

Agilent CXA Signal Analyzer N9000A







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Expect more from a cost-effective N9000A CXA signal analyzer

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 pre-compliance measurements, spur search, interference test and TOI characterization. More measurement applications with CXA are available for noise figure, phase noise, analog demodulation, and vector signal analysis.

Agilent 89600 VSA vector signal analysis software in the CXA enables FFT-based spectrum analysis, time-domain analysis for burst analysis, and advanced signal demodulation analysis and troubleshooting of more than 50 demodulation formates such as FSK, QPSK, QAM, and so on.

visit:

www.agilent.com/find/xseries_apps for more information about applications.

Definitions and Conditions

Specifications describe the performance of parameters covered by the product warranty and apply over 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 is not covered by the product warranty.

The analyzer will meet its specifications when:

- The analyzer is within its calibration cycle.
- Under auto couple control, except that 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, 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

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)		Required options	
0	1	9 kHz to 3.08 GHz		
1	1	2.95 to 3.80 GHz	Option 507	
2	1	3.70 to 4.55 GHz	Option 507	
3	1	4.45 to 5.30 GHz	Option 507	
4	1	5.20 to 6.05 GHz	Option 507	
5	1	5.95 to 6.80 GHz	Option 507	
6	1	6.70 to 7.50 GHz	Option 507	

Frequency reference

Accuracy	± [(time since last adjustment x aging rate) + temperature stability + calibration accuracy]	
Aging rate	±1 x 10 ⁻⁶ / year	
Temperature stability		
20 to 30 °C	$\pm 2 \times 10^{-6}$	
5 to 50 °C	$\pm 2 \times 10^{-6}$	
Achievable initial calibration accuracy	$\pm 1.4 \times 10^{-6}$	
Residual FM	<= (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 resolution¹)

Marker frequency counter

Accuracy	± (marker frequency x frequency reference accuracy + 0.100 Hz)	
Delta counter accuracy	± (delta frequency x frequency reference accuracy + 0.141 Hz)	
Counter resolution	0.001 Hz	

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

Frequency and Time Specifications (continued)

Range	0 Hz (zero span), 10 Hz to maximun	n frequency of instrument	
Resolution	2 Hz		
Accuracy			
Swept	±(0.25% x span + horizontal resolu	,	
FFT	±(0.10% x span + horizontal resolu	tion)	
Sweep time and triggering			
	Span = 0 Hz	1 μs to 6000 s	
	Span ≥ 10 Hz	1 ms to 4000 s	
Accuracy	Span ≥ 10 Hz, swept	±0.01% nominal	
	Span ≥ 10 Hz, FFT	±40% nominal	
	Span = 0 Hz	±1% nominal	
Trigger	Free run, line, video, external 1, RF	burst, Periodic Timer	
Trigger delay	Span = 0 Hz or FFT	-150 to +500 ms	
	Span ≥ 10 Hz, swept	1 μs to 500 ms	
	Resolution	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	± 1.0% (± 0.044 dB) nominal	
RBW range	820 kHz to 1.2 MHz (CF < 3 GHz)	± 2.0% (± 0.088 dB) nominal	
	1.3 to 2.0 MHz (CF < 3 GHz)	± 0.07 dB nominal	
	2.2 to 3 MHz (CF < 3 GHz)	± 0.15 dB nominal	
	4 to 8 MHz (CF < 3 GHz)	± 0.25 dB nominal	
Bandwidth accuracy (–3.01 dB)	1 Hz to 1.3 MHz	± 2% nominal	
RBW range	1.5 to 3.0 MHz (CF < 3 GHz)	± 7% nominal	
	4 to 8 MHz (CF < 3 GHz)	± 15% nominal	
Selectivity (-60 dB/-3 dB)	4.1:1 nominal		
, ,			

Frequency and Time Specifications (continued)

Analysis bandwidth 1

^{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.

