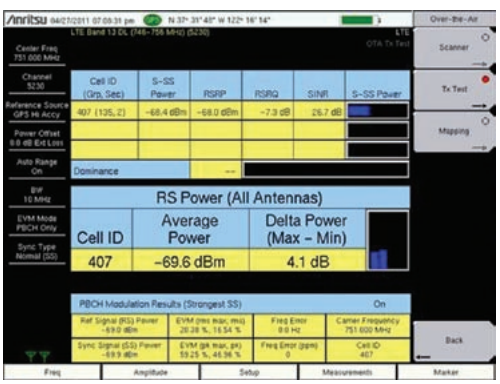
The Cell Master MT8212E and MT8213E are economical, compact handheld base station analyzers that enable cell site technicians to meet virtually all the measurement needs in and around cell sites.

Key Features

- **10 MHz LTE Testing**
  RF measurements
  Modulation quality measurements
  Over-the-Air testing
- **Cable and Antenna Analyzer**
  2 MHz to 4 GHz (MT8212E)
  2 MHz to 6 GHz (MT8213E)
- **Spectrum Analyzer**
  100 kHz to 4 GHz (MT8212E)
  100 kHz to 6 GHz (MT8213E)
- **Internal Power Meter**
  10 MHz to 4 GHz (MT8212E)
  10 MHz to 6 GHz (MT8213E)
- **3GPP Signal Analyzers**
  LTE, GSM/EDGE, W-CDMA/HSDPA,TD-SCDMA/HSDPA
- **3GPP2 Signal Analyzers**
  cdmaOne, CDMA2000 1X, CDMA2000 1xEV-DO
- **Backhaul Analyzers**
  E1, T1, T3/T1

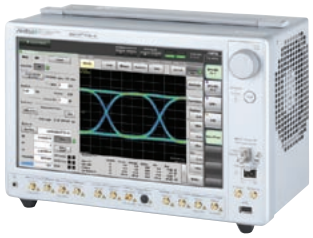


Modulation Quality (Power vs. Resource Block)



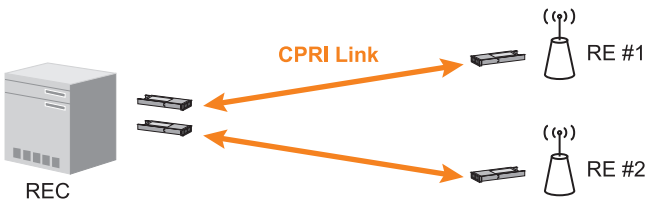
LTE Over-the-Air MIMO Transmitter Test

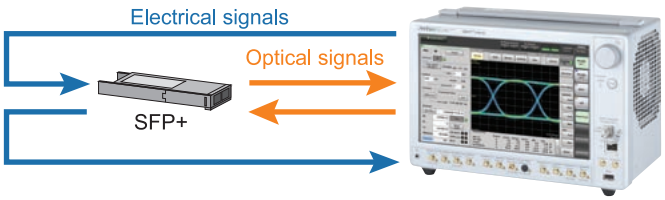
Ideal for LTE CPRI v4.1 Optical Module Evaluation



Simultaneous BER measurements and Eye/Pulse analysis using BERTWave increase efficiency and cut measurement time by eliminating time consuming setup. As a result, the BERTWave is the ideal all-in-one solution supporting both R&D and manufacturing.
Fully supported LTE CPRI v4.1 bit rates (6.14, 4.92, 3.07, 2.46, 1.32 Gbit/s) make the BERTWave ideal for LTE CPRI optical transceiver inspection tests. And the custom lineup of three configurations cuts equipment costs.

