MT8820B
Radio Communication Analyzer
30 MHz to 2.7 GHz
Unit for Basic Tx and Rx Measurements of W-CDMA/HSPA/HSPA Evolution, GSM/GPRS/EGPRS, CDMA2000 1X/1xEV-DO Rev. A, PHS/Advanced PHS, and TD-SCDMA/HSPA Systems

Supports Multi-Communication Systems

The MT8820B Radio Communication Analyzer platform covers a frequency range of 30 MHz to 2.7 GHz. When the dedicated optional measurement software and hardware is installed, the major Tx and Rx characteristics of W-CDMA/HSPA/HSPA Evolution, GSM/GPRS/EGPRS, CDMA2000 1X, CDMA2000 1xEV-DO Rev. A, PHS/Advanced PHS, and TD-SCDMA/HSPA terminals can be measured using a single MT8820B unit.

Advanced Digital Signal Processing and Batch Measurement

Manufacturing and inspection test times have been dramatically cut by incorporating advanced DSP and parallel measurement technologies. Furthermore, several measurement items can be selected freely for batch measurement, and the number of measurements for each measurement item can be configured separately. The one-touch operation supports easy and quick measurement of Tx and Rx characteristics, including transmit frequency, modulation accuracy, transmit power, spectrum emission mask, adjacent channel leakage power ratio, occupied bandwidth, and BER.

Parallelphone Measurement

When the Parallelphone Measurement option is installed in the MT8820B main frame, two different mobile terminals can be connected and tested simultaneously with a single MT8820B using its second RF, AF, GPIB, and Ethernet port. This functionality significantly improves manufacturing efficiency by reducing production costs (return on investment and energy saving) and space.

Manufacturer Test Suite

Manufacturer Test Suite is the ideal solution for making RF adjustments and RF parametric tests on mobile terminal production lines. The basic configuration consists of signal generator and signal analyzer functions without call processing, supporting RF adjustments and RF parametric tests in the test mode (mobile controlled by external PC). Installing the call processing software option supports RF parametric tests while controlling the mobile terminal at call processing. Adding the adjustment software option shortens the time required for RF adjustment by using the chipset adjustment function. Combining Manufacturer Test Suite with the Parallelphone Measurement option offers the perfect solution for production lines.

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

Parallelphone™ is a registered trademark of Anritsu Corporation.
Supports Multi-Communication Systems

All-in-one Support for Basic Tx and Rx Measurements of W-CDMA/HSPA/HSPA Evolution, GSM/GPRS/EGPRS, CDMA2000 1X/1xEV-DO Rev. A, PHS/Advanced PHS, and TD-SCDMA/HSPA Systems

W-CDMA Measurement

3GPP-compliant measurements of Tx and Rx characteristics of 3G W-CDMA terminals.

Transmitter Measurement

The transmit power, frequency error, occupied bandwidth, spectrum emission mask, adjacent channel leakage power ratio, modulation accuracy, and peak code domain error can be measured.

Receiver Measurement

The bit error rate can be measured using the 3GPP-specified loopback test mode. In addition, feeding the demodulated data and clock signals from the W-CDMA terminal directly to the MT8820B supports bit error rate measurement. Both PN9 and PN15 can be set as the downlink RF signal data pattern.

HSDPA Measurement

3GPP-compliant measurements of Tx and Rx characteristics of 3.5G HSDPA terminals.

Transmitter Measurement

The transmit power, spectrum emission mask and adjacent channel leakage power ratio of the HS-DPCCH transmission slot are measured. At measurement in the time domain, the power step at the HS-DPCCH slot boundary, modulation, and code domain power are measured.

Receiver Measurement

The HSDPA throughput can be measured by counting the number of ACK blocks from the HSDPA terminal.

* Requires MT8820B-001, MX882000C, and MX88205xC

Refer to the MX882000C catalog for details.

Product Brochure MT8820B 3
HSUPA Measurement

3GPP-compliant measurements of Tx and Rx characteristics of 3.5G HSUPA terminals.