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 ²			
Local measurement and display update rate	11 ms (90/s) nominal		
Remote measurement and LAN transfer rate	6 ms (167/s) nominal		

75 ms nominal

Measurement/mode switching

Marker peak search 5 ms nominal

Center frequency tune and transfer (RF) 22 ms nominal

^{2.} Sweep points = 101

Amplitude Accuracy and Range Specifications

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Am	nlıt	ahıı	rai	anr

Measurement range	
Preamp off	
100 kHz - 1 MHz	Displayed Average Noise Level (DANL) to +20 dBm
1 MHz - 7.5 GHz	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 attenuator setting \geq 20 dB, preamp off Input attenuator setting \geq 20 dB, preamp on
Peak Pulse Power	+50 dBm (100 W)	< 10 µs pulse width, < 1% duty cycle, input attenuator ≥ 30 dB
AC coupled	±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, dBμV, dBmA, dBμA, V, W, A

Amplitude Accuracy and Range Specifications (continued)

		Specification	95 th Percentile (≈ 2σ)
	9 kHz to 10 MHz	± 0.60 dB	±0.45 dB
	10 MHz to 3 GHz	± 0.75 dB	± 0.55 dB
	3 to 5.25 GHz	± 1.45 dB	± 1.00 dB
	5.25 to 7.5 GHz	± 1.65 dB	± 1.20 dB
Preamp on (Option P03/P07)	100 kHz to 3 GHz		± 0.70 dB
(0 dB attenuation)	3 to 5.25 GHz		± 0.85 dB
	5.25 to 7.5 GHz		± 1.35 dB
Input attenuation switching uncerta	inty		
	50 MHz (reference frequency)	± 0.32 dB	± 0.15 dB typical
	attenuation > 2 dB, preamp off		
	100 kHz to 3.0 GHz		± 0.30 dB nominal
	0.0 . 7.5.011		± 0.50 dB nominal
Total Absolute Amplitude Accuracy	3.0 to 7.5 GHz (10 dB attenuation, 20 to 30 °C, all settings auto-coupled excep		z, input signal –10 to –50 dBm,
Total Absolute Amplitude Accuracy	(10 dB attenuation, 20 to 30 °C, all settings auto-coupled excep		z, input signal –10 to –50 dBm,
Total Absolute Amplitude Accuracy	(10 dB attenuation, 20 to 30 °C,	$\frac{\text{st Auto Swp} = Accy. \sigma}{\pm 0.40 \text{ dB}}$	z, input signal –10 to –50 dBm, = nominal standard deviation)
Total Absolute Amplitude Accuracy	(10 dB attenuation, 20 to 30 °C, all settings auto-coupled except At 50 MHz At all frequencies	t Auto Swp = Accy. σ $\pm 0.40 \text{ dB}$ $\pm (0.40 \text{ dB} + \text{frequent})$	z, input signal –10 to –50 dBm, = nominal standard deviation) ncy response)
Total Absolute Amplitude Accuracy	(10 dB attenuation, 20 to 30 °C, all settings auto-coupled excep At 50 MHz	the Auto Swp = Accy. σ $\pm 0.40 \text{ dB}$ $\pm (0.40 \text{ dB} + \text{frequent}$ $\pm 0.40 \text{ dB} (95^{\text{th}} \text{ Percent})$	z, input signal –10 to –50 dBm, = nominal standard deviation)
Total Absolute Amplitude Accuracy	(10 dB attenuation, 20 to 30 °C, all settings auto-coupled except At 50 MHz At all frequencies 100 kHz to 10 MHz	$\frac{\text{ot } Auto \ Swp = Accy. \ \sigma}{\pm 0.40 \ \text{dB}}$ $\frac{\pm (0.40 \ \text{dB} + \text{frequent})}{\pm 0.40 \ \text{dB}}$ $\frac{\pm 0.40 \ \text{dB}}{\pm 0.50 \ \text{dB}}$	z, input signal −10 to −50 dBm, = nominal standard deviation) ncy response) ercentile (≈ 2σ))
