Anritsu

For MT8820B Radio Communication Analyzer

MX882002C
CDMA2000 Measurement Software

MX882003C
1xEV-DO Measurement Software

for CDMA2000
1xEV-DO

MX882002C

CDMA2000 Measurement Software

Advanced high-speed measurement method and batch measurement supporting the manufacture of CDMA2000® terminals

The MX882002C CDMA2000 Measurement Software is for measuring Rx and Tx performance of mobile terminals conforming to the IS-2000 standard, today's most widespread 3G technology. It uses advanced DSP and parallel measurement to cut manufacturing inspection times for mobile terminals. Multiple measurements can be selected for simultaneous processing and individual sample sizes can be set for each measurement.

User-selected measurements can be grouped and measured with just one function, offering fast Pass/Fail evaluation and reliable repeatability optimized for high-speed production.

The built-in GPIB interface supports easy configuration of automated test systems for CDMA2000 1X terminal manufacturing, R&D, and application development.

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

● CDMA2000 1X Measurement Items

| Tests	3GPP2 C.S0011	Test items
Receiver	3. 4. 1	Demodulation of Forward Traffic Channel in Additive White Gaussian Noise
	3. 5. 1	Receiver Sensitivity and Dynamic Range
Transmitter	4. 1	Frequency Accuracy
	4. 3. 1	Time Reference
	4. 3. 4	Waveform Quality and Frequency Accuracy
	4. 3. 5	Code Domain Power
	4. 4. 1	Range of Open Loop Output Power (Access Channel)
	4. 4. 2	Time Response of Open Loop Power Control
	4. 4. 3	Access Probe Output Power
	4. 4. 5	Maximum RF Output Power
	4. 4. 6	Minimum Controlled Output Power
	4. 4. 7	Standby Output Power and Gated Output Power
	4. 4. 9	Code Channel to Reverse Pilot Channel Output Power Accuracy (2.2)
	4. 5. 1	Conducted Spurious Emissions
	4. 5. 3	Occupied Bandwidth

for CDMA2000

MX882002C CDMA2000 Measurement Software

Transmitter Measurements

Transmitter Power

The CDMA2000 1X terminal Tx power can be measured with the power control bits set to maximum or minimum, alternating bits, or with closed loop power control.
In addition, maximum, minimum, and average values of measured power results are displayed when the number of measurement samples is 2 or more. This is very useful for evaluating statistical variations in mobile terminal characteristics. This feature also supports other measurements.
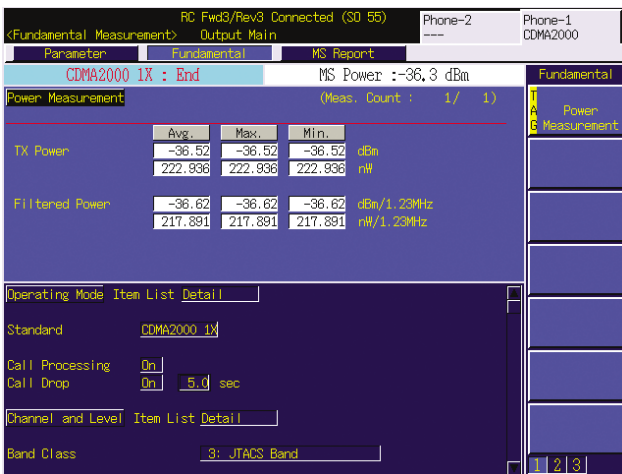

Modulation Analysis

Frequency, frequency error (in kHz and ppm), ρ (waveform quality), τ (time error), EVM, peak vector error, phase error, magnitude error and origin offset are measured simultaneously.
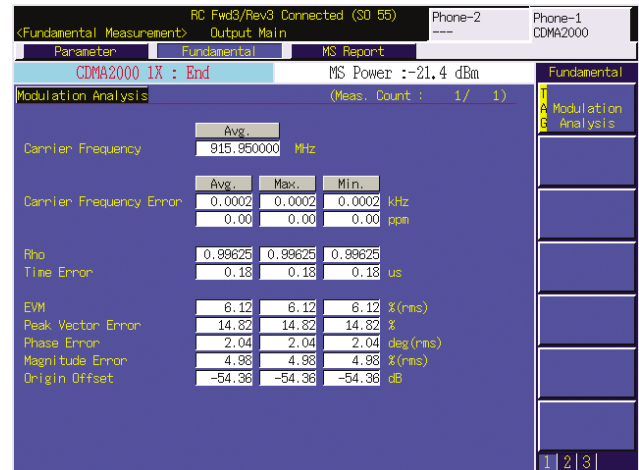

Access Probe Power

The first access probe from the CDMA2000 1X terminal is captured by the level trigger to measure average power.
This value is held after terminating the probe measurement once even in the Continuous Measurement mode, which is convenient for the Open Loop Output Power measurement described in C.S0011 of the 3GPP2 standard.
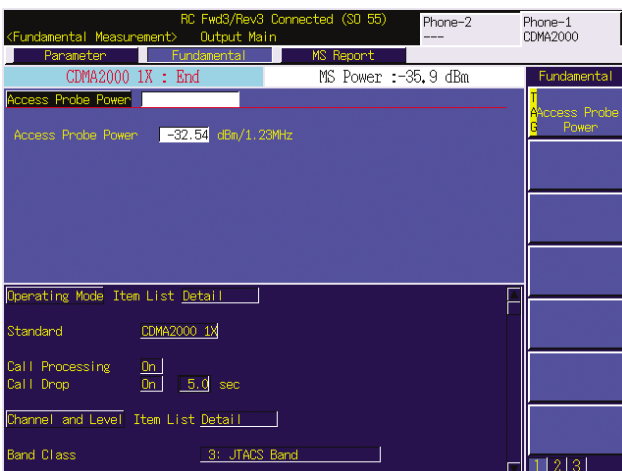

Code Domain Power

The CDMA2000 1X terminal code domain power and error are measured when Reverse RC is set to 3 or more.
The R-PICH, R-FCH, and R-SCH powers are all displayed along with the maximum power and channel numbers for inactive channels. In addition, Pass/Fail evaluation is performed to determine whether or not the inactive channel power satisifies the specifications.
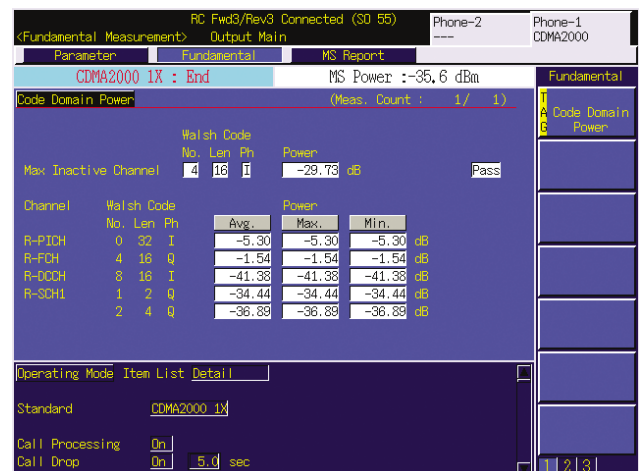
Occupied Bandwidth

