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Anritsu

ME7873A

W-CDMA TRX/Performance Test System

Testing System Conforming to Clause 5, 6, 7 in 3GPP TS34.121 Standards

Providing Test Bench Conforming to Standard Specifications

ME7873A is the auto testing system for the Tx/Rx/ Performance characteristic of W-CDMA mobile terminals conforming to 3GPP standards. This system enables to perform measurement conforming to Clause5 (Transmitter test), 6 (Reception test), 7 (Performance test) in 3GPP TS 34.121 standards.
The dedicated software runs on Windows2000 and provides easy management of measurement parameters during tests and test result data.
PC with installed Windows® 2000 is used as system controller. Furthermore, various tests are achieved while communicating (loop-back mode) with W-CDMA mobile terminals to be tested. Also, power consumption tests and temperature tests of W-CDMA mobile terminals are realized using DC power supply and temperature*1 chamber.
In summary, ME7873A is used for RF test use in the process ranging from the development to the final performance evaluation test of W-CDMA mobile terminals.

*1: DC power supply and temperature chamber are needed for power consumption tests and temperature tests separately.
For detailed information on DC power supply and temperature chamber, please contact your Anritsu sales representative)

• Extension of measured units

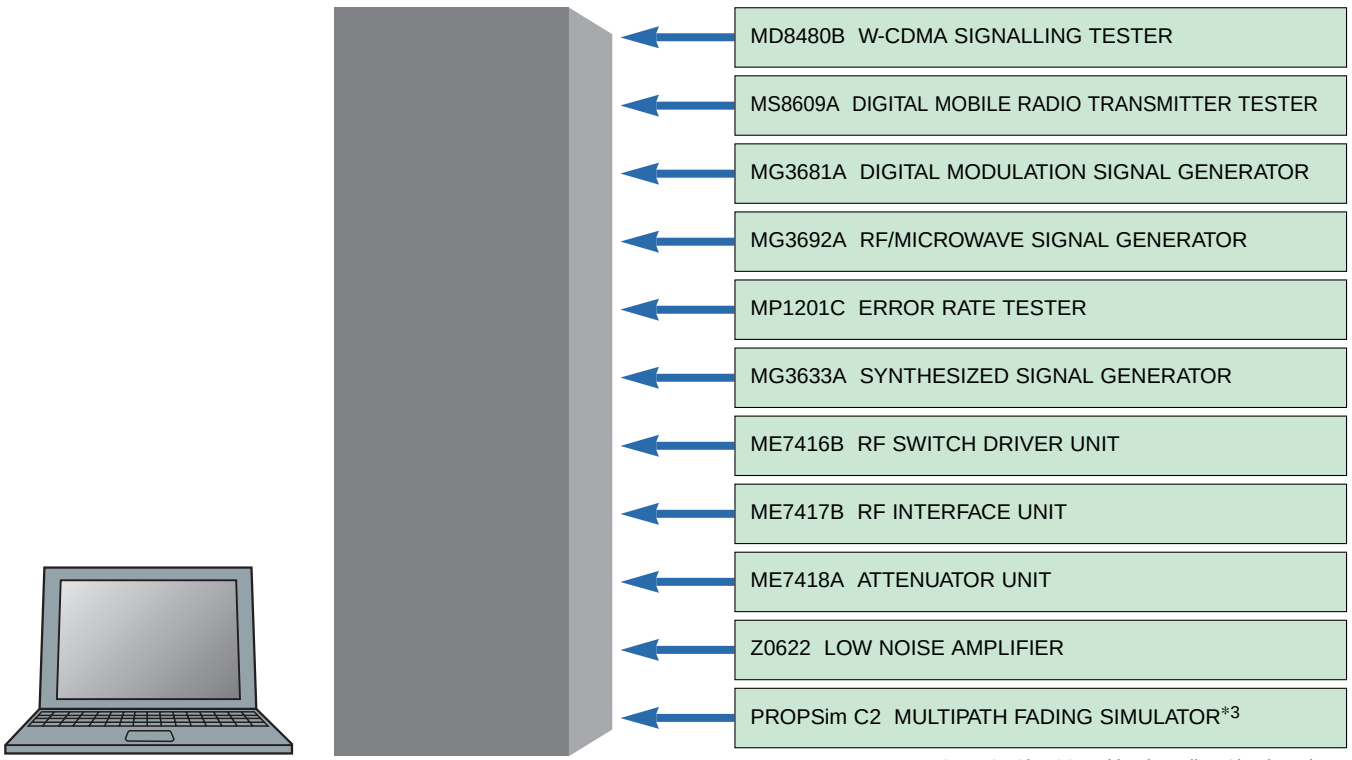
Max. 4 units of mobile terminals can be measured continuously with ME7417B-02 4 Antenna Connection Option*2.