Total Absolute Amplitude Accuracy Preamp on (Option P03/P07)	(10 dB attenuation, 20 to 30 °C, all settings auto-coupled exception At 50 MHz At all frequencies 100 kHz to 10 MHz 10 MHz to 2.0 GHz	± 0.40 dB ± (0.40 dB + frequent ± 0.40 dB (95 th Pe ± 0.50 dB (95 th Pe ± 0.60 dB (95 th Pe	z, input signal -10 to -50 dBm, $=$ nominal standard deviation) ncy response) ercentile ($\approx 2\sigma$)) ercentile ($\approx 2\sigma$))
	(10 dB attenuation, 20 to 30 °C, all settings auto-coupled exception At 50 MHz At all frequencies 100 kHz to 10 MHz 10 MHz to 2.0 GHz 2.0 to 3.0 GHz 100 kHz to 7.5 GHz	± 0.40 dB ± (0.40 dB + frequent ± 0.40 dB (95 th Pe ± 0.50 dB (95 th Pe ± 0.60 dB (95 th Pe	z, input signal -10 to -50 dBm, $=$ nominal standard deviation) ncy response) ercentile ($\approx 2\sigma$)) ercentile ($\approx 2\sigma$)) ercentile ($\approx 2\sigma$))
Preamp on (Option P03/P07) Input voltage standing wave ratio (V	(10 dB attenuation, 20 to 30 °C, all settings auto-coupled exception At 50 MHz At all frequencies 100 kHz to 10 MHz 10 MHz to 2.0 GHz 2.0 to 3.0 GHz 100 kHz to 7.5 GHz	± 0.40 dB ± (0.40 dB + frequent ± 0.40 dB (95 th Pe ± 0.50 dB (95 th Pe ± 0.60 dB (95 th Pe	z, input signal -10 to -50 dBm, $=$ nominal standard deviation) ncy response) ercentile ($\approx 2\sigma$)) ercentile ($\approx 2\sigma$)) ercentile ($\approx 2\sigma$))
Preamp on (Option P03/P07)	(10 dB attenuation, 20 to 30 °C, all settings auto-coupled exception At 50 MHz At all frequencies 100 kHz to 10 MHz 10 MHz to 2.0 GHz 2.0 to 3.0 GHz 100 kHz to 7.5 GHz	### Auto Swp = Accy. of ### ± 0.40 dB ### ± (0.40 dB + frequend ### ± 0.40 dB ### ± 0.50 dB ### ± 0.50 dB ### ± 0.60 dB #### (95 th Pe #### ± (0.39 dB + frequend	z, input signal -10 to -50 dBm, $=$ nominal standard deviation) ncy response) ercentile ($\approx 2\sigma$)) ercentile ($\approx 2\sigma$)) ercentile ($\approx 2\sigma$))
Preamp on (Option P03/P07) Input voltage standing wave ratio (V	(10 dB attenuation, 20 to 30 °C, all settings auto-coupled exception At 50 MHz At all frequencies 100 kHz to 10 MHz 10 MHz to 2.0 GHz 2.0 to 3.0 GHz 100 kHz to 7.5 GHz SWR) 300 kHz to 1 GHz	### Auto Swp = Accy. of ± 0.40 dB ± (0.40 dB + frequent ± 0.40 dB (95 th Pot ± 0.50 dB (95 th Pot ± 0.60 dB (95 th Pot ± (0.39 dB + frequent < 1.2 : 1 nominal	z, input signal -10 to -50 dBm, $=$ nominal standard deviation) ncy response) ercentile ($\approx 2\sigma$)) ercentile ($\approx 2\sigma$)) ercentile ($\approx 2\sigma$))
Preamp on (Option P03/P07) Input voltage standing wave ratio (V	(10 dB attenuation, 20 to 30 °C, all settings auto-coupled exception At 50 MHz At all frequencies 100 kHz to 10 MHz 10 MHz to 2.0 GHz 2.0 to 3.0 GHz 100 kHz to 7.5 GHz SWR) 300 kHz to 1 GHz 1 to 3 GHz	### Auto Swp = Accy. of ### ± 0.40 dB ### ± (0.40 dB + frequend ### ± 0.40 dB	z, input signal -10 to -50 dBm, $=$ nominal standard deviation) ncy response) ercentile ($\approx 2\sigma$)) ercentile ($\approx 2\sigma$)) ercentile ($\approx 2\sigma$))

Amplitude Accuracy and Range Specifications (continued)

Resolution bandwidth switching uncertainty (referenced to 30 kHz RBW)