Occupied bandwidth measurement can be user-defined in the range of 80% to 99.9% for the ratio of in-band power to total power.
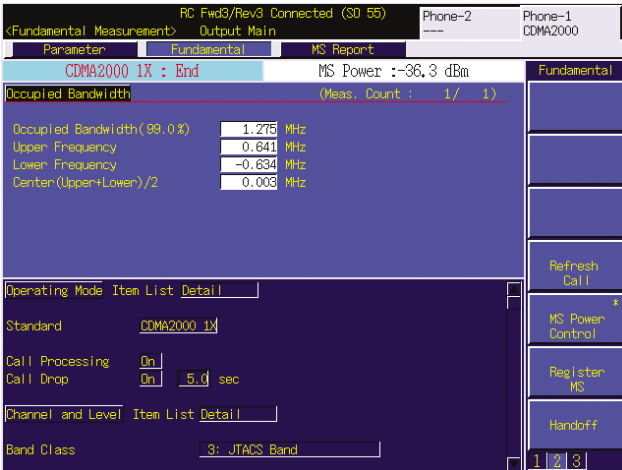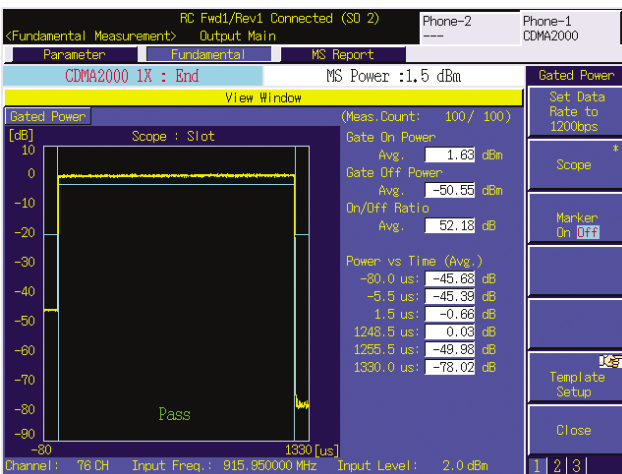

Spurious Emission

Pass/Fail evaluation of spurious emissions is easy. Spurious levels within ±4 MHz of the center frequency are compared with the template. The default for each band is a standard 3GPP2 template, saving setup time. In addition, the templates can be customized for any requirement and either 1 or 1.23 MHz bandwidth measurements can be performed as necessary.
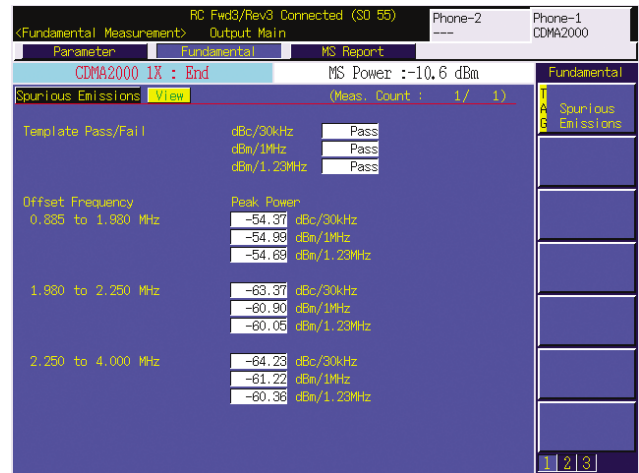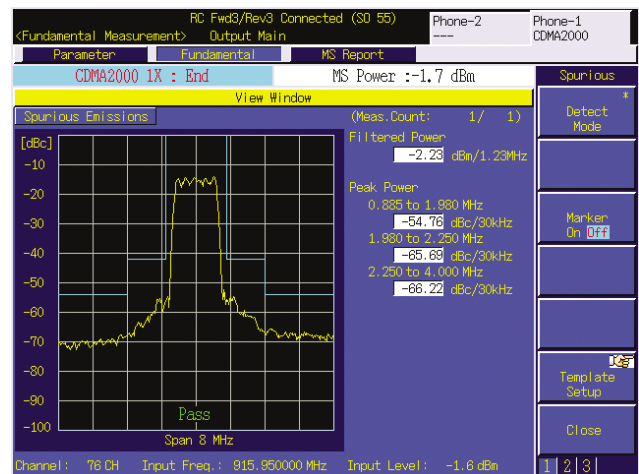

Gated Power Measurement

Gated Power is measured at RC1 or 2.
Gated On Power, Gated Off Power and the On/Off Ratio are measured simultaneously on screen.

A graph of the spurious emission waveform offers an at-a glance check of whether the waveform satisfies the 3GPP2 standard template.

Access Probe Power Measurement

The Access Probe Power screen measures the Access Probe transmitted continuously from a CDMA2000 1X terminal. (During measurement, Ack is not returned to the Access Probe from a CDMA2000 1X terminal.)
In addition to the level of each probe, the difference from the last probe level, probe detection time, probe transmission time and probe interval are measured simultaneously.
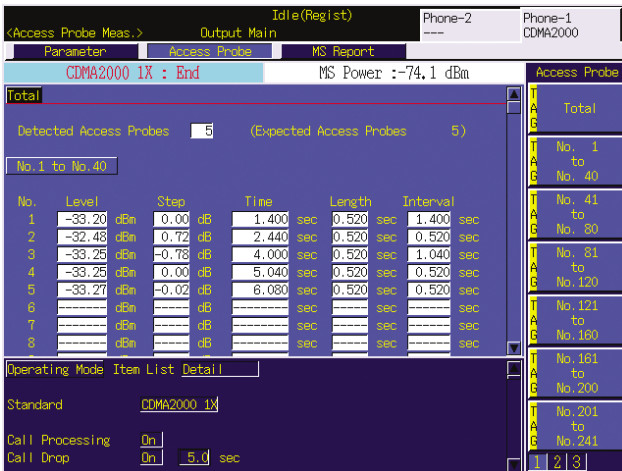
Open Loop Time Response Screen

The Open Loop Time Response screen is used to measure the time response of the CDMA2000 1X terminal open loop power control. Changes in the mobile terminal Tx power are measured between 100 ms from the point where the power of the forward link signal power changed.
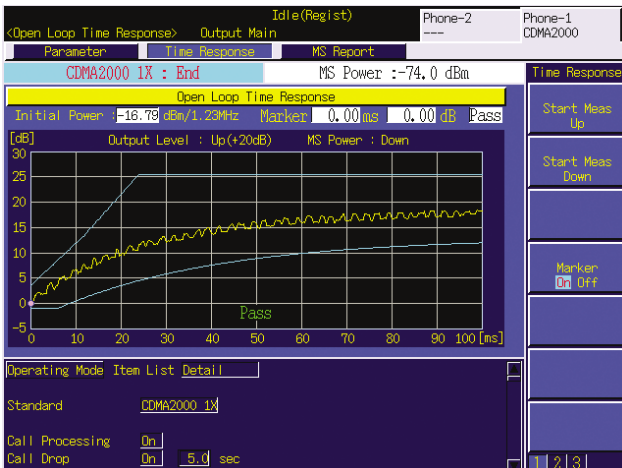
Receiver Measurements

