



N9000A CXA  
X-Series Signal Analyzer  
9 kHz to 3.0 GHz or 7.5 GHz

Data Sheet



**Agilent Technologies**

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## Expect more

The Agilent CXA is a versatile, low-cost tool for spectrum and signal characterization. It helps you to accelerate product testing and development on multiple levels: cost reduction, throughput, design enhancement, and more. CXA provides you with dependable and fast measurements in your manufacturing testing, ranging from frequency power measurements to specific tasks such as EMI precompliance measurements, spur search, interference test, and TOI characterization. Optional measurement applications provide preconfigured test routines for general purpose, cellular communications, wireless connectivity, and digital video.

# Definitions and Conditions

Specifications describe the performance of parameters covered by the product warranty and apply to temperature ranges 5 to 50 °C, unless otherwise noted.

95th percentile values indicate the breadth of the population (approx.  $2\sigma$ ) of performance tolerances expected to be met in 95 percent of the cases with a 95 percent confidence, for any ambient temperature in the range of 20 to 30 °C. In addition to the statistical observations of a sample of instruments, these values include the effects of the uncertainties of external calibration references. These values are not warranted. These values are updated occasionally if a significant change in the statistically observed behavior of production instruments is observed.

Typical describes additional product performance information that is not covered by the product warranty. It is performance beyond specifications that 80 percent of the units exhibit with a 95 percent confidence level over the temperature range 20 to 30 °C. Typical performance does not include measurement uncertainty.

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 analyzer will meet its specifications when:

- It is within its calibration cycle
- Under auto couple control, except when Auto Sweep Time Rules = Accy
- The analyzer 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 analyzer has been turned on at least 30 minutes with Auto Align set to normal, or, if Auto Align is set to off or partial, alignments must have been run recently enough to prevent an Alert message; if the Alert condition is changed from Time and Temperature to one of the disabled duration choices, the analyzer may fail to meet specifications without informing the user

This CXA signal analyzer data sheet is a summary of the complete specifications and conditions for N9000A CXA signal analyzers (including N9000AEP Express CXA signal analyzers), which are available in the CXA Signal Analyzer Specification Guide. The CXA Signal Analyzer Specification Guide can be obtained on the web at:

[www.agilent.com/find/cxa\\_manuals](http://www.agilent.com/find/cxa_manuals)

For ordering information, refer to the CXA Signal Analyzer Configuration Guide (5990-4341EN).

# Frequency and Time Specifications

Frequency range		
Option 503		9 kHz to 3.0 GHz
Option 507		9 kHz to 7.5 GHz
Band	LO multiple (N)	
0	1	9 kHz to 3.0 GHz
1	1	2.95 to 3.80 GHz
2	1	3.70 to 4.55 GHz
3	1	4.45 to 5.30 GHz
4	1	5.20 to 6.05 GHz
5	1	5.95 to 6.80 GHz
6	1	6.70 to 7.50 GHz
Frequency reference		
Accuracy	$\pm$ [(time since last adjustment x aging rate) + temperature stability + calibration accuracy]	
Aging rate	Option PFR $\pm 1 \times 10^{-7}$ / year $\pm 1.5 \times 10^{-7}$ / 2 years	Standard $\pm 1 \times 10^{-6}$ / year
Temperature stability 20 to 30 °C Full temperature range	Option PFR $\pm 1.5 \times 10^{-8}$ $\pm 5 \times 10^{-8}$	Standard $\pm 2 \times 10^{-6}$ $\pm 2 \times 10^{-6}$
Achievable initial calibration accuracy	Option PFR $\pm 4 \times 10^{-8}$	Standard $\pm 1.4 \times 10^{-6}$
Example frequency reference accuracy (with Option PFR) 1 year after last adjustment	$= \pm (1 \times 1 \times 10^{-7} + 5 \times 10^{-8} + 4 \times 10^{-8})$ $= \pm 1.9 \times 10^{-7}$	
Residual FM Option PFR Standard	$\leq 0.25$ Hz p-p in 20 ms nominal $\leq 10$ Hz p-p in 20 ms nominal	
Frequency readout accuracy (start, stop, center, marker)		
$\pm$ (marker frequency x frequency reference accuracy + 0.25 % x span + 5 % x RBW + 2 Hz + 0.5 x horizontal resolution <sup>1</sup> )		
Marker frequency counter		
Accuracy	$\pm$ (marker frequency x frequency reference accuracy + 0.100 Hz)	
Delta counter accuracy	$\pm$ (delta frequency x frequency reference accuracy + 0.141 Hz)	
Counter resolution	0.001 Hz	
Frequency span (FFT and swept mode)		
Range	0 Hz (zero span), 10 Hz to maximum frequency of instrument	
Resolution	2 Hz	
Accuracy Swept FFT	$\pm$ (0.25 % x span + horizontal resolution) $\pm$ (0.10 % x span + horizontal resolution)	

