

Keysight Technologies

EXG X-Series Signal Generators N5171B Analog & N5172B Vector

Configuration Guide

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



Configure Your EXG X-Series Signal Generator

This step-by-step process will help you configure your EXG signal generator. Tailor the performance to meet your requirements. For detailed specifications, refer to the EXG signal generator data sheet (5991-0039EN).

N5171B EXG X-Series RF Analog Signal Generator

Configure your new EXG 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 1 GHz	N5171B-501	Not compatible with 503, 506
Frequency range from 9 kHz to 3 GHz	N5171B-503	Not compatible with 501, 506
Frequency range from 9 kHz to 6 GHz	N5171B-506	Not compatible with 501, 503

Step 2. Choose connector configuration		
Description	Option number	Additional information
Move all connectors to rear panel	N5171B-1EM	Not upgradeable

Step 3. Choose performance enhancement options		
Description	Option number	Additional information
AM, FM, phase modulation	N5171B-UNT	
Narrow pulse modulation	N5171B-UNW	
Multifunction generator	N5171B-303	
Pulse train generator	N5171B-320	Requires UNW
Instrument security and removable memory card	N5171B-006	
Fast switching	N5171B-UNZ	
High output power	N5171B-1EA	
Flexible reference input (1-50 MHz)	N5171B-1ER	
Expanded license key upgradability	N5171B-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 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/SSupgrades .

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	N5171B-AXT
CD-ROM containing English documentation set	N5171B-CD1
Service documentation, assembly and component	N5171B-0BW

Step 5. Choose warranty and calibration options	
Description	Option number
Warranty Assurance Plan, Return to Keysight, 3 years	Standard, no charge
Warranty Assurance Plan, Return to Keysight, 5 years	R-51B-001-5C
Onsite warranty – 1 year	R-51C-001-1CU
Onsite warranty – 3 year	R-51C-001-3CU
Commercial calibration certificate with test data	N5171B-UK6
Keysight Cal + Uncertainties + Guardbanding (accredited cal)	N5171B-AMG
Keysight Calibration + Uncertainties + Guardbanding, 3 years	R-50C-016-3
Keysight Calibration + Uncertainties + Guardbanding, 5 years	R-50C-016-5
ANSI Z540-1-1994 calibration	N5171B-A6J
ANSI Z540-1-1994 Calibration, 3 years	R-50C-021-3
ANSI Z540-1-1994 Calibration, 5 years	R-50C-021-5
Calibration Assurance Plan, Return-to-Keysight, 5 years	R-50C-011-5

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
Custom services to be qualified by Keysight	PS-X10

Upgrade your existing EXG analog signal generator

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

1. Place an order for the upgrade with Keysight Technologies, Inc. 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/exg_upgrades

You Can Upgrade!

Options can be added after your initial purchase.



Most X-Series options are license-key upgradeable.

Description	Upgrade number	Requirements	Additional information
Service documentation, assembly and component	N5171BU-0BW	None	Printed copy of service guide
Instrument security and removable memory card	N5171BU-006	None	Hardware and license key upgrade
Expanded license key upgradability	N5171BU-099	None	Hardware and license key upgrade
High output power	N5171BU-1EA	099	Customer installable – software, license key
Flexible reference input (1-50 MHz)	N5171BU-1ER	None	Customer installable – software, license key
Multifunction generator	N5171BU-303	None	Customer installable – software, license key
Pulse train generator	N5171BU-320	UNW	Customer installable – software, license key
Hard transit case	N5171BU-AXT	None	
CD-ROM containing English documentation set	N5171BU-CD1	None	
Commercial calibration certificate with test data	N5171BU-UK6	None	
AM, FM, phase modulation	N5171BU-UNT	None	Customer installable – software, license key
Narrow pulse modulation	N5171BU-UNW	None	Customer installable – software, license key
Fast switching	N5171BU-UNZ	099	Customer installable – software, license key
Rack slide kit	1CR012A	None	Hardware
Front handle kit	1CN006A	None	Hardware
Rack mount flange kit	1CM010A	None	Hardware
Rack mount flange kit with front handles	1CP004A	None	Hardware

N5172B EXG X-Series RF Vector Signal Generator

Configure your new EXG 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	N5172B-503	Not compatible with 506
Frequency range from 9 kHz to 6 GHz	N5172B-506	Not compatible with 503

Step 2. Choose connector configuration		
Description	Option number	Additional information
Move all connectors to rear panel	N5172B-1EM	Not upgradable
Differential I/Q outputs	N5172B-1EL	

Step 3. Choose performance enhancement options		
Description	Option number	Additional information
AM, FM, phase modulation	N5172B-UNT	
Enhanced dynamic range	N5172B-UNV	Requires 653
Narrow pulse modulation	N5172B-UNW	
Fast switching	N5172B-UNZ	
Multifunction generator	N5172B-303	
Pulse train generator	N5172B-320	Requires UNW
Instrument security and removable memory card	N5172B-006	
Internal solid-state memory	N5172B-009	
High output power	N5172B-1EA	
Flexible reference input (1-50 MHz)	N5172B-1ER	
LO in/out for phase coherency	N5172B-012	
Expanded license key upgradability	N5172B-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, 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/SSupgrades .

