Discover What's Possible™ Anritsu

MT8820A

Radio Communication Analyzer

30 MHz to 2.7 GHz

For Communications Systems Worldwide
(W-CDMA, GSM/GPRS/EGPRS, CDMA2000 1X, CDMA2000 1xEV-DO, PDC, PHS)

All in 1

1 unit for W-CDMA, GSM/GPRS/EGPRS, CDMA2000 1X, CDMA2000 1xEV-DO, PDC and PHS systems All basic transmission and reception measurements performed by 1 unit

The MT8820A hardware platform covers a frequency range of 30 MHz to 2.7 GHz.
When dedicated measurement software and hardware (options) are installed, this single platform supports evaluation of all the main transmission/reception test items for W-CDMA, GSM/GPRS/EGPRS, CDMA2000 1X (IS-2000), CDMA2000 1xEV-DO, PDC and PHS terminals.
Advanced DSP (Digital Signal Processing) and parallel-measurement technology greatly reduce the time required for the production and testing of mobile terminals.
Combinations of parameters for batch measurements are freely selectable, and the number of repeat measurements for each measurement can be set independently. The selected items for measurement can be batch-processed through one-touch operation, enabling easy, high-speed Pass/Fail evaluation on major test items including transmission frequency, modulation accuracy, transmission power, adjacent channel power, occupied bandwidth and BER.
The standard GPIB interface enables for the MT8820A to be configured in existing automated production lines or to configure automatic test systems in maintenance site.

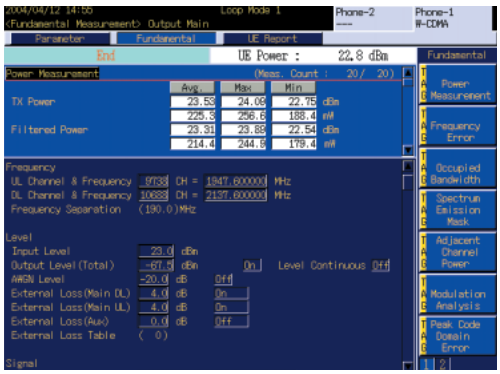
Measurement software	Communication system	Description
MX882000B	W-CDMA	Tx and Rx measurements of mobile stations including call processing (requires MT8820A-01 and MX88205xA*)
MX882001A	GSM/GPRS	Tx and Rx measurements of mobile stations including call processing (requires MT8820A-02)
MX882001A-11	EGPRS	Tx and Rx measurements of mobile stations including call processing (requires MX882001A)
MX882002A	CDMA2000 1X	Tx and Rx measurements of mobile stations including call processing (requires MT8820A-03)
MX882003A	CDMA2000 1xEV-DO	Tx and Rx measurements of access terminals including call processing (requires MT8820A-03, MT8820A-04 and MX882002A)
MX882004A	PDC	Tx and Rx measurements of mobile stations including call processing (requires MT8820A-02)
MX882005A	PHS	Tx and Rx measurements of mobile stations including call processing (requires MT8820A-02)

*: For W-CDMA terminal connectivity, contact your Anritsu sales representative.

Main Measurement Function

Output Power

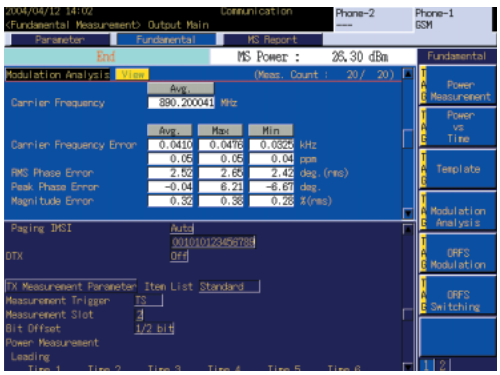
The MT8820A enables measuring output power of mobile stations. When the number of measurements is set to two or more, the max., mean, and min. values of the result are displayed, providing evaluation of the terminal randomness. This repeat measurement function is also available for other measurements.



Example of output power measurement (W-CDMA)

Modulation Analysis

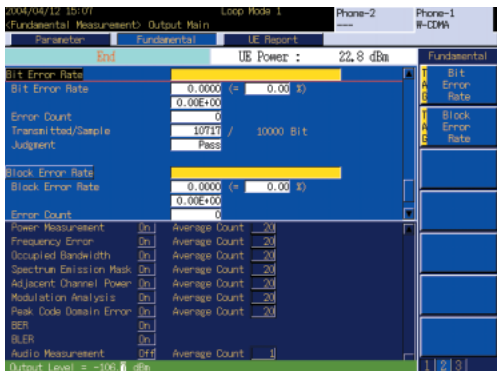
The MT8820A enables modulation analysis of mobile equipment. For example in GSM, simultaneous measurement and display of frequency, frequency error (in kHz and ppm), phase error and peak phase error is performable. Amplitude error at the burst-on section can be also measured.



Example of modulation analysis (GSM)

Receiver Measurement

Measurement of the error rate conforming to the standard of each communication system is performable. For example, in W-CDMA, the bit error rate can be measured by the loopback test mode specified in the 3GPP standards.



Example of error rate measurement (W-CDMA)

W-CDMA Measurement Function

–With W-CDMA Measurement Software and Hardware

The MT8820A-01 W-CDMA measurement hardware can measure the main test items of transmission and reception characteristics for 3G W-CDMA conforming to 3GPP in combination with MX882000B W-CDMA Measurement Software and MX88205xA W-CDMA call Process Software.

Transmitter Measurements

This test can measure output power, frequency error, occupied bandwidth, spectrum emission mask, spectrum monitor, adjacent channel leakage power ratio, modulation accuracy and peak code domain error.

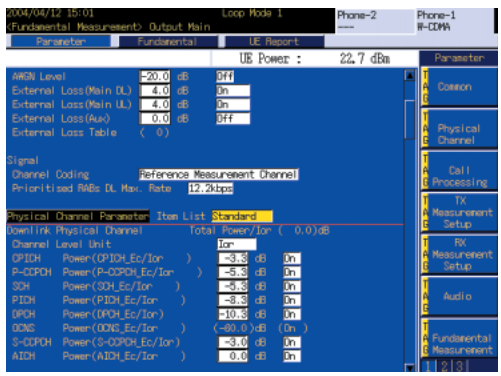
Close Loop Power Control

It is possible to transmit any particular TPC (Transmission Power Control) bit row to a W-CDMA terminal. Terminal's transmission power response to power control can be monitored on the Time Domain Measurement screen, and transmission power for max. 164 slots can be measured at high speed in a batch.

