

For MT8820A Radio Communication Analyzer

# MX882022A

CDMA2000 Wireless Application Test Software



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## CDMA2000 Wireless Application Test Software

The MX882022A CDMA2000 Wireless Application Test Software is designed for evaluating various applications incorporated in mobile terminals conforming to the 3rd generation system, cdma2000<sup>®</sup> 1x (IS-2000). It operates on the platform of MT8820A Radio Communication Analyzer.

cdma2000<sup>®</sup> is a registered trademark of the Telecommunications Industry Association (TIA-USA).

Recent mobile terminals are evolving to multimedia communication terminals for such as voice communication, data communication and streaming, increasing evaluation time and cost. The MX882022A realizes the function to simulate each test of call processing, voice/data communication, short message service (hereafter abbreviated as "SMS"), mobile IP\*<sup>1</sup> and system time synchronization\*<sup>2</sup> under the environment similar to actual network. This contributes to the improvement of work efficiency in evaluating mobile terminal application software operation when executing various functions and tests of mobile terminals.

\*1: Mobile IP test requires FA and HA prepared by customers.

\*2: Using two sets of MT8820A, the MT8820A pre-installed with MX882022A and the MT8820A pre-installed with MX882003A, enables to test the functions of mobile phones complying with two systems; cdma2000 1x and cdma2000 1xEV-DO. Please refer to the individual catalog of MX882003A 1xEV-DO Measurement Software for details.

Call processing test: Functional test of location registration, origination, termination, disconnection from network, disconnection from mobile terminal

Voice communication test: Functional test by loopback of voice signal from a mobile terminal inside MT8820A

Data communication test: Functional test of data communication such as still picture and motion picture between mobile terminals and external server equipment via MT8820A

SMS test: Functional test of SMS communication under changing parameters such as Teleservice ID.

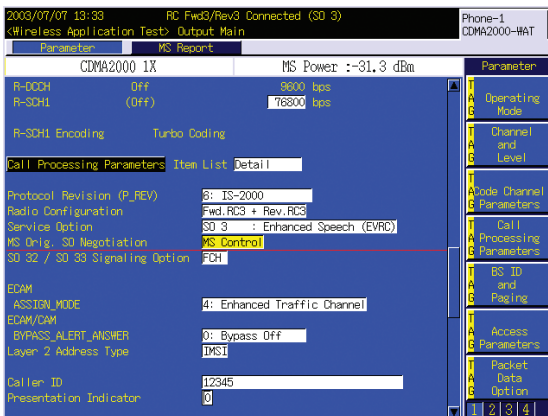
Others: Various functional test such as Call Waiting and Dormant





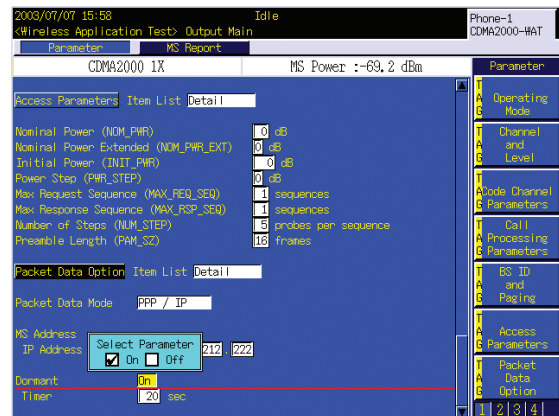
## Call Processing Test

Call processing test is performable for such as location registration, origination, termination, disconnection from mobile terminal and disconnection from network. Network/mobile terminal control can be selected for negotiation of Service Option. Also, in communication state, voice communication test is performable by loopback of voice from a cdma2000 1x terminal to forward link signal.



