

For MT8820A Radio Communication Analyzer

# MX882004A

PDC Measurement Software



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## PDC Measurement Software

### ***Solution for PDC mobile terminal production lines***

The MX882004A PDC Measurement Software supports transmit/receive measurements of mobile terminals conforming to the PDC system, the most common system in Japan. By installing the MX882004A PDC Measurement Software in the MT8820A mainframe, one unit can evaluate major transmission/reception characteristics of common digital mobile terminals used in Japan.

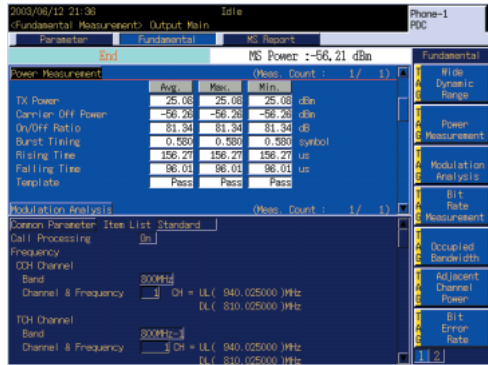
Advanced DSP and parallel measuring technologies greatly reduce manufacturing and test time for mobile terminals. In addition, multiple measurement items can be selected freely for batch processing while the number of repetitive measurements can be set for each individual measurement. The selected measurement items can be batch-measured with just one touch, thus a pass/fail evaluation on major test items such as transmission frequency, modulation accuracy, transmission power, adjacent channel leakage power & BER can be conducted simply and quickly.

It can be built into automated production lines and can create an automated on-site maintenance test system as the GPIB interface is equipped as standard.

# Transmission Measurement

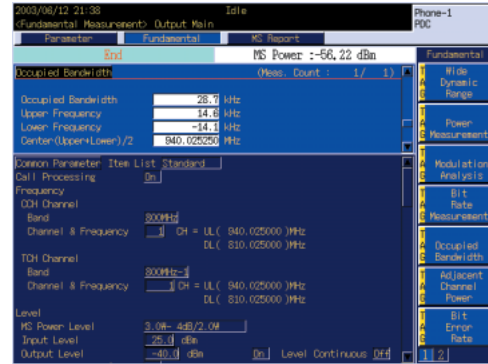
## Transmission Power

Transmission power for a PDC terminal is measured. Maximum, average and minimum values of measured results are indicated by setting the number of repetitive measurements to 2 or above, so the variations in terminal characteristics can be assessed. This repetitive measurement function is also equipped for other measurements.



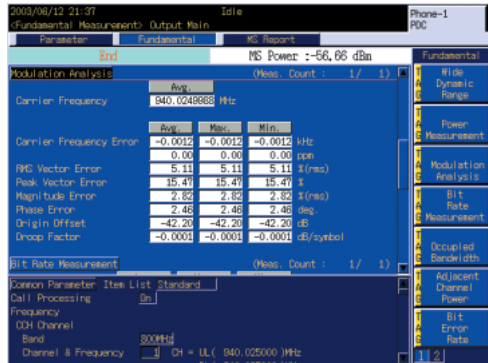
## Occupied Bandwidth

Occupied bandwidth of a PDC terminal is measured. The bandwidth ratio for total power can be changed within the range of 80.0 to 99.9%. Supports measurements in the high-speed mode.



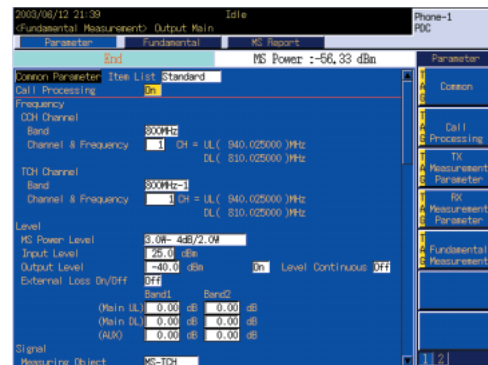
## Modulation Accuracy

Frequency, frequency errors (in kHz & ppm), modulation accuracy, phase error, amplitude error and origin offset of a PDC terminal are measured simultaneously.



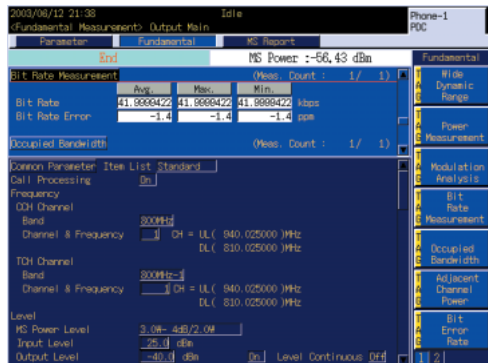
## Adjacent Channel Power

Adjacent channel power of a PDC terminal is measured. Measures power spectrum at 4 frequency points, -100 kHz, -50 kHz, +50 kHz and +100 kHz, offset from the carrier frequency. Advanced DSP technology and parallel processing of power spectrum with other measurements enable high-speed measurement.



## Transmission Speed

Transmission speed and transmission speed error of a PDC terminal can be measured.