1. Horizontal resolution is span/(sweep points - 1).

Sweep time and triggering		
Range	Span = 0 Hz Span ≥ 10 Hz	1 μs to 6000 s 1 ms to 4000 s
Accuracy	Span ≥ 10 Hz, swept Span ≥ 10 Hz, FFT Span = 0 Hz	± 0.01 % nominal ± 40 % nominal ± 1 % nominal
Trigger	Free run, line, video, external 1, RF burst, periodic timer	
Trigger delay	Span = 0 Hz or FFT Span ≥ 10 Hz, swept Resolution	–150 to +500 ms 1 μs to 500 ms 0.1 μs
Time gating		
Gate methods	Gated LO; gated video; gated FFT	
Gate length range (except method = FFT)	100.0 ns to 5.0 s	
Gate delay range	0 to 100.0 s	
Gate delay jitter	33.3 ns p-p nominal	
Sweep (trace) point range		
All spans	1 to 40001	
Resolution bandwidth (RBW)		
Range (–3.01 dB bandwidth)	1 Hz to 3 MHz (10 % steps), 4, 5, 6, 8 MHz	
Bandwidth accuracy (power)	1 Hz to 750 kHz 820 kHz to 1.2 MHz (< 3 GHz CF) 1.3 to 2.0 MHz (< 3 GHz CF) 2.2 to 3 MHz (< 3 GHz CF) 4 to 8 MHz (< 3 GHz CF)	± 1.0 % (± 0.044 dB) nominal ± 2.0 % (± 0.088 dB) nominal ± 0.07 dB nominal ± 0.15 dB nominal ± 0.25 dB nominal
Bandwidth accuracy (–3.01 dB) RBW range	1 Hz to 1.3 MHz	± 2 % nominal
Selectivity (–60 dB/–3 dB)	4.1:1 nominal	
EMI bandwidth (CISPR compliant)	200 Hz, 9 kHz, 120 kHz, 1 MHz	(Option EMC or W6141A required)
EMI bandwidth (MIL STD 461E compliant)	10 Hz, 100 Hz, 1 kHz, 10 kHz, 100 kHz, 1 MHz	(Option EMC or W6141A required)
Analysis bandwidth <sup>1</sup>		
Maximum bandwidth	Option B25 Standard	25 MHz 10 MHz
Video bandwidth (VBW)		
Range	1 Hz to 3 MHz (10 % steps), 4, 5, 6, 8 MHz, and wide open (labeled 50 MHz)	
Accuracy	± 6 % nominal	
Measurement speed <sup>2</sup>		
Local measurement and display update rate	11 ms (90/s) nominal	
Remote measurement and LAN transfer rate	6 ms (167/s) nominal	
Marker peak search	5 ms nominal	
Center frequency tune and transfer (RF)	22 ms nominal	
Measurement/mode switching	75 ms nominal	

1. Analysis bandwidth is the instantaneous bandwidth available around a center frequency over which the input signal can be digitized for further analysis or processing in the time, frequency, or modulation domain.