Gain

1 Hz to 3 MHz RBW		± 0.15 dB		
4, 5, 6, 8 MHz RBW		± 1.0 dB		
Reference level				
Range Log scale Linear scale		-170 to +30 dBm in 0.01 dB steps 707 pV to 7.07 V with 0.01 resolution (0.11%)		
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		
-15 dBm ≤ input mixer level ≤ -10 dBm		± 0.30 dB	± 0.15 dB typical	
Trace detectors				
Normal, peak, sample, negative peak, lo	og power average	e, RMS average, a	nd voltage average	
Preamplifier				
Frequency range	Option P03		100 kHz to 3.0 GHz	
	Option P07		100 kHz to 7.5 GHz	

+20 dB nominal

100 kHz to 7.5 GHz

Dynamic Range Specifications

1 dB gain compression (two-tone)

		Total power at input mixer
	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
	6 to 7.5 GHz	–128 dBm	–131 dBm
Preamp on	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	200 kHz to 7.5 GHz (swept)	–90 dBm
terminated and 0 dB attenuation,	Zero span or FFT	
20 to 30 °C)	or other frequencies	–100 dBm nominal
	·	
LO related spurious	10 MHz to 7.5 GHz	-60 dBc typical
(f > 600 MHz from carrier)		,,
System related sidebands	Offset from CW signal	
	50 to 200 Hz	–50 dBc nominal
	200 Hz to 3 kHz	–65 dBc nominal
	3 to 300 kHz	-72 dBc nominal
	300 kHz to 10 MHz	–80 dBc nominal
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Dynamic Range Specifications (continued)

Second harmonic distortion (SHI) (Input level -20 dBm, Input attenuation 10 dB)

		SHI	
	10 MHz to 3.75 GHz	+35 dBm	+42 dBm nominal
Preamp on (Option P03/P07)	10 MHz to 3.75 GHz	+10 dBm nomina (Input level –40	ıl dB, attenuation 10 dB)

Third-order intermodulation distortion (TOI) (Two -20 dBm tones at input mixer spaced by 100 kHz, 0 dB attenuation, 20 to 30 °C)

		Distortion	TOI	Турісаl
	10 to 400 MHz 400 MHz to 3 GHz	−60 dBc −66 dBc	+10 dBm +13 dBm	+14 dBm +17 dBm
	3 to 7.5 GHz	-66 dBc	+13 dBm	+15 dBm
Preamp on (Option P03/P07)	10 MHz to 7.5 GHz			–8 dBm nominal (Two –45 dBm tones at the preamp input, spaced by 100 kHz, 20 to 30 °C)

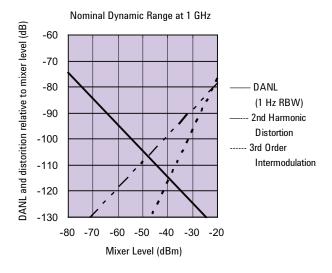


Figure 1. Nominal dynamic range - Band 0, for second and third order distortion, 10 MHz to 3 GHz

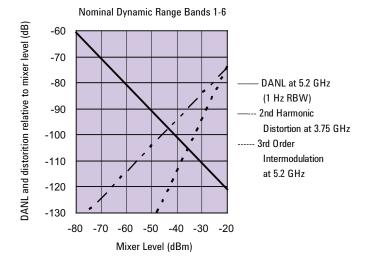


Figure 2. Nominal dynamic range - Band 1 to 6, for second and third order distortion, 3 GHz to 7.5 GHz

Dynamic Range Specifications (continued)

Phase noise 1

Noise sidebands	Offset	Specification	Typical
(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.

