KEYSIGHT N5186A MXG Vector Signal Generator Owner's Manual

Contents

KEYSIGHT N5186A MXG Vector Signal Generator

Specifications:

- Product: N5186A MXG Vector Signal Generator
- Frequency Range: 9 kHz to 8.5 GHz
- RF Bandwidth: 250 MHz to 960 MHz with 256 MSa
- Baseband Generator Memory: Upgradable to 512 MSa, 1 GSa, or 2 GSa
- Phase Noise Options: Low phase noise or Enhanced low phase noise

- Output Power: High output power options available
- Vector System Features: AWGN and CW interferer
- Performance Features: Expanded license key upgradability, Low specified power, Enhanced dynamic range
- Embedded Reflectometer: Available from 9 kHz to 8.5 GHz

Product Usage Instructions

Configure Hardware:

1. Select the number of channels (One channel or Four channels)
    - For one channel, add N5186A-001.
    - For four channels, add N5186A-001, N5186A-002, N5186A-003, N5186A-004.
2. Select connector configuration: Option N5186A-1EM (Move all connectors to the rear panel).
3. Select channel features:
    - Select Frequency options: Choose one from N5186A-503, N5186A-506, N5186A-508.
    - Select Bandwidth options: Choose one from N5186A-B2X, N5186A-B5X, N5186A-B9X.
    - Select Memory options: Optionally choose one from N5186A-M05, N5186A-M10, N5186A-M20.
    - Select Phase Noise options: Optionally choose one from N5186A-EP3, N5186A-EP4.
    - Select High Output Power options: Optionally choose N5186A-1EA.
    - Select Vector System Feature options: Optionally choose N5186A-403.
    - Select General Performance Feature options: Optionally choose N5186A-099, N5186A-1EQ, N5186A-UNV.
    - Select Embedded Reflectometer options: Optionally choose N5186A-V08.

Configure Software:
The included software tools are Sample waveforms and PathWave General Purpose Signal Generation. Additionally, there are Embedded PathWave software tools available for waveform creation and playback through the MXG touch-optimized graphical user interface.
Models include E7608APPC, E7621APPC, E7642APPC, E7653APPC.

FAQ:

1. **Q: What should I do if I need to upgrade my license key for future options?**
   A: If you are considering future upgrades, select option N5186A-099 which enables upgrades via a license key for options 1EA, 1EQ, and UNV.
2. **Q: Can I select different bandwidth options for each channel?**
   A: Yes, you can select different bandwidth options for each channel based on your requirements.
3. **Q: Is the low phase noise option compatible with the enhanced low phase noise option?**
   A: No, the low phase noise option (N5186A-EP3) is not compatible with the enhanced low phase noise option (N5186A-EP4).

Introduction
This configuration guide contains information to help you configure your N5186A MXG vector signal generator to meet your requirements. Ordering optional capabilities at the time of purchase provides the lowest overall cost of ownership.

Configure Hardware

Select number of channels

Configuration	Required options	Descriptions	Additional information
One channel	N5186A-001	Add channel one	Required for all configurations
Four channels	N5186A-001 N5186A-002 N5186A-003 N5186A-004	Add channel one Add channel two Add channel three Add channel four	

Select connector configuration

Option	Description	Additional information
N5186A-1EM	Move all connectors to rear panel	

Select channel features (ordered once per channel)

Option	Description	Additional information
Frequency options (must select one; option will be duplicated on all channels)		
N5186A-503	Frequency range, 9 kHz to 3 GHz	
N5186A-506	Frequency range, 9 kHz to 6 GHz	
N5186A-508	Frequency range, 9 kHz to 8.5 GHz	
Bandwidth options (must select one; option may be different on each channel)		
N5186A-B2X	RF bandwidth, 250 MHz with 256 MSa	
N5186A-B5X	RF bandwidth, 500 MHz with 256 MSa	
N5186A-B9X	RF bandwidth, 960 MHz with 256 MSa	
Memory options (optionally select one; option may be different on each channel)		

N5186A-M05		Baseband generator memory upgrade to 512 MSa		
N5186A-M10		Baseband generator memory upgrade to 1 GSa		
N5186A-M20		Baseband generator memory upgrade to 2 GSa		
Phase noise options (optionally select one; option will be duplicated on all channels)				
N5186A-EP3		Low phase noise		Not compatible with EP4
N5186A-EP4		Enhanced low phase noise		Not compatible with EP3
High output power options (optionally select; option will be duplicated on all channels)				
N5186A-1EA		High output power from 9 kHz to 3, 6, or 8 GHz		
Vector system feature options (optionally select; option may be different on each channel)				
N5186A-403		AWGN and CW interferer		

General performance feature options (optionally select; options will be duplicated on all channels)				
N5186A-099		Expanded license key upgradability		Option 099 is required for anyone co nsidering future upgrades. Option 09 9 simplifies the upgrade process by e nabling upgrades via a license key for options 1EA, 1EQ, and UNV.
N5186A-1EQ		Low specified power (< -110 dBm)		
N5186A-UNV		Enhanced dynamic range		
Embedded reflectometer options (optionally select; option will be duplicated on all channels)				
N5186A-V08		Embedded reflectometer from 9 kHz to 3, 6, or 8.5 GHz		E7653APPC is recommended with o ption V08.

