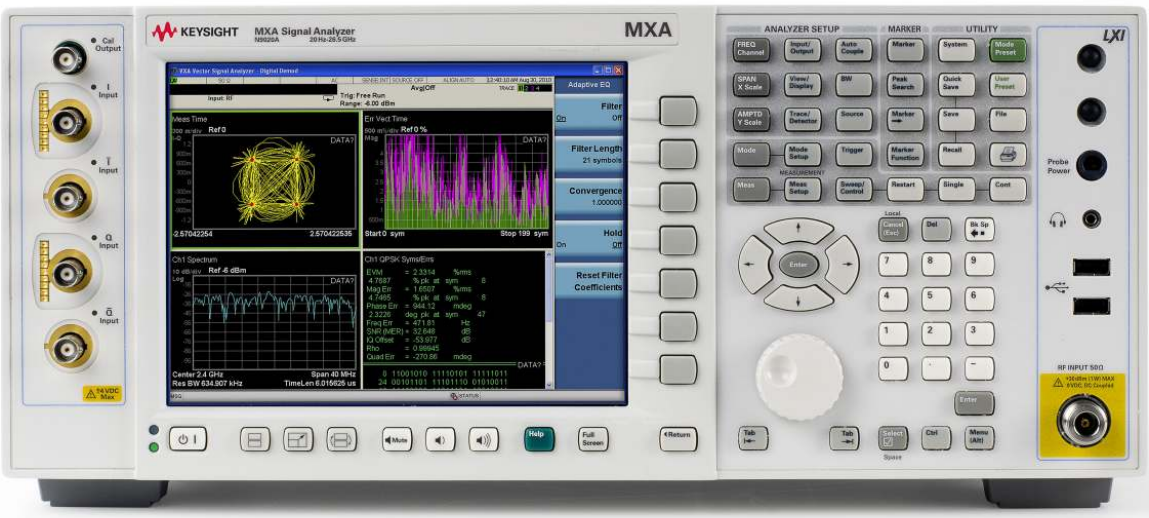
Keysight MXA
X-Series Signal Analyzer
N9020A

Configuration Guide

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



KEYSIGHT TECHNOLOGIES

Configure Your Keysight MXA Signal Analyzer

This step-by-step process will help you configure your new MXA X-Series signal analyzer. Tailor the performance to meet your requirements. For detailed specifications, refer to the MXA signal analyzer specification guide (N9020-90113). For a summary of specifications, refer to the MXA signal analyzer data sheet (5989-4942EN).

Included in base product

Standard options and accessories come with the PXA base model at no additional charge and do not need to be ordered. They include:

- Spectrum analyzer measurement application
- Dual-core, high-performance processor, 8 GB RAM, removable solid-state drive
- Frequency reference
- Mechanical attenuator
- 10 MHz/25 MHz analysis bandwidth
- Enhanced phase noise
- Windows Embedded Standard 7
- Real-time link
- Benchtop configuration
- Mouse
- User guide
- Front-panel protective cover
- Power cord
- 3-year return-to-Keysight warranty

Step 1. Select maximum frequency range (required option)

Description	Option number	Additional information
Frequency range, 10 Hz to 3.6 GHz	N9020A-503	
Frequency range, 10 Hz to 8.4 GHz	N9020A-508	
Frequency range, 10 Hz to 13.6 GHz	N9020A-513	
Frequency range, 10 Hz to 26.5 GHz	N9020A-526	

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 3.6 GHz, +35 dB: 3.6 GHz to 26.5 GHz
Preamplifier, 100 kHz to 3.6 GHz	N9020A-P03	Compatible with frequency range options: N9020A-503, N9020A-508, N9020A-513, and N9020A-526
Preamplifier, 100 kHz to 8.4 GHz	N9020A-P08	Compatible with frequency range options: N9020A-508, N9020A-513, and N9020A-526
Preamplifier, 100 kHz to 13.6 GHz	N9020A-P13	Compatible with frequency range options: N9020A-513 and N9020A-526
Preamplifier, 100 kHz to 26.5 GHz	N9020A-P26	Compatible with frequency range option: N9020A-526

Step 3. Choose frequency reference

Description	Option number	Additional information
Frequency reference	Standard	Aging rate: ± 1 x 10^{-6}/year
Precision frequency reference	N9020A-PFR	– Reduces frequency drift for more accurate measurements – Aging rate: ± 1 x 10^{-7}/year
Atomic frequency reference	J7203A	– Superb long-term frequency stability – Aging rate: ± 1 x 10^{-9}/year; ordered as an accessory

Step 4. Choose an attenuator

Description	Option number	Additional information
Mechanical attenuator	Standard	2 dB steps, 0 to 70 dB; installed as N9020A-FSA
Electronic attenuator up to 3.6 GHz	N9020A-EA3	In addition to the mechanical attenuator; 1 dB steps, 0 to 24 dB