2. Sweep points = 101.

# Amplitude Accuracy and Range Specifications

Amplitude range			
Measurement range			
Preamp off	100 kHz - 1 MHz 1 MHz - 7.5 GHz	Displayed average noise level (DANL) to +20 dBm Displayed average noise level (DANL) to +23 dBm	
Preamp on	100 kHz - 7.5 GHz	Displayed average noise level (DANL) to +15 dBm	
Input attenuator range (100 kHz to 7.5 GHz)			
Standard	0 to 50 dB in 10 dB steps		
Option FSA	0 to 50 dB in 2 dB steps		
Maximum safe input level			
Average total power	+30 dBm (1 W) +10 dBm (10 mW)	Input attenuation $\geq$ 20 dB, preamp off Input attenuation $\geq$ 20 dB, preamp on	
Peak pulse power	+50 dBm (100 W)	< 10 $\mu$ s pulse width, < 1 % duty cycle, input attenuation $\geq$ 30 dB	
AC coupled	$\pm$ 50 Vdc		
Display range			
Log scale	0.1 to 1 dB/division in 0.1 dB steps 1 to 20 dB/division in 1 dB steps (10 display divisions)		
Linear scale	10 divisions		
Scale units	dBm, dBmV, dB $\mu$ V, dBmA, dB $\mu$ A, V, W, A		
Frequency response		Specification	95th percentile ( $\approx$ 2 $\sigma$ )
(10 dB input attenuation, 20 to 30 °C, $\sigma$ = nominal standard deviation)			
Preamp off	9 kHz to 10 MHz	$\pm$ 0.60 dB	$\pm$ 0.45 dB
	10 MHz to 3 GHz	$\pm$ 0.75 dB	$\pm$ 0.55 dB
	3 to 5.25 GHz	$\pm$ 1.45 dB	$\pm$ 1.00 dB
	5.25 to 7.5 GHz	$\pm$ 1.65 dB	$\pm$ 1.20 dB
Preamp on (Option P03/P07) (0 dB attenuation)	100 kHz to 3 GHz		$\pm$ 0.70 dB
	3 to 5.25 GHz		$\pm$ 0.85 dB
	5.25 to 7.5 GHz		$\pm$ 1.35 dB
Input attenuation switching uncertainty		Specifications	Additional information
Attenuation > 2 dB, preamp off Relative to 10 dB (reference setting)	50 MHz (reference frequency) 100 kHz to 3.0 GHz 3.0 to 7.5 GHz	$\pm$ 0.32 dB	$\pm$ 0.15 dB typical $\pm$ 0.30 dB nominal $\pm$ 0.50 dB nominal
Total absolute amplitude accuracy			
(10 dB attenuation, 20 to 30 °C, 1 Hz $\leq$ RBW $\leq$ 1 MHz, input signal -10 to -50 dBm, all settings auto-coupled except Auto Swp Time = Accy, any reference level, any scale, $\sigma$ = nominal standard deviation)			
	At 50 MHz	$\pm$ 0.40 dB	
	At all frequencies	$\pm$ (0.40 dB + frequency response)	
	100 kHz to 10 MHz	$\pm$ 0.40 dB (95th Percentile $\approx$ 2 $\sigma$ )	
	10 MHz to 2.0 GHz	$\pm$ 0.50 dB (95th Percentile $\approx$ 2 $\sigma$ )	
	2.0 to 3.0 GHz	$\pm$ 0.60 dB (95th Percentile $\approx$ 2 $\sigma$ )	
Preamp on (Option P03/P07)	100 kHz to 7.5 GHz	$\pm$ (0.39 dB + frequency response) nominal	
Input voltage standing wave ratio (VSWR)			
Preamp off (10 dB attenuation)	300 MHz to 1 GHz	< 1.2:1 nominal	
	1 to 3 GHz	< 1.5:1 nominal	
	3 to 7.5 GHz	< 2.0:1 nominal	
Preamp on (0 dB attenuation)	10 MHz to 3 GHz	< 2.2:1 nominal	
	3 to 7.5 GHz	< 2.4:1 nominal	

Resolution bandwidth switching uncertainty (referenced to 30 kHz RBW)		
1 Hz to 3 MHz RBW	± 0.15 dB	
4, 5, 6, 8 MHz RBW	± 1.0 dB	
Reference level		
Range		
Log scale	-170 to +23 dBm in 0.01 dB steps	
Linear scale	Same as log (707 pV to 3.16 V)	
Accuracy	0 dB	
Display scale switching uncertainty		
Switching between linear and log	0 dB	
Log scale/div switching	0 dB	
Display scale fidelity		
-80 dBm ≤ input mixer level < -15 dBm	± 0.15 dB total	
-15 dBm ≤ input mixer level < -10 dBm	± 0.30 dB	± 0.15 dB typical
Trace detectors		
Normal, peak, sample, negative peak, log power average, RMS average, and voltage average		
Preamplifier		
Frequency range	Option P03 Option P07	100 kHz to 3.0 GHz 100 kHz to 7.5 GHz
Gain	100 kHz to 7.5 GHz	+20 dB nominal

