

MT8820B

Radio Communication Analyzer

30 MHz to 2.7 GHz





All in 1 Unit for Basic Tx and Rx Measurements of W-CDMA/HSPA, GSM/GPRS/EGPRS CDMA2000 1X/1xEV-DO and PHS/Advanced PHS Systems

Supports Multi-Communication Systems

The MT8820B platform covers a frequency range of 30 MHz to 2.7 GHz. When the dedicated optional measurement software and hardware is installed, the major Tx and Rx characteristics of W-CDMA/HSPA, GSM/GPRS/EGPRS, CDMA2000 1X (IS-2000), CDMA2000 1xEV-DO and PHS/Advanced PHS terminals can be measured using a single MT8820B unit.

Advanced Digital Signal Processing and Batch Measurement

Manufacturing and inspection test times have been dramatically cut by incorporating advanced DSP and parallel measurement technologies. Furthermore, several measurement items can be selected freely for batch measurement, and the number of measurements for each measurement item can be configured separately. The one-touch operation supports easy and quick measurement of Tx and Rx characteristics, including transmit frequency, modulation accuracy, transmit power, spectrum emission mask, adjacent channel leakage power ratio, occupied bandwidth, and BER.

CDMA2000® is a registered trademark of the Telecommunications Industry Association (TIA-USA).

Parallelphone™ Measurement

When the Parallelphone Measurement option is installed in the MT8820B main frame, two different mobile terminals can be connected and tested simultaneously with a single MT8820B using its second RF, AF, GPIB, and Ethernet port. This functionality significantly improves manufacturing efficiency by reducing production costs (return on investment and energy saving) and space.

Manufacturer Test Suite

Manufacturer Test Suite is the ideal solution for making RF adjustments and RF parametric tests on mobile terminal production lines. The basic configuration consists of signal generator and signal analyzer functions without call processing, supporting RF adjustments and RF parametric tests in the test mode (mobile controlled by external PC).

Installing the call processing software option supports RF parametric tests while controlling the mobile terminal at call processing. Adding the adjustment software option shortens the time required for RF adjustment by using the chipset adjustment function. Combining Manufacturer Test Suite with the Parallelphone Measurement option offers the perfect solution for production lines.

MT8820B

Radio Communication Analyzer

30 MHz to 2.7 GHz



Supports Multi-Communication Systems

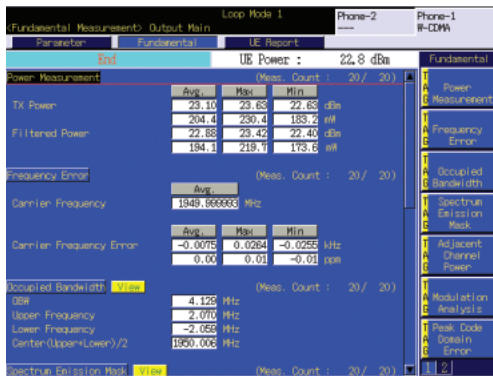
All-in-one Support for Basic Tx and Rx Measurements of W-CDMA/HSPA, GSM/GPRS/EGPRS CDMA2000 1X/1xEV-DO, and PHS/Advanced PHS Systems

W-CDMA Measurements

3GPP-compliant measurements of Tx and Rx characteristics of 3G W-CDMA terminals.

Transmitter Measurements

The transmit power, frequency error, occupied bandwidth, spectrum emission mask, adjacent channel leakage power ratio, modulation accuracy, and peak code domain error can be measured.



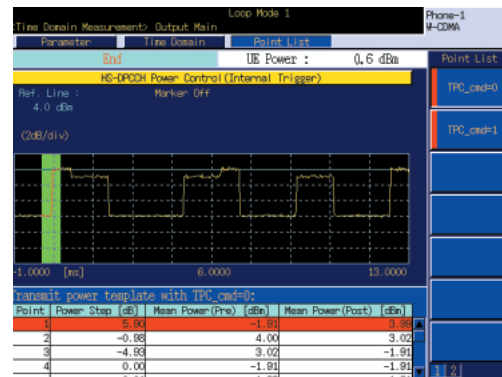
Transmitter Measurements

HSDPA Measurements

3GPP-compliant measurements of Tx and Rx characteristics of 3.5G HSDPA terminals.

Transmitter Measurements

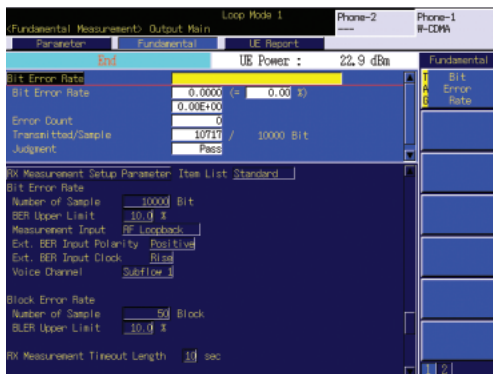
The transmit power, spectrum emission mask and adjacent channel leakage power ratio of the HS-DPCCH transmission slot are measured. At measurement in the time domain, the power step at the HS-DPCCH slot boundary, modulation, and code domain power are measured.



HS-DPCCH Measurement

Receiver Measurements

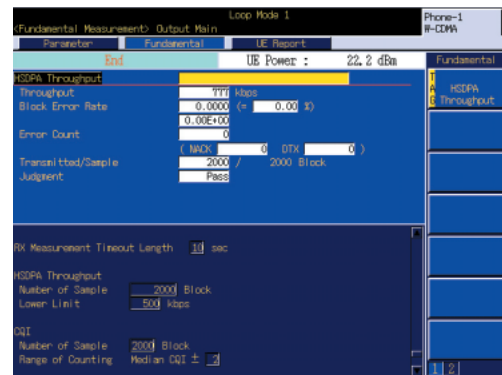
The bit error rate can be measured using the 3GPP-specified loopback test mode. In addition, feeding the demodulated data and clock signals from the W-CDMA terminal directly to the MT8820B supports bit error rate measurement. Both PN9 and PN15 can be set as the downlink RF signal data pattern.



BER

Receiver Measurements

The HSDPA throughput can be measured by counting the number of ACK blocks from the HSDPA terminal.