Step 5. Choose analysis bandwidth		
Description	**Option number**	**Additional information**
10 MHz/25 MHz analysis bandwidth	Standard	Useful for most cellular communications, wireless connectivity, and audio/video broadcasting measurement applications; installed as N9020A-B25
40 MHz analysis bandwidth	N9020A-B40	Extends the analysis bandwidth to 40 MHz (Option MPB required for measurements at frequency > 3.6 GHz); included in B85, B1A, or B1X; also enables fast sweep capability installed as N9020A-FS1; if Option BAA is installed, provides 40 MHz per channel baseband bandwidth
85 MHz analysis bandwidth	N9020A-B85	Extends the analysis bandwidth to 85 MHz (Option MPB required for measurements > 3.6 GHz); also enables fast sweep capability installed as N9020A-FS1; not compatible with Option BBA
125 MHz analysis bandwidth	N9020A-B1A	Extends the analysis bandwidth to 125 MHz (Option MPB required for measurements > 3.6 GHz); also enables fast sweep capability installed as N9020A-FS1; not compatible with Option BBA
160 MHz analysis bandwidth	N9020A-B1X	Extends the analysis bandwidth to 160 MHz (Option MPB required for measurements > 3.6 GHz); also enables fast sweep capability installed as N9020A-FS1; not compatible with Option BBA
Microwave preselector bypass	N9020A-MPB	Required for wide analysis bandwidth measurements with Option B40, B85, B1A, or B1X at frequency > 3.6 GHz; also enables fast sweep capability installed as N9020A-FS1

Step 6. Choose performance options		
Description	**Option number**	**Additional information**
Enhanced phase noise	Standard [1]	Installed as N9020A-EP2
Digital processor with 2 GB capture memory	N9020A-DP2	Comes standard with Option B40, B85, B1A, or B1X; also enables fast sweep capability installed as N9020A-FS1
I/Q baseband inputs, analog	N9020A-BBA	Single-ended/differential, 50 Ω/1 MΩ impedance; not compatible with Option B85, B1A, or B1X
External mixing	N9020A-EXM	Connects with Keysight and third party mixers to extend frequency coverage up to 1.1 THz; single port [2] for LO out and IF in (SMA female)
Fast power	N9020A-FP2	Accelerates the power measurements such as ACPR; requires Option B40
Noise floor extension	N9020A-NFE	Improves analyzer's DANL performance (instrument alignment based processes); installed as N9020A-NF2
Time domain scan	N9020A-TDS	Improves scan speed for EMC pre-compliance tests; requires N6141A EMC pre-compliance measurement application and Option DP2, or B40 (or wider bandwidth option)

Step 7. Add real-time spectrum analysis		
Description	**Option number**	**Additional information**
Real-time analysis up to 160 MHz BW, basic detection	N9020A-RT1	Includes frequency mask trigger (FMT) and time qualified trigger (TQT); minimum 17.3 µs signal duration for 100% probability of intercept (POI); requires Option B85, B1A, or B1X, which determines maximum real-time bandwidth; also supports Option EXM
Real-time analysis up to 160 MHz BW, optimum detection	N9020A-RT2	Includes frequency mask trigger (FMT) and time qualified trigger (TQT); minimum 3.57 µs signal duration for 100% probability of intercept (POI); requires Option B1X, B1A, or B85, which determines maximum real-time bandwidth; also supports Option EXM
Real-time spectrum recorder and analyzer application	N9020A-RTR	Enables recording, analyzing and playback of spectrum density data over time for detecting and analyzing signal anomalies; requires Option RT1 or RT2

1. All instruments with serial number prefix ≥ MY/SG/US5233 are installed with the N9020A-EP2 standard for the enhanced phase noise performance. The N9020A-EP2 is not upgradable.
2. When used with the Keysight 11970 Series external mixers, an external diplexer is required. Recommended diplexer can be purchased from Keysight as N9029AE13, or from OML Inc. as DPL313B.

Step 8. Add optional features		
Description	**Option number**	**Additional information**
Enhanced display package	N9020A-EDP	Includes spectrogram, trace zoom, and zone span
Basic EMI precompliance	N9020A-EMC	Perform basic EMI precompliance measurements with CISPR 16-1-1 detectors and bandwidths; tune and listen, and measure at marker are also available
External source control	N9020A-ESC	External source control for Keysight EXG, MXG, and PSG signal generators; supports external mixing; includes 3 BNC cables and 1 cross-over LAN cable

Step 9. Choose operating system		
Description	**Option number**	**Additional information**
Windows Embedded Standard 7	Standard	Installed as N9020A-W7X