Transmitter Measurement

The transmit power, spectrum emission mask, and adjacent channel leakage power ratio at HS-DPCCH and E-DCH transmission are measured.

Throughput Monitor

The E-DCH throughput is calculated from the E-TFCI notification from the HSUPA terminals. In addition, the E-TFCI statistics (average, median, maximum and minimum) are displayed.

HSPA Evolution Measurement

3GPP-compliant measurements of Tx and Rx characteristics, throughput and CQI of enhanced 3.5G HSPA Evolution terminals. FRC H-Set 8 (64QAM) and HS-DSCH Category 14 (21 Mbps class) test signals can be transmitted for HSPA Evolution throughput measurements.

Transmitter Measurement

At measurement in the time domain, mobile terminal relative code domain power accuracy for HS-DPCCH and E-DCH with 16QAM are measured.

Receiver Measurement

The HSDPA throughput with 64QAM can be measured by counting the number of ACK blocks from the terminal.

* Requires MT8820B-001, MX882000C, MX882000C-011, MX882000C-021, and MX882050C

* Requires MT8820B-001, MX882000C, MX882000C-011, MX882000C-021, MX882000C-031, and MX882050C

* For terminal connectivity, contact your Anritsu sales representative.

Refer to the MX882000C catalog for details.
GSM/GPRS Measurement
Measures Tx and Rx characteristics of GSM/GPRS terminals — world’s most common digital mobile standard.

Transmitter Measurement
At GSM/GPRS measurement, the transmit frequency, phase error (RMS and peak), transmit power, power versus time (template mask), and output RF spectrum can be measured.

Receiver Measurement
The uplink RF signal, which is looped back from GSM terminal, is demodulated by controlling the GSM terminal in the loopback condition to measure the frame error, bit error, and CRC error rates. And FAST BER measurement is supported.
The block error rate can be measured with the BLER and Test Mode B connection by controlling the GPRS terminal in the loopback condition.
The above receiver measurements can be performed in parallel with transmitter measurements.

∗ Requires MT8820B-002 and MX882001C

EGPRS Measurement
Measures Tx and Rx characteristics of enhanced GPRS system (EGPRS) terminals.

Transmitter Measurement
At EGPRS measurement, the transmit frequency, EVM (RMS and peak), origin offset, transmit power, power versus time (template mask), and output RF spectrum can be measured.

Receiver Measurement
The uplink RF signal, which is looped back from EGPRS terminal, is demodulated by controlling the EGPRS terminal in the loopback condition to measure the block error or bit error.
The above receiver measurements can be performed in parallel with transmitter measurements.

∗ Requires MT8820B-002, MX882001C, and MX882000C-011

Refer to the MX882001C catalog for details.
CDMA2000 1X Measurement

3GPP2-compliant measurements of Tx and Rx characteristics of 3G CDMA2000 1X terminals.

Transmitter Measurement

The transmit power, modulation analysis, occupied bandwidth, code domain power, spurious emission, and access probe power can be measured.

Receiver Measurement

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.

CDMA2000 1xEV-DO Rev. 0/Rev. A Measurement

3GPP2-compliant measurements of Tx and Rx characteristics of 3.5G 1xEV-DO Rev. 0/Rev. A terminals.

- Measurement Software and Protocol Revision

<table>
<thead>
<tr>
<th>Model</th>
<th>Protocol Revision</th>
</tr>
</thead>
<tbody>
<tr>
<td>MX882006C</td>
<td>IS-856-0 (1xEV-DO Rev. 0)</td>
</tr>
<tr>
<td>MX882006C-002</td>
<td>IS-856-0 (1xEV-DO Rev. 0)</td>
</tr>
<tr>
<td>MX882006C-011</td>
<td>IS-856-A (1xEV-DO Rev. A)</td>
</tr>
</tbody>
</table>

Transmitter Measurement

The transmit power, modulation analysis, occupied bandwidth, code domain power, spurious emission, and access probe power can be measured.