Throughput

* Requires MT8820B-001, MX882000C, MX882000C-011 and MX882050C

* Requires MT8820B-001, MX882000C and MX88205xC

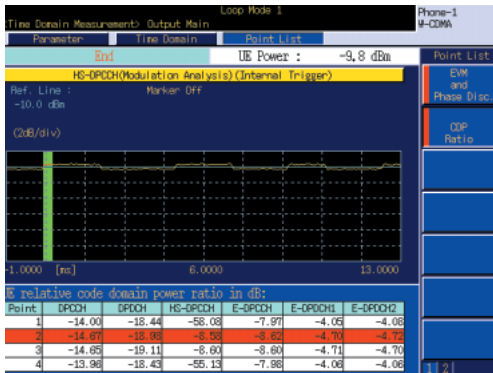
Read the MX882000C catalog for details

HSUPA Measurements

3GPP-compliant measurements of Tx and Rx characteristics of 3.5G HSUPA terminals.

Transmitter Measurements

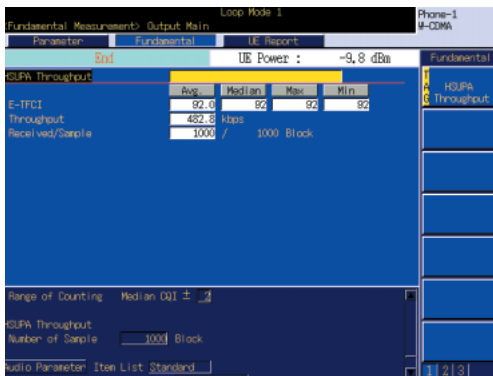
The transmit power, spectrum emission mask, adjacent channel leakage power ratio, and code domain power at HS-DPCCH and E-DCH transmission are measured.



Code Domain Power

Throughput Monitor

The E-DCH throughput is calculated from the E-TFCI notification from the HSUPA terminals. In addition, the E-TFCI statistics (average, median, maximum and minimum) are displayed.



Throughput Monitor

* Requires MT8820B-001, MX882000C, MX882000C-011, MX882000C-021 and MX882050C

GSM/GPRS Measurements

Measures Tx and Rx characteristics of GSM/GPRS terminals — world's most common digital mobile standard.

Transmitter Measurements

At GSM/GPRS measurement, the transmit frequency, phase error (RMS and peak), transmit power, power versus time (template mask), and output RF spectrum can be measured.



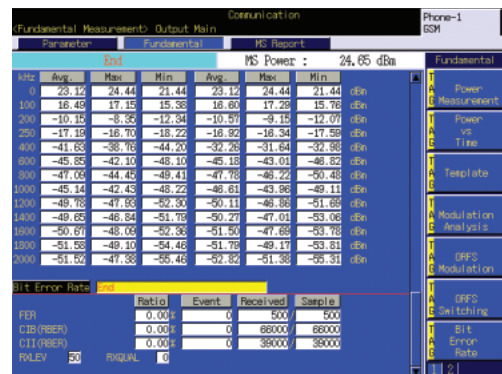
Power vs Time (GSM)

Receiver Measurements

The uplink RF signal, which is looped back from GSM terminal, is demodulated by controlling the GSM terminal in the loopback condition to measure the frame error, bit error, and CRC error rates. And FAST BER measurement is supported.

The block error rate can be measured with the BLER and Test Mode B connection by controlling the GPRS terminal in the loopback condition.

The above receiver measurements can be performed in parallel with transmitter measurements.



BER (GSM)

* Requires MT8820B-002 and MX882001C

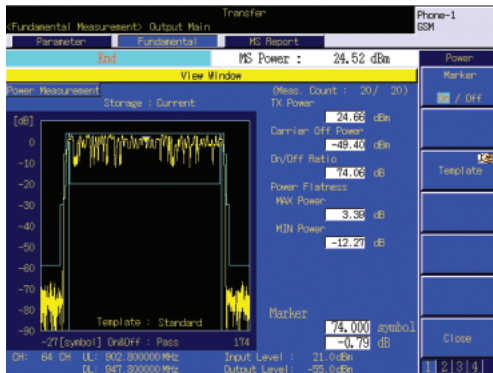


EGPRS Measurements

Measures Tx and Rx characteristics of enhanced GPRS system (EGPRS) terminals.

Transmitter Measurements

At EGPRS measurement, the transmit frequency, EVM (RMS and peak), origin offset, transmit power, power versus time (template mask), and output RF spectrum can be measured.



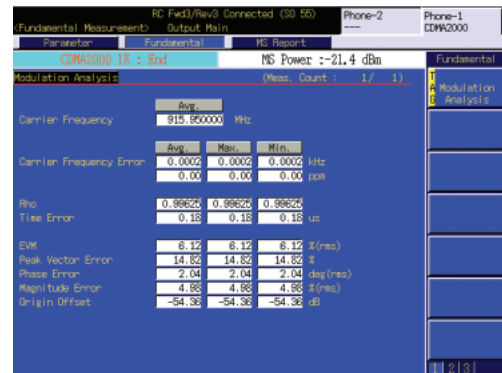
Burst Waveform Display (8PSK)

CDMA2000 1X Measurements

3GPP2-compliant measurements of Tx and Rx characteristics of 3G CDMA2000 1X terminals.

Transmitter Measurements

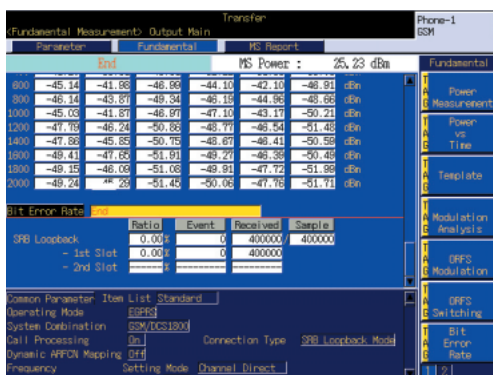
The transmit power, modulation analysis, occupied bandwidth, code domain power, spurious emission, and access probe power can be measured.



Modulation Analysis

Receiver Measurements

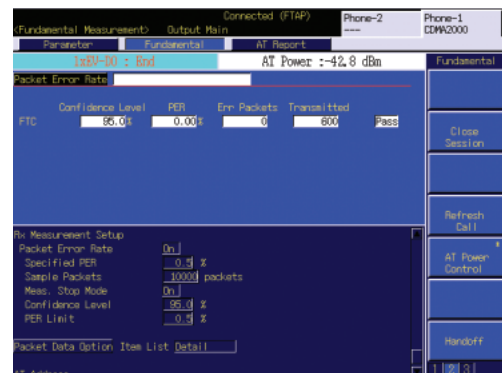
The uplink RF signal, which is looped back from EGPRS terminal, is demodulated by controlling the EGPRS terminal in the loopback condition to measure the block error or bit error. The above receiver measurements can be performed in parallel with transmitter measurements.