Step 10. Add security features		
Description	**Option number**	**Additional information**
Additional removable solid-state drive	N9020A-SSD	Provides a fully-imaged, removable solid-state drive in addition to the one installed in the instrument
Exclude launch program	N9020A-SF1	Prevents the launching of Windows programs from the instrument application
Prohibit saving results	N9020A-SF2	Prevents the saving/recall of measurement results or user configurations to/from instrument's data storage

Step 11. Add rear panel output utilities		
Description	**Option number**	**Additional information**
Second IF output	N9020A-CR3	Wideband IF out; center frequency depends on IF path; output on Aux IF connector at rear panel
Arbitrary IF output	N9020A-CRP	IF out 10 to 75 MHz (in 500 kHz steps); output on Aux IF connector at rear panel
Y-axis screen video output	N9020A-YAS	Screen video (0-1 volt open circuit) on rear panel analog out
Real-time link	Standard	The LVDS connector allows MXA to connect to X-COM data recorder for data streaming (up to 40 MHz BW), and to the N5106A PXB baseband generator and channel emulator; requires Option B40 or DP2; installed as N9020A-RTL

Step 12. Choose measurement application or software and license type

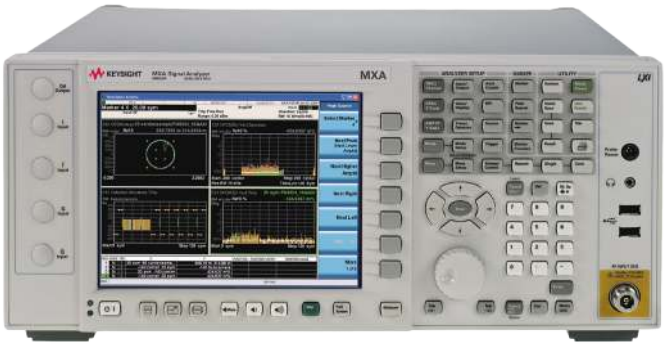
Note: The last two letters of the ordering numbers indicate the license type—FP stands for fixed perpetual, TP for transportable perpetual; it is recommended that you configure each application with the same license type; visit www.keysight.com/find/X-Series_transportable for more information about transportable licenses

Description	Fixed license	Transportable license	Additional information
Cellular communications			
LTE/LTE-Advanced FDD	N9080B-1FP	N9080B-1TP	Standard-based, one-button LTE-FDD measurements; requires W7X - Windows 7 OS
	N9080B-2FP	N9080B-2TP	Standard-based, one-button LTE-Advanced FDD measurements; requires W7X, and N9080B-1FP/1TP
LTE/LTE-Advanced TDD	N9082B-1FP	N9082B-1TP	Standard-based, one-button LTE-TDD measurements; requires W7X - Windows 7 OS
	N9082B-2FP	N9082B-2TP	Standard-based, one-button LTE-Advanced TDD measurements; requires W7X, and N9082B-1FP/1TP
Multi-standard radio (MSR)	N9083A-1FP	N9083A-1TP	Standard-based, one-button MSR measurements on any combination of LTE-FDD, W-CDMA/HSPA/HSPA+, GSM/EDGE/EDGE Evo, cdma2000 and 1xEV-DO signals
W-CDMA/HSPA+	N9073A-1FP	N9073A-1TP	Standard-based, one-button W-CDMA measurements; supports analog baseband analysis with Option BBA (BBIQ inputs)
	N9073A-2FP	N9073A-2TP	Adds HSPA measurements; requires 1FP/1TP
	N9073A-3FP	N9073A-3TP	Adds HSPA+ measurements; requires 1FP/1TP, 2FP/2TP
	N9073A-XFP	N9073A-XTP	Adds single acquisition combined measurement, a SCPI-command-based measurement optimized for high-volume, high-throughput manufacturing; requires 1FP/1TP; not compatible with Options DP2, B40, B85, B1A, B1X, or MPB
GSM/EDGE/EVO	N9071A-2FP	N9071A-2TP	Standard-based, one-button GSM/EDGE measurements; supports analog baseband analysis with Option BBA (BBIQ inputs)
	N9071A-3FP	N9071A-3TP	Adds EDGE Evolution and VAMOS measurements; requires 2FP/2TP
	N9071A-XFP	N9071A-XTP	Adds single acquisition combined measurement, a SCPI-command-based measurement optimized for high-volume, high-throughput manufacturing; requires 2FP/2TP; not compatible with Options DP2, B40, B85, B1A, B1X, or MPB
TD-SCDMA/HSPA	N9079A-1FP	N9079A-1TP	Standard-based, one-button TD-SCDMA measurements; supports analog baseband analysis with Option BBA (BBIQ inputs)
	N9079A-2FP	N9079A-2TP	Adds HSPA/8PSK measurements, requires 1FP/1TP
1xEV-DO	N9076A-1FP	N9076A-1TP	Standard-based, one-button 1xEV-DO Rel 0, Rev A, and Rev B measurements; supports analog baseband analysis with Option BBA (BBIQ inputs)
cdma2000®/cdmaOne	N9072A-2FP	N9072A-2TP	Standard-based, one-button cdma2000 and cdmaOne measurements; supports analog baseband analysis with Option BBA (BBIQ inputs)
iDEN/WiDEN/MotoTalk	N6149A-2FP	N6149A-2TP	Standard-based, one-button iDEN measurements