Receiver Measurement

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

* Requires MT8820B-003 and MX882002C

* Requires MT8820B-003, MT8820B-005, MX882002C, and MX882006C

* Installing the MT8820B-003, MT8820B-005, MX882002C, MX882006C, and MX882006C-011 can measure of Tx and Rx characteristics of 1xEV-DO Rev. A terminal.

Refer to the MX882002C/MX882006C catalog for details.
**TD-SCDMA Measurement**

3GPP-compliant measurements of the main Tx and Rx characteristics of 3G TD-SCDMA (1.28 Mcps TDD) and 3.5G HSDPA/HSUPA mobile terminals is supported.

**Transmitter and Receiver Measurement**

3GPP-compliant measurement of TD-SCDMA with call-processing functions, including Tx/Rx items such as transmit power, power template, frequency error, occupied bandwidth, spectrum emission mask, adjacent channel leakage power, modulation accuracy, peak code domain error, open loop power control, closed loop power control, out-of-sync handling, BER, and BLER, is supported. In addition, one-touch setting of main Tx/Rx test items and closed loop power control offer easy configuration of automated 3GPP-compliant test systems.

**TD-SCDMA HSDPA Measurement**

3GPP-compliant Throughput, and CQI measurements of TD-SCDMA HSDPA terminals are supported. The signals for Throughput measurement include RMC signals for all TD-SCDMA HS-DSCH categories as well as maximum category-15 data rates (2.8 Mbps).

**TD-SCDMA HSUPA Measurement**

3GPP-compliant Tx measurement and Performance test of TD-SCDMA HSUPA with call-processing are measured. The signals for Tx measurement include HSUPA RMC category 1 to 6 (2.23 Mbps UE class) terminals can be transmitted. And, HSUPA performance measurement is calculated the information about bit rate by detecting E-DCH TB (Transport Block size) Index include E-UCCH sent from the mobile terminal to MT8820B/MT8815B.

* Requires MT8820B-001, MT8820B-007, and MX882007C for TD-SCDMA measurements.
* Requires MT8820B-001, MT8820B-007, MX882007C, and MX882007C-011 for TD-SCDMA HSDPA measurements.
* Requires MT8820B-001, MT8820B-007, MX882007C, MX882007C-011, and MX882007C-021 for TD-SCDMA HSUPA measurements.

* For terminal connectivity, contact your Anritsu sales representative.

Refer to the MX882007C catalog for details.

**PHS/Advanced PHS Measurement**

Measures Tx and Rx characteristics of PHS terminals/Advanced PHS terminals and base stations in compliance with ARIB RCR-STD-28 edition 5.0 supporting π/4DQPSK, 8PSK, and 16QAM modulation methods.

**Transmitter Measurement**

The transmit frequency, modulation accuracy, transmit power, transmission rate, occupied bandwidth, adjacent channel power of PHS terminals/Advanced PHS terminals and base stations are measured simultaneously.

**Receiver Measurement**

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

Refer to the MX882005C catalog for details.

**Adjacent Channel Power**

Refer to the MX882005C catalog for details.
Supports All Function Tests

Real-time Voice Encoding and Decoding
Voice tests with a handset are supported by the real-time voice encoding and decoding function of the W-CDMA (GSM, CDMA2000 1X, TD-SCDMA) Measurement Software. In addition, the call Tx and Rx audio can be measured using the audio measurement function.

End-to-End Communications Test
This supports the end-to-end communications test between a handset connected to the RJ11 connector on the MT8820B and a mobile terminal.

Audio Transmitter and Receiver Measurement
The tone signal from the MT8820B AF Output connector is supplied to the microphone of the mobile terminal and the audio transmitter characteristics of the mobile terminal can be measured using the MT8820B to demodulate the uplink RF signal and measure the level, frequency, and distortion of the demodulated tone signal.

