

PRODUCT INTRODUCTION

MX882003A

1xEV-DO Measurement Software

ANRITSU CORPORATION

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MX882003A 1xEV-DO Measurement Software (with MT8820A, MT8820A-04, MX882003A-02) **Product Introduction**



Ver. 1.00
Sep. 2003
Product Marketing Dept.
Wireless Measurement Div.
Anritsu Corporation

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1. Outline of MX882003A

MT8820A with MX882003A is..

the standalone measuring instrument to evaluate the main transmitter/receiver characteristics measurement of mobile phones conforming to the 3G communication system CDMA2000 1xEV-DO.

The MT8820A hardware platform covers a frequency range of 30 MHz to 2.7 GHz. When MX882003A 1xEV-DO Measurement Software is installed, this single platform supports evaluation of all the main transmitter/receiver characteristics for 1xEV-DO terminals. The built-in GPIB interface enables MT8820A to be integrated into automated production lines as well as to configure an automated test system for after-sales maintenance. Also, data through function can be added by installing MX882003A-02 1xEV-DO External Packet Data.

1.1 Main Specifications (MT8820A with MX882003A)

•CDMA2000 1xEV-DO

Test	3GPP2 C.S0033	Test Item
Receiver tests	3.1.1.2.1	Demodulation of Forward Traffic Channel in AWGN
	3.1.2.1.2	Frequency Accuracy
Transmitter tests	3.1.2.2.1	Time Reference (Test1)
	3.1.2.2.2	Waveform Quality and Frequency Accuracy
	3.1.2.3.1	Range of Open Loop Output Power
	3.1.2.3.3	Range of Closed Loop Power Control
	3.1.2.3.4	Maximum RF Output Power
	3.1.2.3.5	Minimum Controlled Output Power
	3.1.2.3.8	Code Domain Power
	3.1.2.3.8.1	DRC Channel Output Power
	3.1.2.3.8.2	ACK Channel Output Power
	3.1.2.3.8.3	Data Channel Output Power
	3.1.2.4.1	Conducted Spurious Emissions
	3.1.2.4.3	Occupied Bandwidth

1.2 Measurement Items

Transmission Measurements

TX Power
Modulation Analysis
Code Domain Power
Occupied Bandwidth
Spurious Emission

Call Processing

Band Class 0,1,2,3,4,5,6,7,8,9,10,
Close Session, Open Session,
network call origination, terminal call origination, communication,
disconnection from MS, disconnection from NW
MS report monitor (Hardware ID)
R-TAP

1.3 Call Processing Function

Simple Connection Test

2003/07/10 18:20 Idle(Session Opened) Phone-1 CDMA2000

<Fundamental Measurement> Output Main

Parameter Fundamental AT Report

1xEV-DO : End AT Power :-21.5 dBm

Code Domain Power (Meas. Count : 1/ 1)

Walsh Code No. Len Ph Power

Max Inactive Channel 8 16 1 -35.43 dB/Pilot Pass

Call Processing Parameters Item List Detail

Application Protocol RTAP

AN ID Item List Detail

Sector ID 00000000 00000000 00000000 00000000

Country Code 1

Color Code 1

Access Parameters Item List Detail

Open Loop Adjust -36 dB

Probe Initial Adjust 0 dB

Probe Num Step 15 probes per sequence

- Test Items**
- Close Session
 - Open Session
 - Network call origination
 - Terminal call origination
 - Terminal disconnect
 - Network disconnect
 - Hand over

1.4 Measurement Functions (1)

TX Power

Avg./Max./Min. values of measured result are displayed simultaneously, enabling to evaluate the MS characteristic randomness.

2003/08/21 13:04 Connected Phone-1 CDMA2000

<Fundamental Measurement> Output Main

Parameter Fundamental AT Report

1xEV-DO : End AT Power :-22.1 dBm

Power Measurement (Meas. Count : 1/ 1)

	Avg.	Max.	Min.	
TX Power	-22.26	-22.26	-22.26	dBm
	5.943	5.943	5.943	uW
Filtered Power	-22.37	-22.37	-22.37	dBm/1.23MHz
	5.799	5.799	5.799	uW/1.23MHz

Modulation Analysis (Meas. Count : 1/ 1)