Down Link RF Signal Generation Function

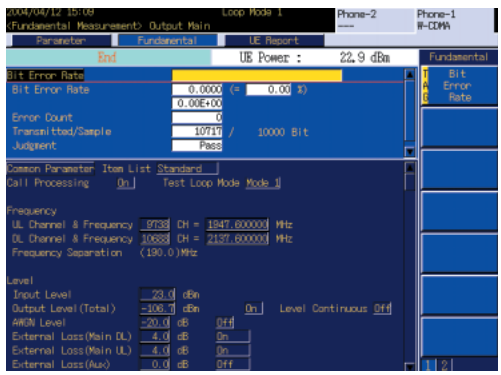
The relative level for each of the CPICH*1, P-CCPCH*2, SCH*3, PICH*4, DPCH*5, S-CCPCH*6, and AICH*7 code channels can be set in a range of –30.0 to 0.0 dB. In addition, OCNS*8 and AWGN*9 are also provided, enabling to generate arbitrary down-link modulation signal required for transmitter and receiver tests. The RF output level can be set in 0.1 dB steps across a range of –140 to –10 dBm (MAIN I/O connectors).

*1: Common Pilot Channel
*2: Primary Common Control Physical Channel
*3: Synchronization Channel
*4: Paging Indicator Channel
*5: Dedicated Physical Channel
*6: Secondary Common Control Physical Channel
*7: Acquisition Indication Channel
*8: Orthogonal Channel Noise Simulator
*9: Additive White Gaussian Noise



Receiver Measurements

Bit error rate can be measured by the loop-back test mode specified in the 3GPP standards or by directly inputting the demodulated data and clock signals from a W-CDMA terminal. Either PN9 or PN15 is selectable for data pattern inserted in the down-link RF signal.



* Please refer to an individual catalogue of MX882000B W-CDMA Measurement Software for details.

GSM/GPRS/EGPRS Measurement Function

–With GSM and EGPRS Measurement Software and TDMA Measurement Hardware

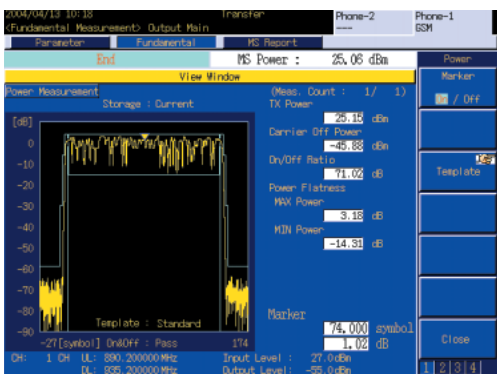
The MT8820A-02 TDMA measurement hardware can measure the main test items of transmission and reception characteristics for GSM/GPRS that is most spread in the world in combination with MX882001A GSM Measurement Software.
The combined use of MX882001A-11 EGPRS Measurement Software enables the measurement of main Tx and Rx characteristics on EGPRS, which is the high-speed version of GPRS.

Transmitter Measurements

This test can measure transmission frequency, modulation accuracy, transmission power, adjacent channel power and output spectrum. When Test Mode A/B is selected in GPRS measurement, power vs time (template mask evaluation)*1, frequency error, phase error (rms and peak) and output spectrum*1 of the designated 1 slot can be measured similarly to GSM.
EGPRS measurement brings the measurement of Output Power, Power vs. Time, Modulation Analysis and Output Spectrum of EGPRS mobile stations.

*1: Can be measured up to 2 uplink slots.

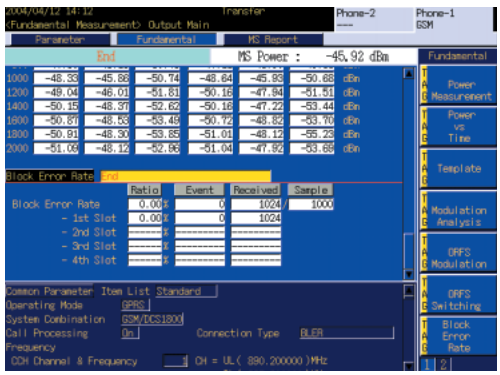
Power vs Time (GSM)



Burst waveform display (EGPRS)

Receiver Measurements

By controlling GSM terminals under the loop-back conditions, the up-link RF signal, which is looped back from the terminal, is demodulated to measure frame error rate, bit error rate and CRC error rate. The FAST BER mode enables high-speed BLER measurement corresponding to each terminal class and coding scheme when Test Mode B or BLER measurement is selected, by controlling GPRS terminals to loop-back condition. These measurements are performable in parallel with the transmission measurements. With an EGPRS terminal controlled to loop-back state from an external PC, up-link RF signal that is looped back from the terminal is demodulated to measure bit error. Similarly to GPRS, such measurement is performable simultaneously with Tx measurement.



BLER (GPRS)

* Please refer to an individual catalogue of MX882001A GSM Measurement Software for details.

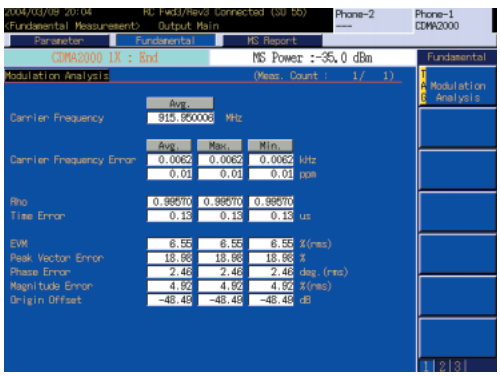
CDMA2000 1X Measurement Function

–With CDMA2000 Measurement Software and hardware

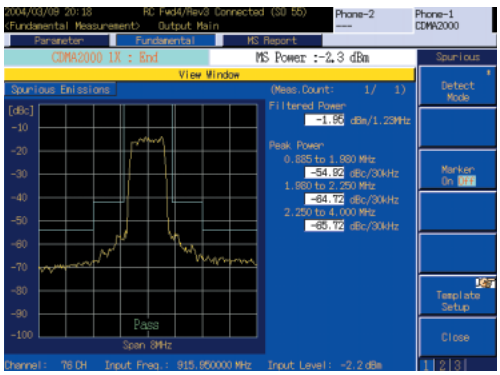
The MT8820A-03 CDMA2000 measurement hardware can measure the major transmission/reception characteristics on the third-generation CDMA2000 1X terminals conforming to 3GPP2, in combination with the MX882002A CDMA2000 Measurement Software.

Transmitter Measurements

Transmission measurement includes measurements of transmission power, modulation analysis, occupied bandwidth, code domain power, spurious emission mask and access probe power of mobile terminals.