Frame Error Rate

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.
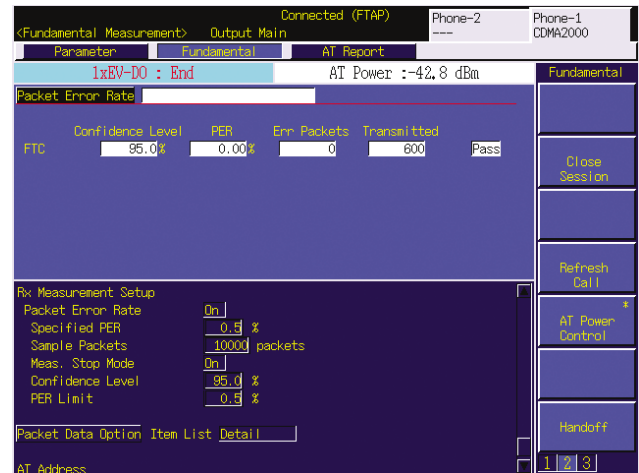
Call Processing

Connection Test

The Call Processing function supports connection tests, such as location registration, origination, termination, disconnection from network, and disconnection from mobile terminal. Service Options 1, 2, 3, 9, 33, 55, and 32768 are supported. A basic voice function can be tested by using loopback during a call.
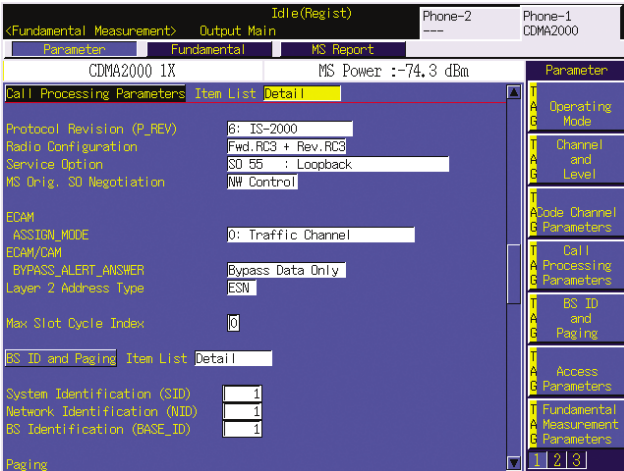
Mobile Terminal Report Monitor

This screen displays the periodically reported CDMA2000 1X terminal status.
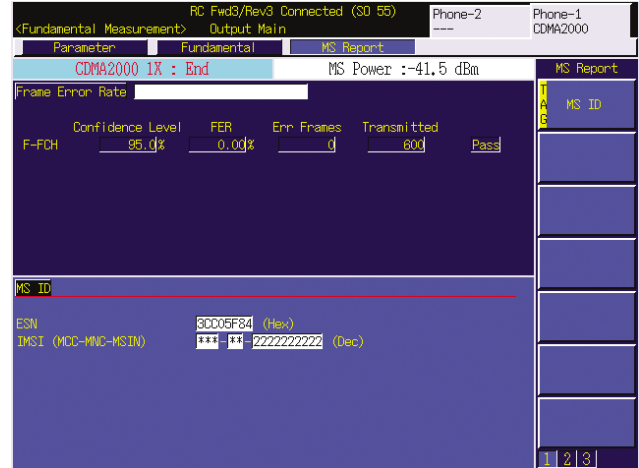
Handoff Function

The Handoff window is used to set parameters after Handoff [Band Class Channel, Protocol Revision (P_REV), Radio Configuration Service Option], and to perform Handoff according to the preset parameters.

Specifications

MT8820B-003 CDMA2000 Measurement Hardware, MX882002C CDMA2000 Measurement Software

Amplitude measurement	Frequency: 300 to 2700 MHz
	Input level: −65 to +35 dBm (Main Input/Output)
	Measurement accuracy: ±0.5 dB (−25 to +35 dBm), ±0.7 dB (−55 to −25 dBm), ±0.9 dB (−65 to −55 dBm)
	        (Filtered Power measurement, after Full cal, Input Level Setting)
	Linearity: ±0.2 dB (0 to −40 dB, ≥−55 dBm), ±0.4 dB (0 to −40 dB, ≥−65 dBm)
	        (Filtered Power measurement, Input Level Setting for reference)

Frequency/Modulation measurement	Frequency: 300 to 2700 MHz Input level: −30 to +35 dBm Carrier frequency accuracy: ±(Set frequency × reference oscillator accuracy + 10 Hz) Residual waveform quality: >0.999 Residual EVM: <2% rms
Occupied bandwidth	Input level: −10 to +35 dBm
Code domain power	Can be measured at Reverse RC3/RC4. Input level: −30 to +35 dBm Measurement accuracy: ±0.2 dB (code power: ≥−15 dBc), ±0.4 dB (code power: ≥−23 dBc)

RF signal generator	Output frequency: 300 to 2700 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: −30 to 0 dB, 0.1 dB step or off
	  SYNC, 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: <±0.2 dB (typ.) (≥−20 dB)
	PN offset: 0 to 511
	Waveform quality: >0.99 (pilot only, AWGN off)
	AWGN
	  AWGN level: −20 to +12 dB (relative level to CDMA signal) or off
	  Maximum CDMA signal output level at AWGN On: −28 dBm (at Main output), −18 dBm (at AUX output)

Error rate measurement	FER (Frame Error Rate) measurement: FER measurement with service option 2, 9, 55 and 32 (TDSO) Display items: FER, Confidence level, Sample frame count, Error frame count

Call processing	Band class: BC 0 to 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, 9, 32, 33, 55, 32768.
	PCH Data Rate: Full
	QPCH Data Rate: Full
	Fwd. FCH Data Rate: Full, half, quarter, eighth
	Fwd. FCH Walsh Code: 10, 14, 26, 30, 42, 46, 58, 62
	Fwd. DCCH Data Rate: Full (RC3, RC4, RC5)
	Fwd. DCCH Walsh Code: 10, 14, 26, 30, 42, 46, 58, 62
	Fwd. SCH: Max. 1 channel
	Fwd. SCH data rate
	  RC3: 9.6, 19.2, 38.4, 76.8, 153.6 Kbps
	  RC4: 9.6, 19.2, 38.4, 76.8, 153.6 Kbps
	  RC5: 14.4, 28.8, 57.6, 115.2, 230.4 Kbps
	Access channel: Access Ch.
	Rev. closed loop power control mode: Closed loop, All 1 (all down), Alternate, All 0 (all up)
	Supported protocols: IS-95B, J-STD-008C, ARIB T-53, Korean PCS, IS-2000 (SR1)
	Handoff: Universal Handoff, Band Class/Channel Handoff, Protocol Revision Handoff, RC/SO Handoff,
	        Analog Handoff (only when the MT8815B/MT8820B-011 audio board is installed.)

MX882002C-002 CDMA2000 External Packet Data

## Direct RF connection between CDMA2000 1X terminal and application server

The MX882002C-002 CDMA2000 External Packet Data is an optional software application that adds CDMA2000 1X packet data communications to the MX882002C Measurement Software option.
It supports transfer of packet data between a local or network application server and an Internet-enabled CDMA2000 1X terminal via an Ethernet connection to the MT8820B.
The following two packet data transfer modes are supported.

Data Loopback Mode

IIn this test mode, Radio Link Protocol (RLP) data is looped back to the RLP stack in the MT8820B and transmitted via forward link.