Step 12. Choose measurement application software and license type, continued			
Description	**Fixed license**	**Transportable license**	**Additional information**
Wireless connectivity			
Mobile WiMAX™	N9075A-2FP	N9075A-2TP	Standard-based, one-button Mobile WiMAX measurements; supports analog baseband analysis with Option BBA (BBIQ inputs)
Fixed WiMAX	N9074A-XFP	N9074A-XTP	Single acquisition combined measurement, a SCPI-command-based measurement optimized for high-volume, high-throughput manufacturing; not compatible with Options DP2, B40, or MPB
WLAN 802.11a/b/g/n/ac	N9077A-2FP	N9077A-2TP	Standard-based, one-button 802.11a/b/g measurement; requires wide analysis bandwidth option, see Step 5 to choose the right bandwidth
	N9077A-3FP	N9077A-3TP	Adds 802.11n; requires 2FP/2TP; requires wide analysis bandwidth option, see Step 5 to choose the right bandwidth
	N9077A-4FP	N9077A-4TP	Adds 802.11ac; requires 2FP/2TP, 3FP/3TP; requires wide analysis bandwidth option, see Step 5 to choose the right bandwidth
	N9077A-5FP	N9077A-5TP	A SCPI-command-based list sequence that allows manufacturing users to make accelerated measurements for high-volume, high-throughput production; requires Option B40, or wider BW. (see Step 5)
Bluetooth®	N9081A-2FP	N9081A-2TP	Standard-based, one-button *Bluetooth* version 2.1+ EDR and Low Energy (LE) measurements
Digital video			
CMMB	N6158A-2FP	N6158A-2TP	Standard-based, one-button CMMB measurements; supports analog baseband analysis with Option BBA (BBIQ inputs)
Digital cable TV	N6152A-2FP	N6152A-2TP	Standard-based, one-button DVB-C (J.83 Annex A/C) measurements; supports analog baseband analysis with Option BBA (BBIQ inputs)
	N6152A-3FP	N6152A-3TP	Standard-based, one-button J.83 Annex B measurements; supports analog baseband analysis with Option BBA (BBIQ inputs)
DTMB (CTTB)	N6156A-2FP	N6156A-2TP	Standard-based, one-button, DTMB (CTTB) measurements; supports analog baseband analysis with Option BBA (BBIQ inputs)
DVB-T/H/T2	N6153A-2FP	N6153A-2TP	Standard-based, one-button DVB-T/H measurements; supports analog baseband analysis with Option BBA (BBIQ inputs)
	N6153A-3FP	N6153A-3TP	Adds DVB-T2 measurements; requires 2FP/2TP
ISDB-T/Tmm	N6155A-2FP	N6155A-2TP	Standard-based, one-button ISDB-T, ISDB-T_B, and ISDB-T_{SB}; supports analog baseband analysis with Option BBA (BBIQ inputs)
	N6155A-3FP	N6155A-3TP	Adds ISDB-Tmm measurements; requires 2FP/2TP
General purpose			
Spectrum analyzer	Standard	Not available	Traditional spectrum analysis plus many new and enhanced functions; power measurements based on industry specifications
Analog demodulation	N9063A-2FP	N9063A-2TP	Adds one-button measurement for AM/FM/PM demodulation with metrics, AF spectrum, audio analysis, and tune-and-listen; supports analog output
	N9063A-3FP	N9063A-3TP	Adds FM Stereo and RDS; requires 2FP/2TP
Phase noise	N9068A-2FP	N9068A-2TP	Adds one-button measurements for analyzing phase noise in frequency domain (log plot) and time domain (spot frequency)