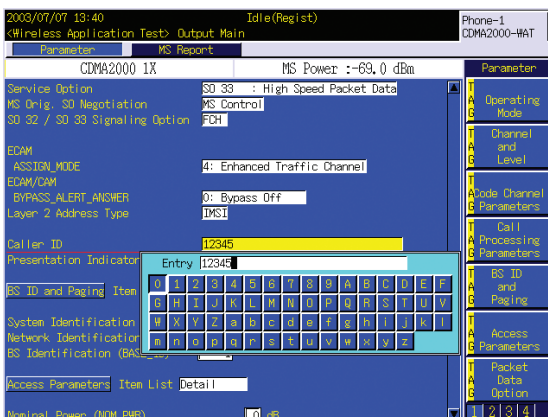
## Dormant, Call Drop Test

The state jumps to Dormant if packet data on traffic channel suspends for a period of time longer than preset timer value after data communication session. Also, Call Drop is detected after passing preset timer value if a call is disconnected without passing normal disconnection process in call processing state.



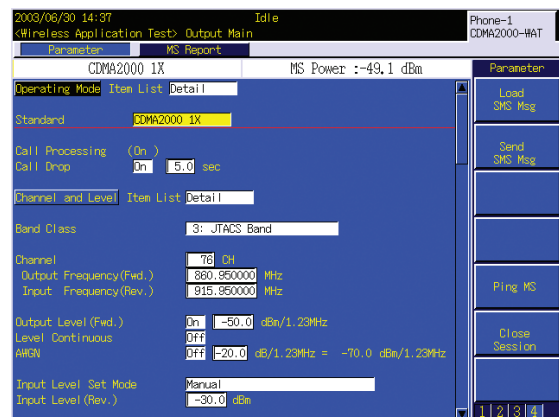
## Caller ID, PI Setup Function

Caller's telephone number (Caller ID) can be set and transmitted to a cdma2000 1x terminal, also, Presentation Indicator On/Off is selectable.



## Data Communication Session Control

Restart of data communication in Dormant state (Ping MS) and suspension of compulsory session during data communication (Close Session) can be controlled on screen.

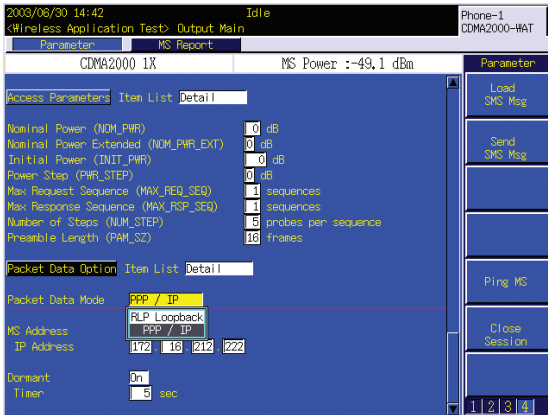


# Data Communication Test Function

Packet data transfer is performable between the local/network application server connected to Ethernet connector (10BASE-T connector) in the rear of MT8820A mainframe and a mobile terminal. Below 2 modes are supported as packet data transfer modes.