IP Data Communications Mode

This mode provides a predictable and controllable test "pipe" between the Internet (or other local application server) and CDMA2000 1X terminal in the native RF environment that is simulated by the base station emulator in the MT8820B hardware.
This mode provides an IP network connection to a CDMA2000 1X terminal and supports the CDMA2000 Packet Data Sevice Option (SO33), RLP, Point to Point Protocol (PPP), Internet Protocol (IP), and direct Ethernet connection.
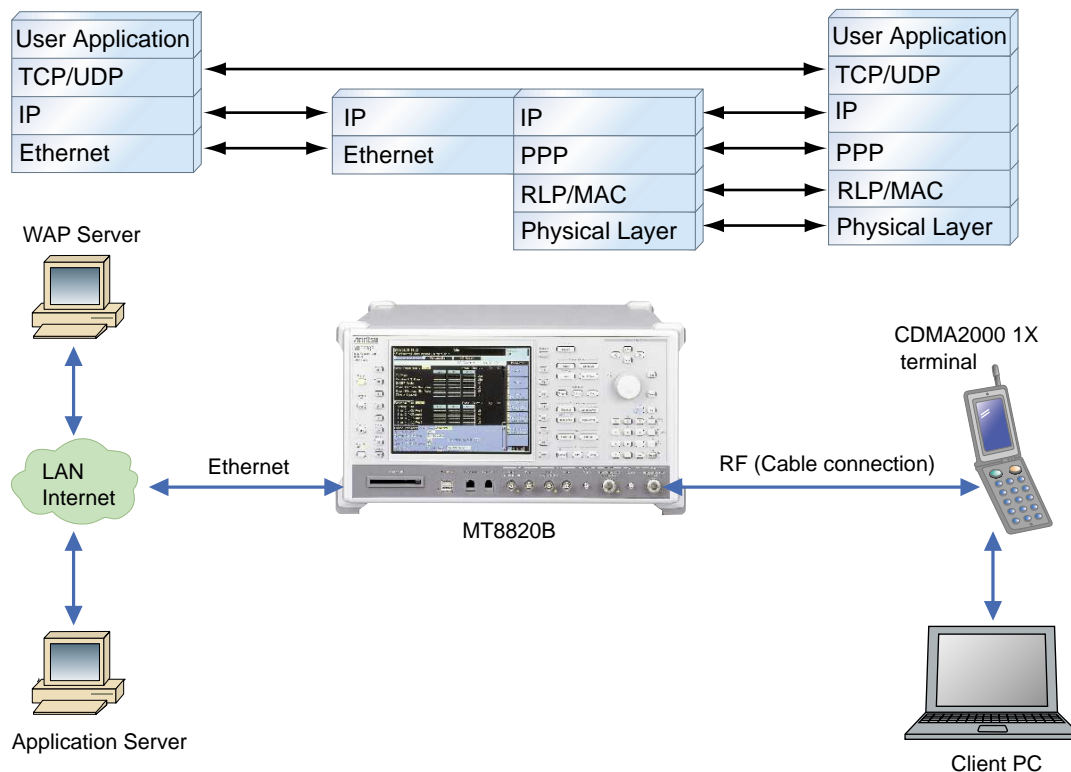
Example of IP Data Communications Mode

Specifications

MX882002C-002 CDMA2000 External Packet Data

|	
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 to loopback the RLP data unit received in reverse link to forward link PPP/IP: The mode to transfer IP packet data between a CDMA2000 1X terminal and a server

American Mobile Phone System (AMPS)

Transmitter Measurements

When the MX882002C CDMA2000 Measurement Software is installed in a main frame with the MT8820B Audio Board (Option 011), measurement of the RF characteristics of AMPS terminals as well as output and measurement of audio signals (requires MT8820B-011) are supported.

Transmitter Power

This function measures the output power of an AMPS terminal.
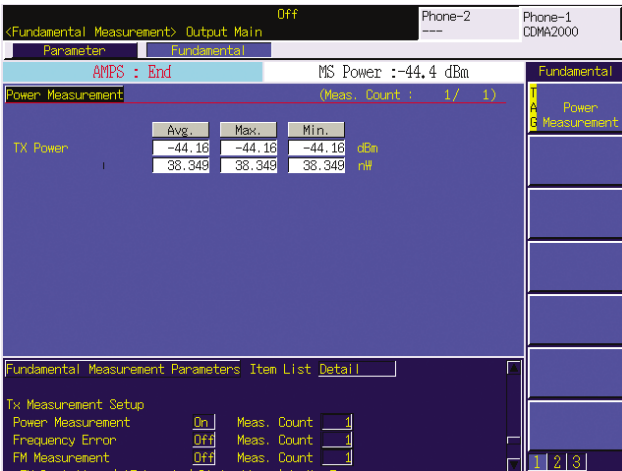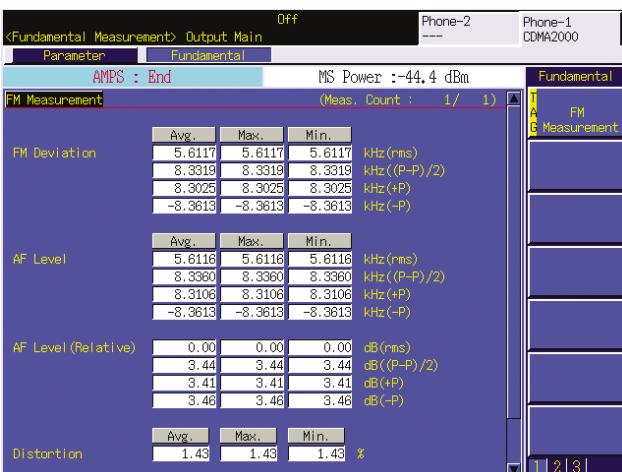
Frequency Error

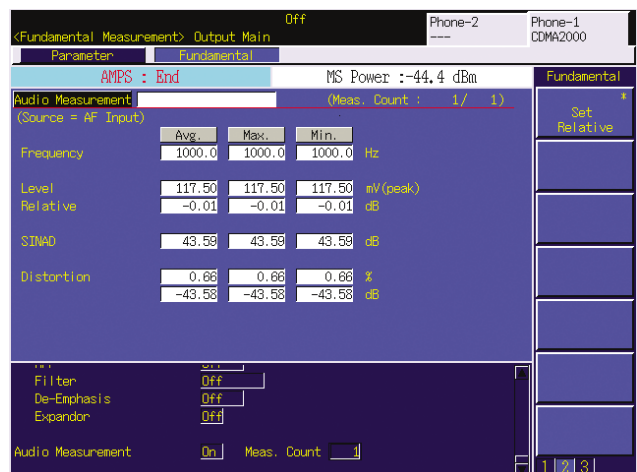The Frequency (kHz) and frequency error (ppm) are measured simultaneously on one screen.
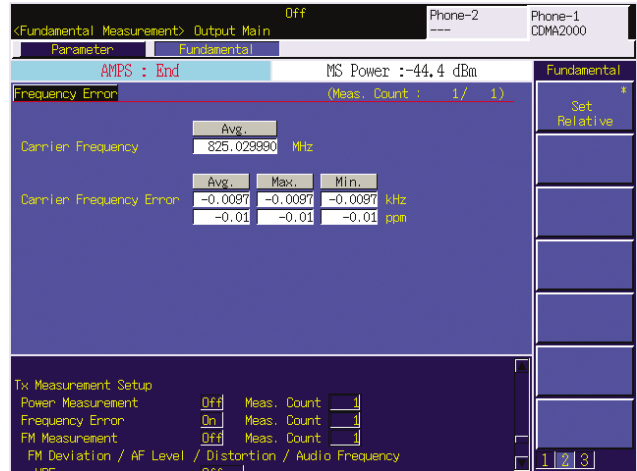
FM Measurement

The FM Deviation, AF Level, Distortion, and Audio Frequency are measured simultaneously on one screen.

