Agilent E6607C
EXT Multiport Wireless Communications Test Set

Data Sheet

The Agilent Technologies E6607C EXT multiport wireless communications test set integrates an innovative test sequencer, vector signal analyzer, vector signal generator, and multiport RF input/output hardware all in a single box, allowing you to accelerate non-signaling test in cellular and wireless device manufacturing.

Anticipate ___Accelerate ___Achieve

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Definitions and Conditions

Specification

Specifications describe the performance parameters covered by the product warranty and are valid from 20 to 35 °C unless otherwise noted.

Typical

Typical describes additional product performance information that is not covered by the product warranty. It is performance beyond specifications that 95 percent of the units exhibit with a 95 percent confidence level. This data, shown in italics, does not include measurement uncertainty and is valid only at room temperature (approximately 25 °C).

Nominal

Nominal values indicate expected performance, or describe product performance that is useful in the application of the product, but are not covered by the product warranty.

The test set will meet its specification when:

- The test set is within its calibration cycle

- The test set has been stored at an ambient temperature within the allowed operating range for at least two hours before being turned on; if it had previously been stored at a temperature range inside the allowed storage range, but outside the allowed operating range

- The test set has been turned on for at least 30 minutes with Auto Align1 set to Normal

- Error vector magnitude (EVM) specifications apply after execution of a source alignment when the instrument is maintained within ±5 °C of the alignment temperature

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1. *For more information on using Alignments in a manufacturing environment, please see the EXT user documentation.*

Vector Signal Analyzer Performance

Performance

Capture depth	256 MSa of I/Q data

Frequency and time specifications

Frequency range

RF Input MPA RF I/O ports 0 thru 7	10 MHz to 3.8 GHz (Option 504) 75 MHz to 3.8 GHz (Option 504)

Specified frequency range

	380 to 490 MHz 695 to 920 MHz 1425 to 1485 MHz 1620 to 2030 MHz 2300 to 2700 MHz 3400 to 3800 MHz

Frequency reference

Accuracy	±[(time since last adjustment x aging rate) + temperature stability + calibration accuracy]
Aging rate	±0.1 ppm/year, ±0.15 ppm/2 years
Temperature stability	±0.015 ppm
Achievable initial calibration accuracy	±0.04 ppm

Residual FM

	$\leq$ 0.25 Hz-p-p in 20 ms nominal

CW measurement frequency accuracy

Accuracy	(Transmitter frequency x frequency reference accuracy) ± 50 Hz
Resolution	1 Hz

Analysis bandwidth

Maximum bandwidth	40 MHz

Triggering

Trigger
  Sequence analyzer
  I/Q analyzer
	Free run, external 1, external 2, RF burst, video, internal
	Free run, external 1, external 2, RF burst, video, line, periodic

Trigger delay range	–150 to 500 ms
Resolution	0.1 µs

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Vector Signal Analyzer Performance *(con't)*

Amplitude accuracy and range specifications

Electronic attenuator

Frequency range	75 MHz to 3.8 GHz
Electronic attenuator range	0 to 24 dB, 1 dB steps

Specified frequency range

380 to 490 MHz
695 to 920 MHz
1425 to 1485 MHz
1620 to 2030 MHz
2300 to 2700 MHz
3400 to 3800 MHz

Input level ranges (average power)

RF Input	–70 to +24 dBm
MPA RF I/O ports 0 thru 7	–65 to +30 dBm

Total absolute amplitude accuracy

RF Input (in specified frequencies)
  Input level ≥ –55 to +24 dBm

380 MHz to 2.7 GHz	< ±0.45 dB, < *±0.20 dB typical*
3.4 to 3.8 GHz	< ±0.50 dB, < *±0.25 dB typical*

  Input level > –70 to < –55 dBm

380 MHz to 2.7 GHz	< ±0.70 dB, < *±0.30 dB typical*
3.4 to 3.8 GHz	< ±0.90 dB, < *±0.45 dB typical*

MPA RF I/O ports 0 thru 7 (in specified frequencies)
  Input level ≥ –55 to +30 dBm