Step 4. Choose baseband generator options		
Description	Option number	Additional information
ARB baseband generator (60 MHz RF bandwidth, 32 MSa)	N5172B-653	
Upgrade baseband generator from 60 to 120 MHz RF bandwidth	N5172B-655	Requires 653
Upgrade baseband generator memory from 32 to 256 MSa	N5172B-021	Requires 653
Upgrade baseband generator memory from 32 to 512 MSa	N5172B-022	Requires 653
Upgrade baseband generator with real-time capability	N5172B-660	Requires 653
Digital output connectivity with the N5102A	N5172B-003	Requires 653
Digital input connectivity with the N5102A	N5172B-004	Requires 653

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)	653 660 for real-time	660, 503, UNV, 403
N7601B	Signal Studio for cdma2000/1xEV-DO (ARB and real-time)	653 660 for real-time	660, 503, 403, UNV
N7602B	Signal Studio for GSM/EDGE/Evo (ARB and real-time)	653 660 for real-time	403, 660, 503, 1ER, UNV, UNZ
N7612B	Signal Studio for TD-SCDMA/HSDPA	653	503, 403, UNV
N7624B	Signal Studio for LTE/LTE-Advanced FDD (ARB and real-time)	653 660 for real-time	655, 660, 506, UNV, 403
N7625B	Signal Studio for LTE/LTE-Advanced TDD (ARB and real-time)	653 660 for real-time	655, 660, 506, UNV, 403
Wireless connectivity			
N7606B	Signal Studio for <i>Bluetooth</i> [®]	653	506, 403, UNV
N7615B	Signal Studio for Mobile WiMAX	653	506, 403, UNV
N7617B	Signal Studio for WLAN 802.11a/b/g/j/p/n/ac	653	655, 506, 403, UNV
Audio/video broadcasting			
N7623B	Signal Studio for digital video (ARB and real-time)	653 660 for real-time	660, 506, 022, UNV
N7611B	Signal Studio for broadcast radio	653	506, 403, UNV
Detection, positioning, tracking, and navigation			
N7609B	Signal Studio for Global Navigation Satellite Systems (GNSS) (real-time)	653 660 for real-time	660, 503, 022, 403
General purpose			
N5172B-403	Calibrated AWGN	653	
N5172B-430	Multitone and two-tone	653	
N5172B-431	Custom digital modulation	653	
N5172B-432	Phase noise impairment	653	
N7622B	Signal Studio toolkit – free utility	653	503, UNV
N5172B 221-229	Waveform license 5-pack 1 to 9 (purchase up to 9-pack for 45 Signal Studio waveforms)	653	503, UNV
N5172B 250-259	Waveform license 50-pack 1 to 10 (purchase up to 10 packs for 500 Signal Studio waveforms)	653	503, UNV
N6171A	MATLAB software		653, 503, 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	N5172B-AXT
CD-ROM containing English documentation set	N5172B-CD1
Service documentation, assembly and component	N5172B-0BW

Step 7. Choose warranty and calibration options	
Description	Option number
Return-to-Keysight warranty, 3 years	Standard
Return-to-Keysight warranty, 5 years	R-51B-001-5C
Onsite warranty – 1 year	R-51C-001-1CU
Onsite warranty – 3 year	R-51C-001-3CU
Commercial calibration certificate with test data	N5172B-UK6
Keysight Cal + Uncertainties + Guardbanding (accredited cal)	N5172B-AMG
Keysight Calibration + Uncertainties + Guardbanding, 3 years	R-50C-016-3
Keysight Calibration + Uncertainties + Guardbanding, 5 years	R-50C-016-5
ANSI Z540-1-1994 calibration	N5172B-A6J
ANSI Z540-1-1994 Calibration, 3 years	R-50C-021-3
ANSI Z540-1-1994 Calibration, 5 years	R-50C-021-5
Calibration Assurance Plan, Return-to-Keysight, 5 years	R-50C-011-5

Step 8. 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
Custom services to be qualified by Keysight	PS-X10

Upgrade your existing EXG 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:
www.keysight.com/find/exg_upgrades

You Can Upgrade!

Options can be added after your initial purchase.



Most X-Series options are license-key upgradeable.