Audio Measurement

Frequency, Level, SINAD (Signal to Noise And Distortion) and Distortion are measured simultaneously on one screen.

Specifications

MT8820B-011 Audio board, MX882002C CDMA Measurement Software (requires option 003)

Frequency/Amplitude measurement	Frequency range: 800 to 960 MHz Measurement level range: −65 to +35 dBm (Main Input/Output) Accuracy: (After calibration, at Input Level setting value) 　±0.5 dB (−25 to +35 dBm), ±0.7 dB (−55 to −25 dBm), ±0.9 dB (−65 to −55 dBm) 　∗Main Input/Output, after calibrated by internal power meter Linearity: (Filter Power measurement, referenced to Input Level setting value) 　±0.2 dB (0 to −40 dB, ≥−55 dBm), ±0.4 dB (0 to −40 dB, ≥−65 dBm)
RF Frequency	Measurement level range: −30 to +35 dBm Carrier frequency accuracy: ± (set frequency × reference oscillator accuracy + 10 Hz)
FM measurement	Measurement level range: −30 to +35 dBm Measurement deviation: 0 Hz to 20 kHz Demodulation frequency range: 30 Hz to 20 kHz
Deviation measurement	Accuracy: Indicated value ±2% + residual FM (at 1 kHz demodulation frequency) Frequency response: ±0.5 dB (demodulation frequency 30 Hz to 20 kHz, referenced to 1 kHz, 5-kHz deviation) Residual FM: <10 Hz rms (demodulation frequency 300 Hz to 3 kHz)
Demodulation distortion	Demodulation distortion: <0.3% (demodulation frequency: 1 kHz, demodulation bandwidth 0.3 to 3 kHz, deviation 5 kHz)
Analog RF signal generator (FM)	Output frequency range: 800 to 960 MHz, 1 Hz steps Deviation: 0 to 20 kHz, 5 Hz steps Modulation signal: Internal modulation only, sine wave, setting frequency range 20 Hz to 10 kHz, 　　　　　　　　　(5 Hz steps) Deviation accuracy: ± (3.5 + 10 Hz) 　　　　　　　　　(at 1 kHz modulation frequency, demodulation bandwidth 300 Hz to 3 kHz) Frequency response: ±0.5 dB (modulation frequency: 0.3 to 3 kHz) 　　　　　　　　　±1.0 dB (modulation frequency: 20 Hz to 10 kHz) 　　　　　　　　　(4 Hz deviation, modulation frequency: referenced to 1 kHz) Modulation deviation: ≤−50 dB 　　　　　　　　　(modulation frequency: 1 kHz, deviation: ≥4 kHz, demodulation bandwidth: at 0.3 to 3 kHz)
Analog RF signal generator (SAT)	Modulation frequency: 5970, 6000, 6030 Hz, Off Deviation: 2 kHz fixed
AF measurement	Input frequency 　Frequency range: 50 Hz to 10 kHz Input level 　Input voltage range: 1 mV peak to 5 V peak (AF Input connector) 　Maximum allowable input voltage: 30 V rms Frequency measurement 　±(reference oscillator accuracy + 0.5 Hz) Level measurement 　Accuracy: ±0.2 dB (≥10 mV peak), ±0.4 dB (≥1 mV peak, ≥1 kHz) SINAD measurement 　Measurement range: ≥60 dB (≥1000 mV peak), ≥54 dB (≥50 mV peak), ≥46 dB (≥10 mV peak) 　(At Frequency: 1 kHz) Distortion ratio measurement 　Measurement range (At Frequency: 1 kHz): 　≤−60 dB (≥1000 mV peak), ≤−54 dB (≥50 mV peak), ≤−46 dB (≥10 mV peak) Input impedance 　100 kΩ
AF output	Output Frequency 　Frequency range: 30 Hz to 10 kHz, 1 Hz step 　Accuracy: ±(Set frequency x reference oscillator accuracy + 0.1 Hz) Output level 　Set range: 0 to 5 V peak (AF Output connector) 　Set resolution: 1 mV (≤5 V peak), 100 µV (≤500 mV peak), 10 µV (≤50 mV rms) 　Accuracy: ±0.2 dB (≥10 mV peak, ≥50 Hz), ±0.3 dB (≥10 mV peak, <50 Hz) Waveform distortion (At Band ≤30 kHz) 　≤−60 dB (≥500 mV peak, ≤5 kHz) 　≤−54 dB (≥70 mV peak) Output impedance: ≤1 Ω Maximum output current: 100 mA

MX882003C

1xEV-DO Measurement Software

Advanced high-speed measurement method and batch measurement supporting the manufacture of 1xEV-DO terminals

The MX882003C 1xEV-DO Measurement Software[*1] is for measuring the performance of mobile terminals conforming to the 1xEV-DO standard (CDMA2000® 1X Evolution Data Only defined in the 3GPP2 standard). It uses advanced DSP and parallel measurements to cut manufacturing and inspection times for 1xEV-DO terminals. Several measurement items can be selected freely for batch measurement and a one-touch operation allows each selected batch measurement item to be executed repeatedly for the specified number of times. Pass/Fail evaluation of the main measurement items, including transmission frequency, modulation accuracy, output power, Code Domain power, and PER, is quick and easy. The built-in GPIB interface supports easy configuration of automated test systems for 1xEV-DO production lines and on-site maintenance.

*1: Requires MT8820B-003, MT8820B-004 and MX882002C
   CDMA2000® is a registered trademark of the Telecommunications Industry Association (TIA-USA).

• 1xEV-DO Measurement Items

| Tests	3GPP2 C.S0033	Test items
Receiver	3.1.1.1	Frequency Coverage Requirement
	3.1.1.3.1	Receiver Sensitivity and Dynamic Range
Transmitter	3.1.2.1	Frequency Requirement
	3.1.2.2.1	Time Reference
	3.1.2.2.2	Waveform Quality and Frequency Accuracy
	3.1.2.3.2	Time Response of Open Loop Power Control
	3.1.2.3.4	Maximum RF Output Power
	3.1.2.3.5	Minimum Controlled Output Power
	3.1.2.3.6	Standby Output Power
	3.1.2.3.7	RRI Channel Output power
	3.1.2.3.8	Code Domain Power
	3.1.2.4.1	Conducted Spurious Emissions
	3.1.2.4.3	Occupied Bandwidth