Step 12. Choose measurement application software and license type, continued			
Description	**Fixed license**	**Transportable license**	**Additional information**
General purpose, continued			
Noise figure	N9069A-1FP (requires preamplifier to meet specifications)	N9069A-1TP (requires preamplifier to meet specifications)	Adds one-button measurements for noise figure, gain, and related metrics; requires preamplifier to meet specifications; works with Keysight N400xA Series smart noise sources and 346 Series noise sources; supports U7227-Series USB preamplifier
	N9069A-2FP	N9069A-2TP	Advanced NF measurement features including external LO control over GPIB/LAN/USB, and manual mode to simulate the legacy NF meter; requires 1FP/1TP
VXA vector signal analysis	N9064A-1FP	N9064A-1TP	Vector signal analysis; high-resolution, FFT-based spectrum and time-domain measurements, time gating, AM/FM/PM demodulation, statistical measurements; analog baseband analysis with Option BBA (BBIQ inputs); also supports Option EXM
	N9064A-2FP	N9064A-2TP	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/1TP
EMC	N6141A-2FP	N6141A-2TP	Pre-compliance conducted and radiated emission measurements
MATLAB software	N6171A-M01	Not available	Basic signal analysis package; adds MATLAB software environment and the Instrument Control Toolbox (not upgradeable)
	N6171A-M02	Not available	Standard signal analysis package; includes basic package and adds Communications Toolbox and Signal Processing Toolbox (not upgradeable)
	N6171A-M03	Not available	Advanced signal analysis package; includes standard package and adds Filter Design Toolbox, RF Toolbox, and System Test (not upgradeable)
Pulse	N9051A-2FP	Not available	Automates pulse measurements; combines signal analysis and amplitude-vs-time measurements
	N9051A-3FP	Not available	Adds phase and frequency measurements; requires 2FP
	N9051A-4FP	Not available	Adds extended analysis and statistics; requires 2FP
SCPI command language compatibility	N9062A-2FP	Not available	Adds capability to emulate the R&S FSP/FSU/FSE spectrum analyzers
Remote language compatibility	N9061A-1FP	Not available	Adds capability to emulate the 8566/68 spectrum analyzers
	N9061A-2FP	Not available	Adds capability to emulate the 856xE/EC spectrum analyzers
89600 vector signal analysis (VSA) software	Not available	89601B (transportable license is standard)	Industry-leading measurement software for evaluating and troubleshooting signals in R&D; PC-based software supporting more than 40 measurement platforms, plus more than 75 signal standards and modulation types including MIMO analysis; www.keysight.com/find/89600_VSA

Step 13. 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	N9020A-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



MXA bench top configuration

Portable configuration includes pivoting carrying handle and protective corner rubber guards (front protective cover comes standard) – N9020A-PRC

Step 14. Choose accessories		
Description	**Option number**	**Additional information**
Mouse, USB interface	Standard	Enhances the usability of the Windows operating system
User guide	Standard	– US – English localization – All user documentation is included in the MXA's embedded, context-sensitive help system and on a DVD that is shipped with the instrument – User documentation can be downloaded from: www.keysight.com/find/mxa_manuals
Front-panel protective cover	Standard	
Power cord	Standard	Dependent upon the region of use
Rack mount	N9020A-1CM	Adds rack mount flanges to the MXA
Front handles	N9020A-1CN	Adds front handles to the MXA
Rack mount with handles	N9020A-1CP	Adds rack mount flanges and handles to the MXA
Rack slide	N9020A-1CR	Adds a non-tilting rack slide to the MXA
Accessory pouch	N9020A-BAG	Easily store and carry the N9020A-KB2 keyboard and USB mouse
USB DVD-ROM/CD-R/RW drive	N9020A-DVR	Enhances the usability of the Windows operating system
Hard transit case	N9020A-HTC	Ultra-durable, wheeled carrying case offers maximum protection and portability
US 65-key USB keyboard	N9020A-KB2	Compact design fits in N9020A-BAG accessory pouch for convenient storage
Keyboard, USB interface	N9020A-KYB	Enhances the usability of the Windows operating system (Note: Does not fit N9020A-BAG accessory pouch)
Minimum loss pad, 50 to 75 Ω (type-N to BNC)	N9020A-MLP	– 50 Ω type-N male to 75 Ω BNC female adapter – Frequency range: 9 MHz to 2 GHz – Input/output return loss: 20 and 11 dB – Insertion loss: 5.7 dB
V-band waveguide harmonic mixer, 50 to 75 GHz	M1970V-001	Requires Option EXM; USB mixer with smart features
Extended V-band waveguide harmonic mixer, 50 to 80 GHz	M1970V-002	Requires Option EXM; USB mixer with smart features
E-band waveguide harmonic mixer, 60 to 90 GHz	M1970E	Requires Option EXM; USB mixer with smart features
W-band waveguide harmonic mixer, 75 to 110 GHz	M1970W	Requires Option EXM; USB mixer with smart features
26 to 40 GHz waveguide harmonic mixer	11970A	Requires Option EXM and N9029AE13 diplexer
33 to 50 GHz waveguide harmonic mixer	11970Q	Requires Option EXM and N9029AE13 diplexer
40 to 60 GHz waveguide harmonic mixer	11970U	Requires Option EXM and N9029AE13 diplexer
50 to 75 GHz waveguide harmonic mixer	11970V	Requires Option EXM and N9029AE13 diplexer
75 to 110 GHz waveguide harmonic mixer	11970W	Requires Option EXM and N9029AE13 diplexer
LO/IF diplexer	N9029AE13	Ordering convenience; required for 11970 Series external mixers
90 to 140 GHz OML harmonic mixer	N9029AE08	Ordering convenience; requires Option EXM
110 to 170 GHz OML harmonic mixer	N9029AE06	Ordering convenience; requires Option EXM
140 to 220 GHz OML harmonic mixer	N9029AE05	Ordering convenience; requires Option EXM
220 to 325 GHz OML harmonic mixer	N9029AE03	Ordering convenience; requires Option EXM
50 to 75 GHz frequency extension module	N9029AV15	VDI signal analyzer frequency extension module; requires Option EXM
60 to 90 GHz frequency extension module	N9029AV12	VDI signal analyzer frequency extension module; requires Option EXM
75 to 110 GHz frequency extension module	N9029AV10	VDI signal analyzer frequency extension module; requires Option EXM
90 to 140 GHz frequency extension module	N9029AV08	VDI signal analyzer frequency extension module; requires Option EXM
110 to 170 GHz frequency extension module	N9029AV06	VDI signal analyzer frequency extension module; requires Option EXM
140 to 220 GHz frequency extension module	N9029AV05	VDI signal analyzer frequency extension module; requires Option EXM
220 to 330 GHz frequency extension module	N9029AV03	VDI signal analyzer frequency extension module; requires Option EXM
325 to 500 GHz frequency extension module	N9029AV02	VDI signal analyzer frequency extension module; requires Option EXM
550 to 750 GHz frequency extension module	N9029AV1B	VDI signal analyzer frequency extension module; requires Option EXM
750 to 1100 GHz frequency extension module	N9029AV01	VDI signal analyzer frequency extension module; requires Option EXM
Power supply for VDI module	N5262VDI-175	Required for the N9029AVxx VDI module
Atomic frequency reference	J7203A	Improves long-term frequency stability; requires firmware A.14.00 or higher
USB external preamplifier, 10 MHz to 4 GHz	U7227A	Requires firmware A.14.00 or higher
USB external preamplifier, 0.1 to 26.5 GHz	U7227C	Requires firmware A.14.00 or higher
USB external preamplifier, 2 to 50 GHz	U7227F	Requires firmware A.14.00 or higher