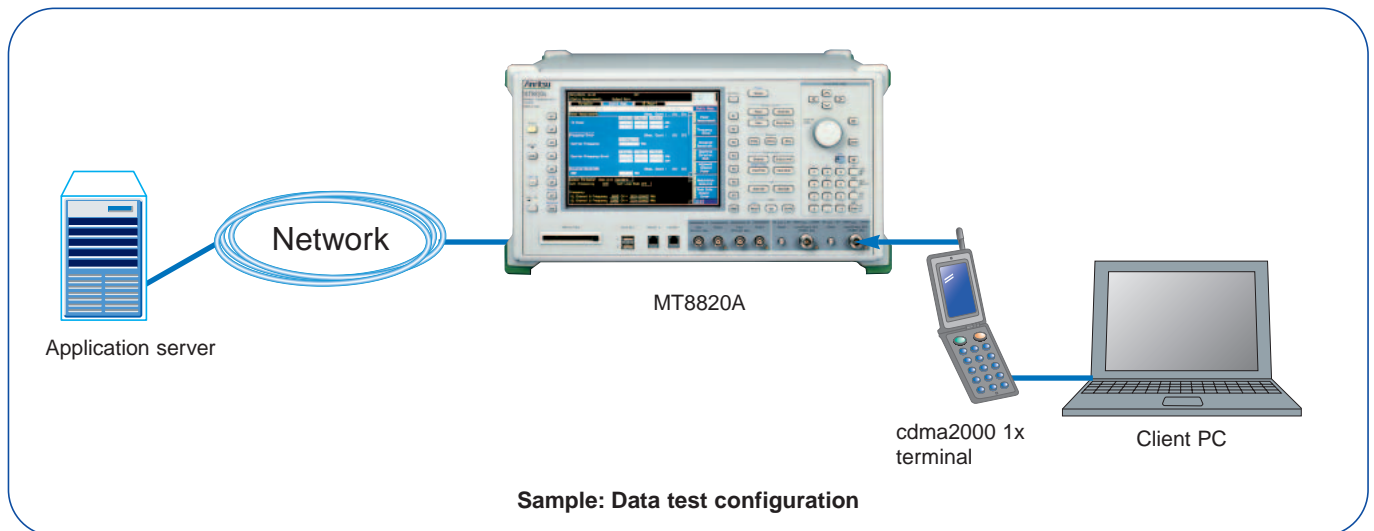
## Data Loopback Mode

RLP data unit received in Reverse Link is looped back in RLP (Radio Link Protocol 3) stack inside MT8820A and transmitted in forward link.



## IP Data Communications Mode

PPP connection is established with a cdma2000 1x terminal connected by RF and IP packet data can be transferred between a cdma2000 1x terminal and a network server. This enables various application tests using IP packet such as Web browsing and receiving mails by WAP. Furthermore, file transfer to the client PC via data port and data download test can be performed.



# SMS Test Function

The WAT tool as a standard attachment software of MX882022A enables SMS test, Alert with Information and Mobile IP test.

## SMS Test

WAT tool is able to set parameters such as teleservice ID and service category, and edit the content of User Data. SMS data can be sent from a PC to a cdma2000 1x terminal via MT8820A.

Also, it is able to perform the same test without a PC by saving the content edited by WAT tool in a CF card in the form of files, loading it on MT8820A and transmitting SMS data.