Configure Software

Included software
The N5186A MXG base configuration includes the following software tools.

Description
Sample waveforms
PathWave General Purpose Signal Generation

Embedded PathWave software tools
Embedded PathWave software tools can be used to create and playback waveforms through the MXG touch-optimized graphical user interface. Optionally select any models. One software license per instrument is required.

Model		Description
E7608APPC		PathWave Signal Generation for custom IQ modulation
E7621APPC		PathWave Signal Generation for basic multitone
E7642APPC		PathWave Signal Generation for IQ based AM, FM, phase modulation
E7653APPC		PathWave automatic channel response correction and S-parameter de-embedding (incl udes instrument nonlinear correction)

Additional PathWave software tools and MATLAB
These PathWave software tools can be used to create and playback waveforms through file-export based waveform playback. Real-time signal creation is not supported. Only node-locked licenses are available. Optionally select any models. One software license per instrument is required. For additional information, see the PathWave Signal Generation Brochure.

Model		Description
Cellular communications		
N7600EMBC		PathWave Signal Generation for W-CDMA/HSPA+
N7601EMBC		PathWave Signal Generation for cdma2000/1xEV-DO
N7602EMBC		PathWave Signal Generation for GSM/EDGE/Evo
N7612EMBC		PathWave Signal Generation for TD-SCDMA/HSPA
N7624EMBC		PathWave Signal Generation for LTE/LTE-Advanced/LTE-A Pro FDD
N7625EMBC		PathWave Signal Generation for LTE/LTE-Advanced TDD
N7626EMBC		PathWave Signal Generation for V2X
N7631EMBC		PathWave Signal Generation for 5G NR
N7632EMBC		PathWave Signal Generation for NR-V2X
Wireless connectivity		
N7606EMBC		PathWave Signal Generation for Bluetooth
N7610EMBC		PathWave Signal Generation for IoT
N7615EMBC		PathWave Signal Generation for Mobile WiMAX
N7617EMBC		PathWave Signal Generation for WLAN 802.11
Audio/video broadcasting		
N7611EMBC		PathWave Signal Generation for broadcast radio
N7623EMBC		PathWave Signal Generation for digital video
N7640EMBC		PathWave Signal Generation for LMR
General RF and Microwave		
N7608EMBC		PathWave Signal Generation for custom modulation
N6171A		MATLAB software (for standalone PC use)

Select Accessories

Model		Description		Additional information
1CM110A		Rackmount flange kit		
1CN106A		Front handle kit		
1CP104A		Rackmount flange and front handle k it		

KeysightCare Coverage

One year of KeysightCare Assured is included with your new N5186A MXG Vector Signal Generator for priority access to technical experts and optimized uptime to mitigate project risk. Multiyear upgrade options to

KeysightCare Enhanced add calibration coverage for full performance verification and accelerated turnaround times.
Obtain multi-year KeysightCare upfront to lock in the service pricing of today and operate with a planned spending profile and eliminate the need for yearly requests for maintenance budget. Plus, you benefit from secured service for 2, 3, or 5 years.

Service		Function
KeysightCare Enhanced 1		**Includes tech support, warranty, and calibration**
R-55B-001-1		KeysightCare Enhanced – Upgrade 1 year
R-55B-001-2		KeysightCare Enhanced – Extend to 2 years
R-55B-001-3		KeysightCare Enhanced – Extend to 3 years (Recommended)
R-55B-001-5		KeysightCare Enhanced – Extend to 5 years (Recommended)
R-55B-001-3CC		KeysightCare Enhanced – Extend to 3 years (China only) [2]
R-55B-001-5CJ		KeysightCare Enhanced – Extend to 5 years (Japan only)
KeysightCare Assured		**Includes tech support and warranty**
R-55A-001-2		KeysightCare Assured – Extend to 2 years
R-55A-001-3		KeysightCare Assured – Extend to 3 years
R-55A-001-5		KeysightCare Assured – Extend to 5 years
R-55A-001-3CC		KeysightCare Assured – Extend to 3 years (China only)
R-55A-001-5CC		KeysightCare Assured – Extend to 5 years (China only)
R-55A-001-5CJ		KeysightCare Assured – Extend to 5 years (Japan only)
Start-Up Assistance		
PS-S20		Startup assistance, daily
PS-X10		Custom Services

1. Available in select countries. R-55B-001-2/3/5 must be ordered with R-55B-001-1. For details, please view the KeysightCare datasheet.
2. Contact Keysight for 5-year coverage.

Keysight enables innovators to push the boundaries of engineering by quickly solving design, emulation, and test chall enges to create the best product experiences. Start your innovation journey at **www.keysight.com**.

Documents / Resources

	**KEYSIGHT N5186A MXG Vector Signal Generator** [pdf] Owner's Manual N5186A MXG Vector Signal Generator, N5186A MXG, Vector Signal Generator, Signal Generator, Generator

References

- Test Equipment Rentals, Sales, Calibration | ATEC
- Keysight: Design, Emulate, and Test to Accelerate Innovation
- User Manual