Packet Communication Data Transfer Test
End-to-End Data Transfer Test
Using the External Packet Data Software option supports end-to-end data transfer between a mobile terminal (W-CDMA, HSDPA, GPRS, CDMA2000 1X, CDMA2000 1xEV-DO Rev. 0) and an application server connected to the MT8820B, or a PC client connected to the terminal, and various application tests.

* Requires MT8820B-011, MX882000C-001, MX882001C-001, MX882002C-001, or MX882007C-001
* Audio Transmitter and Receiver Measurement supports W-CDMA, GSM, TD-SCDMA
Audio Transmitter and Receiver Measurement does not support CDMA2000 1X

* Any of MX882001C-002, MX882002C-002, MX882006C-002, MX882050C-002, MX882050C-011, or MX882051C-002 separately required

Refer to the MX882000C, MX882001C, MX882002C and MX882007C catalog for details.

Refer to the MX882000C, MX882001C and MX882002C/MX882006C catalog for details.
**Video Phone Test**

**End-to-End Video Phone Test**

The MT8820B supports two-ways tests between W-CDMA (TD-SCDMA) terminals with video functions via the MT8820B Ethernet port.

Two-way video phone tests require either two MT8820B units or one unit with the Parallelphone option.

---

**CDMA2000 1X/1xEV-DO (Rev. 0) Synchronous Function**

**CDMA2000 1X/1xEV-DO (Rev. 0) Hybrid Terminal Function Test**

By using the MX882002C and MX882006C with two MT8820B units or one MT8820B unit with the Parallelphone measurement option, the CDMA2000 1X and 1xEV-DO (Rev. 0) forward link signals can be output with synchronized system times, supporting function tests of terminals for both CDMA2000 1X and 1xEV-DO (Rev. 0) systems.

*: This function cannot be used when MX882000C W-CDMA Measurement Software or MX882007C TD-SCDMA Measurement Software is loaded. Please perform unload, when MX882000C or MX882007C is loaded.

*: Installing the MX882006C-011 option supports the mobile terminal connection test with ETAP only.

---

* Requires MX88205xC-003 or MX882007C-003

Refer to the MX882000C and MX882007C catalog for details.
Various connection tests, such as registration, origination, termination, handover, terminal disconnect, and network disconnect, can be tested using the call processing functionality. Moreover, voice from the mobile terminal can be echoed back while calling to test simple voice communications.

**Mobile Terminal Report Monitor**

The mobile terminal status can be displayed as a periodic report sent by the mobile terminal to the MT8820B. The downlink RF signal level at the mobile receiver can be checked with the Rx level reported from the mobile terminal.

**Case of GSM Parallelphone Measurements**

- MT8820B  Radio Communication Analyzer  x 1
- MT8820B-002  TDMA Measurement Hardware  x 2
- MT8820B-012  Parallel Phone Measurement Hardware  x 1
- MX882001C  GSM Measurement Software  x 1
- MX882010C  Parallel Phone Measurement Software  x 1

* The MT8820B-012 Parallel Phone Measurement Hardware requires the MX882010C Parallel Phone Measurement Software as well as installation of the required measurement software and two measurement hardware units.
Excellent Cost-Performance Solution

Perfect RF Adjustment and Test Solution for Mobile Production Lines

**Manufacturer Test Suite**

**Basic Configuration**

Call processing functions are not required for RF adjustments, and are only rarely required for RF parametric tests. Consequently, the basic configuration of Manufacturer Test Suite offers signal generator and signal analyzer functions without call processing, and is ideal for making RF adjustments and RF parametric tests in the test mode (mobile controlled by external PC).

**W-CDMA**
- MT8820B: Radio Communication Analyzer
- MT8820B-031: W-CDMA Measurement Hardware Lite
- MX882030C: W-CDMA Measurement Software Lite

**GSM**
- MT8820B: Radio Communication Analyzer
- MT8820B-032: TDMA Measurement Hardware Lite
- MX882031C: GSM Measurement Software Lite

**RF Adjustment**

The basic configuration with signal generator and signal analyzer functions supports RF adjustments using traditional adjustment methods. Installing the adjustment software option cuts the RF adjustment time because the chipset adjustment function is used.