Nominal Phase Noise at different center frequencies

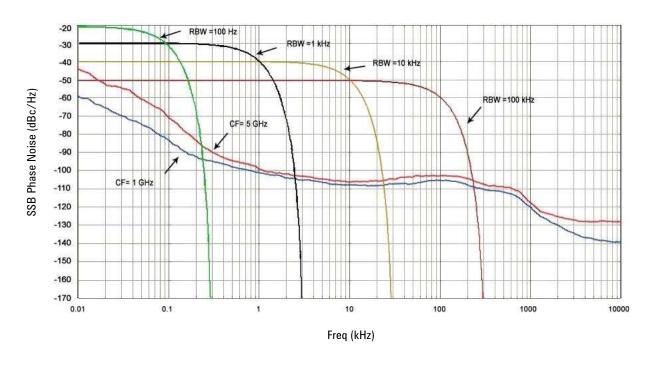


Figure 3. Nominal phase noise at different center frequencies

Power Suite Measurement Specifications

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)	Adicaret Alternate
	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
Offset channel pairs measured	1 to 6
Multiple number of carriers measured	Up to 12
Power statistics CCDF	
Histogram resolution	0.01 dB
Methods	Power above threshold, power within burst width
Results	Single burst output power, average output power, maximum pow minimum power within burst, burst width
Spurious emission	
W-CDMA (1 to 3.0 GHz)	
Table driven spurious signals;	
search across regions	
Course dologo regions	
Dyanmic range	86.6 dB (91.6 dB typical)
Dyanmic range	86.6 dB (91.6 dB typical) -75.4 dBm (-80.4 dBm typical)
_	86.6 dB (91.6 dB typical) –75.4 dBm (–80.4 dBm typical)
Dyanmic range	
Dyanmic range Absolute sensitivity Spectrum emission mask (SEM)	
Dyanmic range Absolute sensitivity Spectrum emission mask (SEM) cdma2000* (750 kHz offset)	–75.4 dBm (–80.4 dBm typical)
Dyanmic range Absolute sensitivity Spectrum emission mask (SEM) cdma2000* (750 kHz offset) Relative dynamic range (30 kHz RBW)	-75.4 dBm (-80.4 dBm typical) 71.5 dB (79.1 dB typical)
Dyanmic range Absolute sensitivity Spectrum emission mask (SEM) cdma2000* (750 kHz offset) Relative dynamic range (30 kHz RBW) Absolute sensitivity	-75.4 dBm (-80.4 dBm typical) 71.5 dB (79.1 dB typical) -90.7 dBm (-95.7 dBm typical)
Dyanmic range Absolute sensitivity Spectrum emission mask (SEM) cdma2000* (750 kHz offset) Relative dynamic range (30 kHz RBW) Absolute sensitivity Relative accuracy	-75.4 dBm (-80.4 dBm typical) 71.5 dB (79.1 dB typical)
Dyanmic range Absolute sensitivity Spectrum emission mask (SEM) cdma2000* (750 kHz offset) Relative dynamic range (30 kHz RBW) Absolute sensitivity Relative accuracy 3GPP W-CDMA (2.515 MHz offset)	-75.4 dBm (-80.4 dBm typical) 71.5 dB (79.1 dB typical) -90.7 dBm (-95.7 dBm typical) ±0.11 dB
Dyanmic range Absolute sensitivity Spectrum emission mask (SEM) cdma2000* (750 kHz offset) Relative dynamic range (30 kHz RBW) Absolute sensitivity Relative accuracy 3GPP W-CDMA (2.515 MHz offset) Relative dynamic range (30 kHz RBW)	-75.4 dBm (-80.4 dBm typical) 71.5 dB (79.1 dB typical) -90.7 dBm (-95.7 dBm typical) ±0.11 dB 70.5 dB (74.7 dB typical)
Dyanmic range Absolute sensitivity Spectrum emission mask (SEM) cdma2000* (750 kHz offset) Relative dynamic range (30 kHz RBW) Absolute sensitivity Relative accuracy 3GPP W-CDMA (2.515 MHz offset)	-75.4 dBm (-80.4 dBm typical) 71.5 dB (79.1 dB typical) -90.7 dBm (-95.7 dBm typical) ±0.11 dB

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 a 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 MIL-PRF-28800F Class 3.

General Specifications (continued)

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 (fully loaded with options)
Standby	20 W

Display

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

Data storage

Internal	40 GB nominal
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 Ω nominal	
Probe power		
Voltage/current	+15 Vdc, ±7% at 150 mA max nominal	
	-12.6 Vdc, ±10% at 150 mA max nominal	
USB 2.0 ports		
Master (2 ports)	Compatible with USB 2.0 standard, type-A female connector, output current 0.5 A nominal	
Standard	Compatible with USB 2.0 standard	
Connector	Type A female	
Output current	0.5 A nominal	