*2: Only one unit in standard configuration.

• Auto measurement of correction value

The test system that is configured various equipments requires the frequency characteristic compensation of input/output level. Restoration with the substitution for configuration unit and periodical maintenance such as the update of correction value can be performed in user's site with the dedicated Correction Kit Option.

Structuring of Test System

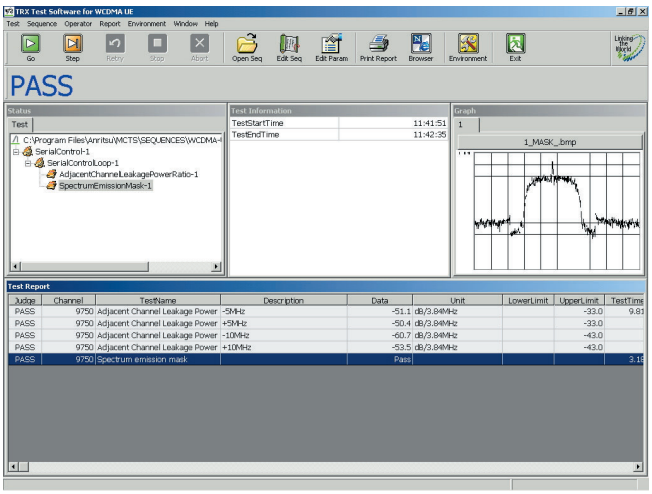


*3: PROPSim C2 Multipath Fading Simulator is a product of ELEKTROBIT.

Understandable Operation Screen with Windows and Help Guide

• Main Screen considering Visual Confirmability and Operability

Operation on main screen is done with tool bar on upper part of the screen. The tool bar is composed of icons considering understandable operation detail. Test sequence items are displayed in the middle and on the left half of the screen, varied detailed information on the right half, and test results at the bottom, all in real time during the test. Thus all necessary information in testing can be confirmed on main screen.



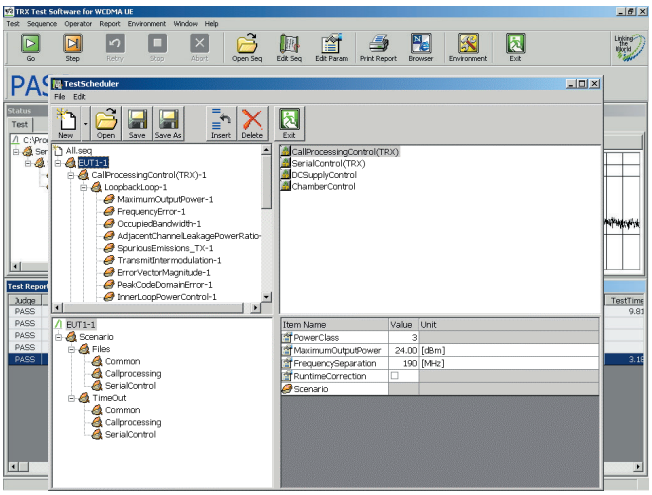
Main Screen

• Free Test Method

Test items can be selected with arbitrary frequency channel for each test. Moreover, A variety of tests can be freely specified for customer's needs such batch auto measurement of all test items, manual selection measurement for selected items only, and step measurement for each item.

