

# MT8820C Specifications (Extract)

Specifications are subject to change without notice.

\* Typical values are only for reference and are not guaranteed specifications.

## ● MT8820C Radio Communication Analyzer

General	Frequency range: 30 MHz to 2.7 GHz 3.4 GHz to 3.8 GHz (with MT8820C-018) Max. input level: +35 dBm (Main)
RF Signal Generator	Frequency Frequency range: 30 MHz to 2.7 GHz (setting range: 400 kHz to 2.7 GHz) 3.4 GHz to 3.8 GHz (with MT8820C-018) Setting resolution: 1 Hz Output level Level range: -140 to -10 dBm (Main), -130 to 0 dBm (AUX) Resolution: 0.1 dB Accuracy: Main: $\pm 1.0$ dB, $\pm 0.7$ dB typ. (Output frequency: $\geq 50$ MHz), $\pm 1.5$ dB (Output frequency: $< 50$ MHz) (-120 to -10 dBm, after calibration, 10° to 40°C) AUX: $\pm 1.0$ dB, $\pm 0.7$ dB typ. (Output frequency: $\geq 50$ MHz), $\pm 1.5$ dB (Output frequency: $< 50$ MHz) (-110 to 0 dBm, after calibration, 10° to 40°C)

## ● MT8820C-008 LTE Measurement Hardware, MX882012C LTE FDD Measurement Software, MX882013C LTE TDD Measurement Software

Modulation Analysis	Frequency: 400 MHz to 2.7 GHz 3.4 GHz to 3.8 GHz (with MT8820C-018) Input level: -40 to +35 dBm (Main) Carrier frequency accuracy: $\pm$ (Set frequency $\times$ Reference oscillator accuracy + 15 Hz) Measurement object: PUSCH, PRACH, PUCCH
RF Power	Frequency: 400 MHz to 2.7 GHz 3.4 GHz to 3.8 GHz (with MT8820C-018) Input level: -60 to +35 dBm (Main) Measurement accuracy: 400 MHz to 2.7 GHz, After calibration, 10° to 40°C $\pm 0.5$ dB, $\pm 0.3$ dB (typ.) (-20 to +35 dBm), $\pm 0.7$ dB (-50 to -20 dBm), $\pm 0.9$ dB (-60 to -50 dBm) 3.4 GHz to 3.8 GHz, After calibration, 10° to 40°C $\pm 0.5$ dB, $\pm 0.3$ dB (typ.) (-20 to +35 dBm, 18° to 28°C), $\pm 0.7$ dB (-50 to +35 dBm), $\pm 0.9$ dB (-60 to -50 dBm) Linearity: 400 MHz to 2.7 GHz, After calibration, 10° to 40°C $\pm 0.2$ dB (-40 to 0 dB, $\geq -50$ dBm), $\pm 0.4$ dB (-40 to 0 dB, $\geq -60$ dBm) 3.4 GHz to 3.8 GHz, After calibration, 10° to 40°C $\pm 0.2$ dB (-40 to 0 dB, $\geq -50$ dBm, 18° to 28°C), $\pm 0.3$ dB (-40 to 0 dB, $\geq -50$ dBm), $\pm 0.4$ dB (-40 to 0 dB, $\geq -60$ dBm)
Call Processing	Call controlling: Registration, Call processing for Reference Measurement Channel (executes each processing conforming to 3GPP standards and performs pass/fail evaluation) Mobile terminal controlling: Output level (executes each mobile terminal control conforming to 3GPP standards)