## Alert with Information Test

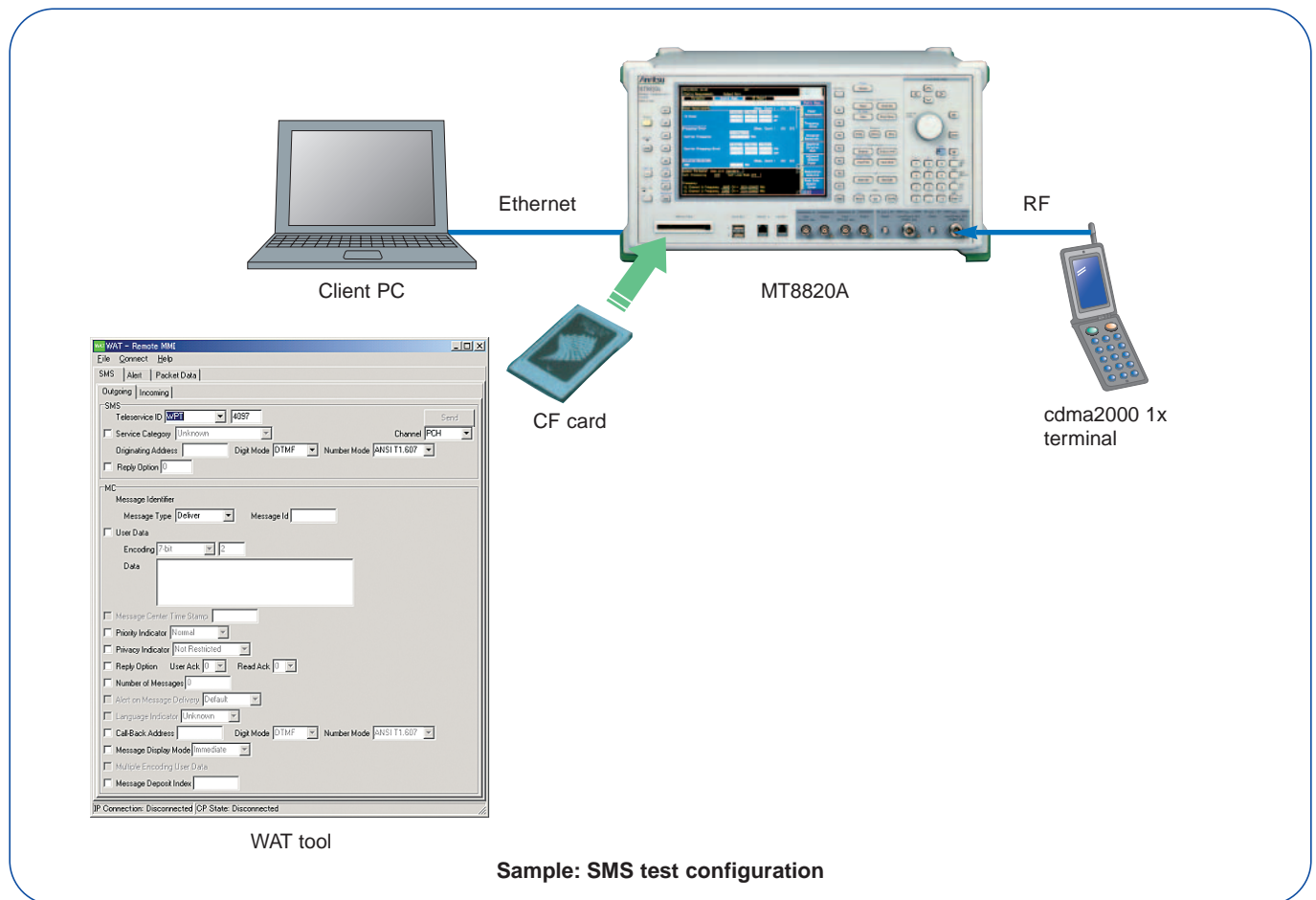
In a cdma2000 1x terminal's communication state, interrupt transmission by WAT tool can be used for testing call-waiting function.

The caller's telephone number display On/Off can be set for interrupt-call.

## Mobile IP Test

Mobile IP test is performed by enabling the Mobile IP of WAT tool.

\* Customers need to prepare FA and HA.



# Specifications

## MX882022A CDMA2000 Wireless Application Test Software

RF signal generator	<p>Output frequency: 300 to 2200 MHz, 1 Hz step  Channel level [relative level to Ior (total level)]  Pilot channel: -30 to 0 dB, 0.25 dB step or Off  FCH, SCH, DCCH: -30 to 0 dB, 0.1 dB step or Off  SYNCH, PCH: -30 to 0 dB, 0.25 dB step or Off  OCNS: Auto, 0.01 dB step or Off  QPCH channel level (Relative level to pilot channel): -5 to +2 dB, 1 dB step or Off  Channel level accuracy: <math>\pm 0.2</math> dB (typ.) (<math>\geq -20</math> dB)  PN offset: 0 to 511 can be set  Waveform quality: <math>&gt;0.99</math> (Pilot only, AWGN Off)  AWGN  AWGN level: -20 to +12 dB (relative level to cdma signal) or Off  Maximum output level of Ior at AWGN On: -28 dBm (at MAIN Input/Output), -18 dBm (at AUX Output)</p>
Call processing	<p>Band class: BC0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10  Call control: Location registration, origination, termination, disconnection from network, disconnection from mobile terminal  Paging channel data rate: Full  Radio configuration: F-RC1 + R-RC1, F-RC2 + R-RC2, F-RC3 + R-RC3, F-RC4 + R-RC3, F-RC5 + R-RC4  Service option: SO 1, 2, 3, 6, 9, 15, 32, 33, 55, 32768  Fwd. FCH data rate: Full, half, quarter, eighth can be set for RC1 to 5  Fwd. SCH: Max. 1 channel  Fwd. SCH data rate  RC 3: 9.6, 19.2, 38.4, 76.8, 153.6 kbps  RC 4: 9.6, 19.2, 38.4, 76.8, 153.6 kbps  RC 5: 14.4, 28.8, 57.6, 115.2, 230.4 kbps  Access probe: Access channel  Rev. closed loop power control modes: closed loop, alternate, all 0 (all up), all 1 (all down)  Usable protocols: IS-95B, J-STD-008C, ARIB T-53, Korean PCS, IS-2000 (SR1)</p>
External packet data	<p>Service option: SO33  Radio configuration: F-RC3 + R-RC3, F-RC4 + R-RC3  Signaling Ch: FCH  Supplemental Ch: Encoding: Convolutional, turbo  Data rates: 9.6, 19.2, 38.4, 76.8, 153.6 kbps  RLP (Radio Link Protocol): RLP3  Packet data mode: RLP loopback, PPP/IP  RLP loopback: The mode that RLP data unit received in reverse link is looped back in RLP (Radio Link Protocol 3) stack inside MT8820A and transmitted in forward link.  PPP/IP: The mode that IP packet data is transferred between mobile terminal and server equipment.</p>