• Abundant Parameter Setup

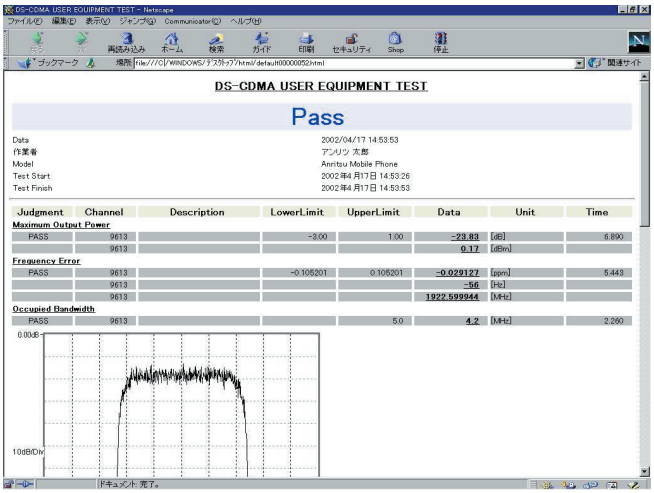
Parameter such as Spec. and Average can be specified for each test item. Testing can be performed under optimized conditions according to the model of device under test and test purpose.



Parameter Setup Example

• Measured Data Administrative Function

Measured results acquired from this test unit can be displayed on browser screen and printed out. Various sorts of information such as test starting time, inputted to Header part of this measurement report, can all be administrated as a file.



Test Result Example

• Help Guide

Software operation is supported by help guide. Also Japanese or English Help can be selected in installation.

Test Items

• Loop-back mode (Signalling control)

Measuring Instruments / 3GPP TS34.121 Standard Test Items	MD8480B W-CDMA Signalling Tester	MS8609A TX Tester 9 kHz to 13.2 GHz	MP1201C Error Rate Tester	MG3681A Interference SG2 250 kHz to 3 GHz	MG3692A CW SG3 10 kHz to 20 GHz
Clause 5 Transmitter Characteristics					
5.2 Maximum Output Power	√	√			√
5.3 Frequency Error	√	√			√
5.4.1 Open Loop Power Control in the Uplink	√	√			√
5.4.2 Inner Loop Power Control in the Uplink	√	√		√	√
5.4.3 Minimum Output Power	√	√			√
5.4.4 Out-of-synchronization handling of output power	√	√		+AWGN	√
5.5.1 Transmit OFF Power	√	√		√	√
5.5.2 Transmit ON/OFF Time mask	√	√		√	√
5.6 Change of TFC	√	√			√
5.7 Power setting in uplink compressed mode	√	√			√
5.8 Occupied Bandwidth (OBW)	√	√			√
5.9 Spectrum emission mask	√	√			√
5.10 Adjacent Channel Leakage Power Ratio (ACLR)	√	√			√
5.11 Spurious Emissions	√	√			√
5.12 Transmit Intermodulation	√	√			√
5.13.1 Error Vector Magnitude (EVM)	√	√			√
5.13.2 Peak code domain error	√	√			√
Clause 6 Receiver Characteristics					
6.2 Reference Sensitivity Level	√	√	√		√
6.3 Maximum Input Level	√	√	√		√
6.4 Adjacent Channel Selectivity (ACS)	√	√	√	√	√
6.5 Blocking Characteristics	√	√	√	√	√
6.6 Spurious Response	√	√	√		√
6.7 Intermodulation Characteristics	√	√	√	√	√
6.8 Spurious Emissions	√	√			√

+AWGN: Noise Generation Option needs to be installed.