Carrier Frequency Avg. 900.100001 MHz

Operating Mode Item List Detail

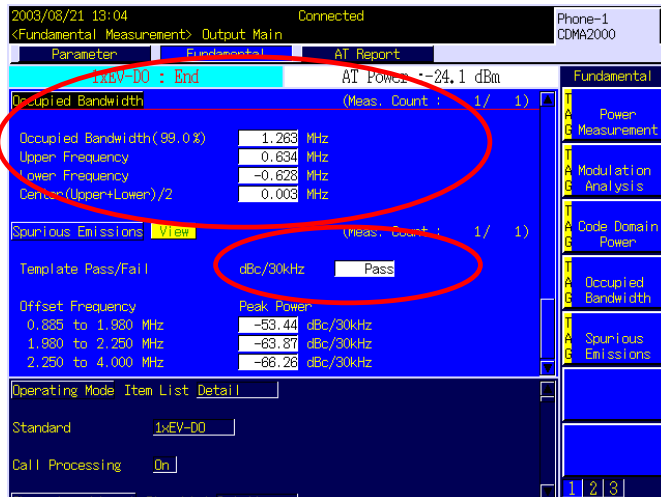
Standard 1xEV-DO

Call Processing On

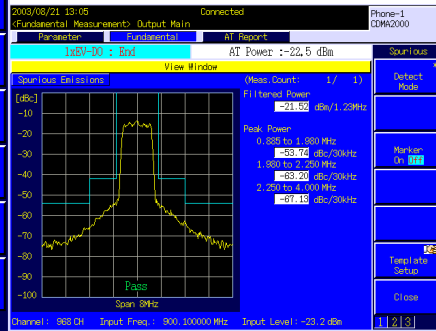
1.4 Measurement Functions (2)

OBW measurement & Spurious Emission Mask evaluation

Enables occupied bandwidth measurement and spurious emission mask evaluation.



The evaluation result of spurious emission mask is comparable with the Template below.



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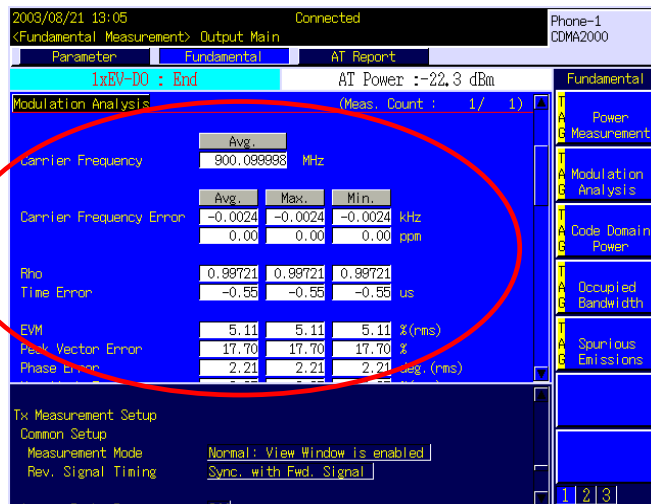
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1.4 Measurement Functions (3)

Modulation Analysis

Frequency, frequency error (in kHz and ppm), phase error and peak phase error can be measured simultaneously.



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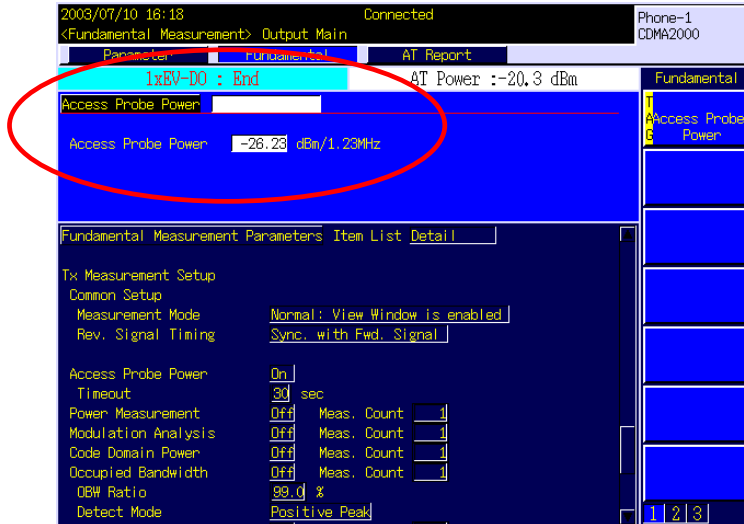
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1.4 Measurement Functions (4)

Access Probe Power

Access Power which is transmitted from MS can be measured.