# Dynamic Range Specifications

1 dB gain compression (two-tone)		Total power at input mixer		
Preamp off	50 MHz to 7.5 GHz	+2 dBm nominal		
Preamp on (Option P03/P07)	50 MHz to 7.5 GHz	-19 dBm nominal		
Displayed average noise level (DANL)				
(Input terminated, sample or average detector, averaging type = Log, 0 dB input attenuation, IF Gain = High, 20 to 30 °C)				
		Specification	Typical	
Preamp off	9 kHz to 1 MHz		-120 dBm	
	1 to 10 MHz	-130 dBm	-137 dBm	
	10 MHz to 1.5 GHz	-148 dBm	-150 dBm	
	1.5 to 2.2 GHz	-144 dBm	-147 dBm	
	2.2 to 3 GHz	-140 dBm	-143 dBm	
	3 to 4.5 GHz	-137 dBm	-140 dBm	
	4.5 to 6 GHz	-133 dBm	-136 dBm	
Preamp on	6 to 7.5 GHz	-128 dBm	-131 dBm	
	9 kHz to 1 MHz		-139 dBm	
	1 to 10 MHz	-149 dBm	-157 dBm	
	10 MHz to 1.5 GHz	-161 dBm	-163 dBm	
	1.5 to 2.2 GHz	-160 dBm	-163 dBm	
	2.2 to 3 GHz	-158 dBm	-161 dBm	
	3 to 4.5 GHz	-155 dBm	-159 dBm	
4.5 to 6 GHz	-152 dBm	-156 dBm		
6 to 7.5 GHz	-148 dBm	-152 dBm		
Spurious responses				
Residual responses (Input terminated and 0 dB attenuation, 20 to 30 °C)	200 kHz to 7.5 GHz (swept)	-90 dBm		
	Zero span or FFT or other frequencies	-100 dBm nominal		
LO related spurious	10 MHz to 7.5 GHz	-60 dBc typical		
System related sidebands	Offset from CW signal			
	50 to 200 Hz	-60 dBc nominal		
	200 Hz to 300 kHz	-65 dBc nominal		
	300 kHz to 10 MHz	-80 dBc nominal		
Second harmonic distortion (SHI)				
		Source frequency	SHI	SHI (nominal)
Preamp off (Input level -20 dBm, input attenuation 10 dB)	10 MHz to 3.75 GHz		+35 dBm	+42 dBm
	Preamp on (Option P03/P07) (Input level -40 dBm, input attenuation 10 dB)		10 MHz to 3.75 GHz	
Third-order intermodulation distortion (TOI)				
		Distortion	TOI	TOI (typical)
Preamp off (Two -20 dBm tones at input mixer spaced by 100 kHz, 0 dB attenuation, 20 to 30 °C)	10 to 400 MHz	-60 dBc	+10 dBm	+14 dBm
	400 MHz to 3 GHz	-66 dBc	+13 dBm	+17 dBm
	3 to 7.5 GHz	-66 dBc	+13 dBm	+15 dBm
Preamp on (Option P03/P07) (Two -45 dBm tones at the pre-amp input, spaced by 100 kHz, 0 dB attenuation, 20 to 30 °C)	10 MHz to 7.5 GHz		-8 dBm nominal	



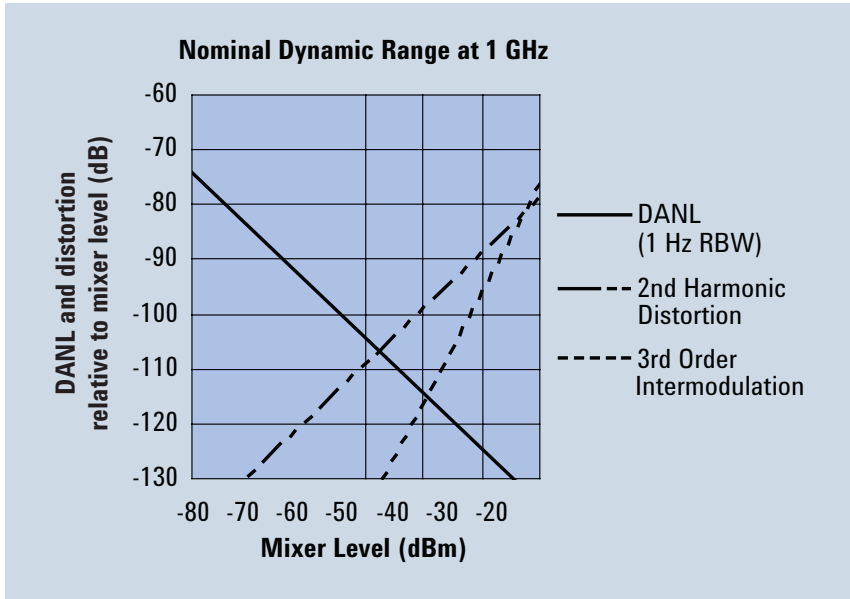


Figure 1. Nominal dynamic range – Band 0, for second and third order distortion, 10 MHz to 3 GHz