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

Step 15. Choose localized Getting Started guides	
Description	**Option number**
Getting started guide MXA Korean localization	N9020A-AB1
Getting started guide MXA Chinese localization	N9020A-AB2
Getting started guide MXA German localization	N9020A-ABD
Getting started guide MXA French localization	N9020A-ABF
Getting started guide MXA Japanese localization	N9020A-ABJ
Getting started guide MXA Russian localization	N9020A-AKT

Step 16. Choose warranty length		
Description	**Option number**	**Additional information**
Return-to-Keysight warranty, 3 years	Standard	3-year warranty is included at no additional charge
Warranty Assurance Plan, Return-to-Keysight, 5 years	R-51B-001-5C	

Step 17. Add calibration, technical training, support, and upgrade services		
Description	**Option number**	**Additional information**
Commercial calibration certificate with test data	N9020A-UK6	Calibration certificate only available at time of instrument purchase; only provides measurement results
Keysight Calibration + Uncertainties + Guardbanding (accredited cal)	N9020A-AMG	Provides ISO 17025A accredited calibration from factory
ANSI Z540-1-1994 Calibration	N9020A-A6J	Provides ANSI Z540 compliant calibration from factory
Calibration Assurance Plan, Return-to-Keysight, 3 years	R-50C-011-3	Keysight 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

Other calibration options may be available; for more information on calibration go to: www.keysight.com/find/calibration
For more information on training and application support services go to: www.keysight.com/find/training

Instrument Upgrades

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

1. Place an order for the upgrade with Keysight 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 MXA
4. Begin using the new capability [1, 2]

Installation and testing information is available at:
www.keysight.com/find/mxa_upgrades

You Can Upgrade!

Options can be added after your initial purchase.

UP GRADE

Most X-Series options are license-key upgradeable.