Measuring Instruments / 3GPP TS34.121 Standard Test Items	MD8480B W-CDMA Signalling Tester	MS8609A TX Tester 9 kHz to 13.2 GHz	MG3681A AWGN SG2 250 kHz to 3 GHz	PROPSim C2 Multipath Fading Simulator*1
Clause 7 Performance Requirements				
7.2 Demodulation in Static Propagation conditions	√	√	√	√
7.3 Demodulation of DCH in Multi-path Fading Propagation conditions	√	√	√	√
7.4 Demodulation of DCH in Moving Propagation conditions	√	√	√	√
7.5 Demodulation of DCH in Birth-Death Propagation conditions	√	√	√	√
7.6.1 Demodulation of DCH in open-loop transmit diversity mode	√	√	√	√
7.6.2 Demodulation of DCH in closed loop transmit diversity mode	√	√	√	√
7.6.3 Demodulation of DCH in Site Selection Diversity Transmission Power Control mode	√	√	√	√
7.7.1 Demodulation of DCH in Inter-Cell Soft Handover	√	√	√	√
7.7.2 Combining of TPC Commands from radio links of different ratio link sets	√	√	√	√
7.8.1 Power control in the downlink, constant BLER target	√	√	√	√
7.8.2 Power control in the downlink, initial convergence	√	√	√	√
7.8.3 Power control in the downlink, wind up effects	√	√	√	√
7.9 Downlink compressed mode	√	√	√	√
7.10 Blind transport format detection	√	√	√	√

*1: PROPSim C2 Multipath Fading Simulator is a product of ELEKTROBIT.

Specifications

General*1	Max. input level	+34 dBm (2.5 W)
	Input/Output connector	Type N, 50 Ω VSWR ≤1.2 (9 kHz to 2.4 GHz: for measuring Maximum Output Power) VSWR ≤1.3 (1 to 3100 MHz: for measuring Blocking characteristics; Frequency range 3) VSWR ≤1.5 (3.1 to 8 GHz: for measuring Blocking characteristics; Frequency range 3) VSWR ≤1.7 (8 to 13 GHz: for measuring Blocking characteristics; Frequency range 3)
	Reference oscillator	Uses the MS8609A (Option 01 High stable reference recommendation oscillator provided) External reference input enabled (Frequency: 10/13 MHz selectable, BNC connector)
Power supply		AC 100 to 120 or 200 to 240 Vac, 50/60 Hz, ≤2710 VA, 1400 VA (typ.)
Dimensions and mass		1597 (H) x 1710 (W) x 797 (D) mm (excluding projections), ≤550 kg
Operating temperature		+15˚ to +35˚C (operation), 0˚ to +50˚C (storage)
EMC		EN61326: 1997/A2: 2001 (Class A) EN61000-3-2: 2000 (Class A) EN61326: 1997/A2: 2001 (Annex A)
LVD		EN61010-1: 2001 (Pollution Degree 2)

*1: The general specifications are applied to use of the ME7417B RF Interface Unit (with 3 dB Attenuator connector).

Ordering Information

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

Model/Order No.	Name
	Main frame
ME7873A	W-CDMA TRX/Performance Test System
	Components
MD8480B	W-CDMA Signaling Tester
MU848051A	CPU (include MD8480B)
MU848052A	Frame Decoder (include MD8480B)
MU848053A	RX Baseband (include MD8480B)
MU848056A	Voice Codec (include MD8480B)
MU848057A	Frame Coder (include MD8480B)
MU848058A	TX Baseband (include MD8480B)
MU848059B	Timing Generator 2 (include MD8480B)
MD8480A-01	Additional RF Unit
MU848053A	RX Baseband
MU848057A	Frame Coder
MU848058A	TX Baseband
MU848061B	2nd OCNS
MX848010A	TS34.121 Support Control Software
MX848011A	TS34.121 Support Firmware
MX848012A	TS34.121 Support FPGA
MX848011A-01	W-CDMA Signalling Tester TX Diversity
MX848011A-02	W-CDMA Signalling Tester Compress mode
B0333F	Rack Mount Kit
MS8609A	Digital Mobile Radio Transmitter Tester
MS8609A-01	Precision Frequency Reference (aging rate: 5 x 10^{-10}/day)
MS8609A-04	Digital Resolution Bandwidth
MS8609A-08	Pre-amplifier
MS8609A-31	Low Noise Floor
MS8609A-47	Rack Mount without Handle (IEC)
MX860901B	W-CDMA Measurement Software
MP1201C	Error Rate Tester
B0333A	Rack Mount Kit
MG3681A	Digital Modulation Signal Generator
MU368040A	CDMA Modulation Unit
MX368041B	W-CDMA Software
MU368060A	AWGN Unit
B0333C	Rack Mount Kit