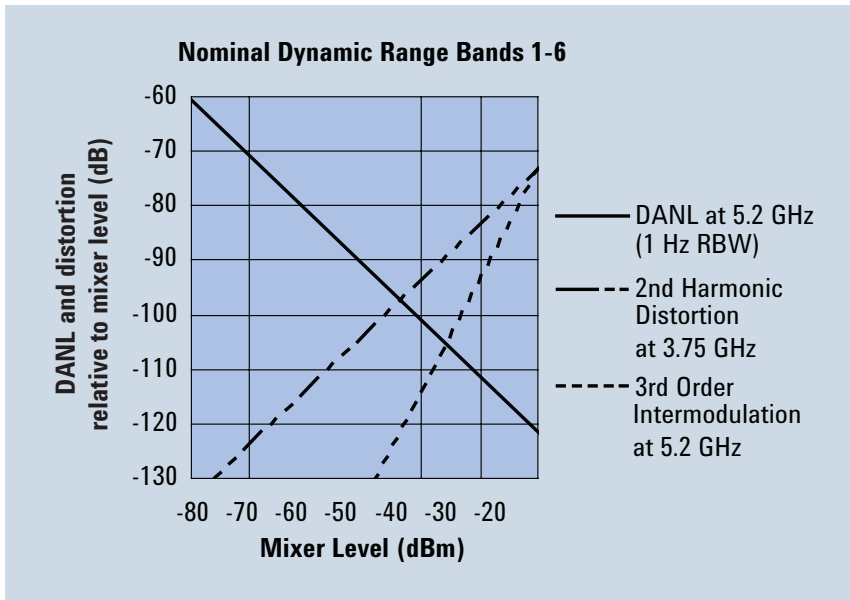


Figure 2. Nominal dynamic range – Bands 1 to 6, for second and third order distortion, 3 GHz to 7.5 GHz

Phase noise <sup>1</sup>	Offset	Specification	Typical
Noise sidebands (20 to 30 °C, CF = 1 GHz)	1 kHz	-94 dBc/Hz	-98 dBc/Hz nominal
	10 kHz	-99 dBc/Hz	-102 dBc/Hz
	100 kHz	-102 dBc/Hz	-104 dBc/Hz
	1 MHz	-120 dBc/Hz	-121 dBc/Hz
	10 MHz		-143 dBc/Hz nominal