## ● MX882042C LTE FDD Measurement Software Lite, MX882043C LTE TDD Measurement Software Lite

Modulation Analysis	Frequency: 400 MHz to 2.7 GHz 3.4 GHz to 3.8 GHz (with MT8820C-018) Input level: -40 to +35 dBm (Main) Carrier frequency accuracy: $\pm$ (Set frequency $\times$ Reference oscillator accuracy + 15 Hz) Measurement object: PUSCH
RF Power	Frequency: 400 MHz to 2.7 GHz 3.4 GHz to 3.8 GHz (with MT8820C-018) Input level: -60 to +35 dBm (Main) Measurement accuracy: 400 MHz to 2.7 GHz, After calibration, 10° to 40°C $\pm 0.5$ dB, $\pm 0.3$ dB (typ.) (-20 to +35 dBm), $\pm 0.7$ dB (-50 to -20 dBm), $\pm 0.9$ dB (-60 to -50 dBm) 3.4 GHz to 3.8 GHz, After calibration, 10° to 40°C $\pm 0.5$ dB, $\pm 0.3$ dB (typ.) (-20 to +35 dBm, 18° to 28°C), $\pm 0.7$ dB (-50 to +35 dBm), $\pm 0.9$ dB (-60 to -50 dBm) Linearity: 400 MHz to 2.7 GHz, After calibration, 10° to 40°C $\pm 0.2$ dB (-40 to 0 dB, $\geq -50$ dBm), $\pm 0.4$ dB (-40 to 0 dB, $\geq -60$ dBm) 3.4 GHz to 3.8 GHz, After calibration, 10° to 40°C $\pm 0.2$ dB (-40 to 0 dB, $\geq -50$ dBm, 18° to 28°C), $\pm 0.3$ dB (-40 to 0 dB, $\geq -50$ dBm), $\pm 0.4$ dB (-40 to 0 dB, $\geq -60$ dBm)

● **MT8820C-001 W-CDMA Measurement Hardware, MX882000C W-CDMA Measurement Software, MX88205xC W-CDMA Call Processing Software**

Modulation Analysis	Frequency: 300 MHz to 2.7 GHz Input level: -30 to +35 dBm (Main) Modulation accuracy (residual vector error): $\leq 2.5\%$ (at input of single DPCH and single DPDCH)
RF Power	Frequency: 300 MHz to 2.7 GHz Input level: -65 to +35 dBm (Main) Measurement accuracy: $\pm 0.3$ dB (typ.), $\pm 0.5$ dB (-25 to +35 dBm), $\pm 0.7$ dB (-55 to -25 dBm), $\pm 0.9$ dB (-65 to -55 dBm) *After calibration, 10° to 40°C Measurement object: DPCH, PRACH
Occupied Bandwidth	Frequency: 300 MHz to 2.7 GHz Input level: -10 to +35 dBm (Main)
Adjacent Channel Leakage Power Ratio	Frequency: 300 MHz to 2.7 GHz Input level: -10 to +35 dBm (Main) Measurement points: $\pm 5$ MHz, $\pm 10$ MHz Measurement range: $\geq 50$ dB ( $\pm 5$ MHz), $\geq 55$ dB ( $\pm 10$ MHz)
Error Rate Measurement	Measurement items: BER, BLER Measurement object: Loopback data imposed on uplink DTCH (BER, BLER), Serial data input from rear-panel call processing I/O port (BER)
Call Processing	Call controlling: Registration, Origination, Termination, Handover, Network disconnect, Terminal disconnect (executes each processing conforming to 3GPP standards and performs Pass/Fail evaluation) Mobile terminal controlling: Output level, Loopback (executes each mobile terminal control conforming to 3GPP standards)

● **MT8820C-002 TDMA Measurement Hardware, MX882001C GSM Measurement Software**

Frequency/Modulation Measurement	Frequency: 300 MHz to 2.7 GHz Input level: -30 to +40 dBm (Average power of burst signal, Main) Measurement items: Normal burst, RACH
Amplitude Measurement	Frequency: 300 MHz to 2.7 GHz Input level: -30 to +40 dBm (Average power of burst signal, Main) Measurement items: Normal burst, RACH Measurement accuracy: $\pm 0.3$ dB (typ.), $\pm 0.5$ dB (-20 to +40 dBm), $\pm 0.7$ dB (-30 to -20 dBm) *After calibration, 10° to 40°C Linearity: $\pm 0.2$ dB (-40 to 0 dB, $\geq -30$ dBm)
Error Rate Measurement	Functions: frame, bit and CRC error measurement Measurement object: Loopback data imposed on uplink TCH Serial data input from rear panel call processing I/O port Number of blocks received from terminal imposed on uplink TCH for GPRS Number of USF blocks received from terminal for GPRS
Call Processing	Call controlling: GSM • Location registration, Terminal call origination, Network call origination, Network disconnect, Terminal disconnect GPRS • Connection, Disconnection, Data transfer Terminal controlling: GSM • Output level, Time slot, Timing advance, Loopback on/off GPRS • Test Mode A, Test Mode B, BLER

● **MT8820C-003 CDMA2000 Measurement Hardware, MX882002C CDMA2000 Measurement Software**