380 MHz to 2.7 GHz	< *±0.30 dB typical*
3.4 to 3.8 GHz	< *±0.50 dB typical*

  Input level > –65 to < –55 dBm

380 MHz to 2.7 GHz	< ±0.35 *dB typical*
3.4 to 3.8 GHz	< ±0.50 *dB typical*

IF flatness

RF Input

10 MHz BW	< *±0.15 dB typical*
25 MHz BW	< *±0.28 dB typical*
40 MHz BW	< *±0.43 dB typical*

MPA RF I/O ports 0 thru 7

10 MHz BW	< *±0.18 dB typical*
25 MHz BW	< *±0.39 dB typical*
40 MHz BW	< *±0.44 dB typical*

Input voltage standing wave ratio (VSWR)

RF Input

10 MHz to 3.4 GHz	< *1.42:1 typical*
3.4 to 3.8 GHz	< *1.46:1 typical*
MPA RF I/O ports 0 thru 7	< *1.42:1 typical*

Spurious responses (RF Input)

Residual responses, 10 MHz to 3.8 GHz (1.5 kHz res BW)

10 MHz IF BW	< *–80 dBm typical*
25 MHz IF BW	< *–80 dBm typical*
40 MHz IF BW	< *–85 dBm typical*
Other spurious, f ≥ 10 MHz from carrier	< *–72 dBc typical*

Phase noise (noise sidebands (CF = 900 MHz)) RF Input

10 kHz offset	< *–104 dBc/Hz typical*
1 MHz offset	< *–132 dBc/Hz typical*

Vector Signal Generator Performance

Performance	
Arb sample rate range and bandwidth	
Clock rate	100 Sa/s to 60 MSa/s
Bandwidth	48 MHz
Arb sample memory (storage capacity)	2 GB memory, 256 MSa of I/Q data

Frequency specifications	
Frequency range	
RF Output	10 MHz to 3.8 GHz (Option 504)
MPA RF I/O ports 0 thru 7	75 MHz to 3.8 GHz (Option 504)
Specified frequency range	
	76 to 110 MHz
	390 to 500 MHz
	690 to 960 MHz
	1470 to 1560 MHz
	1800 to 2200 MHz
	2300 to 2700 MHz
	3400 to 3800 MHz
MPA GPS Out ports 0 thru 3	
Frequency range	75 MHz to 3.8 GHz (Option 504)
Specified frequency range	1100 to 1700 MHz
Frequency accuracy	Refer to vector signal analyzer frequency reference accuracy
Frequency resolution	0.01 Hz

Amplitude specifications	
Output level ranges	
RF Output	
10 MHz to 3.8 GHz	*−130 to +10 dBm typical*
MPA RF I/O ports 0 thru 7	
75 MHz to 3.8 GHz	*−130 to −5 dBm typical*
GPS Out ports 0 thru 3	
1100 to 1700 MHz	*−130 to −45 dBm typical*
Absolute level accuracy (specified frequencies)	
RF Out	
Level +5 to −80 dBm	< ±0.6 dB, *< ±0.30 dB typical*
Level ≤ −80 to −100 dBm	< ±0.6 dB, *< ±0.40 dB typical*
GPS Out	
Level −10 to −110 dBm	*< ±1.25 dB typical*
MPA RF I/O ports 0 thru 7	
Level −10 to −110 dBm	*< ±0.6 dB + MPA UL port balance typical*
Level ≤ −110 to −120 dBm	*< ±0.8 dB + MPA DL port balance typical*
MPA GPS Out ports 0 thru 3	
Level −25 to −110 dBm	< ±0.6 dB + MPA DL port balance nominal
Level ≤ −110 to −130 dBm	< ±0.8 dB + MPA DL port balance nominal
MPA DL port balance nominal	< ±0.25 dB nominal
Setting resolution	0.01 dB
VSWR RF output	*< 1.4:1 typical*
VSWR GPS output	*< 1.4:1 typical*
VSWR MPA RF I/O ports 0 thru 7 (specified frequency ranges)	
75 MHz to 2.7 GHz	*< 1.32:1 typical*
2.7 to 3.8 GHz	*< 1.42:1 typical*
VSWR GPS Out ports 0 thru 3	
1100 to 1700 MHz	*< 1.22:1 typical*