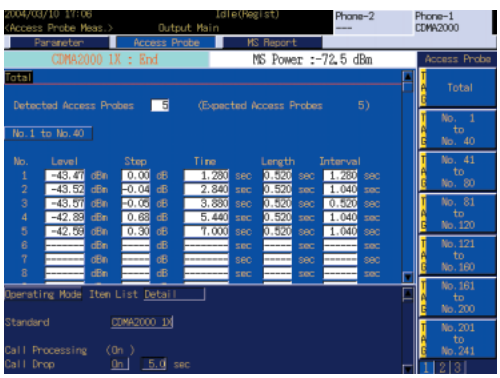
Modulation analysis



Spurious emission mask

Access Probe Power measurement

On the Access Probe Power screen*1, Access Probe which is continuously transmitted from a mobile terminal can be measured. (During measurement, Ack is not returned to the Access Probe from a mobile terminal.) As well as the level of each probe, the difference with the last probe level, probe detection time, probe transmission time and probe interval are measured simultaneously and displayed on a screen. *1 MX882002A only.



Receiver Measurements

FER (Frame Error Rate) measurement and pass/fail evaluation at SO2, SO9, SO55 and SO32 (TDSO) can be performed. FER, error frame count, transmission frame count, confidence level and pass/fail evaluation results are displayed.

Handoff function

On the Handoff window, parameters after Hand off [Band Class Channel, Protocol Revision (P_REV), Radio Configuration, Service Option] can be set. Also, Hand off can be performed according to the preset parameters.

* Please refer to an individual catalogue of MX882002A CDMA2000 Measurement Software for details.

CDMA2000 1xEV-DO Measurement Function

–With 1xEV-DO Measurement Software and Hardware

The MT8820A-04 1xEV-DO measurement hardware, in combination with MX882003A 1xEV-DO Measurement Software*1, is able to measure main Tx characteristics on 3rd-generation CDMA2000 1xEV-DO conforming to 3GPP2.

*1: Requires MT8820A-03 and MX882002A

Transmitter Measurements

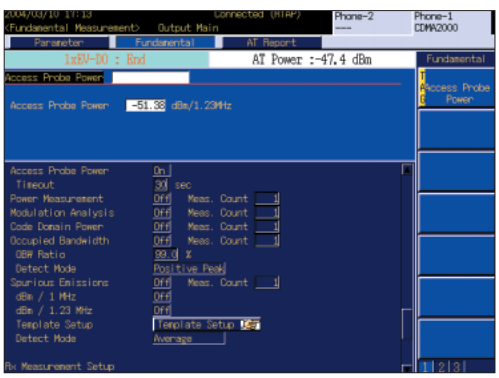
Transmission measurement can measure Output Power, Modulation Analysis, Occupied Bandwidth, Code Domain Power, Spurious Emission Mask and Access Probe Power of access terminals.

Code Domain power

* Output power, modulation analysis, occupied bandwidth measurement etc. can be performed similarly to the MX882002A.

Access Probe Power Measurement

The level trigger acquires the first Access Probe from a 1xEV-DO terminal to measure the average power. Even in continuous measurement mode, the measured value is kept once the measurement of probe is terminated. It is effective for the measurement of 3.1.2.3.1 Range of Open Loop Output Power in the 3GPP2 standard C.S0033.



1xEV-DO Access probe power

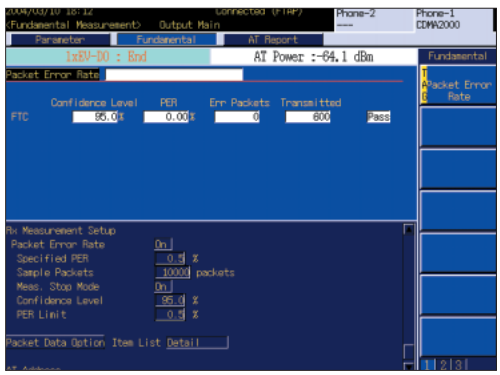
Open Loop Time Response Measurement (Open Loop Time Response screen)

On the Open Loop Time Response screen, it is a screen for measuring the time response of open loop power control of an access terminal. Change of the transmitted power of an access terminal is measured and displayed between 100 ms from the point where the power of a forward link signal changed.

* Similarly the MX882002A can perform the Open Loop Time Response measurement.

Receiver Measurements

PER (Packet Error Rate) measurement and pass/fail evaluation can be performed in FTAP. The PER, error packet count, transmission packet count, confidence level, and pass/fail results are displayed.



* Please refer to an individual catalogue of MX882003A 1xEV-DO Measurement Software for details.

PDC Measurement Function

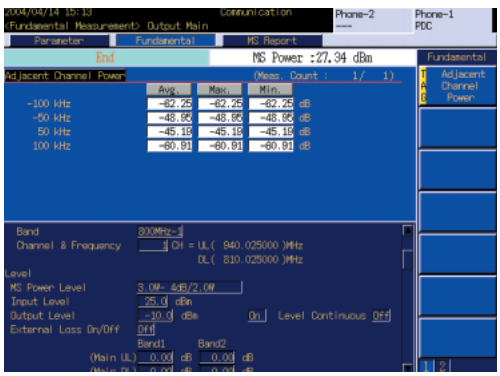
–With PDC Measurement Software and TDMA Measurement Hardware

The MT8820A-02 TDMA measurement hardware, in combination with MX882004A PDC Measurement Software, is able to measure main Tx and Rx measurements of second-generation PDC system which are most common terminal in Japan.

Transmitter Measurements

Transmission measurement includes measurements of transmission power, occupied bandwidth, modulation accuracy, adjacent channel power and transmission speed of mobile terminals.

Modulation accuracy



Adjacent channel power measurement

Receiver Measurements

Bit error rate can be measured by controlling a PDC terminal and demodulating up-link RF signals. This measurement can be performed in parallel with transmission measurement.

* Please refer to an individual catalogue of MX882004A PDC Measurement Software for details.

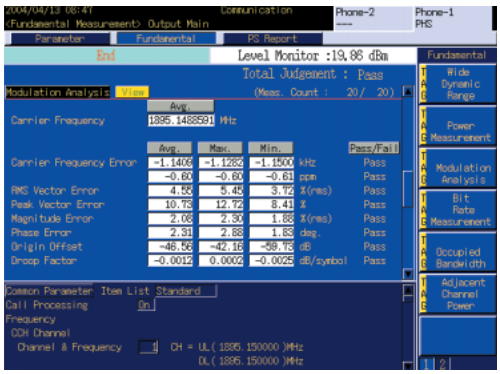
PHS Measurement Function

–With PHS Measurement Software and TDMA Measurement Hardware

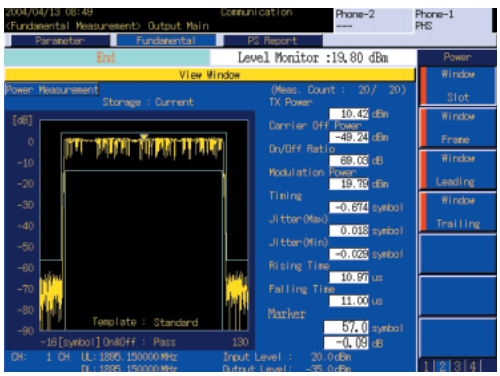
The MT8820A-02 TDMA measurement hardware, in combination with MX882005A PHS Measurement Software, is able to measure main Tx and Rx measurements of PHS terminals/base stations which are spreading throughout the world centering on Asia including Japan.