**RF Parametric Test**

The RF parametric tests control the mobile terminal in the test mode or with call processing. The basic configuration performs RF parametric tests in the test mode but installing the call processing software option adds support for RF parametric tests with call processing.

**Example of Manufacturer Test Suite Options Stack (W-CDMA)**

- MX882030C-001: W-CDMA Voice Codec
- MX882030C-011: HSDPA Measurement Software
- MX882030C-040: W-CDMA High-speed Adjustment
- MX882030C-009: W-CDMA Band IX
- MX882030C: W-CDMA Measurement Software Lite
- MT8820B-031: W-CDMA Measurement Hardware Lite
- MT8820B Main frame

**Target Phase of Manufacturer Test Suite**

* Installing the option supports W-CDMA/HSDPA/HSUPA and GSM/GPRS/EGPRS in Manufacturer Test Suite.
* Manufacturer Test Suite does not support real-time processing functions, such as external packet data and video phone tests.
* MX882030C-001 W-CDMA Voice Codec function requires MT8820B-011.
MT8820B Panel Layout

1. **Preset Key**: Starts initializing
2. **Remote Lamp**: Lit while in remote control mode
3. **Local Key**: Switches remote control to manual control
4. **Copy Key**: Copies screen
5. **Power Switch**: Switches mode between power-on and standby
6. **Memory Card Slot**: For saving/recalling measurement parameters and update software to/from PCMCIA-compliant PC-card-type memory card (Type II)
7. **Handset Connector**: For testing end-to-end voice communication between MT8820B and mobile terminal using handset
8. **AF Input/Output Connector**: For audio measurement
9. **AUX Output Connector**: Outputs RF signal for RF testing mobile terminal (SMA connector)
10. **Main Input/Output Connector**: Outputs RF signal for RF testing mobile terminal (N-type connector)
11. **Functions**: Displays function menu on screen
12. **Function Key**: Executes function menu displayed on right of screen
13. **Page Switch Key**: Switches function menu displayed on right of screen
14. **Screen Switch Key**: Switches screen
15. **Screen Control**: Switches display window for manual operation
16. **Measure**: Starts and stops measurement
17. **Channel/Level**: Sets channel, frequency, and level
18. **Call**: Connects and disconnects call
19. **Utility**: Saves and recalls parameters, and displays configuration
20. **Cursor/Data Entry**: Moves cursor and sets parameters
**GPIB Connector:** For remote control of MT8820B

**Trigger Output Connector:** Outputs event-timing signal to external equipment (BNC connector)

**Trigger Input Connector:** Inputs trigger signal from external equipment to measure uplink signal from mobile equipment by synchronizing (BNC connector)

**Reference Signal Input Connector:** Inputs 10/13-MHz reference signal (BNC connector)

**Reference Signal Output Connector:** Outputs 10-MHz reference signal of MT8820B (BNC connector)

**Frequency Adjust:** Adjusts frequency of internal reference oscillator

**10BASE-T Port:** Interface for packet and W-CDMA video communication test

**Call Processing Input/Output Port:** Interface for BER measurement and synchronization

**RS-232C Port:** Interface for packet communication test

**Grounding Terminal:** Connected to ground potential

**Main Power Switch:** Switches main power on/off. The front-panel power switch enters the standby (Stby) mode when the main power is switched on.
### Specifications

