



CXA



N9000A CXA X-Series Signal Analyzer Configuration Guide

This CXA configuration guide will help you determine which performance options, measurement applications, accessories, and services to include with your new CXA or to add as upgrades to an existing CXA.



Agilent Technologies

Configure Your Agilent CXA Signal Analyzer

This step-by-step process will help you custom configure your CXA signal analyzer. Capabilities that are listed as standard come with the instrument at no additional charge. Tailor the performance, exterior, and service packages to meet your requirements. Ordering optional capabilities at time of purchase provides the lowest overall cost.

For detailed specifications, refer to the CXA Signal Analyzer Specification Guide (N9000-90016). For a summary of specifications, refer to the CXA Signal Analyzer Data Sheet (5990-4327EN).

Express CXA

If you do not require specialized functionality, such as measurement applications or wider bandwidth, then a pre-configured CXA signal analyzer may be appropriate for you. Available through Agilent's distribution partners, these express configurations offer excellent value and the fastest delivery. For more information on the N9000AEP, go to:

www.agilent.com/find/express_cxa

Step 1. Select maximum frequency range (required option; frequency range not upgradeable)

Description	Option number	Additional information
Frequency range, 9 kHz to 3.0 GHz	N9000A-503	
Frequency range, 9 kHz to 7.5 GHz	N9000A-507	

Step 2. Add a preamplifier

Description	Option number	Additional information: Preamplifiers improve the noise floor for low-level signal detection; +20 dB: 100 kHz to 7.5 GHz
Preamplifier, 100 kHz to 3.0 GHz	N9000A-P03	Compatible with N9000A-503, N9000A-507
Preamplifier, 100 kHz to 7.5 GHz	N9000A-P07	Compatible with N9000A-507

Step 3. Choose frequency reference

Description	Option number	Additional information
Frequency reference	Standard	Aging rate: $\pm 1 \times 10^{-6}$ /year
Precision frequency reference	N9000A-PFR	Reduces frequency drift for more accurate measurements; aging rate: $\pm 1 \times 10^{-7}$ /year

Step 4. Choose an attenuator

Description	Option number	Additional information
Electronic attenuator	Standard	10 dB steps, 0 to 50 dB
Fine resolution step attenuator	N9000A-FSA	Allows 2 dB steps for the full 50 dB range of the electronic attenuator

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Step 5. Choose analysis bandwidth

Description	Option number	Additional information
10 MHz analysis bandwidth	Standard	Useful for most 2G and 3G measurement applications
25 MHz analysis bandwidth	N9000A-B25	Extends the analysis (demod) bandwidth from 10 to 25 MHz (RF and baseband)

Step 6. Add a tracking generator

Description	Option number	Additional information
Tracking generator, 9 kHz to 3.0 GHz	N9000A-T03	Compatible with N9000A-503, N9000A-507
Tracking generator, 9 kHz to 6.0 GHz	N9000A-T06	Compatible with N9000A-507

Step 7. Add optional features

Description	Option number	Additional information
Enhanced display package	N9000A-EDP	Includes spectrogram, trace zoom, and zone span
Basic precompliance EMI	N9000A-EMC	Perform EMI precompliance measurements with CISPR 16-1-1 detectors and bandwidths; tune and listen, and measure at marker are also available
External source control	N9000A-ESC	Controls the Agilent RF MXG signal source (N5181A/N5182A) ¹ for scalar stimulus/response measurements

Step 8. Add data storage

Description	Option number	Additional information
Additional, removable solid-state drive	N9000A-SSD	Provides a fully-imaged, removable solid-state drive in addition to the one installed in the instrument

- Option UNZ (fast switching) is required on the MXG except for cases where all points in the sweep are less than 3 GHz and the point trigger method is set to external triggering using BNC cables. For an existing MXG, customer-installable upgrades (N5181AK/N5182AK-UNZ) are available.