Rear panel

BNC female, 50 Ω nominal	
≥ 0 dBm nominal	
10 MHz ± (10 MHz x frequency reference accuracy)	
BNC female, 50 Ω nominal	
–5 to 10 dBm nominal	
10 MHz nominal	
$\pm\;5\;x\;10^{-6}$ of specified external reference input frequency	
BNC female	
$>$ 10 k Ω nominal	
−5 to 5 V	
BNC female	
50 Ω nominal	
5 V TTL nominal	
VGA compatible, 15-pin mini D-SUB	
XGA (60 Hz vertical sync rates, non-interlaced) Analog RGB	
1024 x 768	
BNC female	
Connecting to SNS series noise sources for noise figure measurement application	
BNC female	

Inputs and Outputs (continued)

Rear panel

USB 2.0 ports

Master (4 ports)

Standard Compatible with USB 2.0 standard

Connector Type A female
Output current 0.5 A nominal

Slave (1 port)

Standard Compatible with USB 2.0 standard

Connector 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 100Base-T Connector RJ45 Ethertwist

Sync (Reserved for future use)

Connector BNC female

Connector SMA female

CXA Signal Analyzer Ordering Information

For further information, refer to CXA Signal Analyzer Configuration Guide (5990-4341FN)

Hardware		
N9000A	CXA signal analyzer	
N9000A-503	Frequency range, 9 kHz to 3.0 GHz	
N9000A-507	Frequency range, 9 kHz to 7.5 GHz	
N9000A-P03	Preamplifier, 3.0 GHz	
N9000A-P07	Preamplifier, 7.5 GHz	
N9000A-FSA	Fine step attenuator	
Optional features		
N9000A-EMC	Basic precompliance EMI features	
Applications		
• •	g numbers indicate the license type. FP stands for Fixed Perpetual.	
W9063A-2FP	Analog demodulation measurement application	
W9068A-2FP	Phase noise measurement application	
W9069A-1FP	Noise figure measurement application (requires preamplifier)	
89601X	VXA Vector Signal Analysis application	
89601XFP-205	VXA Basic VSA-Lite (required option at initial order of 89601X)	
89601XFP-333	VXA X-Series connectivity (required option at initial order of 89601X, requires 205)	
89601XFP-AYA	VXA vector modulation analysis (requires 205/333)	
39601A	89600 Vector Signal Analysis VSA software	
N6171A-M01	MATLAB - Basic Signal Analysis Package	
N6171A-M02	MATLAB - Standard Signal Analysis Package	
N6171A-M03	MATLAB - Advanced Signal Analysis Package	
Accessories	· · · ·	
N9000A-KYB ¹	Keyboard	
N9000A-KB2	US 65 key USB keyboard	
N9000A-BAG	Accessory pouch	
N9000A-DVR	USB DVD-ROM/CD-R/RW drive	
N9000A-MLP	Minimum loss pad, 50 to 75 Ω	
N9000A-PRC	Portable configuration	
N9000AK-CVR	Front panel cover, additional	
N9000A-1CP	Rack mount and handle kit	
N9000A-1CM	Rack mount kit	
N9000A-1CN	Front handle kit	
N9000A-1CR	Rack slide kit	
N9000A-HTC	Hard transit case	
Warranty and service		
Standard warranty is one year		
R-51B-001-3C	1 year return-to-Agilent warranty extended to 3 years	
Calibration ²		
N9000A-UK6	Commercial calibration certification with test data	

Inclusive calibration plan, 3 year coverage

Inclusive calibration plan and cal data, 3 year coverage

R-50C-011-3

R-50C-013-3

¹ Does not fit Option N9000A-BAG accessory pouch. Order N9000A-KB2 for accessory pouch that fits keyboard. 2 Options not available in all countries

Literature Resources

Literature title	Literature number
Agilent CXA Signal Analyzers	
Brochure	5990-3927EN
Data Sheet	5990-4327EN
Configuration Guide	5990-4341EN
For more information on the CXA, visit: www.agilent.com/find/CXA	
Agilent EXA Signal Analyzers	
Brochure	5989-6527EN
Data Sheet	5989-6529EN
Configuration Guide	5989-6531EN
Agilent MXA Signal Analyzers	
Brochure	5989-5047EN
Data Sheet	5989-4942EN
Configuration Guide	5989-4943EN
Option BBA: Analog Baseband IQ Inputs Technical Overview	5898-6538EN

Agilent X-Series Signal Analyzers

For more information about X-Series applications, visit: www.agilent.com/find/xseries_apps

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Thailand	1 800 226 008

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Other European Countries:	

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