#### MT8820B Radio Communication Analyzer

| Frequency range: 30 MHz to 2700 MHz  
Max. input level: +35 dBm (Main)  
Main I/O  
Impedance: 50 Ω  
VSWR: ≤1.2 (<1.6 GHz), ≤1.25 (1.6 GHz to 2.2 GHz), ≤1.3 (>2.2 GHz)  
Connector: N type  
AUX 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^-6/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 MHz to 2700 MHz (setting range: 0.4 MHz to 2700 MHz)  
Setting resolution: 1 Hz  
Accuracy: Due to reference oscillator accuracy  
Output level  
Level range: −140 to −10 dBm (Main), −130 to 0 dBm (AUX)  
Resolution: 0.1 dB  
Accuracy: ≤±1.0 dB (−120 to −10 dBm, Main, after calibration), ≤±1.0 dB (−110 to 0 dBm, AUX, after calibration)  
Signal purity  
Non-harmonic spurious: ≤−50 dBc  
Harmonics: ≤−25 dBc  
Uninterrupted level variation  
Variable range: 0 to −30 dB  
Setting resolution: 0.1 dB |
| Others  
Display  
Color 8.4-inch 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 Vac/200 to 240 Vac (–15+/15%, 250 V max.), 47.5 Hz to 63 Hz, ≤550 VA (with all Options) |
| Dimensions and Mass  
426 (W) x 221.5 (H) x 498 (D) mm (excluding projections), ≤26 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  
EN61326-1, EN61000-3-2  
LVD  
EN61010-1 |
<table>
<thead>
<tr>
<th>Model/Order No.</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>MT8820B</td>
<td>Main frame Radio Communication Analyzer</td>
</tr>
<tr>
<td>MT8820B-001</td>
<td>W-CDMA Measurement Hardware</td>
</tr>
<tr>
<td>MT8820B-002</td>
<td>TDMA Measurement Hardware</td>
</tr>
<tr>
<td>MT8820B-003</td>
<td>CDMA2000 Measurement Hardware</td>
</tr>
<tr>
<td>MT8820B-004</td>
<td>1xEV-DO Measurement Hardware (^1)</td>
</tr>
<tr>
<td>MT8820B-005</td>
<td>1xEV-DO Measurement Hardware (^1)</td>
</tr>
<tr>
<td>MT8820B-006</td>
<td>TD-SCDMA Measurement Hardware</td>
</tr>
<tr>
<td>MT8820B-007</td>
<td>Audio Board</td>
</tr>
<tr>
<td>MT8820B-008</td>
<td>Parallel Phone Measurement Hardware</td>
</tr>
<tr>
<td>MT8820B-009</td>
<td>W-CDMA Measurement Hardware Lite</td>
</tr>
<tr>
<td>MT8820B-010</td>
<td>TDMA Measurement Hardware Lite</td>
</tr>
<tr>
<td>MT8820B-011</td>
<td>CDMA2000 Time Offset CAL For GPS SG</td>
</tr>
<tr>
<td>MT8820B-101</td>
<td>W-CDMA Measurement Hardware Retrofit</td>
</tr>
<tr>
<td>MT8820B-102</td>
<td>TDMA Measurement Hardware Retrofit</td>
</tr>
<tr>
<td>MT8820B-103</td>
<td>CDMA2000 Measurement Hardware Retrofit</td>
</tr>
<tr>
<td>MT8820B-104</td>
<td>1xEV-DO Measurement Hardware Retrofit (^1)</td>
</tr>
<tr>
<td>MT8820B-105</td>
<td>1xEV-DO Measurement Hardware Retrofit (^1)</td>
</tr>
<tr>
<td>MT8820B-106</td>
<td>TD-SCDMA Measurement Hardware Retrofit</td>
</tr>
<tr>
<td>MT8820B-111</td>
<td>Audio Board Cable</td>
</tr>
<tr>
<td>MT8820B-112</td>
<td>Parallel Phone Measurement Hardware Retrofit</td>
</tr>
<tr>
<td>MT8820B-113</td>
<td>W-CDMA Measurement Hardware Lite Retrofit</td>
</tr>
<tr>
<td>MT8820B-114</td>
<td>TDMA Measurement Hardware Lite Retrofit</td>
</tr>
<tr>
<td>MT8820B-115</td>
<td>CDMA2000 Time Offset CAL For GPS SG Retrofit</td>
</tr>
<tr>
<td>MT8820B-117</td>
<td>TD-SCDMA Measurement Retrofit</td>
</tr>
</tbody>
</table>