Evaluating LTE CPRI v4.1 Optical Modules





CPRI Line Bit Rate [Mbit/s]
1228.8
2457.6
3072.0
4915.2
6144.0

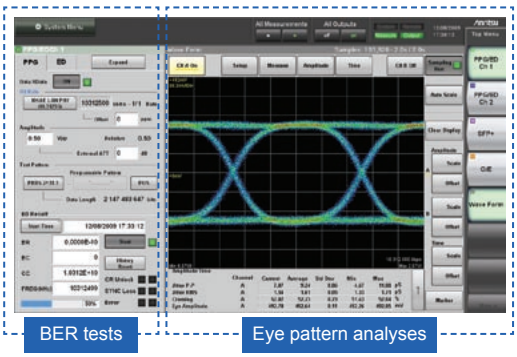
Lineup

MP2100A BERTWave
BERT | Eye/Pulse Scope
All-in-one built-in BERT and Eye/Pulse scope functions

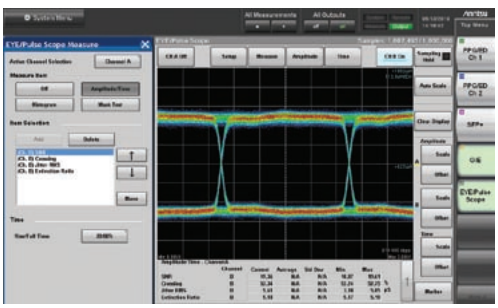
MP2101A BERTWave PE
BERT
BERT functions only

MP2102A BERTWave SS
Eye/Pulse Scope
Eye/Pulse scope functions only

Supporting BER Measurements and Eye Pattern Analysis



Typical Waveform



Bit rate: 6.14 Gbit/s, PRBS15, Amplitude: 0.5 Vp-p, 10^6 samples

Power Meters and Power Sensors for LTE

ML2490A Pulse Power Meter with MA2411B Pulse Sensor

ML2480B Wideband Power Meter with MA2490A Wideband Sensor

ML2490A with MA2411B: Ideal for FDD and TDD LTE

Key Features

- **Industry Best Video Bandwidth**
  39 MHz BW for combination of meter and sensor covers all LTE channel bandwidths to 20 MHz and future proof for wider applications.
- **High Sample Rate**
  62.5 MS/s sample rate with Random Repetitive Sampling to 1 GS/s. is ideal for accurate measurements on TDD based LTE.
- **Dual Input Model**
  The ML2496A supports A, B and ratio measurements A/B for amplifier and return loss measurement applications.
- **Color Display**
  Highly visible color display. The results can be displayed graphically or as a direct numerical readout.
- **Measurements**
  Average, Min., Max., Peak, Crest and Power Added Efficiency
- **Power Statistics**
  PDF, CDF, CCDF
- **Gates and Markers**
  Multiple measurement gates and markers for the precise capture and measurement of the correct section of a complex signal. 4 independent gates and 8 repeated gates can be set for TDD applications. 4 Markers and a delta marker enable the user to pinpoint relevant features of the signal.
- **Sensor MA2411B**
  40 GHz frequency range make the MA2411B an excellent sensor for a wide variety of applications in addition to LTE.

ML2480B with MA2490A: Ideal for FDD LTE

Key Features

- **Wide Video Bandwidth**
  20 MHz BW for combination of meter and sensor covers all current LTE channel bandwidths.
- **High Sample Rate**
  62.5 MS/s sample rate provides accurate measurements on wideband signals.
- **Dual Input Model**
  The ML2488B supports A, B and ratio measurements A/B for amplifier and return loss measurement applications.
- **Color Display**
  Highly visible color display. The results can be displayed graphically or as a direct numerical readout.
- **Measurements**
  Average, Min., Max., Peak, Crest and Power Added Efficiency
- **Power Statistics**
  PDF, CDF, CCDF
- **Sensor MA2490A**
  MA2490A sensor supports 8 GHz requirements.

Note:

Anritsu

Specifications are subject to change without notice.

Anritsu Corporation
5-1-1 Onna, Atsugi-shi, Kanagawa, 243-8555 Japan
Phone: +81-46-223-1111
Fax: +81-46-296-1238

• **U.S.A.**
Anritsu Company
1155 East Collins Blvd., Suite 100, Richardson,
TX 75081, U.S.A.
Toll Free: 1-800-267-4878
Phone: +1-972-644-1777
Fax: +1-972-671-1877

• **Canada**
Anritsu Electronics Ltd.
700 Silver Seven Road, Suite 120, Kanata,
Ontario K2V 1C3, Canada
Phone: +1-613-591-2003
Fax: +1-613-591-1006

• **Brazil**
Anritsu Eletrônica Ltda.
Praça Amadeu Amaral, 27 - 1 Andar
01327-010 - Bela Vista - São Paulo - SP - Brazil
Phone: +55-11-3283-2511
Fax: +55-11-3288-6940