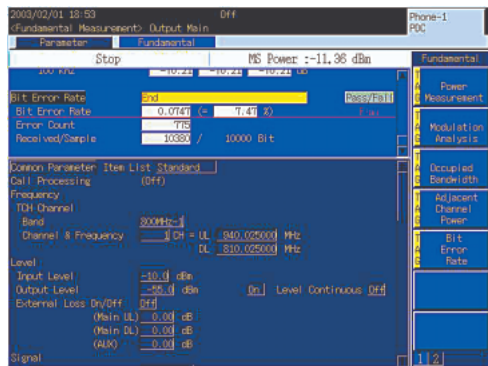




# Reception Measurement

## Error Rate Test

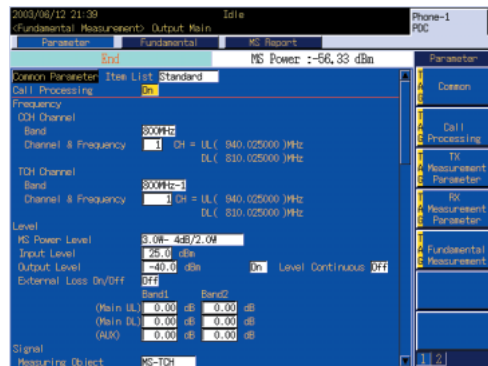
Bit error rate can be measured on receipt of demodulation data and clocks output from a PDC terminal by controlling the PDC terminal with an external PC. This measurement can be performed in parallel with transmitter measurements.



# Call Processing Function

## Connection Test

The call processing function enables performance of various connection tests including location registration, terminal call origination, network call origination, disconnection from mobile terminal and disconnection from network.



## Mobile Terminal Report Monitor

PDC terminal status can be displayed based on the measurement report that the mobile terminal sends back to the tester. "RCH RSSI" monitoring shows the downlink RF signal level received by the PDC terminal.



# High-speed, User-friendly GPIB Controls

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## **Eliminating Dependence on Measurement Screen**

Readout and changes of settings can be performed freely without having to change screens, even when no items that exist on screen are currently being displayed. This controls loss time effects, critical to screen plotting

## **Batch Measurement Results Readout Command**

All results for batch measurements can be read out with one "ALLMEAS?" command. In addition, the desired measurement results can be selected for readout by specifying measurement targets such as "ALLMEAS? MOD" (Modulation Analysis). Decreases in the number of GPIB commands lower the load for the MT8820A and controller PC while enhancing measurement throughput. Since the step size of a control program is reduced, it's effective in creating a control program with high maintainability that's easy to view.

# Specifications

## • MT8820A-02 TDMA Measurement Hardware, MX882004A PDC Measurement Software

Frequency/Modulation measurement	<p>Frequency: 300 to 2200 MHz</p> <p>Input level range: -30 to +40 dBm (measurement object: TCH), -30 to +35 dBm (measurement object: UPCH continuous wave)</p> <p>Measurement items: TCH, UPCH, continuous wave</p> <p>Carrier frequency accuracy: <math>\pm</math> (reference oscillator accuracy + 1 Hz)</p> <p>Modulation accuracy: <math>\pm</math> (2% of indicated value + 0.7%) rms</p> <p>Origin offset accuracy: <math>\pm</math>0.5 dB (relative to signal of -30 dBc)</p> <p>Transmission rate: <math>\pm</math>1 ppm (measurement range: 42 kbps <math>\pm</math>100 ppm)</p>
Amplitude measurement	<p>Frequency range: 300 to 2200 MHz</p> <p>Input level range: -30 to +40 dBm (measurement object: TCH), -30 to +35 dBm (measurement object: UPCH continuous wave)</p> <p>Measurement items: TCH, UPCH, continuous wave</p> <p>Measurement accuracy: <math>\pm</math>0.5 dB (-20 to +40 dBm), <math>\pm</math>0.7 dB (-30 to -20 dBm) *After calibration</p> <p>Linearity: <math>\pm</math>0.2 dB (0 to -40 dB, <math>\geq</math>-30 dBm)</p> <p>Power measurement range at carrier off: <math>\geq</math>65 dB (input level: <math>\geq</math>-10 dBm), <math>\geq</math> (Amplitude measurement value [dBm] + 80) dB (wide dynamic range power measurement)</p>
Occupied bandwidth measurement	<p>Frequency range: 300 to 2200 MHz</p> <p>Input level range: -10 to +40 dBm (measurement object: TCH), -10 to +35 dBm (measurement object: UPCH continuous wave)</p> <p>Measurement items: TCH, UPCH, continuous wave</p>
Adjacent channel power measurement	<p>Frequency range: 300 to 2200 MHz</p> <p>Input level range: -10 to +40 dBm (measurement object: TCH), -10 to +35 dBm (measurement object: UPCH continuous wave)</p> <p>Measurement items: TCH, UPCH, continuous wave</p> <p>Measurement range: <math>\leq</math>-60 dB (50 kHz offset), <math>\leq</math>-65 dB (100 kHz offset)</p>
RF signal generator	<p>Output frequency: 300 to 2200 MHz, 1 Hz step</p> <p>Modulation accuracy: <math>\leq</math>3%rms</p> <p>Modulation data Continuous wave output: PN9, PN15 and repetition of arbitrary 4-bit data Burst wave output: PN9, PN15</p>
Error rate measurement	<p>Function: Bit error rate measurement</p> <p>Measurement items: Serial data inputted from the Call Proc. I/O terminal of a back panel</p>
Call processing	<p>Call control: Location registration, call origination, call termination, communication, disconnection from network, disconnection from mobile terminal</p> <p>Mobile terminal control: Output level, time slot, time alignment</p>
Channel coding	Full rate, Half rate
Frequency band	800 MHz-1, 800 MHz-2, 800 MHz-3, 1.5 GHz

# 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	GPIO cable, 1 m
J0008	GPIO 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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