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Step 9. Choose measurement application or software

Note: The last two letters of the ordering numbers indicate the license type—FP stands for fixed perpetual, the only license type offered for CXA

Description	Fixed license	Additional information
Cellular communications		
W-CDMA/HSPA/HSPA+	W9073A-1FP	Standard-based, one-button W-CDMA measurements
	W9073A-2FP	Adds HSPA measurements; requires 1FP
	W9073A-3FP	Adds HSPA+ measurements; requires 1FP, 2FP
GSM/EDGE/EDGE Evolution	W9071A-2FP	Standard-based, one-button GSM/EDGE measurements
	W9071A-3FP	Adds EDGE Evolution (EGPRS2) measurements; requires 2FP
TD-SCDMA/HSPA	W9079A-1FP	Standard-based, one-button TD-SCDMA measurements
	W9079A-2FP	Adds HSPA/8PSK measurements, requires 1FP
cdma2000®/cdmaOne	W9072A-2FP	Standard-based, one-button cdma2000 and cdmaOne measurements
1xEV-DO	W9076A-1FP	Standard-based, one-button 1xEV-DO Rel 0, Rev A, and Rev B measurements
Wireless connectivity		
802.16 OFDMA	W9075A-2FP	Standard-based, one-button Mobile WiMAX™ measurements
Bluetooth®	W9081A-2FP	Standard-based, one-button Bluetooth version 2.1+ EDR and Low Energy (LE) measurements
Digital video		
CMMB	W6158A-2FP	Standard-based, one-button CMMB measurements
Digital Cable TV	W6152A-2FP	Standard-based, one-button DVB-C (J.83 Annex A/C) measurements
	W6152A-3FP	Standard-based, one-button J.83 Annex B measurements
DTMB (CTTB)	W6156A-2FP	Standard-based, one-button DTMB (CTTB) measurements
DVB-T/H with T2	W6153A-2FP	Standard-based, one-button DVB-T/H measurements
	W6153A-3FP	Adds DVB-T2 measurements; requires 2FP
ISDB-T	W6155A-2FP	Standard-based, one-button ISDB-T, ISDB-T _{B'} , and ISDB-T _{SB} measurements
ISDB-Tmm	W6155A-3FP	Adds ISDB-Tmm measurements; requires 2FP

Configure Your Agilent CXA Signal Analyzer

Step 9. Choose measurement application or software, continued		
Description	Fixed license	Additional information
General purpose		
Spectrum analyzer	Standard	Traditional spectrum analysis plus many new and enhanced functions; power measurements based on industry specifications
Analog demodulation	W9063A-2FP	One-button AM/FM/PM demodulation with metrics, tune and listen, and AF spectrum
Phase noise	W9068A-2FP	One-button phase noise measurements in frequency domain (log plot) and time domain (spot frequency)
Noise figure	W9069A-1FP (requires preamplifier)	One-button noise figure, gain and related measurements; requires preamplifier to meet specifications; works with Agilent N400xA Series smart noise sources and 346 Series noise sources
VXA vector signal and WLAN modulation analysis	W9064A-1FP	Vector signal analysis; high-resolution, FFT-based spectrum and time-domain measurements, time gating, AM/FM/PM demodulation, statistical measurements
	W9064A-2FP	Adds flexible digital modulation analysis; general purpose digital modulation for 2-16FSK, 2-8PSK, and 16-1024QAM, as well as more than 15 additional formats; requires 1FP
	W9064A-3FP	Adds IEEE 802.11 a/b/g/j/p WLAN modulation analysis; requires 1FP
EMC	W6141A-2FP	Pre-compliance conducted and radiated emission measurements
MATLAB software	N6171A-M01	Basic signal analysis package; adds MATLAB software environment and the Instrument Control Toolbox (not upgradeable)
	N6171A-M02	Standard signal analysis package; includes basic package and adds Communications Toolbox and Signal Processing Toolbox (not upgradeable)
	N6171A-M03	Advanced signal analysis package; includes standard package and adds Filter Design Toolbox, RF Toolbox, and System Test (not upgradeable)
Pulse	N9051A-2FP	Automates pulse measurements; combines signal analysis and amplitude-vs-time measurements
	N9051A-3FP	Adds phase and frequency measurements; requires 2FP
	N9051A-4FP	Adds extended analysis and statistics; requires 2FP
89600B vector signal analysis (VSA) software	89601B	Industry-leading measurement software for evaluating and troubleshooting signals in R&D; PC-based software supporting more than 30 measurement platforms, plus more than 70 signal standards and modulation types including MIMO analysis; www.agilent.com/find/89600B

Configure Your Agilent CXA Signal Analyzer

Step 10. Choose physical instrument configuration

Description	Option number	Additional information
Bench top configuration	Standard	Provides two side carrying straps, four rear feet, and four bottom feet with a tilt stand; a front panel protective cover is included
Portable configuration	N9000A-PRC	Provides a convenient, pivoting carrying handle as well as rubber protective corners and end guards; this configuration is intended for applications requiring more rugged packaging, such as in the field



CXA bench top configuration



Portable configuration includes pivoting carrying handle and protective corner rubber guards (front protective cover comes standard) – N9000A-PRC