Transmitter Measurements

RF Power, Carrier-off Leakage Power, Frequency, and Modulation Accuracy of PHS terminals/base stations are measured simultaneously and can be displayed.



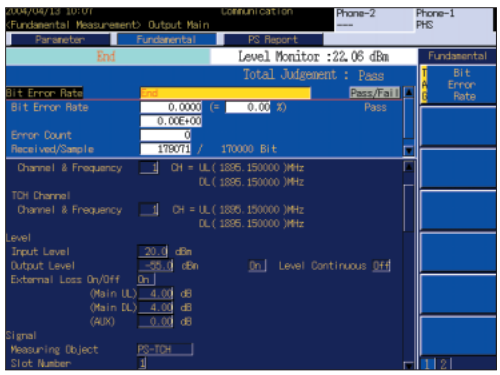
Modulation analysis



Burst waveform display

Receiver Measurements

By controlling PHS terminals, up-link RF signals are demodulated to measure the bit error rate. This measurement can be performed simultaneously with Tx measurement.
By controlling PHS base station and using external trigger function, down-link RF signals(base station signal) are demodulated to measure the bit error rate.



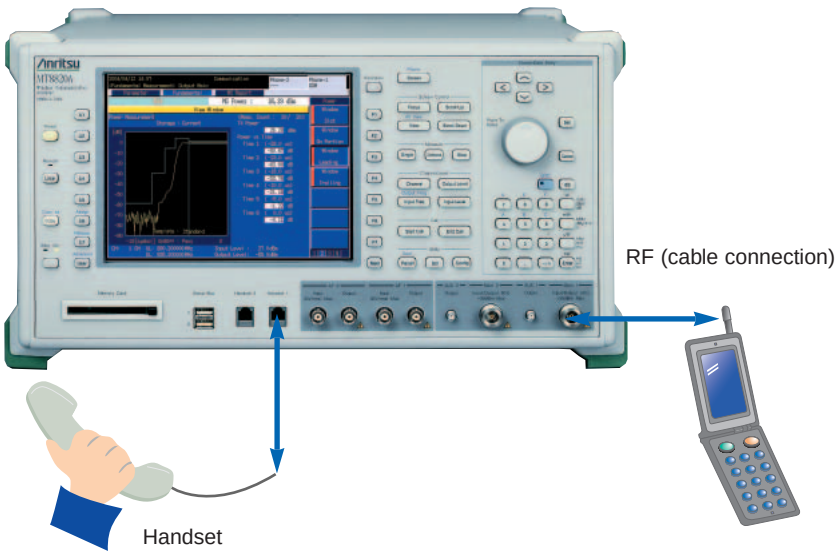
* Please refer to an individual catalogue of MX882005A PHS Measurement Software for details.

Real-time Voice Encoding and Decoding

The MX882000B-01 W-CDMA (MX882001A-01 GSM) Voice Codec is optional software that brings real-time voice encoding and decoding to the W-CDMA (GSM) Measurement Software. Installation of this and the MT8820A Option 11 (audio board) achieves end-to-end communication testing with handsets. In addition, the audio measuring function enables transmission/reception audio measurements to be performed while a call is connected.

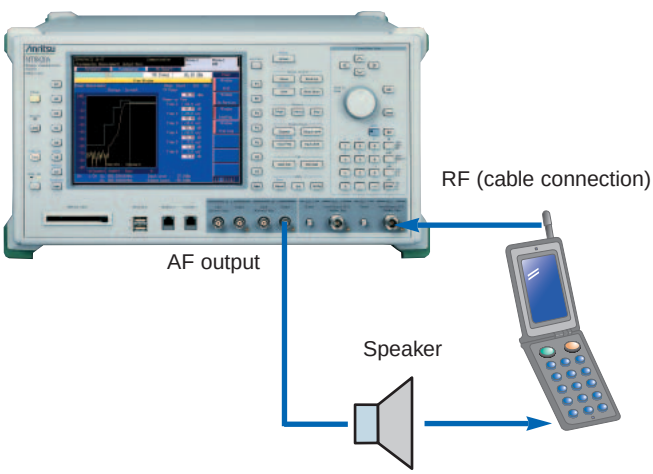
End-to-end Communications Testing

Connection of a handset to the MT8820A RJ11 connector enables end-to-end communications testing between the MT8820A and a mobile terminal.



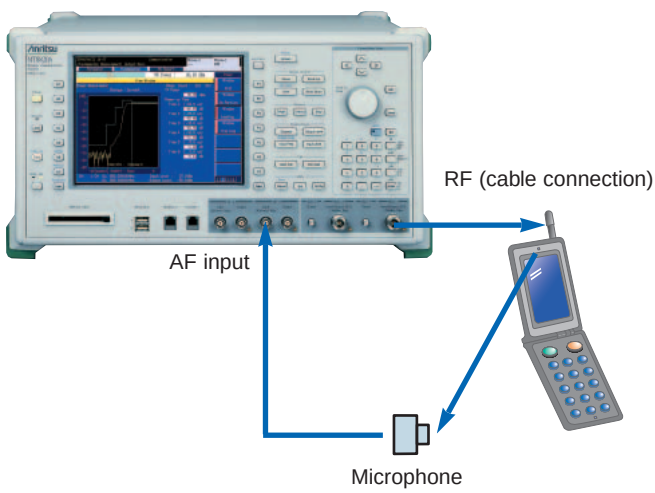
Transmission Audio Measurement

The tone signal output from AF Output connector is input to the terminal microphone. Then the MT8820A demodulates up-link RF signal and measures the level, frequency and distortion rate of demodulated tone signal.
This function achieves the evaluation of audio characteristic on transmitter side of mobile terminals.



Reception Audio Measurement

The tone signal demodulated by the mobile terminal is input to AF Input connector of the MT8820A. The audio characteristic on receiver side of mobile terminals can be evaluated by measuring the level, frequency and distortion rate of the tone signal inputted to AF Input connector.