BER (SRB Loopback)

Receiver Measurements

The Frame Error Rate (FER) and Pass/Fail evaluation can be performed in SO2, SO9, SO55 and SO32 (TDSO) to display the FER, error frame count, Tx frame count, confidence level, and Pass/Fail results.



FER

* Requires MT8820B-002, MX882001C and MX882000C-011

* Requires MT8820B-003 and MX882002C



CDMA2000 1xEV-DO Measurements

3GPP2-compliant measurements of Tx and Rx characteristics of 3.5G 1xEV-DO terminals.

Transmitter Measurements

The transmit power, modulation analysis, occupied bandwidth, code domain power, spurious emission, and access probe power can be measured.



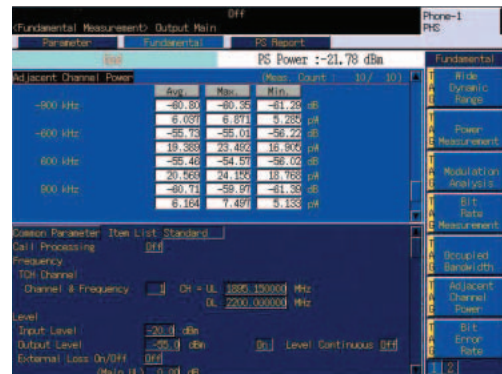
Code Domain Power

PHS Measurements

Measures Tx and Rx characteristics of PHS terminals and base stations.

Transmitter Measurements

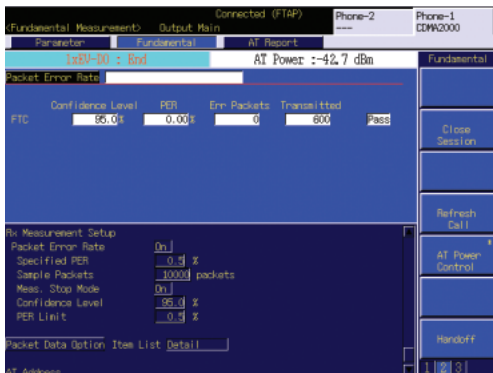
The transmit frequency, modulation accuracy, transmit power, transmission rate, occupied bandwidth, adjacent channel power of PHS terminals and base stations can be measured simultaneously.



Adjacent Channel Power

Receiver Measurements

PER (Packet Error Rate) measurement and Pass/Fail evaluation can be performed in FTAP to display the PER, error packet count, transmission packet count, confidence level, and Pass/Fail results.

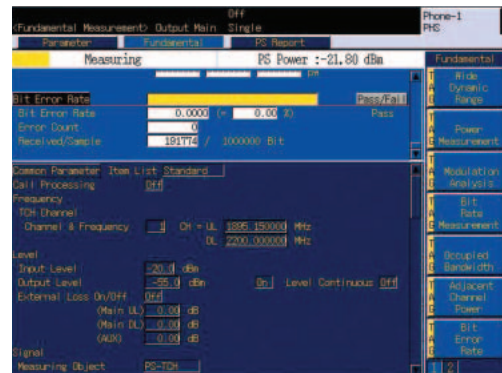


PER

* Requires MT8820B-003, MT8820B-004, MX882002C and MX882003C

Receiver Measurements

The bit error rate can be measured on receipt of demodulation data and clocks output from a terminal/base station by controlling the terminal/base station with an external PC etc. This measurement can be performed in parallel with transmitter measurements.



BER

* Requires MT8820B-002 and MX882005C

Higher Productivity

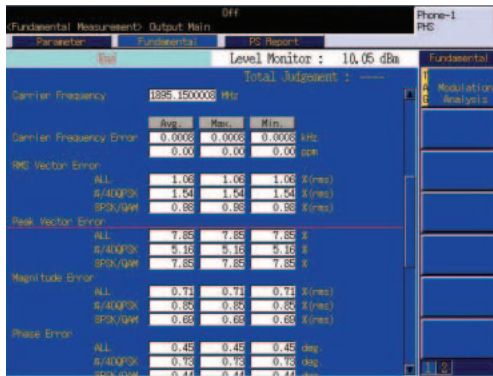
High Production Efficiency and Smaller Equipment Footprint using Parallelphone Measurement

ADVANCED PHS Measurements

Measures Tx and Rx characteristics of Advanced PHS terminals and base stations in compliance with ARIB RCR-STD-28 edition 5.0 supporting $\pi/4$ DQPSK, 8PSK, and 16QAM modulation methods.

Transmitter Measurements

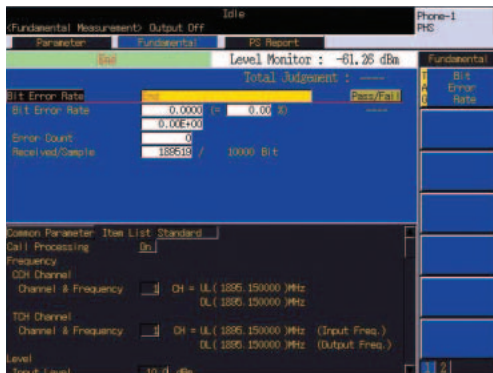
The transmit frequency, modulation accuracy, transmit power, transmission rate, occupied bandwidth, adjacent channel power of Advanced PHS terminals and base stations are measured simultaneously.



Modulation Accuracy

Receiver Measurements

The bit error rate can be measured on receipt of demodulation data and clocks output from a terminal/base station by controlling the terminal/base station with an external PC etc. This measurement can be performed in parallel with transmitter measurements.



BER (8PSK)

* Requires MT8820B-002, MX882005C and MX882000C-011

Read the MX882005C catalog for details

Simultaneous Measurement of Two Mobile Terminals

Installing the Parallelphone Measurement option supports simultaneous measurement of two terminals using the second RF, AF, GPIB, or Ethernet port of a single MT8820B unit.



RF2 (connection cable)

RF1 (connection cable)

GSM Terminal W-CDMA Terminal

Specifications

• MX882010C Parallel Phone Measurement Software

Main2 Input/Output, Aux2 Output	Identical to Main1 Input/Output and Aux1 Output specified by the MT8820B and the measurement software installed in the MT8820B.
AF2 Input/Output	Identical to AF1 Input and Output specified by the measurement software. These are enabled only when the MT8820B-011 Audio Board is installed.