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Vector Signal Generator Performance *(con't)*

Amplitude specifications *(con't)*

Harmonics and spurious

RF Output; harmonics	
+0 dBm output power	*< –30 dBc typical*
MPA RF I/O ports 0 thru 7; harmonics	
–15 dBm output power	< –30 dBc nominal
All ports; non-harmonic spurious (CW mode, specified frequency ranges)	
75 to 375 MHz	< –60 dBc nominal
375 MHz to 3.8 GHz	< –62 dBc nominal

Phase noise

MPA RF I/O ports 0 thru 7, –5 dBm; RF Out, +5 dBm, 1 MHz offset (specified frequency ranges)	
75 MHz to 3 GHz	≤ –122 dBc nominal
3 to 3.8 GHz	≤ –117 dBc nominal

General Specifications

Power requirements	
Voltage and frequency	100/120 V, 50/60 Hz and 220/240 V, 50/60 Hz nominal
Power consumption	260 W nominal 350 W maximum

Data storage	
Internal	80 GB (SSD)
External	Supports USB 2.0-compatible memory devices

Size and weight	
Dimensions (H x W x L)	177 x 426 x 368 mm (7.0 x 16.8 x 14.5 in)
Weight	18.8 kg (41.4 lbs) nominal (net), 32.6 kg (71.8 lbs) nominal (shipping – carton only, no accessories included)

Environmental characteristics	
Operating temperature	+5 to +50 °C
Storage temperature	–40 to +65 °C
EMC	Complies with European EMC Directive 2004/108/EC • IEC/EN 61326-1, IEC/EN 61326-2-1 • CISPR Pub 11 Group 1, class A • AS/NZS CISPR 11:2002 • ICES/NMB-001 This ISM device complies with Canadian ICES-00. Cet appareil ISM est conforme a la norme NMB-001 du Canada
Environmental stress	Samples of this product have been type tested in accordance with the Agilent Environmental Test Manual and verified to be robust against the environmental stresses of storage, transportation, and end-use; those stresses include, but are not limited to, temperature, humidity, shock, vibration, altitude, and power line conditions; test methods are aligned with IEC 60068-2 and levels are similar to MILPRF-28800F Class 3
Compliance	European Low Voltage Directive 2006/95/EC • IEC/EN 61010-1 • Canada: CSA C22.2 No. 61010-1-04 • USA: UL Std. 61010-1

Audio noise	
Acoustic noise emission	Geraeuschemission
LpA < 70 dB	LpA < 70 dB
Operator position	Am Arbeitsplatz
Normal position	Normaler Betrieb
Per ISO 7779	Nach DIN 45635 t.19

Remote programming
GPIB IEEE standard 488.2
LAN 1 RJ45 rear-panel connector
USB-B 1 rear-panel connector

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General Specifications *(con't)*

Warranty

This test set is supplied with a standard three-year warranty

Calibration cycle

The recommended calibration cycle is two years; calibration services available through Agilent service centers

Maximum applied reverse power

RF In, RF Out, GPS ports 0 thru 3	+24 dBm, CW
MPA RF I/O ports 0 thru 7	+33 dBm, CW
MPA RF I/O port isolation	
On-to-Off isolation (1 port)	> 45 dB nominal
Port-to-port isolation (any 2 ports)	> 50 dB nominal
Input-to-Output (any 2 ports)	> 60 dB nominal
MPA maximum external loss compensation	
Option PB1	20 dB
Option PB2	50 dB
MPA maximum port level differential	
Option PB1	6 dB
Option PB2	20 dB

Front Panel

RF connections

RF In	Type-SMA female, 50 Ω nominal
RF Out	Type-SMA female, 50 Ω nominal
MPA In and MPA Out	Type-SMA female, 50 Ω nominal
GPS RF Out and Dist In	Type-SMA female, 50 Ω nominal
GPS Out ports 0 thru 3	Type-SMA female, 50 Ω nominal
MPA RF I/O ports 0 thru 7	Type-SMA female, 50 Ω nominal