Model/Order No.	Name
MG3692A	Synthesized Signal Generator
MG3690A/1B	Rack Mount
MG3690A/2A	110 dB Mechanical Step Attenuator
MG3690A/4	Digital Down Converter (RF Coverage 0.01 to 2 GHz)
MG3690A/22	Audio Frequency Coverage, 0.1 Hz to 10 MHz
34RKNF50	Coaxial Adapter (strengthened K-M, N-F)
MG3633A	Synthesized Signal Generator
B0048	Rack Flange Kit (for 1MW • 4U)
ME7416B	RF Switch Driver Unit
B0333A	Rack Mount Kit
ME7417B	RF Interface Unit
ME7417B-01	Three-Signal Junction
ME7417B-03	BRF for GSM Band Measurement
ME7417B-04	BRF for Blocking Characteristics Measurement
ME7417B-10	Fading and AWGN Addition
B0333B	Rack Mount Kit
ME7418A	Attenuator Unit
B0390G	Rack Mount Kit (1/2MW2U350D)
Z0622	Low Noise Amplifier (LNA1822-3212-R)
Z0621	Accessory Kit
B0512	System Rack (for Japan*1)
B0519	System Rack (for Europe*1)
B0520	System Rack (for North America*1)
B0521	System Rack (for China*1)
MX787103A	W-CDMA TRX/Performance Test Software
MX787133A	TRX/Performance Test Self Test Software
	Standard accessories
W2289AE	ME7873A Operation Manual (CD-ROM): 1 copy
	Options
ME7417B-02	Four-Antenna Connection
	Application Parts
Z0616*2	Accessory for Basic Correction
MX787113A*2	TRX/Performance Test Correction Software

∗1: Customers can select one system rack from B0512, B0519, B0520 and B0521 depending on the area where it is used.
∗2: For system correction, in addition to the Z0616 Accessory for Basic Correction and MX787113A TRX/Performance Test Correction Software, customers need to prepare measurement equipments for correction. For detailed information on additional equipments for correction, please contact your Anritsu sales representative

In addition to the components listed above, customers need to prepare the following components.

1. Fading Simulator
   Fading Simulator is used for performance test.
   Multipath Fading simulator PROPSim C2 (Product of Elektrobit)
2. Personal computer and peripherals
   Personal computer and peripherals are needed for controling ME7873A.
   The following instruments with recommended spec need to be prepared by Customers.
   <Recommended Spec.>
   CPU: Pentium4 over 1.6 GHz
   OS: Microsoft Windows® 2000 Professional SP4
   Main Memory: over 512 MB
   Resolution: 1024 x 768 dots
   Hard Disk: over 10 GB
   Input/Output bus: USB,Ethernet (100BASE-TX), PCMCIA (PC Card)
   Others: CD-ROM, IE5.5
   <Peripherals>
   (1) GPIB Card
   Recommended Product: 778034-0212 PCMCIA-GPIB (for Windows® 2000) product of National Instruments
   (2) Ethernet Cable
3. DC power supply, Temperature chamber
   DC power supply and temperature chamber need to be prepared by customer for power consumption tests and temperature tests of W-CDMA mobile terminals. For detailed information on DC power supply and temperature chamber, please contact your Anritsu sales representative.

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Specifications are subject to change without notice.

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