Parallelphone Measurement Function

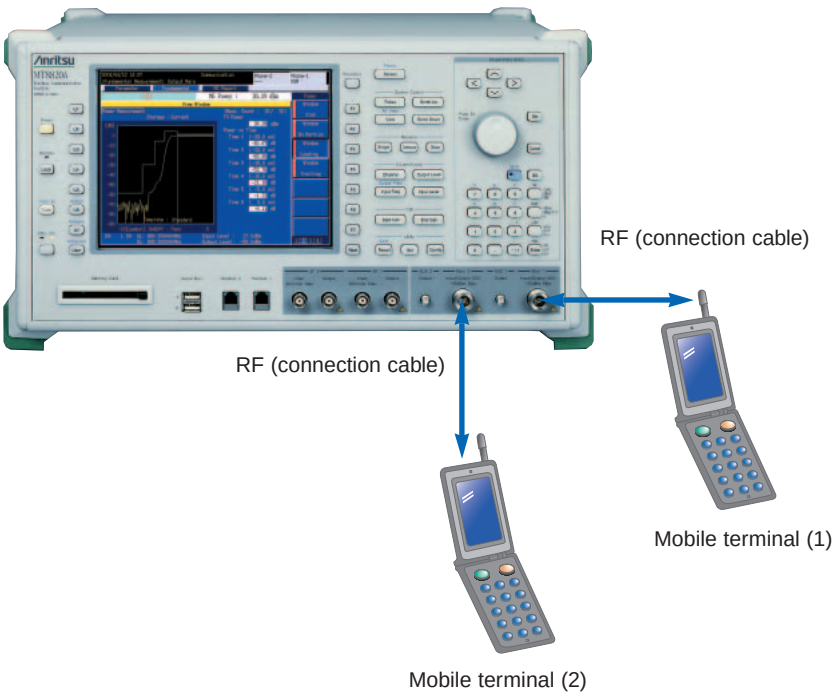
–With Parallelphone Measurement Software and Hardware

Enables connection and simultaneous measurement of two different mobile terminals

With the Parallelphone*1 measurement option enabled by installing the MT8820A-12, a MT8820A can measure two different mobile terminals by connecting them via its second RF, AF, GPIB and Ethernet ports.
The MT8820A is equipped with two RF, AF, GPIB and Ethernet ports, respectively, enabling independent control for each. Using the MT8820A-12 promotes further reduction in cost (return on direct investment, energy saving) and space in the production of various mobile terminals, greatly contributing to the improvement of production efficiency.
For example, when a W-CDMA terminal is connected to the Mobile Terminal 1 side and another W-CDMA terminal to the Mobile Terminal 2 side, two mobile terminals with the same communication system (W-CDMA in this case) can be tested simultaneously.
The MT8820A supports parallel phone measurement*2 for the W-CDMA, GSM/GPRS/EGPRS, CDMA2000 1X, CDMA2000 1xEV-DO, PDC and PHS communication systems.

*1: Parallelphone is the registered trademark of Anritsu Corporation.

*2: All 3 types of measurement hardware can be implemented together for each port.



Specifications

MX882010A Parallel phone measurement software

Main2 Input/Output, Aux2 Output	Identical to Main1 Input/Output and Aux1 Output specified by the MT8820A and the measurement software installed in the MT8820A.
AF2 Input, Output	Identical to AF1 Input and Output specified by the measurement software. These are enabled only when the MT8820A-11 Audio Board is installed.

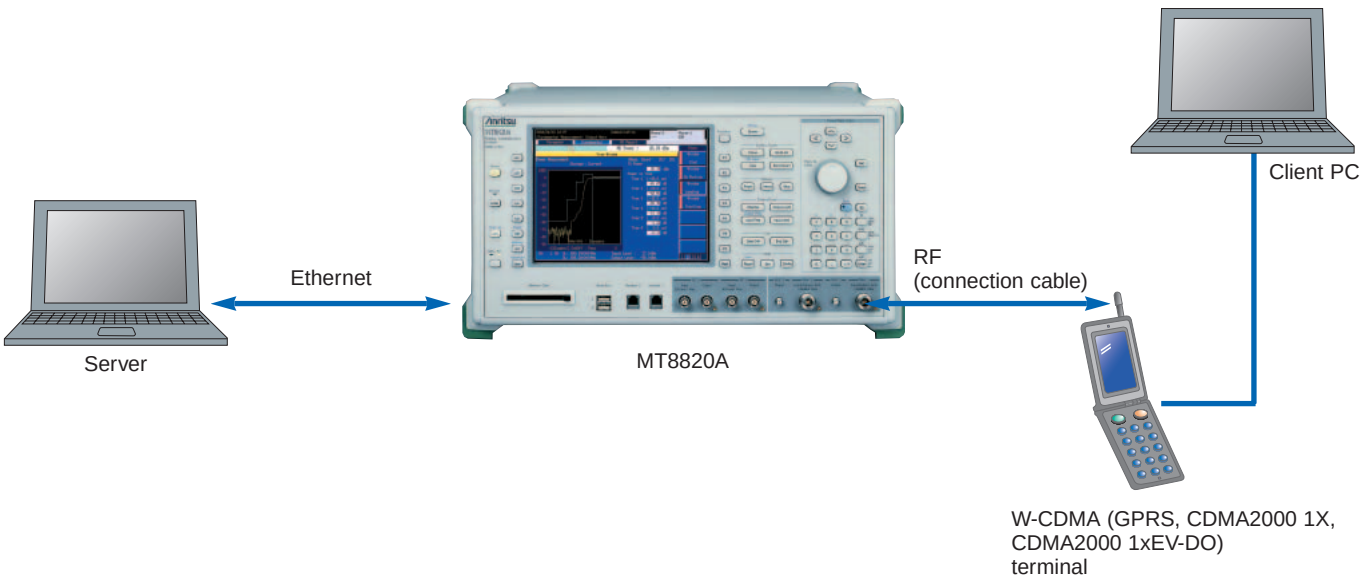
* The MT8820A-12 (32) Parallel phone Measurement hardware requires MX882010A Parallel phone Measurement Software and corresponding measurement software and measurement hardware (e.g. For W-CDMA PPM two boards and one measurement software is required)

External Packet Data

–With Measurement Software Option

Test Function for Packet Communication Data Transfer

External Packet Data software option enables to perform data transfer to/from external equipment via an Ethernet port in the rear of MT8820A. Installing the Measurement Software option 02 series (MX882051A-02/ MX882001A-02/ MX882002A-02/ MX882003A-02) realizes end-to-end data transfer between an application server connected to the MT8820A and a W-CDMA (GPRS,CDMA2000 1X,CDMA2000 1xEV-DO)terminals or a client PC connected to a W-CDMA (GPRS,CDMA2000 1X,CDMA2000 1xEV-DO) terminals, enabling various application tests to be performed.