Configure Your Agilent CXA Signal Analyzer

Step 11. Choose accessories		
Description	Option number	Additional information
Mouse, USB interface	Standard	Every CXA is shipped with a USB mouse which enhances the usability of the Windows XP® Professional operating system
User guide	Standard	<ul style="list-style-type: none"> • US – English localization • All user documentation is included in the CXA's embedded, context-sensitive help system and on a CD that is shipped with the instrument • User documentation can be downloaded from: www.agilent.com/find/cxa_manuals
Rack mount	N9000A-1CM	Adds rack mount flanges to the CXA
Front handles	N9000A-1CN	Adds front handles to the CXA
Rack mount with handles	N9000A-1CP	Adds rack mount flanges and handles to the CXA
Rack slide	N9000A-1CR	Adds a non-tilting rack slide to the CXA
Accessory pouch	N9000A-BAG	Easily store and carry the N9000A-KB2 keyboard and USB mouse in this attachable pouch
USB DVD-ROM/CD-R/RW drive	N9000A-DVR	Enhances the usability of the Windows XP Professional operating system
USB storage device (blank)	N9000A-EFM	Enhances the usability of the Windows XP Professional operating system
Hard transit case	N9000A-HTC	Ultra-durable, wheeled carrying case offers maximum protection and portability
US 65-key USB keyboard	N9000A-KB2	Compact design fits in N9000A-BAG accessory pouch for convenient storage
Keyboard, USB interface	N9000A-KYB	Enhances the usability of the Windows XP Professional operating system (Note: Does not fit N9000A-BAG accessory pouch)
Minimum loss pad, 50 to 75 Ω (type-N to BNC)	N9000A-MLP	<ul style="list-style-type: none"> • 50 Ω type-N male to 75 Ω BNC female adapter • Frequency range: 9 MHz to 2 GHz • Input/output return loss: 20 dB and 11 dB • Insertion loss: 5.7 dB

Step 12. Choose localized Getting Started guides	
Description	Option number
Getting Started Guide Korean	N9000A-AB1
Getting Started Guide Simplified Chinese	N9000A-AB2
Getting Started Guide German	N9000A-ABD
Getting Started Guide French	N9000A-ABF
Getting Started Guide Japanese	N9000A-ABJ
Getting Started Guide Russian	N9000A-AKT

For more information on accessories go to: www.agilent.com/find/accessories

Configure Your Agilent CXA Signal Analyzer

Step 13. Choose warranty length		
Description	Option number	Additional information
1-year return-to-Agilent warranty and service	Standard (R-51B-001-C)	1-year warranty is included at no additional charge
3-year return-to-Agilent warranty and service	R-51B-001-3C	Recommended

Step 14. Add calibration, technical training, support, and upgrade services		
Description	Option number	Additional information
Commercial calibration certificate with test data	N9000A-UK6	Calibration certificate only available at time of instrument purchase; only provides measurement results
ISO 17025 compliant calibration	N9000A-1A7 ¹	Provides ISO 17025A compliant calibration from factory
ANSI Z540 compliant calibration	N9000A-A6J ¹	Provides ANSI Z540 compliant calibration from factory
Calibration service: Agilent upfront support plan, 3-year term	R-50C-011-3	Agilent tests your instrument against its original specifications and automatically makes adjustments if outside of specified parameters; pre- and post-adjustment measurement data reports also provided
Service: remote scheduled productivity assistance	PS-S10-100	Hourly phone-in technical support service designed to help you understand and operate your equipment through convenient phone and Web access
Service: 1-day start-up assistance	PS-S20-01	Training on how to operate your instrument effectively (recommended)
Service: productivity assistance	PS-S20-100	Daily instrument and application consulting using your equipment and device under test
Service: custom engineering service	PS-X10-100	Application-specific technical assistance

1. These are standard-compliant calibrations provided by the Agilent factory. If local accreditation is required (i.e. A2LA, UKAS, DKD, NVLAP, etc.), please contact your local Agilent Service Center.