Indicators

MPA status	
Tx/DL ports 0 thru 7	LED indictor for active/inactive
Rx/UL ports 0 thru 7	LED indictor for active/inactive
LAN ready	LED indicator LAN is ready
Instrument STATUS	LED indicator instrument is ready

Rear Panel

Ext Ref In	
Connector	BNC female, 50 Ω nominal
Input amplitude range	−5 to 10 dBm nominal
Input frequency	1 to 50 MHz nominal
Frequency lock range	±5 x 10^{-6} of specified external reference input frequency

10 MHz Out	
Connector	BNC female, 50 Ω nominal
Output amplitude	≥ 0 dBm nominal
Frequency	10 MHz ± frequency reference accuracy

Trigger 1 and Trigger 2 inputs	
Connector	BNC female
Impedance	> 10 kΩ nominal
Trigger level range	−5 to +5 V

Trigger 1 and Trigger 2 outputs	
Connector	BNC female
Impedance	50 Ω nominal
Trigger level range	5 V TTL nominal

Sync (reserved for future use)	
Connector	BNC female

Monitor output	
Connector	VGA compatible, 15-pin mini D-SUB
Format	XGA (60 Hz vertical sync rates, non-interlaced) analog RGB
Resolution	1024 x 768

Digital bus (reserved for future use)	
Connector	MDR-80

Analog Out (reserved for future use)	
Connector	BNC female

USB 2.0 ports	
Master (4 ports)	
Standard	Compatible with USB 2.0
Connector	USB Type-A female
Output current	0.5 A nominal
Slave (1 port)	
Standard	Compatible with USB 2.0
Connector	USB Type-B female
Output current	0.5 A nominal

GPIB interface	
Connector	IEEE-488 bus connector
GPIB codes	SH1, AH1, T6, SR1, RL1, PP0, DC1, C1, C2, C3, C28, DT1, L4, C0
GPIB mode	Controller or device

LAN TCP/IP interface	
Standard	1000 Base-T
Connector	RJ45 Ethertwist

U9071A GSM/EDGE/Evo Measurement Application
Key Specifications[1]

Power versus time (PvT)	
Minimum carrier power at RF Input	> –28 dBm (RF Input port), > –14 dBm (RF I/O ports)
Absolute power accuracy	±0.3 dB nominal
Power ramp relative accuracy (referenced to mean transmitted power)	
Accuracy	±0.11 dB nominal
Measurement floor	–92 dBm nominal

EDGE error vector magnitude (EVM)	
Carrier power range at RF Input	+24 to –24 dBm (RF Input port), +33 to –24 dBm (RF I/O ports)
EVM, rms	
Operating range	0 to 20% nominal
Accuracy	±0.5% nominal
Floor	0.5% nominal
Frequency error	
Initial frequency error range	±80 kHz nominal
Accuracy	±5 Hz + tfa[2]
Trigger to T0 time offset	
Relative accuracy	±5.0 ns nominal

Output RF spectrum (ORFS) and EDGE ORFS	
Carrier power range at RF Input	+24 to –14 dBm (RF Input port), +33 to +1 dBm (RF I/O ports)
ORFS absolute RF power accuracy	±0.3 dB nominal
ORFS relative RF power accuracy	±0.3 dB nominal
GSM (GMSK)	
Dynamic range, spectrum due to modulation	
Offset frequency	
600 kHz	77.1 dB nominal
1.2 MHz	81.3 dB nominal
Offset frequency	
1.2 MHz	–74.6 dB nominal
1.8 MHz	–76.0 dB nominal
EDGE (NSR 8PSK and narrow QPSK)	
Dynamic range, spectrum due to modulation	
Offset frequency	
600 kHz	76.6 dB nominal
1.2 MHz	80.0 dB nominal
ORFS dynamic range, spectrum due to switching	
Offset frequency	
1.2 MHz	78.2 dB nominal
1.8 MHz	87.2 dB nominal

1. Specifications apply for frequencies between 380 to 960 MHz and 1710 to 1990 MHz.

2. tfa = transmitter frequency x frequency reference accuracy.