MX882003C 1xEV-DO Measurement Software

Transmitter Measurements

Code Domain Power

The 1xEV-DO terminal code domain error is measured. The PICH (pilot-ch), RRI, DRC, ACK and Data powers are all displayed along with the maximum power and channel numbers of inactive channels on one screen.
In addition, Pass/Fail evaluation is performed to determine whether or not the inactive channel power satisifies the specifications.
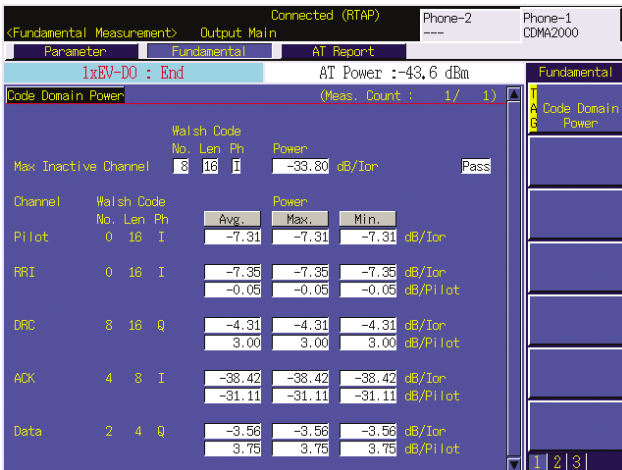
Open Loop Time Response Screen

The Open Loop Time Response screen is used to measure the time response of the 1xEV-DO terminal open loop power control. Changes in the terminal transmitted power are measured between 100 ms from the point where the power of the forward link signal changed.
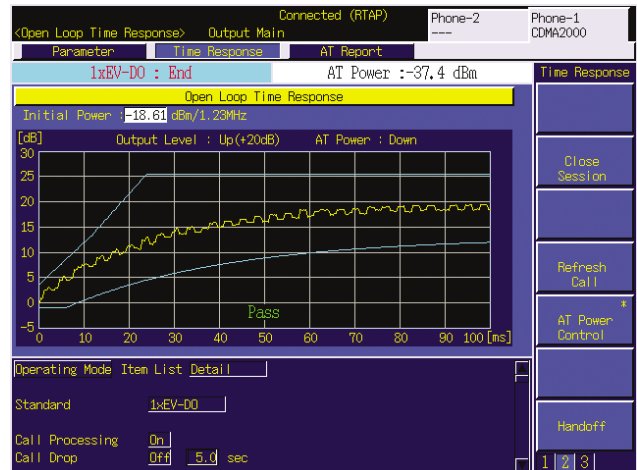
∗Output power, modulation analysis, occupied bandwidth, etc., can be measured similarly to the MX882002C.

Access Probe Power

The first access probe from the 1xEV-DO terminal is captured by the level trigger to measure the average power. This value is held after terminating the probe measurement once even in the Continuous Measurement mode, which is convenient for the Open Loop Output Power measurement described in C.S0033 of the 3GPP2 standard.
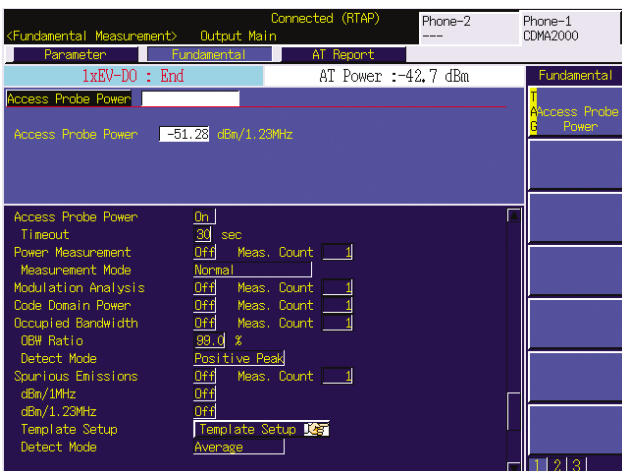
Receiver Measurement

Packet Error Rate

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

Call Processing

Connection Test

The Call Processing function supports connection tests, such as Open Session, Closed Session, AT Origination, AN Release, and AT Release.

Terminal Report Monitor

This screen displays the periodically reported 1xEV-DO terminal status.

Specifications

MT8820B-004 1xEV-DO Measurement Hardware, MX882003C 1xEV-DO Measurement Software

Amplitude measurement	Dependent on the performance of MX882002C
Modulation analysis	Frequency: 300 to 2700 MHz Input level: −30 to +35 dBm Carrier frequency accuracy: reference oscillator accuracy +10 Hz Residual waveform quality: >0.999 Residual EVM: <2% rms
Code domain power	Input level: −10 to +35 dBm Measurement accuracy: ±0.2 dB (code power ≥−15 dBc), ±0.4 dB (code power ≥−23 dBc)

RF signal generator	Output frequency: 300 to 2700 MHz (1 Hz step)
	Channel level: Pilot channel, MAC channel, Control channel, Traffic channel, All 0 dB (reference Ior)
	PN offset: 0 to 511
	Wave quality: >0.99 (pilot only, AWGN Off)
	AWGN:
	      AWGN Level: −20 to +12 dB (relative to CDMA signal) or Off
	      Maximum output level of CDMA signal at AWGN on:
	      −28 dBm (at Main output)
	      −18 dBm (at AUX output)

Error rate measurement	PER (Packet Error Rate) measurement: PER measurement with FTAP Display items: PER, Confidence level, Sample packet count, Error packet count
Call processing	Band class: BC0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 Call control: Open Session, Close Session, AT Origination, NW Origination, AT Release, NW Release, Hard Handoff, Softer Handoff Rev. closed loop power control mode: Closed loop, Alternate, All 0 (all up), All 1 (all down) Test application protocol: RTAP, FTAP, FTAP + RTAP

MX882003C-002 1xEV-DO External Packet Data

Direct RF connection between 1xEV-DO terminal and application server

The MX882003C-002 1xEV-DO External Packet Data is an optional software application that adds 1xEV-DO external packet data communications to the MX882003C 1xEV-DO External Measurement Software option. It supports transfer of packet data between a local or network application server and an Internet-enabled CDMA2000 1xEV-DO terminal via an Ethernet connection to the MT8820B. The IP data communications mode is supported as described below.

