

Keysight Technologies

MXG X-Series Signal Generators N5181B Analog & N5182B Vector

Configuration Guide



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



Unlocking Measurement Insights

Configure Your MXG X-Series Signal Generator

This step-by-step process will help you configure your MXG signal generator and choose options to meet your requirements. For detailed specifications, refer to the MXG signal generator data sheet (5991-0038EN).

N5181B MXG X-Series RF Analog Signal Generator

Configure your new MXG analog signal generator

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

Description	Option number	Additional information
Frequency range from 9 kHz to 3 GHz	N5181B-503	Not compatible with 506
Frequency range from 9 kHz to 6 GHz	N5181B-506	Not compatible with 503

Step 2. Choose connector configuration

Description	Option number	Additional information
Move all connectors to rear panel	N5181B-1EM	Not upgradeable

Step 3. Choose performance enhancement options

Description	Option number	Additional information
AM, FM, phase modulation	N5181B-UNT	
Low phase noise	N5181B-UNX	Not compatible with UNY, not upgradeable
Enhanced low phase noise	N5181B-UNY	Not compatible with UNX, not upgradeable
Fast switching	N5181B-UNZ	
Narrow pulse modulation	N5181B-UNW	
Pulse train generator	N5181B-320	Requires UNW
Multifunction generator	N5181B-303	
Avionics	N5181B-302	
Instrument security and removable memory card	N5181B-006	
High output power	N5181B-1EA	
Low specified power (< -110 dBm)	N5181B-1EQ	
Flexible reference input (1-50 MHz)	N5181B-1ER	
Expanded license key upgradeability	N5181B-099	Option 099 is recommended for anyone considering future upgrades. Option 099 simplifies the upgrade process by enabling upgrades via a license key for Options 1EA, 1EQ, and UNZ. Without Option 099, upgrades for these options require purchase and installation of hardware in a field retrofit kit. For more information, visit www.keysight.com/find/mxg_upgrades .

Step 4. Choose accessory and documentation options

Description	Option number
Rack slide kit	1CR012A
Front handle kit	1CN006A
Rack mount flange kit	1CM010A
Rack mount flange kit with front handles	1CP004A
Hard transit case	N5181B-AXT
CD-ROM containing English documentation set	N5181B-CD1
Service documentation, assembly and component	N5181B-0BW

Step 5. Choose warranty and calibration options

Description	Option number	
Return to Keysight Warranty, 3 years	Standard	
Warranty Assurance Plan, Return to Keysight, 5 years	R-51B-001-5Z	
Warranty Assurance Plan, Return to Keysight, 7 years	R-51B-001-7Z	
Warranty Assurance Plan, Return to Keysight, 10 years	R-51B-001-10Z	
Calibration Assurance Plan, Return to Keysight, 5 years	R-50C-011-5	
Calibration Assurance Plan, Return to Keysight, 7 years	R-50C-011-7	
Calibration Assurance Plan, Return to Keysight, 10 years	R-50C-011-10	
Keysight Calibration + Uncertainties, 5 years	R-50C-011-MU-5	
Keysight Calibration + Uncertainties + Guardbanding (accredited)	N5181B-AMG	Only available at time of new instrument purchase
Keysight Calibration + Uncertainties + Guardbanding, 5 years	R-50C-016-5	
ANSI Z540-1 1994 Calibration	N5181B-A6J	Only available at time of new instrument purchase
ANSI Z540-1 1994 Calibration, 5 years	R-50C-021-5	
Onsite warranty – 1 year	R-51C-001-1CU	
Onsite warranty – 3 year	R-51C-001-3CU	
Commercial calibration certificate with test data	N5181B-UK6	Only available at time of new instrument purchase

Step 6. Choose startup assistance service options

Description	Option number	
Remote scheduled assistance 1- 999 hours	PS-S10	
Daily productivity assistance	PS-S20	
Signal generator and source basics; half-day, maximum of eight students on site	PS-T10-ASG	

Upgrade your existing MXG analog signal generator

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

1. Place an order for the upgrade with Keysight and request to receive the software entitlement certificate through email
2. Redeem the certificate through the Web by following the instructions on the certificate
3. Install the license file using Keysight License Manager
4. Begin using the new capability

Installation, calibration, and verification information is available at:
www.keysight.com/find/mxg_upgrades

You Can Upgrade!