U9071A GSM/EDGE/Evo Measurement Application
Key Specifications[1] *(con't)*

Phase and frequency error (GMSK modulation)	
Carrier power range at RF Input	+24 to –38 dBm (RF Input port), +33 to –24 dBm (RF I/O ports)
Phase error, rms	
Floor	0.3° nominal
Accuracy, rms	
Phase error range 1 to 6°	±0.3° nominal
Frequency error	
Initial frequency error range	±80 kHz nominal
Accuracy	±5 Hz + tfa[2]
I/Q origin offset floor	
Analyzer noise floor	–50 dBc nominal
Trigger to T0 time offset	
Relative accuracy	±5.0 ns nominal

GSM/EDGE/Evo Source Key Specifications[3]

Signal quality (RF Output: 0 dBm, RF I/O ports 0 thru 7: –10 dBm)	
Phase error (GMSK)	
RMS	< 0.3° nominal
Peak	< 2.0° nominal
EVM (EDGE)	
RMS	< 3% nominal

1. *Specifications apply for frequencies between 380 to 960 MHz, and 1710 to 1990 MHz.*

2 . *tfa = transmitter frequency x frequency reference accuracy.*

3. *Specifications apply for frequencies between 390 to 1990 MHz.*

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U9073A W-CDMA/HSPA+ Measurement Application Key Specifications[1]

Channel power	
Absolute power accuracy	*±0.30 dB typical*

Adjacent channel leakage ratio (ACLR) and adjacent channel power ratio (ACPR)	
Dynamic range	*69 dB typical*

Spectrum emission mask (2.515, 2.715, 3.515, 4.000, 8.000, and 12.00 MHz offset)	
Absolute accuracy	See absolute power accuracy
Relative accuracy	±0.35 dB nominal
Dynamic range, relative	*79 dB typical*

Code domain power (−25 dBm ≤ mixer level ≤ −15 dBm, 20 to 30 °C)	
Code domain power	
Relative accuracy Code domain power range: 0 to −40 dBc	±0.2 dB nominal
Symbol power vs. time	
Symbol EVM accuracy: 0 to −25 dBc	1% nominal

QPSK EVM	
Carrier power range at RF Input	+24 to −34 dBm (RF Input port), +33 to −20 dBm (RF I/O ports)
EVM accuracy	1% nominal (0 to 25%)
Residual EVM	*< 1.5% typical*

Frequency error
  Initial frequency error range
  Accuracy
	±30 kHz
	±5 Hz + tfa[2]

I/Q origin offset	
Analyzer noise floor	−50 dBc nominal

W-CDMA/HSPA+ Source Key Specifications[3]

Signal quality (RF Output: 0 dBm, RF I/O ports 0 thru 7: −10 dBm)	
Composite EVM	
RMS	< 1.1% nominal

1. *Specifications apply for frequencies between 698 to 960 MHz, and 1427 to 2690 MHz.*

2. *tfa = transmitter frequency x frequency reference accuracy.*

3. *Specifications apply for frequencies between 390 to 2715 MHz.*

U9072A cdma2000® Measurement Application and
U9076A 1xEV-DO Measurement Application Key Specifications[1]

Channel power	
Absolute power accuracy	*±0.35 dB typical*

Adjacent channel power (ACP)	
ACP relative accuracy Offset ≤ ±4 MHz	±0.35 dB nominal
ACP dynamic range 30 kHz integrating bandwidth	> 70 dB nominal

Spectrum emission mask (SEM)	
Relative accuracy	±0.35 dB nominal
Absolute accuracy	See absolute power accuracy
SEM dynamic range 750 kHz offset	> 70 dB nominal

Code domain (−25 dBm ≤ mixer level ≤ −15 dBm, 20 to 30 °C)	
Code domain power	
Relative accuracy Code domain power range: 0 to −40 dBc	±0.2 dB nominal
Symbol power vs. time	
Symbol EVM accuracy: 0 to −25 dBc	1% nominal