* The MT8820B-012 Parallel Phone Measurement Hardware requires the MX882010C Parallel Phone Measurement Software as well as installation of the required measurement software and two measurement hardware units.

Case of GSM Parallelphone Measurements

MT8820B	Radio Communication Analyzer	X 1
MT8820B-002	TDMA Measurement Hardware	X 2
MT8820B-012	Parallel Phone Measurement Hardware	X 1
MX882001C	GSM Measurement Software	X 1
MX882010C	Parallel Phone Measurement Software	X 1

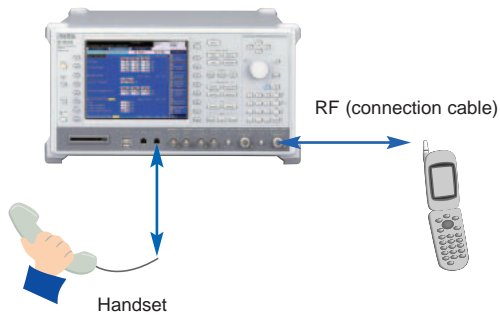
Supports All Function Tests

Real-time Voice Encoding and Decoding

Voice tests with a handset are supported by the real-time voice encoding and decoding function of the W-CDMA (GSM) Measurement Software. In addition, the call Tx and Rx audio can be measured using the audio measurement function.

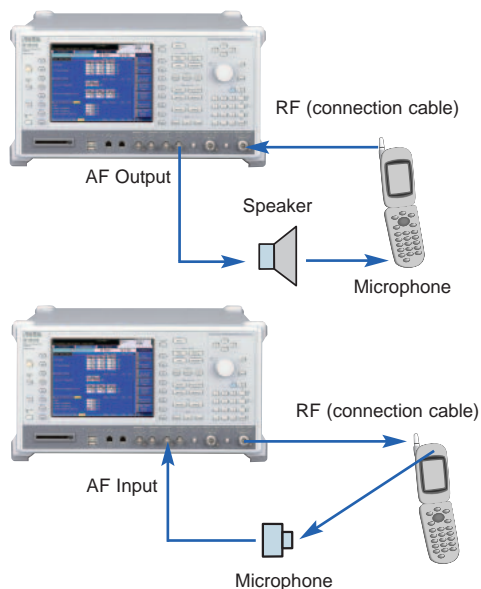
End-to-End Communications Test

This supports the end-to-end communications test between a handset connected to the RJ11 connector on the MT8820B and a mobile terminal.



Audio Transmitter Measurement

The tone signal from the MT8820B AF Output connector is supplied to the microphone of the mobile terminal and the audio transmitter characteristics of the mobile terminal can be measured using the MT8820B to demodulate the uplink RF signal and measure the level, frequency, and distortion of the demodulated tone signal.



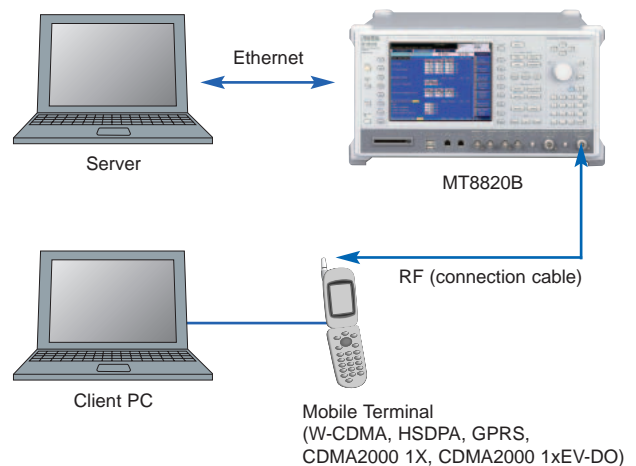
* Requires MT8820B-011, MX882000C-001 or MX882001C-001

Read the MX882000C and MX882001C catalog for details

Packet Communication Data Transfer Test

End-to-end data transfer Tests

Using the External Packet Data Software option supports end-to-end data transfer between a mobile terminal (W-CDMA, HSDPA, GPRS, CDMA2000 1X, CDMA2000 1xEV-DO) and an application server connected to the MT8820B, or a PC client connected to the terminal, and various application tests.



Sample MT8820B connection

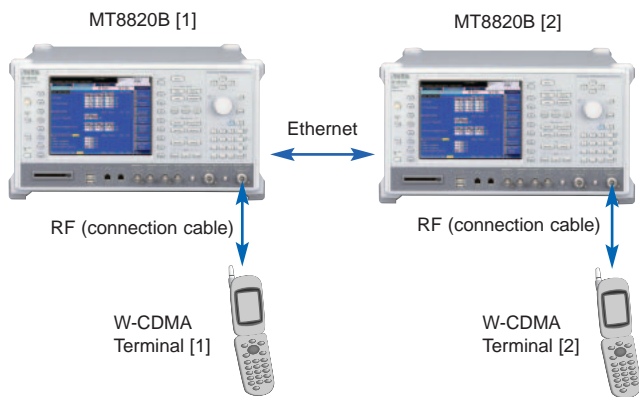
* Any of MX882001C-002, MX882002C-002, MX882003C-002, MX882050C-002, MX882050C-011, or MX882051C-002 separately required

Read the MX882000C, MX882001C and MX882002C/MX88203C catalog for details

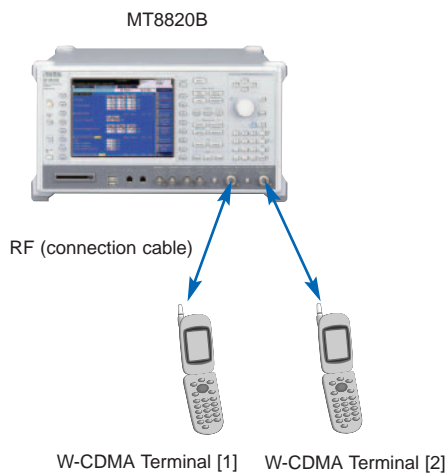
W-CDMA Video Phone Test

End-to-End Video Phone Test

Installing the MX882005xC-003 W-CDMA Video Phone Test Software supports two-way tests between W-CDMA terminals with video functions via the MT8820B Ethernet port. Two-way video phone tests require either two MT8820B units or one unit with the Parallelphone option.