1. For nominal values, refer to Figure 3.

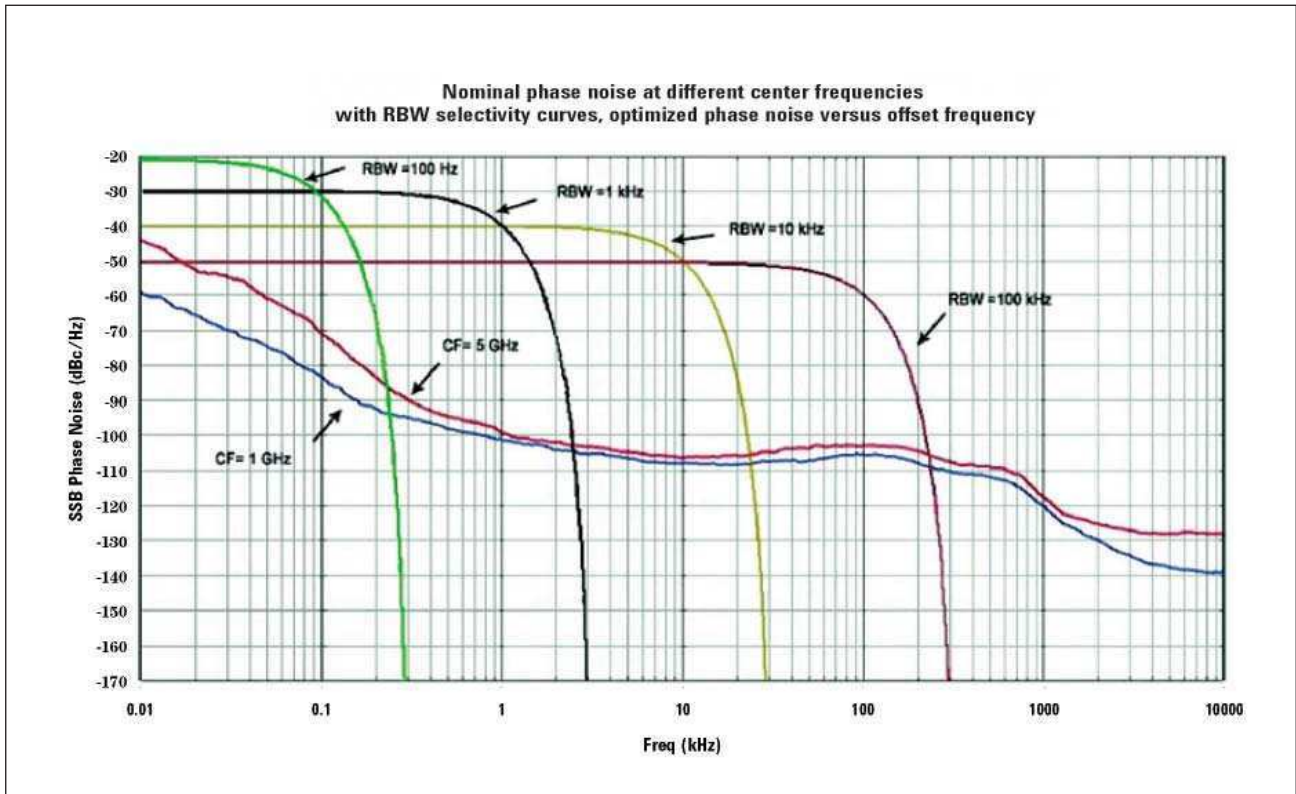


Figure 3. Nominal phase noise at different center frequencies

# PowerSuite Measurement Specifications

Channel power		
Amplitude accuracy, W-CDMA or IS95 (20 to 30 °C, attenuation = 10 dB)	± 1.15 dB (± 0.60 dB 95th percentile)	
Occupied bandwidth		
Frequency accuracy	± [span/1000] nominal	
Adjacent channel power		
Accuracy, W-CDMA (ACLR) (at specific mixer levels and ACLR ranges)	Adjacent	Alternate
MS	± 0.41 dB	± 0.55 dB
BTS	± 1.92 dB	± 1.22 dB
Dynamic range (typical)		
Without noise correction	-63 dB	-67 dB
With noise correction	-66 dB	-72 dB
Offset channel pairs measured	1 to 6	
Multiple number of carriers measured	Up to 12	
Power statistics CCDF		
Histogram resolution	0.01 dB	
Harmonic distortion		
Maximum harmonic number	10th	
Results	Fundamental power (dBm), relative harmonics power (dBc), total harmonic distortion in %	
Intermod (TOI)		
	Measure the third-order products and intercepts from two tones	
Burst power		
Methods	Power above threshold, power within burst width	
Results	Single burst output power, average output power, maximum power, minimum power within burst, burst width	
Spurious emission		
W-CDMA (1 to 3.0 GHz) table-driven spurious signals; search across regions		
Dynamic range	86.6 dB	(91.6 dB typical)
Absolute sensitivity	-75.4 dBm	(-80.4 dBm typical)
Spectrum emission mask (SEM)		
cdma2000® (750 kHz offset)		
Relative dynamic range (30 kHz RBW)	71.5 dB	(79.1 dB typical)
Absolute sensitivity	-90.7 dBm	(-95.7 dBm typical)
Relative accuracy	± 0.11 dB	
3GPP W-CDMA (2.515 MHz offset)		
Relative dynamic range (30 kHz RBW)	70.5 dB	(74.7 dB typical)
Absolute sensitivity	-90.7 dBm	(-95.7 dBm typical)
Relative accuracy	± 0.11 dB	