Modulation accuracy (composite rho)	
Carrier power range at RF Input	+24 to −34 dBm (RF Input port); +33 to −20 dBm (RF I/O ports)
EVM accuracy	1% nominal (0 to 25%)[2]
Residual EVM	*< 1.5% typical*
Rho accuracy	
At rho = 0.99751 (EVM 5%)	±0.0010 nominal
Frequency error	
Initial frequency error range	±400 Hz
Accuracy	±10 Hz + tfa[3]
I/Q origin offset	
Analyzer noise floor	−50 dBc nominal
DUT maximum offset	−10 dBc nominal

1. *Specifications apply for frequencies between 410 to 935 MHz, and 1710 to 1980 MHz.*

2. *The composite EVM accuracy specification applies when the EVM to be measured is well above the measurement floor. When the EVM does not greatly exceed the floor, the errors due to the floor add to the accuracy errors. The errors due to the floor are noise-like and add incoherently with the UUT EVM. The errors depend on the EVM of the UUT and the floor as follows:*
    Error = sqrt(EVMUUT² + EVMsa²) − EVMUUT. For example, if the EVM is 7% and the floor is 2.5% the error due to the floor is 0.43%.

3. *tfa = transmitter frequency x frequency reference accuracy.*

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cdma2000 and 1xEV-DO Source Key Specifications[1]

Signal quality (RF Output: 0 dBm, RF I/O ports 0 thru 7: –20 dBm)	
Composite EVM	
RMS	< 1.1% nominal

U9075A Mobile WiMAX™ Measurement Application Key Specifications[2]

Modulation analysis	
RCE (EVM) floor	
CF ≤ 3 GHz	–45 dB nominal

Channel power	
Absolute accuracy	See VSA performance, nominal
Minimum power at RF Input	–35 dBm nominal
Measurement floor	–79.7 dBm nominal

Spectrum emission mask	
Dynamic range, relative	77.4

1. *Specifications apply for frequencies between 390 to 2170 MHz.*

2. *Specifications apply for frequencies between 2300 to 2800 MHz, and 3300 to 3600 MHz.*

U9080A LTE FDD Measurement Application Key Specifications[1]

Modulation and channels	
3GPP standards supported	3GPP TS 36.201 V9.1.0 (2010-03), 3GPP TS 36.211 V9.1.0 (2010-03), 3GPP TS 36.212 V9.3.0 (2010-03), 3GPP TS 36.213 V9.2.0 (2010-06), 3GPP TS 36.214 V9.2.0 (2010-06), 3GPP TS 36.101 V9.4.0 (2010-06)
Signal structure	FDD frame structure Type 1
Signal bandwidth	1.4 MHz (6 RB), 3 MHz (15 RB), 5 MHz (25 RB), 10 MHz (50 RB), 15 MHz (75 RB), 20 MHz (100 RB)
Modulation formats and sequences	BPSK, BPSK with I & Q CDM, QPSK, 16QAM, 64QAM, PRS, CAZAC (Zadoff-Chu)

Physical channels
   Downlink
   Uplink
	
	 PBCH, PCFICH, PHICH, PDCCH, PDSCH
	 PUCCH, PUSCH, PRACH

Physical signals
   Downlink
   Uplink
	
	 P-SS, S-SS, RS
	 S-RS, PUCCH-DMRS, PUSCH-DMRS

Channel power	
Absolute power accuracy	±0.4 dB nominal

Adjacent channel power	
Minimum power at RF I/O input	−5 dBm nominal

Dynamic range
   E-UTRA
   UTRA
	
	 70 dB nominal
	 74 dB nominal

Error vector magnitude (EVM)	
Residual EVM	

Signal bandwidth
   5 MHz
   10 MHz
	
	 −45 dB (0.45%) nominal
	 −45 dB (0.45%) nominal

Frequency error	
Frequency error, lock range	±2.5 x subcarrier spacing nominal, default is 15 kHz
Frequency error accuracy	±1 Hz + tfa[2]