• **Mexico**
Anritsu Company, S.A. de C.V.
Av. Ejército Nacional No. 579 Piso 9, Col. Granada
11520 México, D.F., México
Phone: +52-55-1101-2370
Fax: +52-55-5254-3147

• **U.K.**
Anritsu EMEA Ltd.
200 Capability Green, Luton, Bedfordshire, LU1 3LU, U.K.
Phone: +44-1582-433200
Fax: +44-1582-731303

• **France**
Anritsu S.A.
12 avenue du Québec, Bâtiment Iris 1- Silic 612,
91140 VILLEBON SUR YVETTE, France
Phone: +33-1-60-92-15-50
Fax: +33-1-64-46-10-65

• **Germany**
Anritsu GmbH
Nemetschek Haus, Konrad-Zuse-Platz 1
81829 München, Germany
Phone: +49-89-442308-0
Fax: +49-89-442308-55

• **Italy**
Anritsu S.r.l.
Via Elio Vittorini 129, 00144 Roma, Italy
Phone: +39-6-509-9711
Fax: +39-6-502-2425

• **Sweden**
Anritsu AB
Borgarfjordsgatan 13A, 164 40 KISTA, Sweden
Phone: +46-8-534-707-00
Fax: +46-8-534-707-30

• **Finland**
Anritsu AB
Teknobulevardi 3-5, FI-01530 VANTAA, Finland
Phone: +358-20-741-8100
Fax: +358-20-741-8111

• **Denmark**
Anritsu A/S (Service Assurance)
Anritsu AB (Test & Measurement)
Kay Fiskers Plads 9, 2300 Copenhagen S, Denmark
Phone: +45-7211-2200
Fax: +45-7211-2210

• **Russia**
Anritsu EMEA Ltd.
Representation Office in Russia
Tverskaya str. 16/2, bld. 1, 7th floor.
Russia, 125009, Moscow
Phone: +7-495-363-1694
Fax: +7-495-935-8962

• **United Arab Emirates**
Anritsu EMEA Ltd.
Dubai Liaison Office
P O Box 500413 - Dubai Internet City
Al Thuraya Building, Tower 1, Suit 701, 7th Floor
Dubai, United Arab Emirates
Phone: +971-4-3670352
Fax: +971-4-3688460

• **Singapore**
Anritsu Pte. Ltd.
60 Alexandra Terrace, #02-08, The Comtech (Lobby A)
Singapore 118502
Phone: +65-6282-2400
Fax: +65-6282-2533

• **India**
Anritsu Pte. Ltd.
India Branch Office
3rd Floor, Shri Lakshminarayan Niwas, #2726, 80 ft Road,
HAL 3rd Stage, Bangalore - 560 075, India
Phone: +91-80-4058-1300
Fax: +91-80-4058-1301

• **P.R. China (Hong Kong)**
Anritsu Company Ltd.
Units 4 & 5, 28th Floor, Greenfield Tower, Concordia Plaza,
No. 1 Science Museum Road, Tsim Sha Tsui East,
Kowloon, Hong Kong
Phone: +852-2301-4980
Fax: +852-2301-3545

• **P.R. China (Beijing)**
Anritsu Company Ltd.
Beijing Representative Office
Room 2008, Beijing Fortune Building,
No. 5, Dong-San-Huan Bei Road,
Chao-Yang District, Beijing 100004, P.R. China
Phone: +86-10-6590-9230
Fax: +86-10-6590-9235

• **Korea**
Anritsu Corporation, Ltd.
8F Hyunjuk Building, 832-41, Yeoksam Dong,
Kangnam-ku, Seoul, 135-080, Korea
Phone: +82-2-553-6603
Fax: +82-2-553-6604

• **Australia**
Anritsu Pty. Ltd.
Unit 21/270 Ferntree Gully Road, Notting Hill,
Victoria 3168, Australia
Phone: +61-3-9558-8177
Fax: +61-3-9558-8255

• **Taiwan**
Anritsu Company Inc.
7F, No. 316, Sec. 1, NeiHu Rd., Taipei 114, Taiwan
Phone: +886-2-8751-1816
Fax: +886-2-8751-1817

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Please Contact:

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