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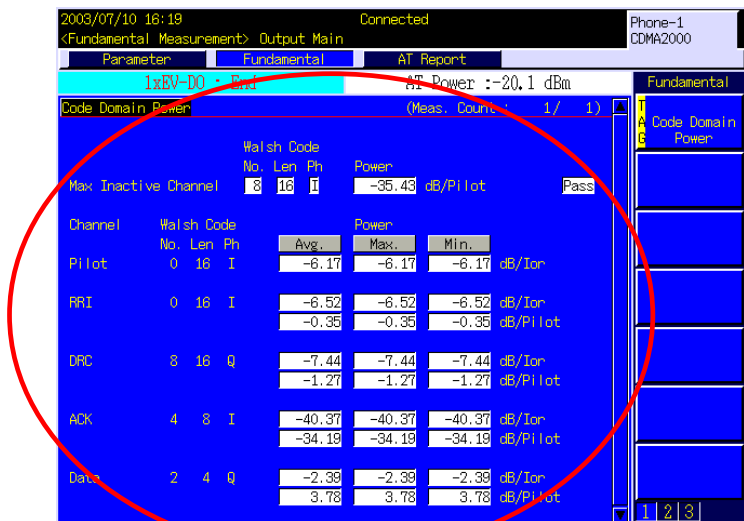
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1.4 Measurement Functions (5)

Code Domain Power

Code domain power which is transmitted from MS can be batch-measured.



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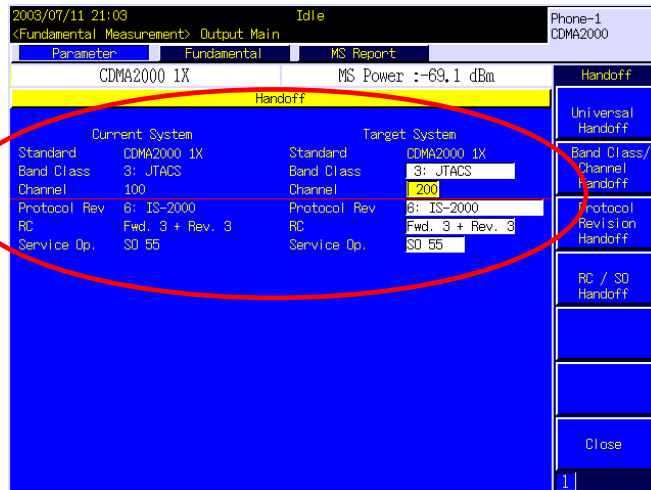
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1.4 Measurement Functions (6)

Handoff function

Parameters after Hand Off (Band Class, Channel, Protocol Revision (P_REV), Radio Configuration, Service Option) can be set on the Handoff Window.



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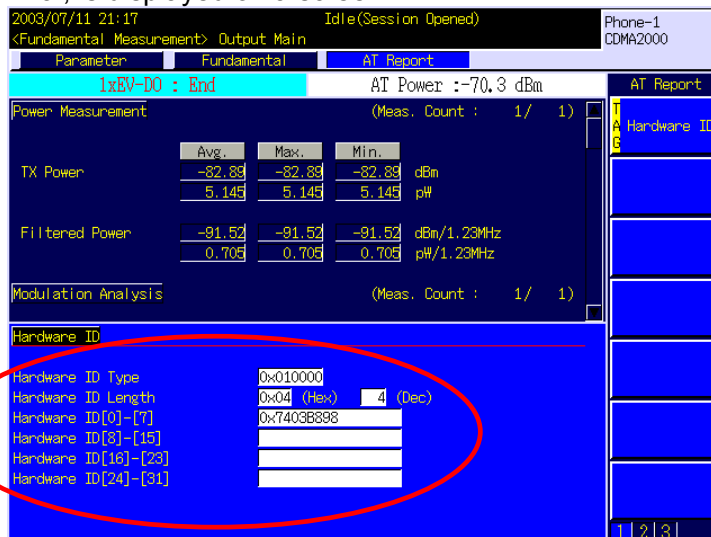
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1.4 Measurement Functions (7)

MS Report Monitor

The terminal status, which is periodically reported from a CDMA2000 terminal, is displayed on a screen.



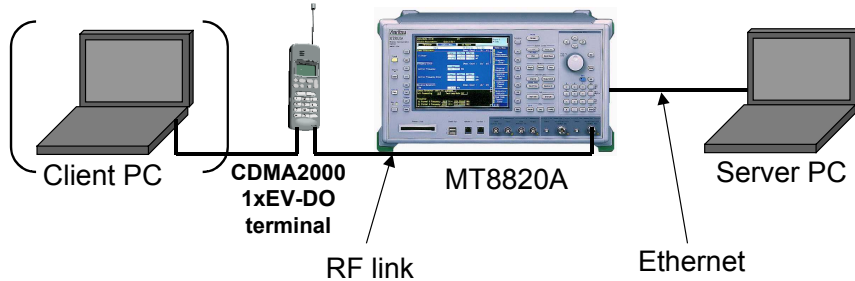
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2. Outline of MX882003A-02

- MX882003A-02 External Packet Data is the software option to add data through function to MX882003A 1xEV-DO measurement software.
- When this software option is installed in the MT8820A, the platform simulates the operation of a base station, enabling to perform end-to-end IP data communication test between the connected 1xEV-DO terminal and various application servers.