Description	Upgrade number	Requirements	Additional information
Service documentation, assembly and component	N5172BU-0BW	None	Printed copy of service guide
Instrument security and removable memory card	N5172BU-006	None	Hardware and license key upgrade
Internal solid-state memory	N5172BU-009	None	Customer installable – software, license key
LO in/out for phase coherency	N5172BU-012	None	Hardware and license key upgrade
Upgrade baseband generator memory from 32 to 256 MSa	N5172BU-021	653	Customer installable – software, license key
Upgrade baseband generator memory from 32 to 512 MSa	N5172BU-022	653	Customer installable – software, license key
Upgrade baseband generator memory from 256 to 512 MSa	N5172BU-042	021 and 653	Customer installable – software, license key
Expanded license key upgradability	N5172BU-099	None	Hardware and license key upgrade
High output power	N5172BU-1EA	099	Customer installable – software, license key
Differential I/Q outputs	N5172BU-1EL	None	Customer installable – software, license key
Flexible reference input (1-50 MHz)	N5172BU-1ER	None	Customer installable – software, license key
5-pack waveform license	N5172BU-221	653	Customer installable – software, license key
50-pack waveform license	N5172BU-250	653	Customer installable – software, license key
Multifunction generator	N5172BU-303	None	Customer installable – software, license key
Pulse train generator	N5172BU-320	UNW	Customer installable – software, license key
Calibrated AWGN	N5172BU-403	653	Customer installable – software, license key
Multitone and two-tone	N5172BU-430	653	Customer installable – software, license key
Custom digital modulation	N5172BU-431	653	Customer installable – software, license key
Phase noise impairment	N5172BU-432	653	Customer installable – software, license key
ARB baseband generator (60 MHz RF bandwidth, 32 MSa)	N5172BU-653	None	Customer installable – software, license key
Upgrade baseband generator from 60 to 120 MHz RF bandwidth	N5172BU-655	Requires 653	Customer installable – software, license key
Upgrade baseband generator with real-time capability	N5172BU-660	Requires 653	Hardware and license key upgrade

Digital output connectivity with the N5102A	N5172BU-003	Requires 653	
Digital input connectivity with the N5102A	N5172BU-004	Requires 653	
Hard transit case	N5172BU-AXT	None	Hard transit case
CD-ROM containing English documentation set	N5172BU-CD1	None	CD
AM, FM, phase modulation	N5172BU-UNT	None	Customer installable – software, license key
Enhanced dynamic range	N5172BU-UNV	653, 099	Customer installable – software, license key
Narrow pulse modulation	N5172BU-UNW	None	Customer installable – software, license key
Fast switching	N5172BU-UNZ	099	Customer installable – software, license key
Rack slide kit	1CR012A	None	Hardware
Front handle kit	1CN006A	None	Hardware
Rack mount flange kit	1CM010A	None	Hardware
Rack mount flange kit with front handles	1CP004A	None	Hardware

myKeysight

myKeysight

www.keysight.com/find/mykeysight

A personalized view into the information most relevant to you.



www.axistandard.org

AdvancedTCA® Extensions for Instrumentation and Test (AXIe) is an open standard that extends the AdvancedTCA for general purpose and semiconductor test. Keysight is a founding member of the AXIe consortium.



www.lxistandard.org

LAN eXtensions for Instruments puts the power of Ethernet and the Web inside your test systems. Keysight is a founding member of the LXI consortium.



www.pxisa.org

PCI eXtensions for Instrumentation (PXI) modular instrumentation delivers a rugged, PC-based high-performance measurement and automation system.



Three-Year Warranty

www.keysight.com/find/ThreeYearWarranty

Keysight's commitment to superior product quality and lower total cost of ownership. The only test and measurement company with three-year warranty standard on all instruments, worldwide.



Keysight Assurance Plans

www.keysight.com/find/AssurancePlans

Up to five years of protection and no budgetary surprises to ensure your instruments are operating to specification so you can rely on accurate measurements.



www.keysight.com/quality

Keysight Electronic Measurement Group
DEKRA Certified ISO 9001:2008
Quality Management System

Keysight Channel Partners

www.keysight.com/find/channelpartners

Get the best of both worlds: Keysight's measurement expertise and product breadth, combined with channel partner convenience.

WiMAX is a trademark of the WiMAX Forum.

Bluetooth® and the Bluetooth logos are trademarks owned by Bluetooth SIG, Inc, U.S.A. and licensed to Keysight Technologies.

www.keysight.com/find/EXG

For more information on Keysight Technologies' products, applications or services, please contact your local Keysight office. The complete list is available at: www.keysight.com/find/contactus

Americas

Canada	(877) 894 4414
Brazil	55 11 3351 7010
Mexico	001 800 254 2440
United States	(800) 829 4444

Asia Pacific

Australia	1 800 629 485
China	800 810 0189
Hong Kong	800 938 693
India	1 800 112 929
Japan	0120 (421) 345
Korea	080 769 0800
Malaysia	1 800 888 848
Singapore	1 800 375 8100
Taiwan	0800 047 866
Other AP Countries	(65) 6375 8100

Europe & Middle East

Austria	0800 001122
Belgium	0800 58580
Finland	0800 523252
France	0805 980333
Germany	0800 6270999
Ireland	1800 832700
Israel	1 809 343051
Italy	800 599100
Luxembourg	+32 800 58580
Netherlands	0800 0233200
Russia	8800 5009286
Spain	0800 000154
Sweden	0200 882255
Switzerland	0800 805353
	Opt. 1 (DE)
	Opt. 2 (FR)
	Opt. 3 (IT)
United Kingdom	0800 0260637

For other unlisted countries:
www.keysight.com/find/contactus
(BP-06-09-14)

Related Literature

Keysight EXG signal generators

Brochure 5990-9957EN

Data Sheet 5991-0039EN