Upgrades for analysis bandwidth depend on the vintage of the instrument and the options already installed. More than one option may be required to achieve desired wider analysis bandwidth. Use our web-based calculator to find the upgrade options you may need:
www.keysight.com/find/BW-selector

Description	Upgrade number	Requirements (MXA must already include the following)	Additional information
Increase frequency from 3.6 to 8.4 GHz	N9020AK-F01	503	
Increase frequency from 3.6 to 13.6 GHz	N9020AK-F02	503	
Increase frequency from 3.6 to 26.5 GHz	N9020AK-F03	503	
Increase frequency from 8.4 to 13.6 GHz	N9020AK-F06	508	
Increase frequency from 8.4 to 26.5 GHz	N9020AK-F07	508	
Increase frequency from 13.6 to 26.5 GHz	N9020AK-F10	513	
Increase analysis bandwidth from 10 MHz to 25 MHz	N9020AK-B25 [3]	None	Also enables 25 MHz per channel baseband bandwidth if Option BBA is installed
Increase analysis bandwidth from 10 to 40 MHz	N9020AK-B40	DP2 or MPB	Also enables 40 MHz per channel baseband bandwidth if Option BBA is installed
Increase analysis bandwidth from 25 to 40 MHz	N9020AK-BU1	B25 and DP2 or MPB	Also enables 40 MHz per channel baseband bandwidth if Option BBA is installed
Increase analysis bandwidth to 40 MHz. Option 508, 513, and 526 only	N9020AK-HL4	508, 513, or 526 Serial prefix < US/SG/MY5233	Includes hardware and license key; also adds microwave preselector bypass and enables 40 MHz per channel baseband bandwidth if Option BBA is installed; not compatible with Option 503
	N9020AK-HLA	508, 513, or 526 Serial prefix ≥ US/SG/MY5233	
Increase analysis bandwidth to 40 MHz, Option 503 only	N9020AK-HL8	503 Serial prefix < US/SG/MY5233	Includes hardware and license key; also enables 40 MHz per channel baseband bandwidth if Option BBA is installed; only compatible with Option 503
	N9020AK-HL9	503 Serial prefix ≥ US/SG/MY5233	
Increase analysis bandwidth from 10/25 MHz to 85 MHz; Option 503 only	N9020AK-HLD	503 Serial prefix < US/SG/MY5233	Includes hardware and license key; only compatible with Option 503
Increase analysis bandwidth from 10/25 MHz to 85 MHz; Option 508, 513, and 526 only	N9020AK-HLE	508, 513, 526 Serial prefix < US/SG/MY5233	Includes hardware and license key; also add microwave preselector bypass; only compatible with Option 508, 513, 526
Increase analysis bandwidth from 40 MHz to 85 MHz	N9020AK-HLB	B40 Serial prefix < US/SG/MY5233	Includes hardware and license key; not compatible with Option BBA
	N9020AK-HLC	B40 Serial prefix ≥ US/SG/MY5233	

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 two years 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 two years, or if the analyzer is more than two years 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. This upgrade option is for instrument(s) ordered before May 1, 2011.

Description	Upgrade number	Requirements (MXA must already include the following)	Additional information
Increase analysis bandwidth from 85 MHz to 125 MHz	N9020AK-BU4	B85	License key only
Increase analysis bandwidth from 85 MHz to 160 MHz	N9020AK-BU5	B85	License key only
Increase analysis bandwidth from 125 MHz to 160 MHz	N9020AK-BU6	B1A	License key only
Real-time analysis up to 160 MHz BW, basic detection	N9020AK-RT1	B85, B1A, or B1X (Analysis BW option determines maximum real-time BW)	Includes frequency mask trigger (FMT) and time qualified trigger (TQT); minimum 17.3 µs signal duration for 100% POI; supports external mixing Option EXM; license key upgrade. Combination of Win 7/PC4 required for optimal display performance
Real-time analysis up to 160 MHz BW, optimum detection	N9020AK-RT2	B1X, B1A, or B85 (Analysis BW option determines maximum real-time BW)	Includes frequency mask trigger (FMT) and time qualified trigger (TQT); minimum 3.57 µs signal duration for 100% POI; supports external mixing Option EXM; license key upgrade; combination of Win 7/PC4 required for optimal display performance
Real-time spectrum recorder and analyzer application	N9020AK-RTR	RT1 or RT2	Enables recording, analyzing, and playback of spectrum density data over time for detecting and analyzing signal anomalies
Upgrade to the precision frequency reference	N9020AK-PFR	None	
Add an electronic attenuator, 3.6 GHz	N9020AK-EA3	None	
Add preamplifier, 3.6 GHz	N9020AK-P03	None	
Add preamplifier, 8.4 GHz	N9020AK-P08	None	Not compatible with Option 503
Add preamplifier, 13.6 GHz	N9020AK-P13	None	Not compatible with Options 503, 508
Add preamplifier, 26.5 GHz	N9020AK-P26	None	Not compatible with Options 503, 508, 513
Add analog baseband IQ inputs	N9020AK-BBA	None	Not compatible with Options B85, B1A, B1X
Add basic precompliance EMI features	N9020AK-EMC	None	
Add external source control	N9020AK-ESC	None	Adds feature to control the Keysight EXG, MXG, and PSG signal generators; includes 3 BNC cables and 1 cross-over LAN cable
Add external mixing	N9020AK-EXM	Serial prefix ≥ US/SG/MY5233 but < US/SG/MY5318	Includes hardware and license key
	N9020AK-HL6	Serial prefix ≥ US/SG/MY5318	Includes hardware and license key
Add fast power	N9020AK-FP2	B40, or B85, B1A, B1X	For fast power measurements such as ACPR
Add noise floor extension	N9020AK-NFE	None	Instrument alignment based; installed as N9020A-NF2
Add security features, exclude launch program	N9020AK-SF1	None	Prevents the launching of Windows programs from the instrument application
Add security features, prohibit saving results	N9020AK-SF2	None	Prevents the saving/recall of measurement results or user configurations to/from instrument's data storage