Sample MT8820B connection: when MT8820B is two sets



Sample MT8820B connection: when MT8820B is one set (Parallelphone measurement correspondence)

* Requires MX88205xC-003

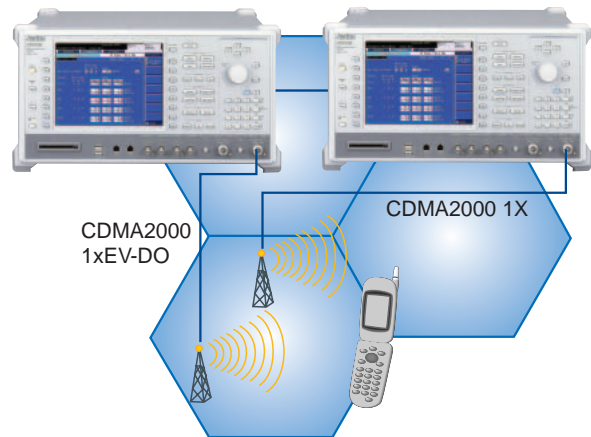
Read the MX882000C catalog for details

CDMA2000 1X/1xEV-DO Synchronous Function

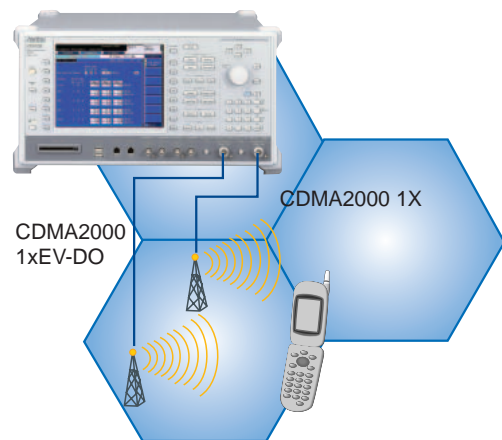
CDMA2000 1X/1xEV-DO Hybrid Terminal Function Tests

By using the MX882002C and MX882003C with two MT8820B units or one MT8820B unit with the Parallelphone measurement option, the CDMA2000 1X and 1xEV-DO forward link signals can be output with synchronized system times, supporting function tests of both CDMA2000 1X and 1xEV-DO mobile terminals.

* This function cannot be used when the MX882000C W-CDMA Measurement Software is installed. Uninstall this function when the MX882000C is installed.



Sample MT8820B connection: when MT8820B is two sets



Sample MT8820B connection: when MT8820B is one set (Parallelphone measurement correspondence)

Read the MX882002C/MX882003C catalog for details

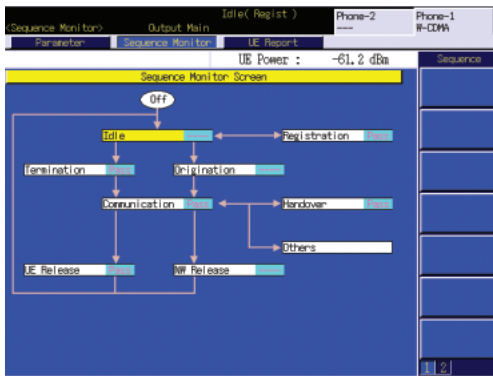
Supports Multi-System Call Processing Tests

Call Processing Tests

Call Processing

Connection Tests

Various connection tests, such as registration, origination, termination, handover, terminal disconnect, and network disconnect, can be tested using the call processing functionality. Moreover, voice from the mobile terminal can be echoed back while calling to test simple voice communications.



Sequence Monitor (W-CDMA)

Mobile Terminal Report Monitor

The mobile terminal status can be displayed as a periodic report sent by the mobile terminal to the MT8820B. The downlink RF signal level at the mobile receiver can be checked with the Rx level reported from the mobile terminal.

Ordered	Actual	Cell	ARFCN	RxLEV	MS	BCC
1		1	1	0	1	1
2		2				
3		3				
4		4				
5		5				
6		6				

Mobile Terminal Report Monitor (GSM)

GPIB Control

High-Speed Easy-to-Use GPIB Interface

The built-in GPIB interface enables the MT8820B to be integrated into automated test systems for after-sales maintenance, as well as into automated production lines.

Independent Screen Items

Items not currently displayed on-screen can be read out or changed freely without changing the screen, dramatically saving time that would otherwise be lost by displaying the relevant screen.

Batch Readout Command for Measurement Results

All results of batch measurement can be read out using the single command "ALLMEAS?". The intended measurement results can be read out using a command such as "ALL MEAS? MOD". The reduced number of GPIB commands cuts the overhead of both the MT8820B and control PC, increasing measurement throughput. Moreover, since the control program step size is also reduced, easy-to-read control programs with high maintainability are easily created.

Excellent Cost-Performance Solution

Perfect RF Adjustment and Test Solution for Mobile Production Lines

Manufacturer Test Suite

Basic Configuration

Call processing functions are not required for RF adjustments, and are only rarely required for RF parametric tests. Consequently, the basic configuration*¹ of Manufacturer Test Suite offers signal generator and signal analyzer functions without call processing, and is ideal for making RF adjustments and RF parametric tests in the test mode (mobile controlled by external PC).

W-CDMA

MT8820B	Radio Communication Analyzer
MT8820B-031	W-CDMA Measurement Hardware Lite
MX882030C	W-CDMA Measurement Software Lite

GSM

MT8820B	Radio Communication Analyzer
MT8820B-032	TDMA Measurement Hardware Lite
MX882031C	GSM Measurement Software Lite

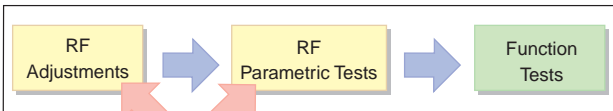
RF Adjustments

The basic configuration with signal generator and signal analyzer functions supports RF adjustments using traditional adjustment methods. Installing the adjustment software option cuts the RF adjustment time because the chipset adjustment function is used.

RF Parametric Tests

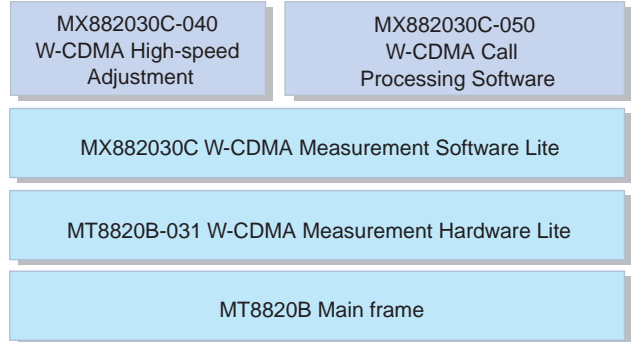
The RF parametric tests control the mobile terminal in the test mode or with call processing. The basic configuration performs RF parametric tests in the test mode but installing the call processing software option adds support for RF parametric tests with call processing.