### Options

- **Softwares**
  - MX882000C: W-CDMA Measurement Software (requires MT882000C-001 and MX882000C-011)
  - MX882000C-001: W-CDMA Voice Codec (requires MX882000C-001 and MX882000C-011)
  - MX882000C-011: CDSDPA High Data Rate (requires MX882000C-001, MX882000C-002, and MX882000C-011)
  - MX882000C-021: HSUPA Measurement Software (requires MX882000C-001, MX882000C-002, and MX882000C-011)
  - MX882000C-031: HSUPA Measurement Software (requires MX882000C-001, MX882000C-002, and MX882000C-011)
  - MX882000C-041: HSUPA Measurement Software (requires MX882000C-001, MX882000C-002, and MX882000C-011)
  - MX882000C-051: HSUPA Measurement Software (requires MX882000C-001, MX882000C-002, and MX882000C-011)
  - MX882000C-061: HSUPA Measurement Software (requires MX882000C-001, MX882000C-002, and MX882000C-011)
  - MX882000C-071: HSUPA Measurement Software (requires MX882000C-001, MX882000C-002, and MX882000C-011)
  - MX882000C-081: HSUPA Measurement Software (requires MX882000C-001, MX882000C-002, and MX882000C-011)

### Application parts

- **Options**
  - P0019: TEST USIM001 \(^2\)
  - P0035B: W-CDMA/GSM Test USIM
  - A0013: Handset
  - J1249: CDMA2000 Cable
  - J0576: Coaxial Cord (N-P - 5D-2W - N-P), 1 m
  - J0576D: Coaxial Cord (N-P - 5D-2W - N-P), 2 m
  - J127: CDMA2000 Cross Cable
  - B032: Joint Plate (4 pcs/set)
  - B033CG: Rack Mount Kit
  - B049: Carrying Case (hard type, with protective cover and casters)
  - B049B: Carrying Case (hard type, with protective cover, without casters)
  - W2776AE: MT8815B/MT8820B Operation Manual (booklet)
  - W2765AE: MX882000C Operation Manual (booklet)
  - W2771AE: MX882001C Operation Manual (booklet)
  - W2790AE: MX882002C Operation Manual (booklet)
  - W2791AE: MX882003C Operation Manual (booklet)
  - W2792AE: MX882004C Operation Manual (booklet)
  - W2793AE: MX882005C Operation Manual (booklet)
  - W2794AE: MX882006C Operation Manual (booklet)
  - W2795AE: MX882007C Operation Manual (booklet)
  - W2796AE: MX882008C Operation Manual (booklet)
  - W2797AE: MX882009C Operation Manual (booklet)
  - W2798AE: MX882010C Operation Manual (booklet)
  - W2799AE: MX882011C Operation Manual (booklet)
  - W2790AE: MX882002C Operation Manual (booklet)
  - W2791AE: MX882003C Operation Manual (booklet)
  - W2792AE: MX882004C Operation Manual (booklet)
  - W2793AE: MX882005C Operation Manual (booklet)
  - W2794AE: MX882006C Operation Manual (booklet)

### Product Brochure

- **Options**
  - P0035B: W-CDMA/GSM Test USIM

---

1. The MT8820B-004 hardware supports IS-856-0 (1xEV-DO Rev. 0) RF measurements but does not support IS-856-A (1xEV-DO Rev. A) measurements.
2. The MT8820B-005 hardware supports both IS-856-0 (1xEV-DO Rev. 0) and IS-856-A (1xEV-DO Rev. A) RF measurements.
3. These options preinstall the integrity protection function.
4. This Test USIM can be worked on only W-CDMA mode.
5. The connection of GSM or TD-SCDMA is necessary, P0035B can be applied.

---

- **Parallelphone™** is a registered trademark of Anritsu Corporation.
- **CompactFlash™** is a registered trademark of SanDisk Corporation in the United States and is licensed to CFA (Compact Flash Association).