Sample MT8820A connection

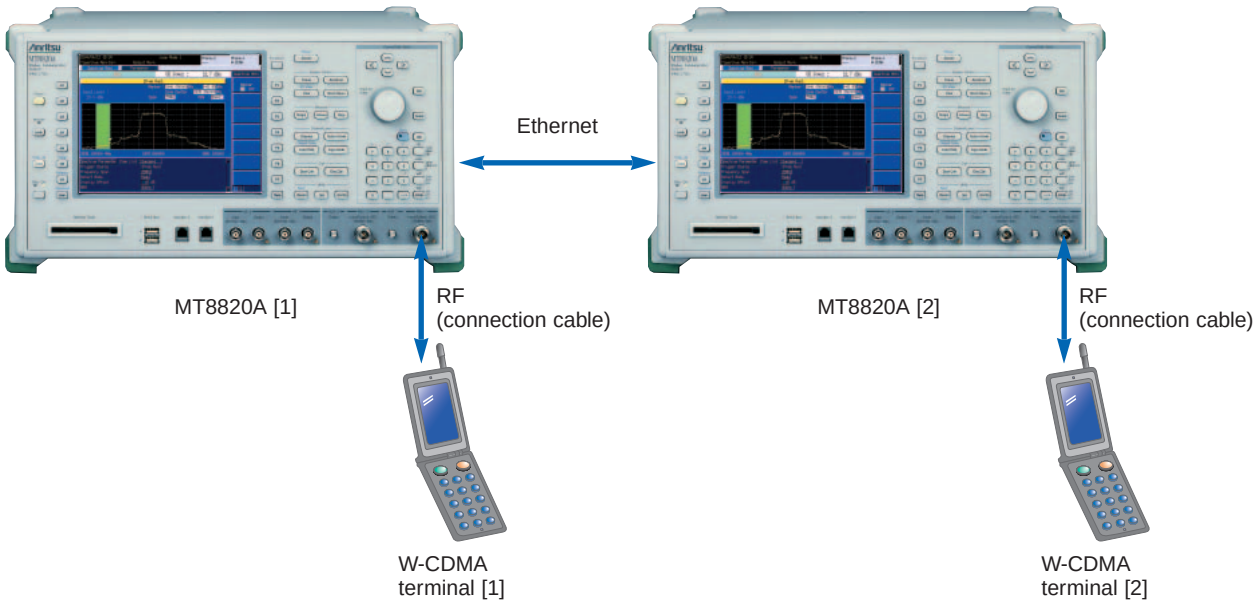
* Please refer to the individual catalogues of MX882000B, MX882001A, MX882002A/MX882003A Measurement Software for details.

W-CDMA Video Phone Test

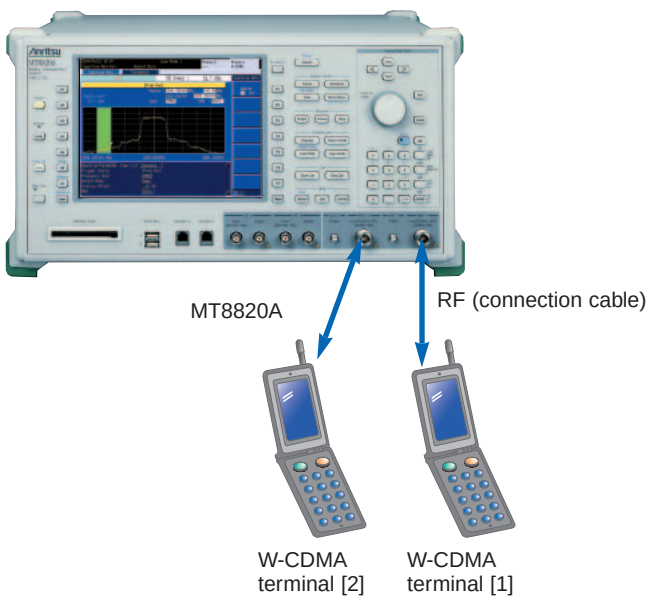
–With Measurement Software Option

End-to-End Test Function for Video Phones between two MT8820A Units

W-CDMA video phone test realizes data transfer between two MT8820As via an Ethernet port in the rear of MT8820A. When the MX88205xA-03 W-CDMA Video Phone Test option is installed in the mainframe, end-to-end testing can be performed between two W-CDMA video phone terminals connected to two MT8820As respectively.



Sample MT8820A connection: when MT8820A is two sets



Sample MT8820A connection:
when MT8820A is one set (Parallelphone measurement correspondence)

* Please refer to an individual catalogue of MX882000B W-CDMA Measurement Software for details.

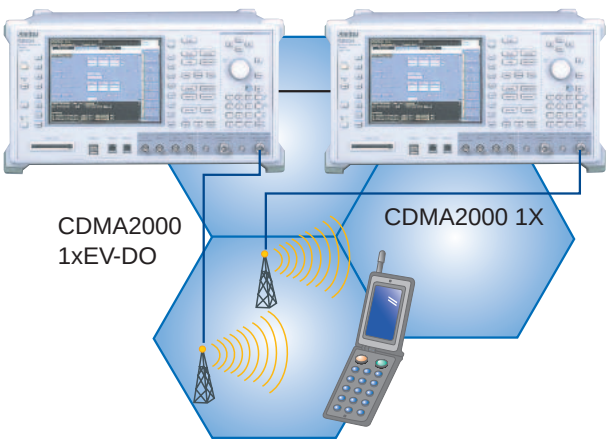
CDMA2000 1X/1xEV-DO Synchronous Function

The Functional Test of Mobile Terminal Corresponding to Two Systems, CDMA2000 1X and CDMA2000 1xEV-DO, is Realized.

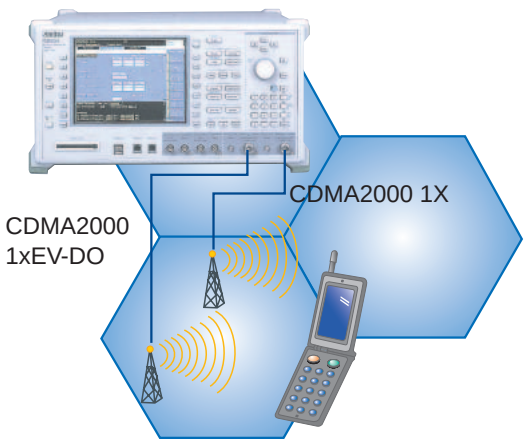
Using the MX882002A and MX882003A with two MT8820A units or one MT8820A unit with the Parallelphone*1 measurement option installed, CDMA2000 1X and 1xEV-DO Forward Link signals with their system times synchronized can be output. This function allows the performance of functional tests for MS supporting both the CDMA2000 1X and 1xEV-DO systems*2.

*1: Parallelphone is the registered trademark of Anritsu Corporation.

*2: This function cannot be used when MX882000B W-CDMA Measurement Software is loaded. Please perform unload, when MX882000B is loaded.