Description	Upgrade number	Requirements (MXA must already include the following)	Additional information
Upgrade operating system to Windows Embedded Standard 7			
From 32-bit processor	N9094AK-W7X [1] N9094AK-PC4 [1]	PC1 or PC2	Upgrade the existing 32-bit processor with Windows XP to a 64-bit performance processor, 8 GB RAM, with removable solid-state drive
From 64-bit processor	N9094AK-W7X [1] N9094AK-SSD [1]	PC4	For existing 64-bit processors provides operating system and removable solid-state drive
Upgrade to dual core 64-bit performance processor, 8 GB RAM, removable solid-state drive			
With Windows 7 operating system	N9094AK-W7X [1] N9094AK-PC4 [1]	PC1 or PC2	
Add removable solid-state drive			
With Windows 7 operating system	N9094AK-W7X [1] N9094AK-SSD [1]	PC4	For Windows 7 operating system provides additional removable solid-state drive
With Windows XP operating system	N9094AK-WXP [1] N9094AK-SSD [1]	Requires N9094AK-PC4 for instruments with serial number prefixes less than MY/SG/US 4910	For Windows XP operating system provides additional removable solid-state drive last order date is March 1, 2015; not compatible with the older MXA instruments with non-removable hard drives
Add second IF output	N9020AK-CR3	B40, B85, B1A, B1X, DP2, MPB, or CRP	
Add arbitrary IF output	N9020AK-CRP	B40, B85, B1A, B1X, DP2, MPB, or CR3	
Add second IF output and arbitrary IF output	N9020AK-HL3	None	Includes hardware and license key
Add time domain scan capability	N9020AK-TDS	N6141A and DP2, or B40 (or wider BW)	For EMC pre-compliance tests only
Add Y-axis screen video output	N9020AK-YAS	None	
Add enhanced display package	N9020AK-EDP	None	
USB DVD-ROM/CD-R/RW drive	N9020AK-DVR	None	
Keyboard, USB interface	N9020AK-KYB	None	Enhances the usability of the Windows operation system (Note: Does not fit N9020A-BAG accessory pouch)
US 65-Key USB keyboard	N9020AK-KB2	None	Compact design fits in N9020A-BAG accessory pouch for convenient storage
Accessory pouch	N9020AK-BAG	None	Easily store and carry the N9020AK-KB2 keyboard and USB mouse in this attachable pouch
Hard transit case	N9020AK-HTC	None	
Rack mount and handle kit	N9020AK-1CP	None	Not compatible with Options PRC, 1CM, 1CN
Front handle kit	N9020AK-1CN	None	Not compatible with Options PRC, 1CM, 1CP
Rack mount kit	N9020AK-1CM	None	Not compatible with Options PRC, 1CP, 1CN
Rack slide kit	N9020AK-1CR	None	Not compatible with Option PRC
Portable configuration	N9020AK-PRC	None	Not compatible with Options 1CM, 1CP, 1CN, 1CR
Minimum loss pad, 50 to 75 Ω (type-N to BNC)	N9020AK-MLP	None	
Front panel protective cover, additional	N9020AK-CVR	None	

1. Must be ordered under N9020AK.

Description	Upgrade number	Requirements (MXA must already include the following)	Additional information
System memory upgrade (2 GB)	N9020AK-MS1	None	Increases system memory; does not increase capture memory and is not required for instruments with serial number prefixes equal to or greater than MY4738, SG4738, US4736
Getting started guide MXA Korean localization	N9020AK-AB1	None	
Getting started guide MXA Chinese localization	N9020AK-AB2	None	
Getting started guide MXA German localization	N9020AK-ABD	None	
Getting started guide MXA French localization	N9020AK-ABF	None	
Getting started guide MXA Japanese localization	N9020AK-ABJ	None	
Getting started guide MXA Russian localization	N9020AK-AKT	None	

Related Literature

Keysight MXA signal analyzers

Publication title	Publication number
MXA X-Series Signal Analyzer N9020A, Brochure	5989-5047EN
MXA X-Series Signal Analyzer N9020A, Data Sheet	5989-4942EN
X-Series Measurement Applications, Brochure	5989-8019EN

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