2.1 Main Specifications (MX882003A-02)

Electrical characteristics	Application Protocol Packet Data Mode	Default Packet PPP/IP: The mode to transfer IP packet data between a terminal and a server.
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3. MT8820A Application Table

*Combination of CDMA2000 1X + CDMA2000 1xEV-DO

APPLICATION	CDMA2000 1X Terminal testing	CDMA2000 1X Terminal testing (with Audio)	1xEV-DO Terminal testing	CDMA2000 External Packet testing	1xEV-DO Terminal testing	CDMA2000 Wireless Application Terminal testing
MT8820A Main Frame	√	√	√	√	√	√
MT8820A-03 CDMA2000 Measurement Hardware	√	√	√	√	√	√
MT8820A-04 1xEV-DO Measurement Hardware			√		√	
MT8820A-11 Audio Board		√				
MX882002A CDMA2000 Measurement Software (requires MT8820A-02)	√	√	√	√	√	
MX882003A 1xEV-DO Measurement Software (requires MT8820A-03)			√		√	
MX882002A-02 CDMA2000 External Packet Data (requires MT8820A-03 and MX882002A)				√		
MX882003A-02 1xEV-DO External Packet Data (requires MT8820A-04 and MX882003A)					√	
MX882003A-22 Wireless Application Test (requires MT8820A-03)						√

√ Option required

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3. MT8820A Application Table (continued)

*Combination of CDMA2000 1X + W-CDMA

APPLICATION	W-CDMA Terminal testing	CDMA2000 1X Terminal testing	W-CDMA /CDMA2000 1x Dual-mode Terminal testing	W-CDMA Terminal testing (with audio)	CDMA2000 External Packet testing
MT8820A Main Frame	√	√	√	√	√
MT8820A-01 W-CDMA Measurement Hardware	√		√	√	
MT8820A-03 CDMA2000 Measurement Hardware		√	√		√
MT8820A-11 Audio Board				√	
MX882000A W-CDMA Measurement Software (requires MT8820A-01)	√		√	√	
MX882000A-01 W-CDMA voice codec (requires MT8820A-11 and MX882000A)				√	
MX882002A CDMA2000 Measurement Software (requires MT8820A-02)		√	√		√
MX882002A-02 CDMA2000 External Packet Data (requires MT8820A-03 and MX882002A)					√

√ Option required

3. MT8820A Application Table (continued)

*Combination of CDMA2000 1X and GSM/GPRS

APPLICATION	GSM/GPRS Terminal testing	CDMA2000 1X Terminal testing	GSM/GPRS /CDMA2000 1X Dual-mode Terminal testing	GSM/GPRS Terminal testing (with audio)	CDMA2000 External Packet testing
MT8820A Main Frame	√	√	√	√	√
MT8820A-02 TDMA Measurement Hardware	√		√	√	
MT8820A-03 CDMA2000 Measurement Hardware		√	√		√
MT8820A-11 Audio Board				√	
MX882000A GSM Measurement Software (requires MT8820A-02)	√		√	√	
MX882001A-01 GSM voice codec (requires MT8820A-11 and MX882001A)				√	
MX882002A CDMA2000 Measurement Software (requires MT8820A-02)		√	√		√
MX882002A-02 CDMA2000 External Packet Data (requires MT8820A-03 and MX882002A)					√

√ Option required

4. Merits of Introducing MT8820A

- Multi standard support
 - Four Measurement Hardware (W-CDMA, TDMA, CDMA2000 1X, CDMA2000 1xEV-DO) can be mounted simultaneously.
- No need of equipment replacement even for the manufacture of CDMA2000 1X/1xEV-DO, CDMA2000 1X/GSM and CDMA2000 1X/W-CDMA DUAL mode phones
 - MT8820A is the first to support W-CDMA measurement in the world.
 - More efficient production cost is achieved comparing with aging equipment supporting 3G.
- Satisfactory support by 3-year/5-year warranty (optional)
 - Quick and accurate calibration and repair services are provided.

5. Conclusion

With our Signalling & RF technologies, Anritsu provides complete support for customers' 3G business ranging from R&D through manufacturing and maintenance.

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Specifications are subject to change without notice.

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