Mobile Terminal Manufacturing Phase



Target Phase of Manufacturer Test Suite

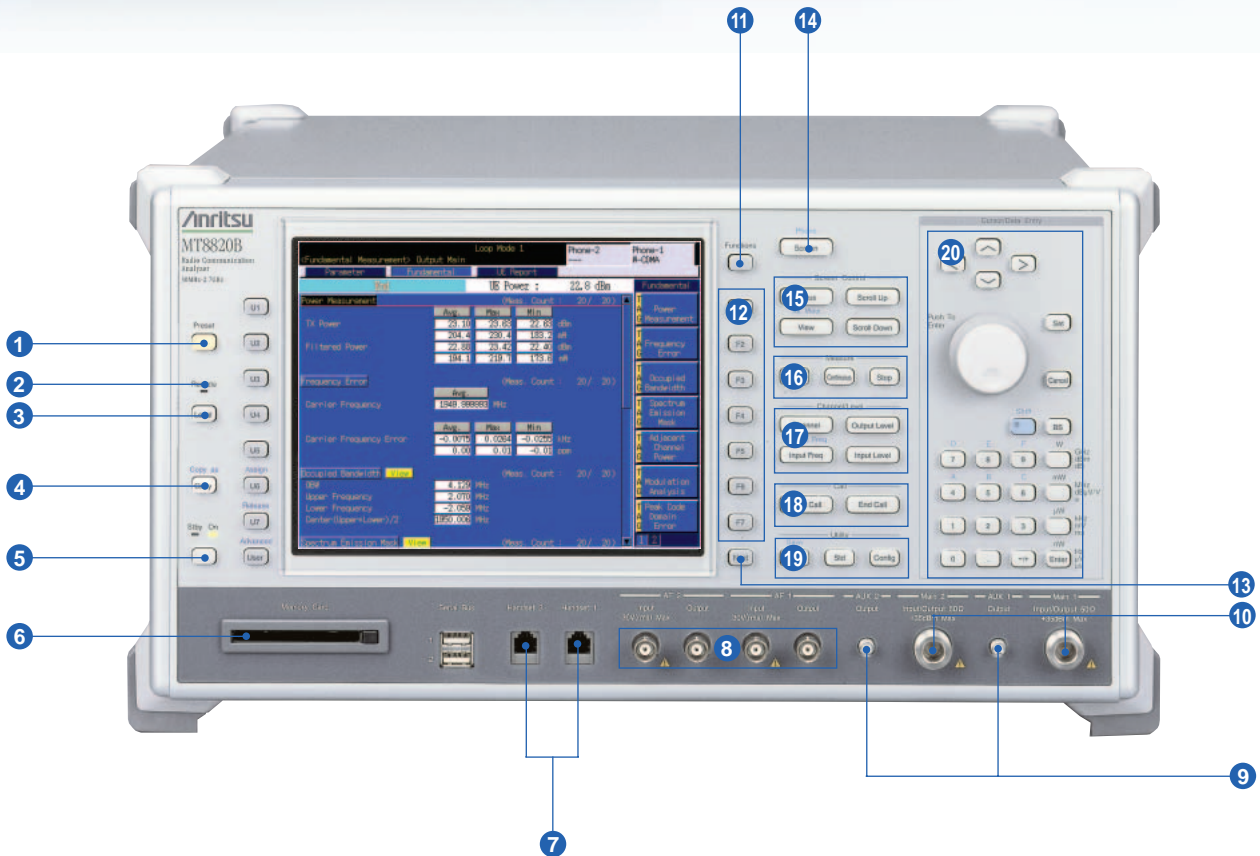
Example of Manufacturer Test Suite Options Stack (W-CDMA)



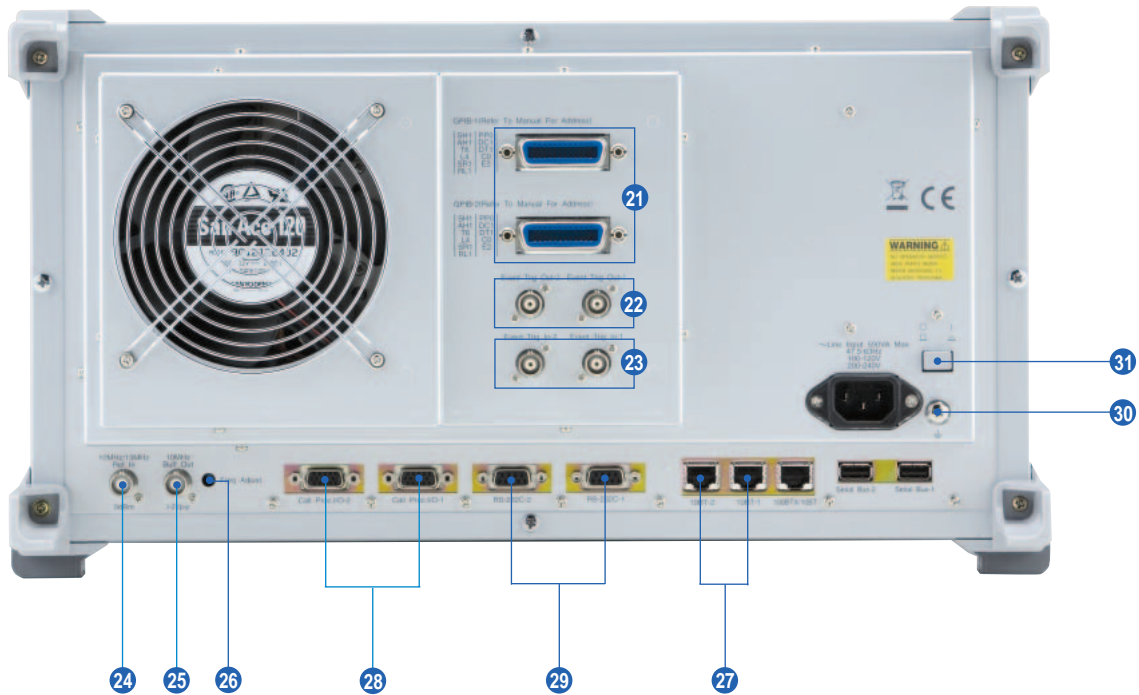
Example of Manufacturer Test Suite Options Stack

- * Manufacturer Test Suite supports W-CDMA/HSDPA and GSM/GPRS/EGPRS.
- * Manufacturer Test Suite does not support real-time processing functions, such as external packet data and video phone tests.