Sample MT8820A connection: When MT8820A is two sets

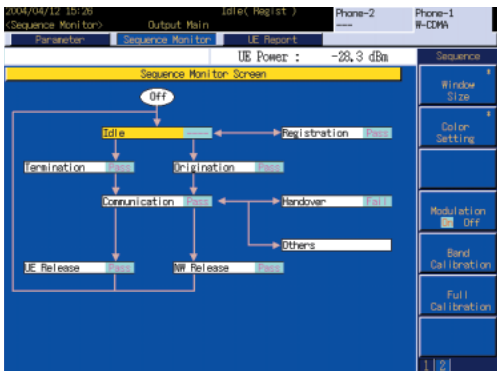


**Sample MT8820A connection:
When MT8820A is one set
(Parallelphone measurement correspondence)**

Call Processing Function

Connection Test

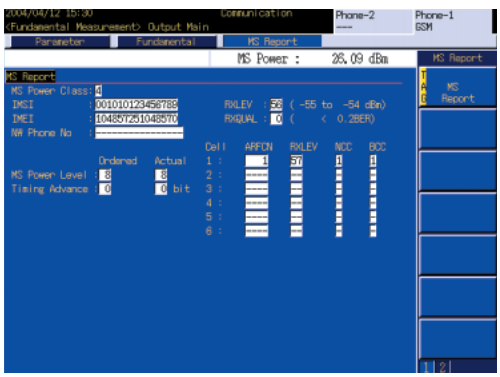
The call processing function enables performance of various connection tests including location registration, terminal call origination, network call origination, terminal disconnect and network disconnect. During a call, the user's speech can be echoed back from the terminal to provide a simple voice communication test.



Example of sequence monitor (W-CDMA)

Mobile Terminal Report Monitor

Mobile terminal status can be displayed based on the measurement report that the terminal sends back to the tester. "RX Level" monitoring shows the down-link RF signal level received by the terminal.



Example of terminal monitor measurement (GSM)

High-speed, Easy-to-use GPIB Control

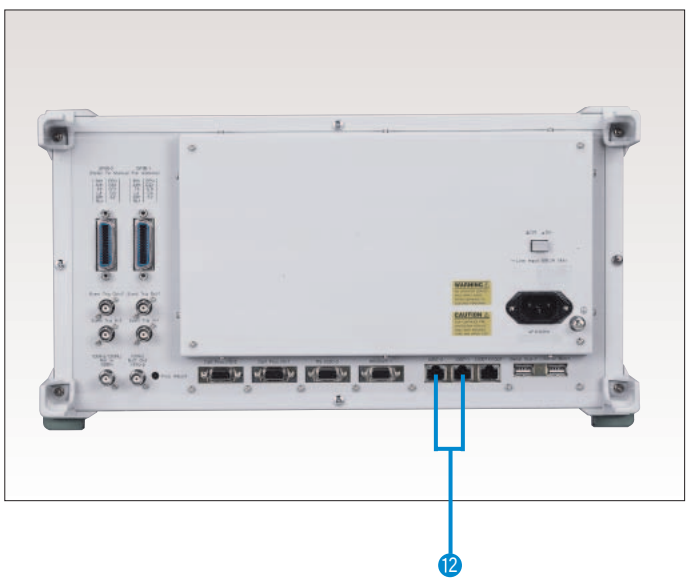
Controllable without Displaying the Measurement Window

Items not currently displayed on the measurement window can be read out or changed freely without requiring display. This dramatically saves time that would otherwise be lost by displaying the relevant measurement window.

Batch Readout Command for Measured Results

All results obtained by batch measurement can be read out with the single command: "ALLMEAS?". If required, only desired measurement results can be read out using a command such as "ALL MEAS? MOD" (modulation analysis). A decrease in the number of GPIB commands reduces the GPIB traffic on both the MT8820A and control PC, contributing to the increase in measurement throughput. Since the step size of the control program is also reduced, this provides a real benefit to the user for the creation of a control program that is easy to read and maintain.

❶ Function: Executes function menu
❷ Screen Control: Switches between operation window and display window, etc.
❸ Measure: Selects measurement mode and starts and stops measurement
❹ Channel/Level: Sets input/output channels, frequency and level
❺ Call: Calls mobile station and disconnects communications link
❻ Utility: Saves and reads parameter settings, etc.
❼ Cursor/Data Entry: Confirms cursor movement and input of parameter settings
❽ Memory Card: Slot for Type II PCMCIA card used to save and recall measured data and measurement conditions and for updating measurement software.
❾ Handset 1/2: A handset is connected to the RJ11 connector. End to end test between station and MT8820A can be performed.
❿ AF 1/2: Input/output connectors for audio measurement
⓫ Connectors for mobile station: For RF measurement of mobile station (N and SMA types)
⓬ 10Base T-1/2: For external data transmission when using the external packet data option.




1
2
3
4
5
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7
Communication
Phone-2
Phone-1
W-CDMA
UE Report
UE Power : -9.7 dBm
Fundamental
(Meas. Count : 20/ 20)
Max
Min
-8.70
-9.84
dBm
134.9
103.8
uW
-8.91
-10.06
dBm
128.6
98.71
uW
(Meas. Count : 20/ 20)
MHz
Max
Min
-0.0091
-0.0377
kHz
0.00
-0.01
ppm
Mode Off
MHz
MHz
Power Measurement
Frequency Error
Occupied Bandwidth
Spectrum Emission Mask
Adjacent Channel Power
Modulation Analysis
Peak Code Domain Error
Functions
F1
F2
F3
F4
F5
F6
F7
Next
Phone
Screen
Screen Control
Focus
Scroll Up
Alt View
View
Scroll Down
Measure
Single
Continuous
Stop
Channel/Level
Channel
Output Level
Output Freq
Input Freq
Input Level
Call
Start Call
End Call
Utility
Save
Recall
Std
Config
Cursor/Data Entry
Push To Enter
Set
Cancel
Shift
BS
D
E
F
W
7
8
9
GHz
dBm
dB
A
B
C
mW
4
5
6
MHz
dBµV/V
s
1
2
3
µW
kHz
mV
ms
0
.
-/+
nW
Enter
Hz
µV
µs
Handset 2
Handset 1
AF 2
AF 1
Input
30V(rms) Max
Output
Input
30V(rms) Max
Output
AUX 2
Output
Main 2
Input/Output 50Ω
+35dBm Max
AUX 1
Output
Main 1
Input/Output 50Ω
+35dBm Max
9
10
11

Specifications

• MT8820A (Main frame)