IP Data Communications Mode

This mode provides a predictable and controllable test "pipe" between the Internet (or other local application server) and 1xEV-DO terminal in the native RF environment that is simulated by the base station simulator in the MT8820B hardware. This mode provides an IP network connection to a 1xEV-DO terminal and supports Default Packet Point to Point Protocol (PPP), Internet Protocol (IP), and direct Ethernet connection.
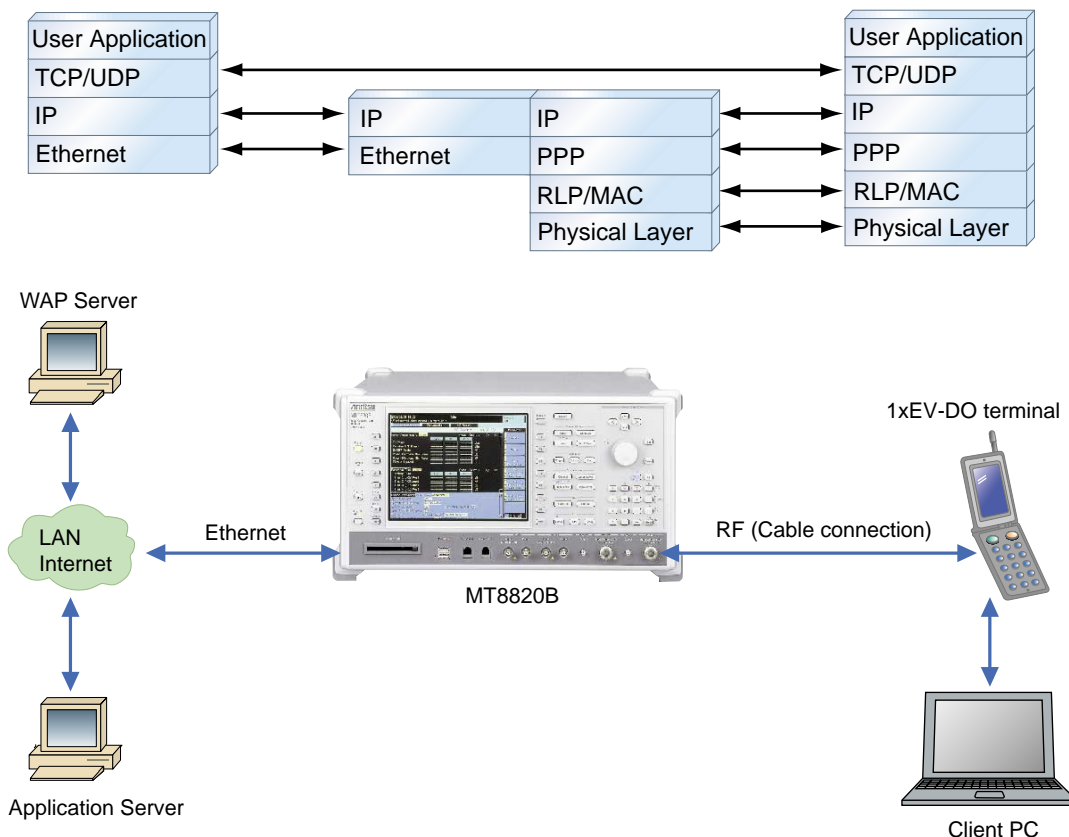
Example of IP Data Communications Mode

Specifications

MX882003C-002 1xEV-DO external packet data

Application Protocol	Default Packet
Packet Data Mode	PPP/IP (transfers IP packet data between 1xEV-DO terminal and server)

CDMA2000 1X/1xEV-DO Synchronous Function

For Functional Tests of CDMA2000 1X and CDMA2000 1xEV-DO

By using the MX882002C and MX882003C with two MT8820B units or one MT8820B unit with the Parallelphone[1] measurement option, the CDMA2000 1X and 1xEV-DO forward link signals can be output with synchronized system times, supporting function tests of terminals for both CDMA2000 1X and 1xEV-DO systems.[2]

[1]: Parallelphone is the registered trademark of Anritsu Corporation

[2]: This function cannot be used when MX882000C W-CDMA Measurement Software is loaded
 Please perform unload, when MX882000C is loaded

CDMA2000 1xEV-DO

CDMA2000 1X

Two MT8820B units

CDMA2000 1xEV-DO

CDMA2000 1X

One MT8820B unit and Parallelphone
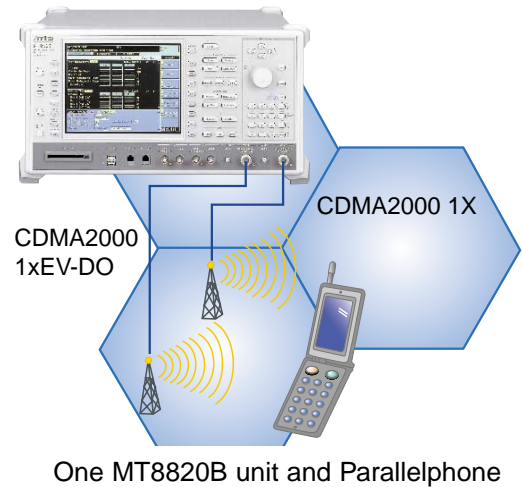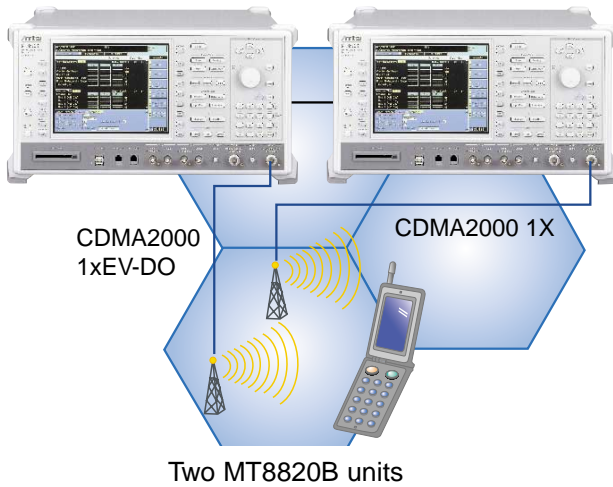
Ordering Information

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

Model/Order No.	Name
	Main frame
MT8820B	Radio Communication Analyzer
	Standard accessories
	Power Cord, 2.6 m:　　　　　　　　　　1 pc
Z0906A	ANR-CFX00T64 (CF card, 64 MB):　　　1 pc
CA68ADP	PC card Adapter:　　　　　　　　　　1 pc
W2778AE	MT8815B/MT8820B operation manual (CD-ROM):1 copy
	Options
MT8820B-001	W-CDMA Measurement Hardware
MT8820B-002	TDMA Measurement Hardware
MT8820B-003	CDMA2000 Measurement Hardware
MT8820B-004	1xEV-DO Measurement Hardware
MT8820B-011	Audio Board
MT8820B-012	Parallel Phone Measurement Hardware
MT8820B-101	W-CDMA Measurement Hardware Retrofit
MT8820B-102	TDMA Measurement Hardware Retrofit
MT8820B-103	CDMA2000 Measurement Hardware Retrofit
MT8820B-104	1xEV-DO Measurement Hardware Retrofit
MT8820B-111	Audio Board Retrofit
MT8820B-112	Parallel Phone Measurement Hardware Retrofit
	Softwares
MX882000C	W-CDMA Measurement Software (requires MT8820B-001 and MX88205xC)
MX882000C-001	W-CDMA Voice Codec (requires MT8820B-011 and MX882000C)
MX882000C-011	HSDPA Measurement Software (requires MT8820B-001, MX882000C and MX882050C)
MX882001C	GSM Measurement Software (requires MT8820B-002)
MX882001C-001	GSM Voice Codec (requires MT8820B-011 and MX882001C)
MX882001C-002	GSM External Packet Data (requires MX882001C)
MX882001C-011	EGPRS Measurement Software (requires MX882001C)
MX882002C	CDMA2000 Measurement Software (requires MT8820B-003)
MX882002C-002	CDMA2000 External Packet Data (requires MX882002C)
MX882003C	1xEV-DO Measurement Software (requires MT8820B-003, MT8815B-004 and MX882002C)
MX882003C-002	1xEV-DO External Packet Data (requires MX882003C)
MX882010C	Parallel Phone Measurement Software[1] [requires MT8820B-012, two identical measurement hardware sets (2 board/set) and one measurement Software][1]
MX882050C	W-CDMA Call Processing Software[2] (requires MX882000C)
MX882050C-002	W-CDMA External Packet Data[2, 3] (requires MX882050C)
MX882050C-003	W-CDMA Video Phone Test[2] (requires MX882050C)
MX882050C-009	W-CDMA Band IX[2] (requires MX882050C)
MX882050C-011	HSDPA External Packet Data[2] (requires MX882000C-011)
MX882070C	W-CDMA Ciphering Software[2] (requires MX882050C)
MX882051C	W-CDMA Call Processing Software[2] (requires MX882000C)
MX882051C-002	W-CDMA External Packet Data[2, 3] (requires MX882051C)
MX882051C-003	W-CDMA Video Phone Test[2] (requires MX882051C)
MX882071C	W-CDMA Ciphering Software[2] (requires MX882051C)