# Tracking Generator Specifications

Output frequency		
Frequency range		
Option T03	9 kHz to 3 GHz	
Option T06	9 kHz to 6 GHz	
Resolution	1 Hz	
Output power level		
Range	-50 to 0 dBm	
Resolution	0.1 dB	
Absolute accuracy (at 50 MHz, -10 dBm, 20 to 30 °C)	± 0.55 dB	
Output flatness (referenced to 50 MHz, -10 dBm, 20 to 30 °C)	Specification	95th percentile ( $\approx 2\sigma$ )
9 kHz to 100 kHz	± 1.5 dB	± 1.2 dB
100 kHz to 3.0 GHz	± 1.2 dB	± 0.8 dB
3.0 GHz to 6.0 GHz	± 1.5 dB	± 1.2 dB
Level accuracy		
9 kHz to 100 kHz	± 1.0 dB nominal	
100 kHz to 3.0 GHz	± 0.5 dB nominal	
3.0 GHz to 6.0 GHz	± 0.8 dB nominal	
Output power sweep		
Range	-50 to 0 dBm	
Resolution	0.1 dB	
Maximum safe reverse level		
Average total power	+30 dBm (1 W)	
AC coupled	± 50 Vdc	
Phase noise		
Noise sidebands (CF = 1 GHz)	Offset	
	10 kHz	-102 dBc/Hz nominal
	100 kHz	-104 dBc/Hz nominal
	1 MHz	-120 dBc/Hz nominal
Spurious outputs (0 dBm output)		
Harmonic Spurs		
100 kHz to 3 GHz	< -35 dBc	
3 GHz to 6 GHz	< -30 dBc	
Non-harmonic spurs		
9 kHz to 10MHz	< -35 dBc nominal	
10 MHz to 6 GHz	< -35 dBc	
Dynamic range		
	Maximum output power – displayed average noise level	110 dBc nominal
Output VSWR		
9 kHz to 6 GHz	<1.5:1 nominal	

# General Specifications

## Temperature range

Operating	5 to 50 °C
Storage	-40 to 65 °C

## EMC

Complies with European EMC Directive 2004/108/EC

- IEC/EN 61326-1 or 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-001

Cet appareil ISM est conforme à la norme NMB-001 du Canada

## Safety

Complies with European Low Voltage Directive 73/23/EEC, amended by 93/68/EEC

- IEC/EN 61010-1 2nd Edition
- Canada: CSA C22.2 No. 61010-1
- USA: UL 61010-1 2nd Edition

## 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

## 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.

## Power requirements

Voltage and frequency (nominal)	100 to 120 V, 50/60/400 Hz 220 to 240 V, 50/60 Hz
Power consumption	
On	270 W maximum
Standby	20 W

## Display

Resolution	1024 x 768, XGA
Size	213 mm (8.4 in.) diagonal (nominal)

## Data storage

Internal	80 GB nominal (removable solid state drive)
External	Supports USB 2.0 compatible memory devices

## Weight (without options)

Net	14 kg (30.8 lbs) nominal
Shipping	26 kg (57.2 lbs) nominal

## Dimensions

Height	177 mm (7.0 in)
Width	426 mm (16.8 in)
Length	368 mm (14.5 in)

## Warranty

The CXA signal analyzer is supplied with a one-year warranty

## Calibration cycle

The recommended calibration cycle is one year; calibration services are available through Agilent service centers

# Inputs and Outputs

Front panel	
RF input Connector	Type-N female, 50 $\Omega$ nominal
RF output (Option T03 or T06) Connector	Type-N female, 50 $\Omega$ nominal
Probe power Voltage/current	+15 Vdc, $\pm 7\%$ at 150 mA max. nominal -12.6 Vdc, $\pm 10\%$ at 150 mA max. nominal
USB 2.0 ports Master (2 ports) Standard Connector Output current	Compatible with USB 2.0 USB Type-A female 0.5 A nominal
Rear panel	
10 MHz out Connector Output amplitude Frequency	BNC female, 50 $\Omega$ nominal $\geq 0$ dBm nominal 10 MHz $\pm$ (10 MHz x frequency reference accuracy)
Ext Ref In Connector Input amplitude range Input frequency Frequency lock range	BNC female, 50 $\Omega$ nominal -5 to 10 dBm nominal 10 MHz $\pm$ nominal $\pm 5 \times 10^{-6}$ of specified external reference input frequency
Trigger 1 input Connector Impedance Trigger level range	BNC female > 10 k $\Omega$ nominal -5 to 5 V
Trigger 1 output Connector Impedance Level	BNC female 50 $\Omega$ nominal 5 V TTL nominal
Monitor output Connector Format Resolution	VGA compatible, 15-pin mini D-SUB XGA (60 Hz vertical sync rates, non-interlaced) Analog RGB 1024 x 768
Noise source drive +28 V (pulsed) Connector	BNC female
SNS Series noise source	
Analog out Connector	BNC female
USB 2.0 ports Master (4 ports) Standard Connector Output current Slave (1 port) Standard Connector Output current	Compatible with USB 2.0 USB Type-A female 0.5 A nominal  Compatible with USB 2.0 USB Type-B female 0.5 A nominal
Rear panel	
GPIB interface Connector GPIB codes GPIB mode	IEEE-488 bus connector SH1, AH1, T6, SR1, RL1, PP0, DC1, C1, C2, C3, C28, DT1, L4, C0 Controller or device
LAN TCP/IP interface Standard Connector	1000Base-T RJ45 Ethertwist
Sync (reserved for future use) Connector	BNC female