1. *Specifications apply for frequencies between 824 to 960 MHz, 1710 to 2690 MHz, and 3400 to 3600 MHz.*

2. *tfa = transmitter frequency x frequency reference accuracy.*

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U9081A *Bluetooth*® Measurement Application Key Specifications[1]

Modulation characteristics	
Deviation range	±250 kHz nominal
Deviation resolution	100 Hz nominal
Measurement accuracy	±100 Hz + tfa[2] nominal

Initial carrier frequency tolerance	
Measurement range	Nominal channel freq ± 100 kHz nominal
Measurement accuracy	±100 Hz + tfa[2] nominal

Carrier frequency drift	
Measurement range	±100 kHz nominal
Measurement accuracy	±100 Hz + tfa[2] nominal

EDR modulation accuracy	
Range (rms DEVM)	0 to 12% nominal
Floor	1.5% nominal
Accuracy	±1.2%[3] nominal

1. Specifications apply for frequencies between 2400 to 2486 MHz.

2. tfa = transmitter frequency x frequency reference accuracy.

3. The accuracy specification applies when the EVM to be measured is well above the measurement floor.

U9079A TD-SCDMA/HSPA Measurement Application
Key Specifications[1]

Modulation and channels	
3GPP standards supported	TS34.122, TS25.142
Signal structure	TDD
Signal bandwidth	1.6 MHz
Modulation formats	
TD-SCDMA	QPSK, 8PSK
TD-HPSA	QPSK, 16QAM
TD-HSPA+	QPSK, 16QAM, 64QAM
Physical channels	
Burst type	Traffic, UpPTS, DwPTS
Supported channels	DPCH, HS-PDSCH

Channel power	
Absolute power accuracy	±0.30 dB nominal

Modulation accuracy (–25 dBm ≤ mixer level ≤ –15 dBm, 20 to 30 °C)	
Range for test signal with TS0 active and one HS-PDCH in TS0	0 to 17% nominal
Composite EVM accuracy	±7% when EVM ≤ 9% nominal

Frequency error	
Range	±7 kHz nominal
Test signal with TS0 active and one HS-PDCH in TS0	±6 Hz + tfa[2]

1. *Specifications apply for frequencies between 1850 to 2620 MHz.*

2. *tfa = transmitter frequency x frequency reference accuracy.*

U9082A LTE TDD Measurement Application Key Specifications[1]

Modulation and channels

3GPP demodulation standards supported	36.211 V9.1.0 (March 2010), 36.212 V9.4.0 (September 2011), 36.213 V9.3.0 (September 2010), 36.214 V9.2.0 (June 2010)
3GPP EVM test standards supported	36.101 V9.10.0 (December 2011), 36.104 V9.10.0 (December 2011), 36.141 V9.9.0 (September 2011), 36.521-1 V9.7.0 (December 2011)
Signal structure	TDD frame structure
Signal bandwidth	1.4 MHz (6 RB), 3 MHz (15 RB), 5 MHz (25 RB), 10 MHz (50 RB), 15 MHz (75 RB), 20 MHz (100 RB)
Modulation formats	
Downlink	QPSK, 16QAM, 64QAM
Uplink	QPSK, 16QAM, 64QAM (UE Cat 5 only)
Burst types	Traffic, UpPTS, DwPTS, SRS, PRACH

Channel power

Absolute power accuracy	±0.40 dB nominal

Adjacent channel power

Minimum power at MPA RF I/O Input	–5 dBm nominal
Dynamic range	
E-UTRA	62 dB nominal
UTRA	62 dB nominal

Error vector magnitude (EVM)

Residual EVM

Signal bandwidth	
5 MHz	–45 dB (0.56%) nominal
10 MHz	–45 dB (0.56%) nominal

Frequency error

Lock range	±2.5 subcarrier spacing nominal, default is 15 kHz (spacing)
Error accuracy	±1 Hz + tfa[2]

1. *Specifications apply for frequencies between 824 to 960 MHz, 1710 to 2690 MHz, and 3400 to 3800 MHz.*

2. *tfa = transmitter frequency x frequency reference accuracy.*

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