

# M9484C VXG

## Vector Signal Generator

### Introduction

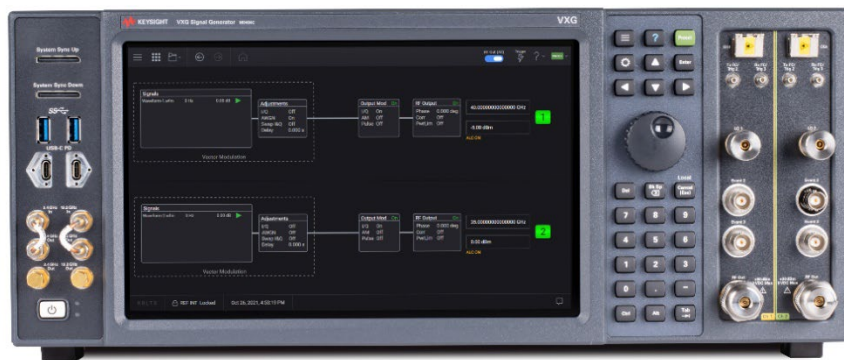
This configuration guide contains information to help you configure your M9484C VXG vector signal generator to meet your requirements. Ordering optional capabilities at the time of purchase provides the lowest overall cost of ownership.



# About the M9484C VXG Vector Signal Generator

You're designing your next RF breakthrough and ensuring that your design delivers maximum throughput, robust links, and data handling capabilities. This introduces a new set of design and test challenges, including more bandwidths, frequency bands, and system complexity.

Keysight has created the ultimate VXG signal generator to take your designs to the widest bandwidths, highest frequencies, and multichannel applications. With this fully integrated, calibrated, and synchronized solution, you don't need to worry about the errors caused by additional connections and instruments. Through integration with PathWave Signal Generation software, create performance-optimized reference signals and reduce the time you spend on signal simulation.



**Figure 1.** M9484C VXG Signal Generator with two 54 GHz channels.

# Configure Hardware

To configure the M9484C VXG, start by selecting the desired number of channels. Then, add system features, which are ordered once per instrument. Finally, add channel features, which are ordered once per channel. Detailed information is provided below.

## Select number of channels

Configuration	Required Options	Descriptions	Additional Information
One channel	M9484C-001	Add channel one	Required for all configurations
Two channels	M9484C-001	Add channel one	
	M9484C-002	Add channel two	
Four channels	M9484C-001	Add channel one	Not compatible with 532, 544, 554
	M9484C-002	Add channel two	
	M9484C-003	Add channel three	
	M9484C-004	Add channel four	

## Select system features (ordered once per instrument)

Option	Description	Additional information
M9484C-1ER	Flexible reference input	
M9484C-CB5	Channel bonding, 5 GHz	Requires R25 on all channels Recommended with Y1166A or Y1167A accessory kits
M9484C-PCH	Phase coherence for N channels	Requires 002

## Select channel features (ordered once per channel)

Option	Description	Additional information
<b>Frequency options (must select one; option will be duplicated on all channels)</b>		
M9484C-506	CW frequency range, 9 kHz to 6 GHz	Type-N (f) RF output connector Not compatible with 1EH
M9484C-508	CW frequency range, 9 kHz to 8.5 GHz	Type-N (f) RF output connector Not compatible with 1EH
M9484C-514	CW frequency range, 9 kHz to 14 GHz	3.5 mm (m) RF output connector
M9484C-520	CW frequency range, 9 kHz to 20 GHz	3.5 mm (m) RF output connector
M9484C-532	CW frequency range, 9 kHz to 31.8 GHz	1.85 mm (m) RF output connector Not compatible with 003, 004
M9484C-544	CW frequency range, 9 kHz to 44 GHz	1.85 mm (m) RF output connector Not compatible with 003, 004
M9484C-554	CW frequency range, 9 kHz to 54 GHz	1.85 mm (m) RF output connector Not compatible with 003, 004
<b>Bandwidth options (must select one; option may be different on each channel)</b>		
M9484C-B1X	RF bandwidth, 160 MHz with 64 MSa memory	
M9484C-B2X	RF bandwidth, 250 MHz with 64 MSa memory	
M9484C-B5X	RF bandwidth, 500 MHz with 256 MSa memory	
M9484C-R10	RF bandwidth, 1 GHz with 256 MSa memory	
M9484C-R1E	RF bandwidth, 1 GHz with 256 MSa memory, limited	Maximum bandwidth is frequency dependent. See data sheet for details.
M9484C-R25	RF bandwidth, 2.5 GHz with 256 MSa memory	
M9484C-R2E	RF bandwidth, 2.5 GHz with 256 MSa memory, limited	Maximum bandwidth is frequency dependent. See data sheet for details.
<b>Reference options (must select one; option will be duplicated on all channels)</b>		
M9484C-500	High performance reference	Requires ST5
M9484C-600	Enhanced high performance reference	Requires ST6
<b>Phase noise options (must select one; option will be duplicated on all channels)</b>		
M9484C-ST5	Low phase noise	Requires 500
M9484C-ST6	Enhanced low phase noise	Requires 600