# I/Q Analyzer

Frequency			
Frequency span			
Standard instrument		10 Hz to 10 MHz	
Option B25		10 Hz to 25 MHz	
Resolution bandwidth (spectrum measurement)			
Range			
Overall		100 mHz to 3 MHz	
Span = 1 MHz		50 Hz to 1 MHz	
Span = 10 kHz		1 Hz to 10 kHz	
Span = 100 Hz		100 mHz to 100 Hz	
Window shapes			
Flat top, Uniform, Hanning, Gaussian, Blackman, Blackman-Harris, Kaiser Bessel (K-B 70 dB, K-B 90 dB and K-B 110 dB)			
Analysis bandwidth			
Standard instrument		10 Hz to 10 MHz	
Option B25		10 Hz to 25 MHz	
IF frequency response (standard 10 MHz IF path)			
IF frequency response (demodulation and FFT response relative to the center frequency, 20 to 30 °C)			
Center frequency (GHz)	Span (MHz)	Max. error	RMS (nominal)
≤ 3.0	≤ 10	± 0.45 dB	0.03 dB
3.0 < f ≤ 7.5	≤ 10	± 0.45 dB	0.25 dB
IF phase linearity (deviation from mean phase linearity, nominal)			
Center frequency (GHz)	Span (MHz)	Peak-to-peak	RMS
≤ 3.0	≤ 10	± 0.5 °	0.2 °
3.0 < f ≤ 7.5	≤ 10	± 1.5 °	0.4 °
Data acquisition (standard 10 MHz IF path)			
Time record length	4,000,000 IQ sample pairs		
Sample rate	30 MSa/s		
ADC resolution	14 Bits		
Option B25 25 MHz analysis bandwidth			
IF frequency response (B25 IF path)			
IF frequency response (demodulation and FFT response relative to the center frequency, 20 to 30 °C)			
Center frequency (GHz)	Span (MHz)	Max. error	RMS (nominal)
≤ 3.0	10 to ≤ 25	± 0.45 dB	0.03 dB
3.0 < f ≤ 7.5	10 to ≤ 25	± 0.45 dB	0.65 dB
IF phase linearity (deviation from mean phase linearity, nominal)			
Center frequency (GHz)	Span (MHz)	Peak-to-peak	RMS
0.02 ≤ f < 3.0	10 to ≤ 25	± 0.8 °	± 0.3 °
3.0 < f ≤ 7.5	10 to ≤ 25	± 1.5 °	± 0.4 °
Data acquisition (B25 IF path)			
Time record length	4,000,000 IQ sample pairs		
IQ analyzer	4,000,000 IQ sample pairs		
Sample rate	90 MSa/s		
ADC resolution	14 Bits		

## Related Literature

*Brochure* 5990-3927EN

*Configuration Guide* 5990-4341EN

For more information or literature resources please visit the web:  
[www.agilent.com/find/cxa](http://www.agilent.com/find/cxa)



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### Asia Pacific

Australia	1 800 629 485
China	800 810 0189
Hong Kong	800 938 693
India	1 800 112 929
Japan	0120 (421) 345
Korea	080 769 0800
Malaysia	1 800 888 848
Singapore	1 800 375 8100
Taiwan	0800 047 866
Other AP Countries	(65) 375 8100

### Europe & Middle East

Belgium	32 (0) 2 404 93 40
Denmark	45 70 13 15 15
Finland	358 (0) 10 855 2100
France	0825 010 700*
	*0.125 €/minute
Germany	49 (0) 7031 464 6333
Ireland	1890 924 204
Israel	972-3-9288-504/544
Italy	39 02 92 60 8484
Netherlands	31 (0) 20 547 2111
Spain	34 (91) 631 3300
Sweden	0200-88 22 55
United Kingdom	44 (0) 118 9276201

For other unlisted countries:

[www.agilent.com/find/contactus](http://www.agilent.com/find/contactus)

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