Options can be added after your initial purchase.

All of our X-Series application options are license-key upgradeable.



Description	Upgrade number	Requirements	Additional information
Instrument security and removable memory card	N5181BU-006	None	Hardware and license key upgrade
Expanded license key upgradability	N5181BU-099	None	Hardware and license key upgrade
High output power	N5181BU-1EA	099	Customer installable – software, license key
Low specified power (< -110 dBm)	N5181BU-1EQ	099	Customer installable – software, license key
Flexible reference input (1-50 MHz)	N5181BU-1ER	None	Customer installable - software, license key
Avionics	N5181BU-302	None	If serial number is less than MY/SG/US 5620xxxx - return to Keysight Service Center required for installation. If serial number is greater than or equal to MY/SG/US 5620xxxx - customer installable - software, license key.
Multifunction generator	N5181BU-303	None	Customer installable – software, license key
Pulse train generator	N5181BU-320	UNW	Customer installable – software, license key
AM, FM, phase modulation	N5181BU-UNT	None	Customer installable – software, license key
Narrow pulse modulation	N5181BU-UNW	None	Customer installable – software, license key
Fast switching	N5181BU-UNZ	099	Customer installable – software, license key

N5182B MXG X-Series RF Vector Signal Generator

Configure your new MXG vector signal generator

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

Description	Option number	Additional information
Frequency range from 9 kHz to 3 GHz	N5182B-503	Not compatible with 506
Frequency range from 9 kHz to 6 GHz	N5182B-506	Not compatible with 503

Step 2. Choose connector configuration

Description	Option number	Additional information
Move all connectors to rear panel	N5182B-1EM	Not upgradeable

Step 3. Choose performance enhancement options

Description	Option number	Additional information
AM, FM, phase modulation	N5182B-UNT	
Enhanced dynamic range	N5182B-UNV	Requires 656
Narrow pulse modulation	N5182B-UNW	
Low phase noise	N5181B-UNX	Not compatible with UNY, not upgradeable
Enhanced low phase noise	N5182B-UNY	Not compatible with UNX, not upgradeable
Fast switching	N5182B-UNZ	
Internal bit error rate analyzer	N5182B-UN7	
Pulse train generator	N5182B-320	Requires UNW
Multifunction generator	N5182B-303	
Avionics	N5182B-302	
Instrument security and removable memory card	N5182B-006	
Internal solid-state memory	N5182B-009	
High output power	N5182B-1EA	
Differential I/Q outputs	N5182B-1EL	Requires 656
Low specified power (< -110 dBm)	N5182B-1EQ	
Flexible reference input (1-50 MHz)	N5182B-1ER	
LO in/out for phase coherency	N5182B-012	
Expanded license key upgradability	N5182B-099	Option 099 is recommended for anyone considering future upgrades. Option 099 simplifies the upgrade process by enabling upgrades via a license key for Options 1EA, 1EQ, UNV, and UNZ. Without Option 099, upgrades for these options require purchase and installation of hardware in a field retrofit kit. For more information, visit www.keysight.com/find/mxg_upgrades .

Step 4. Choose baseband generator options

Description	Option number	Additional information
ARB baseband generator (80 MHz RF bandwidth, 32 MSa)	N5182B-656	
Upgrade baseband generator from 80 to 160 MHz RF bandwidth	N5182B-657	Requires 656
Upgrade baseband generator memory from 32 to 512 MSa	N5182B-022	Requires 656
Upgrade baseband generator memory from 32 to 1 GSa	N5182B-023	Requires 656
Upgrade baseband generator with real-time capability	N5182B-660	Requires 656
Digital output connectivity with the N5102A	N5182B-003	Requires 656
Digital input connectivity with the N5102A	N5182B-004	Requires 656

Step 5. Choose Signal Studio and embedded software

Note: The following software can be added at purchase or as an upgrade. To configure Signal Studio applications, refer to the configuration assistant at: www.keysight.com/find/signalstudio. For more information on Signal Studio configuration and licenses, go to www.keysight.com/find/SS_licensing.