General	Frequency range: 30 to 2700 MHz Max. input level: +35 dBm (MAIN 1) MAIN 1 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 1 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 x 10^{-8} (at 10 min after startup referenced to frequency 24 h after startup) Aging rate: ≤±2 x 10^{-8}/day, ≤±1 x 10^{-7}/year (referenced to frequency 24 h after startup) Temperature characteristics: ≤±5 x 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
RF signal generator	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 1), –130 to 0 dBm (AUX 1) Resolution: 0.1 dB Accuracy: ±1.0 dB (–120 to –10 dBm, MAIN 1, after calibration), ±1.0 dB (–110 to 0 dBm, AUX 1, after calibration) Signal purity Non-harmonic spurious: ≤–50 dBc (at offset frequency: ≥100 kHz, except Uplink frequency – Downlink frequency + 4.1825 GHz), ≤–40 dBc [spurious of (4.8 –F out) GHz at ≥2.1 GHz] Harmonics: ≤–25 dBc Uninterrupted level variation Variable range: 0 to –30 dB Setting resolution: 1 dB
Others	Display Color 8.4" 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
Power supply	100 to 120/200 to 240 Vac (–15/+15%, 250 V max.), 47.5 to 63 Hz, ≤300 VA (with Option 01), ≤650 VA (with all Options)
Dimensions and mass	426 (W) x 221.5 (H) x 498 (D) mm (excluding projections), ≤27 kg (with Option 01), ≤34 kg (with all Options)
Environmental conditions	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/A2: 2001 (Class A), EN61000-3-2: 2000 (Class A), EN61326: 1997/A2: 2001 (Annex A) LVD EN61010-1: 2001 (Pollution Degree 2)

Ordering Information

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

Model/Order No.	Name	
	Main frame	
MT8820A	Radio Communication Analyzer	
	Standard accessories	
	Power cord, 2.6 m	: 1 pc
HB28B064C8H	CF card (64 MB)	: 1 pc
CA68ADP	PC card adapter	: 1 pc
W1940AE	MT8820A operation manual (CD-ROM)	: 1 copy
	Options	
MT8820A-01	W-CDMA Measurement Hardware	
MT8820A-02	TDMA Measurement Hardware	
MT8820A-03	CDMA2000 Measurement Hardware	
MT8820A-04	1xEV-DO Measurement Hardware	
MT8820A-11	Audio Board	
MT8820A-12	Parallel Phone Measurement Hardware	
MT8820A-21	W-CDMA Measurement Hardware retrofit	
MT8820A-22	TDMA Measurement Hardware retrofit	
MT8820A-23	CDMA2000 Measurement Hardware retrofit	
MT8820A-24	1xEV-DO Measurement Hardware retrofit	
MT8820A-31	Audio Board retrofit	
MT8820A-32	Parallel Phone Measurement Hardware retrofit	
	Softwares	
MX882000B	W-CDMA Measurement Software (requires MT8820A-01 and MX88205xA)	
MX882000B-01	W-CDMA Voice Codec (requires MT8820A-11 and MX882000B)	
MX882001A	GSM Measurement Software (requires MT8820A-02)	
MX882001A-01	GSM Voice Codec (requires MT8820A-11 and MX882001A)	
MX882001A-02	GSM External Packet Data (requires MX882001A)	
MX882001A-11	EGPRS Measurement Software (requires MX882001A)	
MX882002A	CDMA2000 Measurement Software (requires MT8820A-03)	
MX882002A-02	CDMA2000 External Packet Data (requires MX882002A)	
MX882003A	1xEV-DO Measurement Software (requires MT8820A-03, MT8820A-04 and MX882002A)	
MX882003A-02	1xEV-DO External Packet Data (requires MX882003A)	
MX882004A	PDC Measurement Software (requires MT8820A-02)	
MX882005A	PHS Measurement Software (requires MT8820A-02)	
MX882010A	Parallel Phone Measurement Software*1 [requires MT8820A-12, the two same measurement hardware (2 board/set) and one measurement software]	
MX882022A	CDMA2000 Wireless Application Test Software (requires MT8820A-03)	
MX882050A	W-CDMA Call Processing Software*2 (requires MX882000B)	
MX882050A-02	W-CDMA External Packet Data*2, *3 (requires MX882050A)	
MX882050A-03	W-CDMA Video Phone Test*2 (requires MX882050A)	
MX882070A	W-CDMA Ciphering Software*2 (requires MX882050A)	
MX882051A	W-CDMA Call Processing Software*2 (requires MX882000B)	
MX882051A-02	W-CDMA External Packet Data*2 (requires MX882051A)	
MX882051A-03	W-CDMA Video Phone Test*2 (requires MX882051A)	
MX882071A	W-CDMA Ciphering Software*2 (requires MX882051A)	

Model/Order No.	Name
W2161AE	MX882000B operation manual*4 (attached to MX882000B)
W2026AE	MX882001A operation manual*4 (attached to MX882001A)
W2104AE	MX882002A operation manual*4 (attached to MX882002A)
W2201AE	MX882003A operation manual*4 (attached to MX882003A)
W2159AE	MX882004A operation manual*4 (attached to MX882004A)
W2228AE	MX882005A operation manual*4 (attached to MX882005A)
W2247AE	MX882022A operation manual*4 (attached to MX882022A)
W2220AE	MX88205xA operation manual*4 (attached to MX88205xA)
W2230AE	MX88207xA operation manual*4 (attached to MX88207xA)
	Warranty
MT8820A-90	Extended three year warranty service
MT8820A-91	Extended five year warranty service
	Application parts
P0019	TEST USIM001*5
P0027	W-CDMA/GSM Test USIM
A0012	Handset
J1249	CDMA2000 cable
J0576B	Coaxial cord (N-P · 5D-2W · N-P), 1 m
J0576D	Coaxial cord (N-P · 5D-2W · N-P), 2 m
J0127A	Coaxial cord (BNC-P · RG58A/U · BNC-P), 1 m
J0127C	Coaxial cord (BNC-P · RG58A/U · BNC-P), 0.5 m
J0007	GPIB cable, 1 m
J0008	GPIB cable, 2 m
MN8110B	I/O Adapter (for call processing I/O)
B0332	Joint plate (4 pcs/set)
B0333G	Rack mount kit
B0499	Carrying case (hard type, with protective cover and casters)
B0499B	Carrying case (hard type, with protective cover, without casters)
W1943AE	MT8820A operation manual (booklet)
W2162AE	MX882000B operation manual (booklet)
W2027AE	MX882001A operation manual (booklet)
W2100AE	MX882002A operation manual panel operation (booklet)
W2101AE	MX882002A operation manual remote control (booklet)
W2202AE	MX882003A operation manual panel operation (booklet)
W2203AE	MX882003A operation manual remote control (booklet)
W2160AE	MX882004A operation manual (booklet)
W2229AE	MX882005A operation manual (booklet)
W2245AE	MX882022A operation manual panel operation (booklet)
W2246AE	MX882022A operation manual remote control (booklet)
W2221AE	MX88205xA operation manual (booklet)
W2231AE	MX88207xA operation manual (booklet)

∗1: The Measurement Hardwares applied to Parallel Phone Measurement are MT8820A-01, MT8820A-02, MT8820A-03, MT8820A-04. And these hardwares can be implemented all together.
∗2: For W-CDMA terminal connectivity, contact your Anritsu sales representative.
∗3: MX882050A preinstalls the integrity protection function.
∗4: Supplied by CD-ROM
∗5: This Test USIM can be worked on only W-CDMA mode.
When the connection of GSM is necessary, P0027 can be applied.

Anritsu

Specifications are subject to change without notice.

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