Amplitude Measurement	Frequency: 300 MHz to 2.7 GHz Input level: -65 to +35 dBm (Main) Measurement accuracy: $\pm 0.3$ dB (typ.), $\pm 0.5$ dB (-25 to +35 dBm), $\pm 0.7$ dB (-55 to -25 dBm), $\pm 0.9$ dB (-65 to -55 dBm) Filtered Power measurement, after Full cal, Input Level Setting, 10° to 40°C Linearity: $\pm 0.2$ dB (0 to -40 dB, $\geq -55$ dBm), $\pm 0.4$ dB (0 to -40 dB, $\geq -65$ dBm) Filtered Power measurement, Input Level Setting for reference
Frequency/Modulation Measurement	Frequency: 300 MHz to 2.7 GHz Input level: -30 to +35 dBm Carrier frequency accuracy: $\pm$ (Setting frequency $\times$ reference oscillator accuracy + 10 Hz) Residual waveform quality: >0.999
Error Rate Measurement	FER (Frame Error Rate) measurement: FER measurement with service option 2, 9, 55 and 32 (TDSO) Display items: Confidence level, FER, Error frame count, Sample frame count
Call Processing	Band class: BC 0 to 12, 14, 15, 18 to 20 Call control: Location registration, Origination, Termination, Disconnection from network, Disconnection from terminal Radio configuration: F-RC1 + R-RC1, F-RC2 + R-RC2, F-RC3 + R-RC3, F-RC4 + R-RC3, F-RC5 + R-RC4 PCH Data Rate: Full Supported protocols: IS-95B, J-STD-008C, ARIB T-53, Korean PCS, IS-2000 (SR1)

● **MT8820C-005 1xEV-DO Measurement Software, MX882006C 1xEV-DO Measurement Software, MX882006C-011 1xEV-DO Rev. A Measurement Software**

Frequency/Modulation Measurement	Dependent on the performance of MX882006C
Code Domain Power	Dependent on the performance of MX882006C
RF Signal Generator	Output frequency: 300 MHz to 2.7 GHz, 1 Hz step Channel: 0 dB for Pilot, MAC, Control and Traffic channels (for reference) PN Offset: 0 to 511 can be set Waveform Quality: (Pilot, at AWGN Off) >0.99 AWGN: Dependent on the performance of MX882006C
Call Processing	Band class: BC 0 to 12, 14, 15, 18 to 20 Call processing: Open Session, Close Session, AT Origination, NW Origination, AT Release, NW Release, Hard Handoff, Softer Handoff Rev. closed loop power control modes: Closed Loop, All 1 (All down), Alternate, All 0 (All up) Physical layer protocol: Subtype 2 Enhanced test application protocol: FETAP (Forward Enhanced Test Application Protocol), RETAP (Reverse Enhanced Test Application Protocol), FETAP + RETAP

● **MT8820C-001 W-CDMA Measurement Hardware, MT8820C-007 TD-SCDMA Measurement Hardware, MX882007C TD-SCDMA Measurement Software**

Modulation Analysis	Frequency: 300 MHz to 2.7 GHz Input level: -30 to +35 dBm (Main) Carrier frequency accuracy: $\pm$ (Setting frequency $\times$ Reference oscillator accuracy + 10 Hz) Modulation accuracy (residual vector error): $\leq 2.5\%$ (when Single Code is input)
RF Power	Frequency: 300 MHz to 2.7 GHz Input level: -70 to +35 dBm (Main) Measurement accuracy: $\pm 0.3$ dB (typ.), $\pm 0.5$ dB (-25 to +35 dBm), $\pm 0.7$ dB (-55 to -25 dBm), $\pm 0.9$ dB (-70 to -55 dBm) *After calibration, 10° to 40°C Linearity: $\pm 0.2$ dB (-40 to 0 dB, $\geq -55$ dBm), $\pm 0.4$ dB (-40 to 0 dB, $\geq -65$ dBm) Measurement object: DPCH, UpPCH
Error Rate Measurement	Functions: Insert PN9 or PN15 pattern in DTCH Measurement items: BER, BLER Measurement objective: Loopback data imposed on uplink DTCH (BER, BLER)
Call Processing	Origination controlling: Registration, Origination, Termination, Network disconnect, Terminal disconnect (executes each processing conforming to 3GPP standards and performs Pass/Fail evaluation) Mobile terminal controlling: Output level, Loopback (executes each mobile terminal control conforming to 3GPP standards)