Product number	Description	Hardware requirements	Recommended hardware options
Cellular communications			
N7600B	Signal Studio for W-CDMA/HSPA+ (ARB and real-time)	656 660 for real-time	403, 503, 660, UNV
N7601B	Signal Studio for cdma2000®/1xEV-DO (ARB and real-time)	656 660 for real-time	403, 503, 660, UNV
N7602B	Signal Studio for GSM/EDGE/Evo (ARB and real-time)	656 660 for real-time	403, 660, 503, UNV, UNZ
N7612B	Signal Studio for TD-SCDMA/HSDPA	656	403, 503, UNV
N7624B	Signal Studio for LTE/LTE-Advanced FDD (ARB and real-time)	656 660 for real-time	403, 506, 657, 660, UNV
N7625B	Signal Studio for LTE/LTE-Advanced TDD (ARB and real-time)	656 660 for real-time	403, 506, 657, 660, UNV
Wireless connectivity			
N7606B	Signal Studio for <i>Bluetooth</i> ®	656	403, 506, UNV
N7607B	Signal Studio for DFS radar profiles	656, 506	657
N7610B	Signal Studio for short range communications	656	
N7615B	Signal Studio for Mobile WiMAX™	656	403, 506, UNV
N7617B	Signal Studio for WLAN 802.11a/b/g/j/p/n/ac/ah	656	403, 506, 657, UNV
Audio/video broadcasting			
N7611B	Signal Studio for broadcast radio	656	403, 506, UNV
N7623B	Signal Studio for digital video (ARB and real-time)	656 660 for real-time	023, 506, 660, UNV
Navigation and radar			
N7609B	Signal Studio for Global Navigation Satellite Systems (GNSS) (ARB and real-time)	656 660 for real-time	022, 403, 503, 660
N7620B	Signal Studio for pulse building	656, UNV	403, 657, UNV, 1EA
General purpose			
N5182B-403	Calibrated AWGN	656	
N5182B-430	Multitone and two-tone	656	
N5182B-431	Custom digital modulation	656	
N5182B-432	Phase noise impairment	656	
N7605B	Signal Studio for real-time fading (real-time)	403, 656, 660	506, 657
N7608B	Signal Studio for custom modulation	656, 506	
N7614B	Signal Studio for power amplifier test	656 660 for real-time	657, 660, 1EA
N7621B	Signal Studio for multitone distortion	656, UNV, 1EA	657
N7622B	Signal Studio toolkit – free utility	656	503, UNV
N5182B 221-229	Waveform license 5-pack 1 to 9 (purchase up to 9 packs for 45 Signal Studio waveforms)	656	503, UNV
N5182B 250-259	Waveform license 50-pack 1 to 10 (purchase up to 10 packs for 500 Signal Studio waveforms)	656	503, UNV
N6171A	MATLAB software		503, 656, UNV

Step 6. Choose accessory and documentation options

Description	Option number
Rack slide kit	1CR012A
Front handle kit	1CN006A
Rack mount flange kit	1CM010A
Rack mount flange kit with front handles	1CP004A
Hard transit case	N5182B-AXT
CD-ROM containing English documentation set	N5182B-CD1
Service documentation, assembly and component	N5182B-OBW

Step 7. Choose warranty and calibration options

Description	Option number	
Return-to-Keysight warranty, 3 years	Standard	
Warranty Assurance Plan, Return to Keysight, 5 years	R-51B-001-5Z	
Warranty Assurance Plan, Return to Keysight, 7 years	R-51B-001-7Z	
Warranty Assurance Plan, Return to Keysight, 10 years	R-51B-001-10Z	
Calibration Assurance Plan, Return to Keysight, 5 years	R-50C-011-5	
Calibration Assurance Plan, Return to Keysight, 7 years	R-50C-011-7	
Calibration Assurance Plan, Return to Keysight, 10 years	R-50C-011-10	
Keysight Calibration + Uncertainties, 5 years	R-50C-011-MU-5	
Keysight Calibration + Uncertainties + Guardbanding (accredited)	N5182B-AMG	Only available at time of new instrument purchase
Keysight Calibration + Uncertainties + Guardbanding, 5 years	R-50C-016-5	
ANSI Z540-1 1994 Calibration	N5182B-A6J	Only available at time of new instrument purchase
ANSI Z540-1 1994 Calibration, 5 years	R-50C-021-5	
Onsite warranty – 1 year	R-51C-001-1CU	
Onsite warranty – 3 year	R-51C-001-3CU	
Commercial calibration certificate with test data	N5182B-UK6	Only available at time of new instrument purchase

Step 8. Choose startup assistance service options

Description	Option number
Remote scheduled assistance 1 - 999 hours	PS-S10
Daily productivity assistance	PS-S20

Upgrade your existing MXG vector signal generator

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

1. Place an order for the upgrade with Keysight and request to receive the software entitlement certificate through email
2. Redeem the certificate through the Web by following the instructions on the certificate
3. Install the license file using Keysight License Manager
4. Begin using the new capability

Installation, calibration, and verification information is available at:
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You Can Upgrade!