MT8820B Panel Layout



- | | |
|--|---|
| <ul style="list-style-type: none"> 1 Preset Key: Starts initializing 2 Remote Lamp: Lit while in remote control mode 3 Local Key: Switches remote control to manual control 4 Copy Key: Copies screen 5 Power Switch: Switches mode between power-on and standby 6 Memory Card Slot: For saving/recalling measurement parameters and update software to/from PCMCIA-compliant PC-card-type memory card (Type II) 7 Handset Connector: For testing end-to-end voice communication between MT8820B and mobile terminal using handset 8 AF Input/Output Connector: For audio measurement 9 AUX Output Connector: Outputs RF signal for RF testing mobile terminal (SMA connector) 10 Main Input/Output Connector: Outputs RF signal for RF testing mobile terminal (N-type connector) | <ul style="list-style-type: none"> 11 Functions: Displays function menu on screen 12 Function Key: Executes function menu displayed on right of screen 13 Page Switch Key: Switches function menu displayed on right of screen 14 Screen Switch Key: Switches screen 15 Screen Control: Switches display window for manual operation 16 Measure: Starts and stops measurement 17 Channel/Level: Sets channel, frequency, and level 18 Call: Connects and disconnects call 19 Utility: Saves and recalls parameters, and displays configuration 20 Cursor/Data Entry: Moves cursor and sets parameters |
|--|---|



- 21 GPIB Connector: For remote control of MT8820B
- 22 Trigger Output Connector: Outputs event-timing signal to external equipment (BNC connector)
- 23 Trigger Input Connector: Inputs trigger signal from external equipment to measure uplink signal from mobile equipment by synchronizing (BNC connector)
- 24 Reference Signal Input Connector: Inputs 10/13-MHz reference signal (BNC connector)
- 25 Reference Signal Output Connector: Outputs 10-MHz reference signal of MT8820B (BNC connector)
- 26 Frequency Adjust: Adjusts frequency of internal reference oscillator
- 27 10BASE-T Port: Interface for packet and W-CDMA video communication test
- 28 Call Processing Input/Output Port: Interface for BER measurement and synchronization
- 29 RS-232C Port: Interface for packet communication test
- 30 Grounding Terminal: Connected to ground potential
- 31 Main Power Switch: Switches main power on/off. The front-panel power switch enters the standby (Stby) mode when the main power is switched on.

Specifications

• MT8820B Radio Communication Analyzer

General	<p>Frequency range: 30 to 2700 MHz Max. input level: +35 dBm (Main) Main I/O Impedance: 50 Ω VSWR: ≤1.2 (<1.6 GHz), ≤1.25 (1.6 to 2.2 GHz), ≤1.3 (>2.2 GHz) Connector: N type AUX output Impedance: 50 Ω VSWR: ≤1.3 (at SG Output level: ≤-10 dBm) Connector: SMA type Reference oscillator Frequency: 10 MHz Level: TTL Startup characteristics: ≤±5 × 10⁻⁸ (at 10 min after startup referenced to frequency 24 h after startup) Aging rate: ≤±2 × 10⁻⁸/day, ≤±1 × 10⁻⁷/year (referenced to frequency 24 h after startup) Temperature characteristics: ≤±5 × 10⁻⁸ Connector: BNC type External reference input Frequency: 10 MHz or 13 MHz (±1 ppm) Level: ≥0 dBm Impedance: 50 Ω Connector: BNC type</p>
RF signal generator	<p>Frequency Frequency range: 30 to 2700 MHz (setting range: 0.4 to 2700 MHz) Setting resolution: 1 Hz Accuracy: Due to reference oscillator accuracy Output level Level range: -140 to -10 dBm (Main), -130 to 0 dBm (AUX) Resolution: 0.1 dB Accuracy: ±1.0 dB (-120 to -10 dBm, Main, after calibration), ±1.0 dB (-110 to 0 dBm, AUX, after calibration) Signal purity Non-harmonic spurious: ≤-50 dBc (at offset frequency: ≥100 kHz) Harmonics: ≤-25 dBc Uninterrupted level variation Variable range: 0 to -30 dB Setting resolution: 1 dB</p>
Others	<p>Display Color 8.4-inch TFT LCD, 640 x 480 dots External control GPIB: Control from external host with main unit as device (excluding some functions such as power-on), no external device control Interface functions: SH1, AH1, T6, L4, SR1, RL1, PP0, DC1, DT1, C0, E2</p>
Power supply	100 to 120/200 to 240 Vac (-15/+15%, 250 V max.), 47.5 to 63 Hz, ≤550 VA (with all Options)
Dimensions and mass	426 (W) x 221.5 (H) x 498 (D) mm (excluding projections), ≤26 kg (with all Options)
Environmental conditions	<p>Operating temperature and humidity: 0° to +50°C, ≤95% (no condensation) Storage temperature and humidity: -20° to +60°C, ≤95% (no condensation) EMC EN61326:1997+A1:1998+A2:2001+A3:2003 (Class A, Annex A), EN61000-3-2: 2000 (Class A) LVD EN61010-1: 2001 (Pollution Degree 2)</p>

Ordering Information

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

The following name of articles is an order name. The actual name may differ name from the product.