Option	Description	Additional information
<b>High output power options (optionally select one; option will be duplicated on all channels)</b>		
M9484C-1EA	High output power from 9 kHz to 6 or 8.5 GHz	Not compatible with 514, 520, 532, 544, 554
M9484C-1EB	High output power from 9 kHz to 14 or 20 GHz	Not compatible with 506, 508, 532, 544, 554
M9484C-1EC	High output power from 9 kHz to 31.8, 44 or 54 GHz	Not compatible with 506, 508, 514, 520
M9484C-1EE	High output power from 9 kHz to 31.8, 44 or 54 GHz, limited above 43.5 GHz	Not compatible with 506, 508, 514, 520
<b>Memory options (optionally select one; option may be different on each channel)</b>		
M9484C-M05	Baseband generator memory upgrade to 512 MSa	
M9484C-M10	Baseband generator memory upgrade to 1024 MSa	
M9484C-M20	Baseband generator memory upgrade to 2048 MSa	
M9484C-M40	Baseband generator memory upgrade to 4096 MSa	
<b>Analog modulation options (optionally select any; options will be duplicated on all channels unless otherwise stated)</b>		
M9484C-AN1	Analog I/O for LF out, AM, FM, PM inputs, single ended IQ outputs	Only available on channel one – will not be duplicated on all channels FM and PM inputs require ST6
M9484C-PMR	Pulse modulation	Not compatible with PME
M9484C-PME	Limited pulse modulation	Not compatible with PMR
<b>Vector system options (optionally select any; option may be different on each channel unless otherwise stated)</b>		
M9484C-403	AWGN and CW interferer	
M9484C-8SG	8 virtual signal generators (multiple IQ paths to RF)	Option will be duplicated on all channels
M9484C-DIQ	Differential IQ outputs	Requires AN1 Only available on channel one – will not be duplicated on all channels
<b>General purpose options (optionally select any; option may be different on each channel)</b>		
M9484C-1EH	Improved harmonics below 3.8 GHz	Not compatible with 506, 508

# Configure Software

## Core software

The M9484C Core Software subscription plan unlocks the full potential of your hardware, providing the measurement tools, generation capabilities, and features required to meet the ever-increasing needs of your applications. To ensure you continue to receive all the latest software updates and enhancements on your equipment, you will need to have a current Core Software subscription. A node-locked perpetual Core Software license and a minimum 1-year updates and enhancements subscription is included with new equipment. The subscription can be extended to 3 or 5 years at the time of purchase and can then be renewed later for a fee.

Model	Description
M9484AP1C	Signal Generator Core Software for M9484C 1 (default), 3, or 5-year updates and enhancements subscription

## Included software

The M9484C VXG base configuration includes the following software tools.

Description
Keysight IO Libraries Suite including Connection Expert
Sample waveforms and programming examples

## Embedded PathWave software tools

Embedded PathWave software tools can be used to create and playback waveforms through the VXG touch-optimized graphical user interface. Optionally select any models. One software license per instrument is required. For additional information, see [the PathWave Signal Generation Brochure](#).