Other calibration options may be available; for more information on calibration go to: www.agilent.com/find/calibration

For more information on training and application support services go to: www.agilent.com/find/training

Instrument Upgrades

Upgrade your existing CXA



www.agilent.com/find/CXA_upgrades

Fast license-key upgrades for performance options that do not require additional hardware:

1. Place an order for the upgrade with Agilent and request to receive the option upgrade entitlement certificate and a one-time software upgrade license through email
2. Redeem the certificate through the Web by following the instructions on the certificate
3. Install the license file and latest software in the CXA
4. Begin using the new capability ^{1,2}

Installation and testing information is available at: www.agilent.com/find/CXA_upgrades

Description	Upgrade number	Requirements (CXA must already include the following)	Additional information
Increase analysis bandwidth from 10 to 25 MHz	N9000AK-B25	None	
Add preamplifier, 3 GHz	N9000AK-P03	None	
Add preamplifier, 7.5 GHz	N9000AK-P07	None	Not compatible with Option 503
Add fine resolution step attenuator	N9000AK-FSA	None	
Upgrade to the precision frequency reference	N9000AK-PFR	None	For instruments with serial number greater than MY/SG/US 51080000 only
Upgrade to the precision frequency reference	N9000AK-HL5	None	Requires hardware and license key; for instruments with serial number less than MY/SG/US 51080000 only
Add tracking generator, 3 GHz	N9000AK-T03	None	Requires hardware and license key
Add tracking generator, 6 GHz	N9000AK-T06	None	Requires hardware and license key
Add basic EMI precompliance features	N9000AK-EMC	None	
Add external source control	N9000AK-ESC	None for analyzer	Adds feature to control the Agilent RF MXG signal source (N5181A/N5182A) ³ for scalar stimulus/response measurements
Add enhanced display package	N9000AK-EDP	None	
Upgrade to single-core, high-performance processor with removable solid-state drive	N9000AK-PC3	None	Adds single-core, high-performance CPU for speed enhancement and a removable solid-state drive for data sanitization; for instruments with serial number less than MY/SG/US 49370546 only
Additional removable solid-state drive	N9000AK-SSD	Requires N9000AK-PC3 for instrument with serial number less than MY/SG/US 49370546	

1. At the time of manufacture, the hardware related to many of these options was fully adjusted and the option performance was verified to be within its warranted specifications. Within one year of the initial calibration date of the analyzer, this option is fully calibrated with no further adjustment or verification testing.
2. If this analyzer has been adjusted as part of a repair or calibration during its first year, or if the analyzer is more than one year old, additional adjustment and performance verification tests are required to ensure that some newly installed options are functioning properly. However, the completion of these tests does not guarantee that the analyzer meets all warranted specifications.
3. Option UNZ (fast switching) is required on the MXG except for cases where all points in the sweep are less than 3 GHz and the point trigger method is set to external triggering using BNC cables. Even for the sweep less than 3 GHz with external triggering, Option UNZ on the MXG is recommended to achieve the fastest tracking speed. For an existing MXG, customer-installable upgrades (N5181AK/N5182AK-UNZ) are available.

Instrument Upgrades

Description	Upgrade number	Requirements (CXA must already include the following)	Additional information
Portable configuration	N9000AK-PRC	None	Not compatible with Options 1CM, 1CP, 1CN, 1CR
Front panel protective cover	N9000AK-CVR	None	
USB DVD-ROM/CD-R/RW drive	N9000AK-DVR	None	
USB storage device (blank)	N9000AK-EFM	None	
Hard transit case	N9000AK-HTC	None	
Keyboard, USB interface	N9000AK-KYB	None	Enhances the usability of the Windows XP Professional operation system (Note: Does not fit N9000AK-BAG accessory pouch)
US 65-key USB keyboard	N9000AK-KB2	None	Compact design fits in N9000A-BAG accessory pouch for convenient storage
Mouse, USB interface	N9000AK-MSE		
USB storage device loaded with CXA instrument software	N9000AK-SWM		
Accessory pouch	N9000AK-BAG		Easily store and carry the N9000AK-KB2 keyboard and USB mouse in this attachable pouch
Minimum loss pad, 50 to 75 Ω (type-N to BNC)	N9000AK-MLP		
Rack mount kit	N9000AK-1CM		Not compatible with Options PRC, 1CP, 1CN
Front handle kit	N9000AK-1CN		Not compatible with Options PRC, 1CP, 1CM
Rack mount and handle kit	N9000AK-1CP		Not compatible with Options PRC, 1CM, 1CN
Rack slide kit	N9000AK-1CR		Not compatible with Option PRC

For more information visit: www.agilent.com/find/accessories

Related Literature

Agilent CXA signal analyzers

Brochure	5990-3927EN
Data Sheet	5990-4327EN
X-Series Measurement Applications Brochure	5989-8019EN

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Belgium	32 (0) 2 404 93 40
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Sweden	0200-88 22 55
United Kingdom	44 (0) 118 9276201

For other unlisted countries:

www.agilent.com/find/contactus

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