Model/Order No.	Name
W2464AE	MX882000C Operation Manual[4] (supplied with MX882000C)
W2770AE	MX882001C Operation Manual[4] (supplied with MX882001C)
W2789AE	MX882002C Operation Manual[4] (supplied with MX882002C)
W2792AE	MX882003C Operation Manual[4] (supplied with MX882003C)
W2766AE	MX88205xC Operation Manual[4] (supplied with MX88205xC)
W2772AE	MX88207xC Operation Manual[4] (supplied with MX88207xC)
	Warranty
MT8820B-ES210	Extended Two Year Warranty Service
MT8820B-ES310	Extended Three Year Warranty Service
MT8820B-ES510	Extended Five Year Warranty Service
	Application parts
P0019	TEST USIM001[5]
P0027	W-CDMA/GSM Test USIM
A0013	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-over cable [D-sub (9 pin, P-type) • D-sub (9 pin, P-type), reverse cable, used 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 with protective cover and casters)
B0499B	Carrying Case (hard type, with protective cover, without casters)
W2776AE	MT8815B/MT8820B Operation Manual (booklet)
W2765AE	MX882000C Operation Manual (booklet)
W2771AE	MX882001C Operation Manual I (booklet)
W2790AE	MX882002C Operation Manual Panel Operation (booklet)
W2791AE	MX882002C Operation Manual Remote Control (booklet)
W2793AE	MX882003C Operation Manual Panel Operation (booklet)
W2794AE	MX882003C Operation Manual Remote Control (booklet)
W2767AE	MX88205xC Operation Manual (booklet)
W2773AE	MX88207xC Operation Manual (booklet)

∗1: The measurement hardware supporting the Parallel Phone Measurement Software are the MT8820B-001, MT8820B-002, MT8820B-003, MT8820B-004, which can be installed simultaneously
∗2: For terminal connection, contact your Anritsu sales representative
∗3: The MX882050C pre-installs the integrity protection functionality
∗4: Supplied as CD-ROM
∗5: The Test USIM001 only supports the W-CDMA mode. When GSM connection is required, use the P0027

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

Note:

/Anritsu

Anritsu Corporation
5-1-1 Onna, Atsugi-shi, Kanagawa, 243-8555 Japan
Phone: +81-46-223-1111
Fax: +81-46-296-1264

● **U.S.A.**
Anritsu Company
1155 East Collins Blvd., Richardson, TX 75081, U.S.A.
Toll Free: 1-800-267-4878
Phone: +1-972-644-1777
Fax: +1-972-671-1877

● **Canada**
Anritsu Electronics Ltd.
700 Silver Seven Road, Suite 120, Kanata,
Ontario K2V 1C3, Canada
Phone: +1-613-591-2003
Fax: +1-613-591-1006

● **Brazil**
Anritsu Eletrônica Ltda.
Praca Amadeu Amaral, 27 - 1 Andar
01327-010-Paraiso-São Paulo-Brazil
Phone: +55-11-3283-2511
Fax: +55-11-3288-6940

● **U.K.**
Anritsu EMEA Ltd.
200 Capability Green, Luton, Bedfordshire, LU1 3LU, U.K.
Phone: +44-1582-433200
Fax: +44-1582-731303

● **France**
Anritsu S.A.
9 Avenue du Québec, Z.A. de Courtabœuf
91951 Les Ulis Cedex, France
Phone: +33-1-60-92-15-50
Fax: +33-1-64-46-10-65

● **Germany**
Anritsu GmbH
Nemetschek Haus, Konrad-Zuse-Platz 1
81829 München, Germany
Phone: +49-89-442308-0
Fax: +49-89-442308-55

● **Italy**
Anritsu S.p.A.
Via Elio Vittorini 129, 00144 Roma, Italy
Phone: +39-6-509-9711
Fax: +39-6-502-2425

● **Sweden**
Anritsu AB
Borgafjordsgatan 13, 164 40 KISTA, Sweden
Phone: +46-8-534-707-00
Fax: +46-8-534-707-30

● **Finland**
Anritsu AB
Teknobulevardi 3-5, FI-01530 VANTAA, Finland
Phone: +358-20-741-8100
Fax: +358-20-741-8111

● **Denmark**
Anritsu A/S
Kirkebjerg Allé 90, DK-2605 Brøndby, Denmark
Phone: +45-72112200
Fax: +45-72112210

● **United Arab Emirates**
Anritsu EMEA Ltd.
Dubai Liaison Office
P O Box 500413 - Dubai Internet City
Al Thuraya Building, Tower 1, Suit 701, 7th Floor
Dubai, United Arab Emirates
Phone: +971-4-3670352
Fax: +971-4-3688460

● **Singapore**
Anritsu Pte. Ltd.
10, Hoe Chiang Road, #07-01/02, Keppel Towers,
Singapore 089315
Phone: +65-6282-2400
Fax: +65-6282-2533

● **P.R. China (Hong Kong)**
Anritsu Company Ltd.
Suite 923, 9/F., Chinachem Golden Plaza, 77 Mody Road,
Tsimshatsui East, Kowloon, Hong Kong, P.R. China
Phone: +852-2301-4980
Fax: +852-2301-3545

● **P.R. China (Beijing)**
Anritsu Company Ltd.
Beijing Representative Office
Room 1515, Beijing Fortune Building,
No. 5, Dong-San-Huan Bei Road,
Chao-Yang District, Beijing 10004, P.R. China
Phone: +86-10-6590-9230
Fax: +86-10-6590-9235

● **Korea**
Anritsu Corporation, Ltd.
8F Hyunjuk Building, 832-41, Yeoksam Dong,
Kangnam-ku, Seoul, 135-080, Korea
Phone: +82-2-553-6603
Fax: +82-2-553-6604

● **Australia**
Anritsu Pty. Ltd.
Unit 21/270 Ferntree Gully Road, Notting Hill,
Victoria 3168, Australia
Phone: +61-3-9558-8177
Fax: +61-3-9558-8255

● **Taiwan**
Anritsu Company Inc.
7F, No. 316, Sec. 1, Neihu Rd., Taipei 114, Taiwan
Phone: +886-2-8751-1816
Fax: +886-2-8751-1817

● **India**
Anritsu Corporation
India Liaison Office
Unit No. S-3, Second Floor, Esteem Red Cross Bhavan,
No. 26, Race Course Road, Bangalore 560 001, India
Phone: +91-80-32944707
Fax: +91-80-22356648

Please Contact:

060906