# Ordering Information

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

Model/Order No.	Name
MT8820A	<b>Main frame</b> Radio Communication Analyzer
	<b>Standard accessories</b>
	Power cord, 2.6 m : 1 pc
HB28B064C8H	CF card (64 MB) : 1 pc
CA68ADP	PC card adapter : 1 pc
W2458AE	MT8820A/MT8815A operation manual (CD-ROM) : 1 copy
	<b>Options</b>
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
	<b>Softwares</b>
MX882000B	W-CDMA Measurement Software (requires MT8820A-01 and MX88205xA)
MX882000B-01	W-CDMA Voice Codec (requires MT8820A-11 and MX882000B)
MX882000B-11	HSDPA Measurement Software (requires MT8820A-01, MX882000B and MX882050A)
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)
MX882005A-11	ADVANCED PHS Measurement Software (requires MX882005A)
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)
MX882050A-09	W-CDMA Band IX*2 (requires MX882050A)
MX882050A-11	HSDPA External Packet Data*2 (requires MX882000B-11)
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
W2477AE	MX882000B operation manual*4 (attached to MX882000B)
W2463AE	MX882001A operation manual*4 (attached to MX882001A)
W2472AE	MX882002A operation manual*4 (attached to MX882002A)
W2473AE	MX882003A operation manual*4 (attached to MX882003A)
W2464AE	MX882004A operation manual*4 (attached to MX882004A)
W2465AE	MX882005A operation manual*4 (attached to MX882005A)
W2484AE	MX882022A operation manual*4 (attached to MX882022A)
W2480AE	MX88205xA operation manual*4 (attached to MX88205xA)
W2478AE	MX88207xA operation manual*4 (attached to MX88207xA)
	<b>Warranty</b>
MT8820A-90	Extended three year warranty service
MT8820A-91	Extended five year warranty service
	<b>Application parts</b>
P0019	TEST USIM001*5
P0027	W-CDMA/GSM Test USIM
A0012	Handset
J1249	CDMA2000 cable [D-sub (15 pin, P-type) · D-sub (15 pin, P-type), used in combination with J1267 (sold separately)]
J1267	CDMA2000 cross cable [D-sub (9 pin, P-type) · D-sub (9 pin, P-type), reverse cable, used in combination with J1249 (sold separately)]
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)
W2457AE	MT8820A operation manual (booklet)
W2476AE	MX882000B operation manual (booklet)
W2466AE	MX882001A operation manual (booklet)
W2470AE	MX882002A operation manual panel operation (booklet)
W2471AE	MX882002A operation manual remote control (booklet)
W2474AE	MX882003A operation manual panel operation (booklet)
W2475AE	MX882003A operation manual remote control (booklet)
W2467AE	MX882004A operation manual (booklet)
W2468AE	MX882005A operation manual (booklet)
W2482AE	MX882022A operation manual panel operation (booklet)
W2483AE	MX882022A operation manual remote control (booklet)
W2481AE	MX88205xA operation manual (booklet)
W2479AE	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 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.

• Parallellphone™ 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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