Model	Description
N7605AP0C	PathWave Signal Generation for 3GPP MIMO fading (5G NR FR1 & FR2, LTE)
N7608APPC	PathWave Signal Generation for custom modulation
N7621APPC	PathWave Signal Generation for basic multitone
N7631APPC	PathWave Signal Generation for 5G NR
N7642APPC	PathWave Signal Generation for IQ based AM, FM, phase modulation
N7653APPC	PathWave automatic channel response correction and S-parameter de-embedding (includes 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. Optionally select any models. One software license per instrument is required. For additional information, see [the PathWave Signal Generation Brochure](#).

Model	Description
<b>Cellular Communications</b>	
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
<b>Wireless Connectivity</b>	
N7606EMBC	PathWave Signal Generation for Bluetooth
N7610EMBC	PathWave Signal Generation for IoT
N7617EMBC	PathWave Signal Generation for WLAN 802.11
<b>Audio/Video Broadcasting, Public Safety</b>	
N7611EMBC	PathWave Signal Generation for broadcast radio
N7623EMBC	PathWave Signal Generation for digital video
N7640EMBC	PathWave Signal Generation for LMR
<b>Detection, Positioning, Tracking and Navigation</b>	
N7609EMBC	PathWave Signal Generation for Global Navigation Satellite System (GNSS)
<b>General RF and Microwave</b>	
N7614EMBC	PathWave Signal Generation for power amplifier test
N6171A	MATLAB software

## Select accessories

Model	Description	Additional information
Y1257A	Rack mount kit for M9484C	
Y1276A	Cooling spacer kit	Required when additional instrumentation will be stacked on the M9484C (on a tabletop or in a rack).
Y1277A	Additional removable solid-state drive	If PathWave software will be added to a purchase which also includes an additional removable SSD, it is recommended to select floating, transportable, or USB portable license types. Node-locked licenses enable a single SSD.
Y1166A	Channel bonding kit for VXG, 6, 8.5, 14, or 20 GHz frequency options	Requires M9484C-CB5
Y1167A	Channel bonding kit for VXG, 31.8, 44, or 54 GHz frequency options	Requires M9484C-CB5
N5520B	Adapter, 1.85 mm (f) to 1.85 mm (f), DC to 67 GHz	One included with M9484C-554
11900B	Adapter, 2.4 mm (f) to 2.4 mm (f), DC to 50 GHz	One included with M9484C-544 and M9484C-532
11904B	Adapter, 2.4 mm (f) to 2.9 mm (f), DC to 40 GHz	One included with M9484C-544 and M9484C-532
83059B	Coaxial Adapter, 3.5 mm (f) to 3.5 mm (f), DC to 26.5 GHz	One included with M9484C-520 and M9484C-514



# Services, Warranty, and Start-up Assistance

The base configuration includes the following services:

- One day of start-up assistance
- KeysightCare Assured first year support

Model	Description
R-55A-001-2	KeysightCare – Extend to 2 years KeysightCare Assured
R-55A-001-3	KeysightCare – Extend to 3 years KeysightCare Assured
R-55A-001-5	KeysightCare – Extend to 5 years KeysightCare Assured

## KeysightCare

KeysightCare offers the industry's first cloud-based customer experience with dedicated, proactive support through a single point of contact for instruments, software, and solutions. Get faster response times, faster access to specialized experts and faster time to resolution.

## Global Warranty

Keysight provides the peace of mind that today's high-tech industry requires. Your investment is protected by Keysight's global reach in more than 100 countries (either directly or through distributors). The warranty gives you convenient standard coverage for the country in which the product is used, eliminating the need to ship equipment back to the country of purchase. Keysight's warranty service provides:

- All parts and labor necessary to return your investment to full specified performance
- Recalibration for products supplied originally with a calibration certificate
- Return shipment

## One Day Start-up Assistance

To give you the most value from your investment, your Keysight purchase includes Startup Assistance, a service that includes consultation from an expert application engineer. They will help you configure the system and offer training on topics most beneficial to you, anything from theory and basic usage to new features and benefits or even more advanced training specific to your application. Startup Assistance provides a customized consultation, getting you to the results you need more quickly.

# Related Literature

For more detailed product and specification information, refer to the following literature and web pages:

- [M9484C VXG web page](#)
- [M9484C VXG data sheet](#)
- [PathWave Signal Generation Brochure](#)