Options can be added after your initial purchase.

All of our X-Series application options are license-key upgradeable.



Description	Upgrade number	Requirements	Additional information
Instrument security and removable memory card	N5182BU-006	None	Hardware and license key upgrade
Internal solid-state memory	N5182BU-009	None	Customer installable – software, license key
LO in/out for phase coherency	N5182BU-012	None	Hardware and license key upgrade
Upgrade baseband generator memory from 32 to 512 MSa	N5182BU-022	656	Customer installable – software, license key
Upgrade baseband generator memory from 32 MSa to 1 GSa	N5182BU-023	656	Customer installable – software, license key
Upgrade baseband generator memory from 512 MSa to 1 GSa	N5182BU-043	022 and 656	Customer installable – software, license key
Expanded license key upgradability	N5182BU-099	None	Hardware and license key upgrade
High output power	N5182BU-1EA	099	Customer installable – software, license key
Differential I/Q outputs	N5182BU-1EL	656	Customer installable – software, license key
Low specified power (< -110 dBm)	N5182BU-1EQ	099	Customer installable – software, license key
Flexible reference input (1-50 MHz)	N5182BU-1ER	None	Customer installable – software, license key
5-pack waveform license	N5182BU-221	656	Customer installable – software, license key
50-pack waveform license	N5182BU-250	656	Customer installable – software, license key
Avionics	N5182BU-302	None	If serial number is less than MY/SG/US 5620xxxx - return to Keysight Service Center required for installation. If serial number is greater than or equal to MY/SG/US 5620xxxx - customer installable - software, license key.
Multifunction generator	N5182BU-303	None	Customer installable – software, license key
Pulse train generator	N5182BU-320	UNW	Customer installable – software, license key
Calibrated AWGN	N5182BU-403	656	Customer installable – software, license key
Multitone and two-tone	N5182BU-430	656	Customer installable – software, license key
Custom digital modulation	N5182BU-431	656	Customer installable – software, license key
Phase noise impairment	N5182BU-432	656	Customer installable – software, license key
ARB baseband generator (60 MHz RF bandwidth, 32 MSa)	N5182BU-656	None	Customer installable – software, license key
Upgrade baseband generator from 80 to 160 MHz RF bandwidth	N5182BU-657	656	Customer installable – software, license key
Upgrade baseband generator with real-time capability	N5182BU-660	656	Hardware and license key upgrade

Description	Upgrade number	Requirements	Additional information
Digital output connectivity with the N5102A	N5182BU-003	656	
Digital input connectivity with the N5102A	N5182BU-004	656	
AM, FM, phase modulation	N5182BU-UNT	None	Customer installable – software, license key
Enhanced dynamic range	N5182BU-UNV	656, 099	Customer installable – software, license key
Narrow pulse modulation	N5182BU-UNW	None	Customer installable – software, license key
Fast switching	N5182BU-UNZ	099	Customer installable – software, license key
Internal bit error rate analyzer	N5182BU-UN7	None	Customer installable - software, license key

Related Literature

MXG & EXG Technical Overview 5990-9957EN

MXG Data Sheet 5991-0038EN

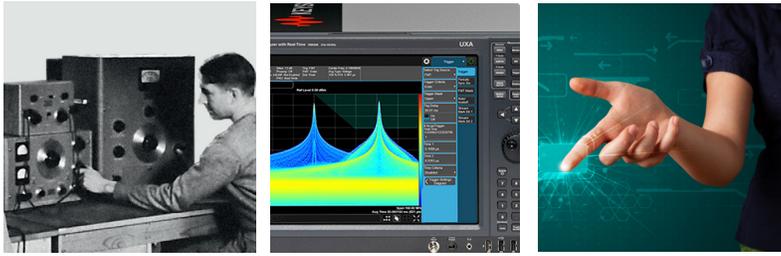
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