Model/Order No.	Name
MT8820B	Main frame Radio Communication Analyzer
Z0956A CA68ADP W2778AE	Standard accessories Power Cord, 2.6 m : 1 pc ANR-CFX40T256 (CF card, 256 MB) : 1 pc PC Card Adapter : 1 pc MT8815B/MT8820B Operation Manual (CD-ROM): 1 copy
MT8820B-001 MT8820B-002 MT8820B-003 MT8820B-004 MT8820B-011 MT8820B-012 MT8820B-031 MT8820B-032 MT8820B-043 MT8820B-101 MT8820B-102 MT8820B-103 MT8820B-104 MT8820B-111 MT8820B-112 MT8820B-131 MT8820B-132 MT8820B-143	Options W-CDMA Measurement Hardware TDMA Measurement Hardware CDMA2000 Measurement Hardware 1xEV-DO Measurement Hardware Audio Board Parallel Phone Measurement Hardware W-CDMA Measurement Hardware Lite TDMA Measurement Hardware Lite CDMA2000 Time Offset CAL For GPS SG (requires MT8820B-003 and MX882002C) W-CDMA Measurement Hardware retrofit TDMA Measurement Hardware retrofit CDMA2000 Measurement Hardware retrofit 1xEV-DO Measurement Hardware retrofit Audio Board retrofit Parallel Phone Measurement Hardware retrofit W-CDMA Measurement Hardware Lite Retrofit TDMA Measurement Hardware Lite Retrofit CDMA2000 Time Offset CAL For GPS SG Retrofit (requires MT8820B-003 and MX882002C)
MX882000C MX882000C-001 MX882000C-011 MX882000C-012 MX882000C-021 MX882001C MX882001C-001 MX882001C-002 MX882001C-011 MX882002C MX882002C-001 MX882002C-002 MX882003C MX882003C-002 MX882005C MX882005C-011 MX882010C MX882030C MX882030C-001 MX882030C-009 MX882030C-011 MX882030C-040 MX882030C-050	Softwares W-CDMA Measurement Software (requires MT8820B-001 and MX88205x) W-CDMA Voice Codec (requires MT8820B-011 and MX882000C) HSDPA Measurement Software (requires MT8820B-001, MX882000C and MX882050C) HSDPA H-Set 6 Throughput Test (requires MT8820B-001, MX882000C, MX882000C-011 and MX882050C) HSUPA Measurement Software (requires MT8820B-001, MX882000C, MX882000C-011 and MX882050C) GSM Measurement Software (requires MT8820B-002) GSM Voice Codec (requires MT8820B-011 and MX882001C) GSM External Packet Data (requires MX882001C) EGPRS Measurement Software (requires MX882001C) CDMA2000 Measurement Software (requires MT8820B-003) CDMA2000 Voice Codec (requires MT8820B-011 and MX882002C) CDMA2000 External Packet Data (requires MX882002C) 1xEV-DO Measurement Software (requires MT8820B-003, MT8820B-004 and MX882002C) 1xEV-DO External Packet Data (requires MX882003C) PHS Measurement Software (requires MT8820B-002) Advanced PHS Measurement Software (requires MX882005C) Parallel Phone Measurement Software*1 [requires MT8820B-012, the two same measurement hardware (2 board/set) and one measurement software] W-CDMA Measurement Software Lite (requires MT8820B-031) W-CDMA Voice Codec (requires MT8820B-011 and MX882030C) W-CDMA Band IX*2 (requires MX882030C-050) HSDPA Measurement Software (requires MX882030C) W-CDMA High-speed Adjustment (requires MX882030C) W-CDMA Call Processing Software (requires MX882030C)

MX882031C MX882031C-001 MX882031C-011 MX882031C-040 MX882031C-050 MX882050C MX882050C-002 MX882050C-003 MX882050C-009 MX882050C-011 MX882070C MX882051C MX882051C-002 MX882051C-003 MX882071C	GSM Measurement Software Lite (requires MT8820B-032) GSM Voice Codec (requires MT8820B-011 and MX882031C) EGPRS Measurement Software (requires MX882031C) EGPRS Predistortion Adjustment (requires MX882031C) GSM Call Processing Software (requires MX882031C) W-CDMA Call Processing Software*2 (requires MX882000C) W-CDMA External Packet Data*2, *3 (requires MX882050C) W-CDMA Video Phone Test*2 (requires MX882050C) W-CDMA Band IX*2 (requires MX882050C) HSDPA External Packet Data*2 (requires MX882000C-001) W-CDMA Ciphering Software*2 (requires MX882050C) W-CDMA Call Processing Software*2 (requires MX882000C) W-CDMA External Packet Data*2 (requires MX882051C) W-CDMA Video Phone Test*2 (requires MX882051C) W-CDMA Ciphering Software*2 (requires MX882051C)
MT8820B-ES210 MT8820B-ES310 MT8820B-ES510	Warranty Extended Two Year Warranty Service Extended Three Year Warranty Service Extended Five Year Warranty Service
P0019 P0027 A0013 J1249 J1267 J0576B J0576D J0127A J0127C J0007 J0008 MN8110B B0332 B0333G B0499 B0499B W2776AE W2765AE W2771AE W2790AE W2791AE W2793AE W2794AE W2769AE W2894AE W2895AE W2767AE W2773AE	Application parts TEST USIM001*4 W-CDMA/GSM Test USIM Handset CDMA2000 Cable [D-Sub (15pin, P-type) · D-Sub (15pin, P-type), used in combination with J1267 (sold separately)] CDMA2000 Cross Cable [D-Sub (9pin, P-type) · D-Sub (9pin, P-type), reverse cable used in combination with J1249 (sold separately)] Coaxial Cord (N-P · 5D-2W · N-P), 1 m Coaxial Cord (N-P · 5D-2W · N-P), 2 m Coaxial Cord (BNC-P · RG58A/U · BNC-P), 1 m Coaxial Cord (BNC-P · RG58A/U · BNC-P), 0.5 m GPIB Cable, 1 m GPIB Cable, 2 m I/O Adapter (for call processing I/O) Joint Plate (4 pcs/set) Rack Mount Kit Carrying Case (hard type, with protective cover and casters) Carrying Case (hard type, with protective cover, without casters) MT8815B/MT8820B Operation Manual (booklet) MX882000C Operation Manual (booklet) MX882001C Operation Manual (booklet) MX882002C Operation Manual Panel Operation (booklet) MX882002C Operation Manual Remote Control (booklet) MX882003C Operation Manual Panel Operation (booklet) MX882003C Operation Manual Remote Control (booklet) MX882005C Operation Manual (booklet) MX882030C Operation Manual (booklet) MX882031C Operation Manual (booklet) MX88205x Operation Manual (booklet) MX88207x Operation Manual (booklet)

- *1: The Measurement Hardwares applied to Parallelphone Measurement are MT8820B-001, MT8820B-002, MT8820B-003, MT8820B-004.
And these hardwares can be implemented all together.
- *2: For terminal connectivity, contact your Anritsu sales representative.
- *3: MX882050C preinstalls the integrity protection function.
- *4: This Test USIM can be worked on only W-CDMA mode.
When the connection of GSM is necessary, P0027 can be applied.

- Parallelphone™ is a registered trademark of Anritsu Corporation.
- CF® card is a registered trademark of SanDisk Corporation in the United States and is licensed to CFA (Compact Flash Association).

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