CONFIGURATION GUIDE

M9384B VXG

Microwave Signal Generator

This configuration guide contains information to help you configure your M9384B VXG microwave signal generator to meet your requirements. Ordering optional capabilities at the time of purchase provides the lowest overall cost.

KEYSIGHT TECHNOLOGIES

Table of Contents

Hardware

Select options for VXG microwave signal generator channel 1

Step 1. Add first channel (required)		
M9384B-001	Add channel 1	
Step 2. Select frequency range on channel 1 (required)		
M9384B-F14	Frequency range, 1 MHz to 14 GHz (APC 3.5 mm male)	
M9384B-F20	Frequency range, 1 MHz to 20 GHz (APC 3.5 mm male)	
M9384B-F32	Frequency range, 1 MHz to 31.8 GHz (2.4 mm male)	
M9384B-F44	Frequency range, 1 MHz to 44 GHz (2.4 mm male)	
Step 3. Select RF bandwidth on channel 1 (required)		
M9384B-D05	RF bandwidth, 500 MHz with 256 MSa memory	Requires F14 or F20
M9384B-D06	RF bandwidth, 500 MHz with 256 MSa memory	Requires F32 or F44
M9384B-D10	RF bandwidth, 1 GHz with 256 MSa memory	Requires F14 or F20
M9384B-D11	RF bandwidth, 1 GHz with 256 MSa memory	Requires F32 or F44
M9384B-D20	RF bandwidth, 2 GHz with 256 MSa memory	Requires F14 or F20
M9384B-D21	RF bandwidth, 2 GHz with 256 MSa memory	Requires F32 or F44
M9384B-D2E	RF bandwidth, 2 GHz with 256 MSa memory, limited	Requires F32 or F44
Step 4. Select reference (required)		
M9384B-500	High performance reference	
M9384B-600	Enhanced high performance reference	
Step 5. Select phase noise performance on channel 1 (required)		
M9384B-ST5	Low phase noise	Requires 500
M9384B-ST6	Enhanced low phase noise	Requires 600
Step 6. Add high output power on channel 1 (optional)		
M9384B-1EB	High output power from 20 GHz to 44 GHz	Requires F32 or F44
M9384B-1EE	High output power from 20 GHz to 43.5 GHz, limited above 43.5 GHz	Requires F32 or F44
Step 7. Select vector system features on channel 1 (optional)		
M9384B-M05	Baseband generator memory upgrade to 512 MSa	
M9384B-M10	Baseband generator memory upgrade to 1024 MSa	
M9384B-EXT	Wideband differential external IQ inputs	
M9384B-DIQ	Differential IQ outputs	
M9384B-403	Calibrated AWGN	

Step 8. Select analog modulation on channel 1 (optional)		
M9384B-PMR	Pulse modulation	
M9384B-PME	Limited pulse modulation	
Step 9. Select general performance features on channel 1 (optional)		
M9384B-PCH	Phase coherency for N channels	
M9384B-1EH	Improved harmonics below 2 GHz	

Select options for VXG microwave signal generator channel 2

Step 1. Add second channel (optional)		
M9384B-002	Add channel 2	
	The reference and phase noise options selected on channel 1 will be automatically selected on channel 2.	
Step 2. Select frequency range on channel 2 (required)		
M9384B-F14	Frequency range, 1 MHz to 14 GHz (APC 3.5 mm male)	Requires F14 or F20 on channel 1
M9384B-F20	Frequency range, 1 MHz to 20 GHz (APC 3.5 mm male)	Requires F20 on channel 1
M9384B-F32	Frequency range, 1 MHz to 31.8 GHz (2.4 mm male)	Requires F32 or F44 on channel 1
M9384B-F44	Frequency range, 1 MHz to 44 GHz (2.4 mm male)	Requires F44 on channel 1
Step 3. Select RF bandwidth on channel 2 (required)		
M9384B-D05	RF bandwidth, 500 MHz with 256 MSa memory	Requires F14 or F20
M9384B-D06	RF bandwidth, 500 MHz with 256 MSa memory	Requires F32 or F44
M9384B-D10	RF bandwidth, 1 GHz with 256 MSa memory	Requires F14 or F20
M9384B-D11	RF bandwidth, 1 GHz with 256 MSa memory	Requires F32 or F44
M9384B-D20	RF bandwidth, 2 GHz with 256 MSa memory	Requires F14 or F20
M9384B-D21	RF bandwidth, 2 GHz with 256 MSa memory	Requires F32 or F44
M9384B-D2E	RF bandwidth, 2 GHz with 256 MSa memory, limited	Requires F32 or F44
Step 4. Select high output power on channel 2 (optional)		
M9384B-1EB	High output power from 20 GHz to 44 GHz	Requires F32 or F44
M9384B-1EE	High output power from 20 GHz to 43.5 GHz, limited above 43.5 GHz	Requires F32 or F44
Step 5. Select vector system features on channel 2 (optional)		
M9384B-M05	Baseband generator memory upgrade to 512 MSa	
M9384B-M10	Baseband generator memory upgrade to 1024 MSa	
M9384B-403	Calibrated AWGN	

Step 6. Select analog modulation on channel 2 (optional)		
M9384B-PMR	Pulse modulation	
M9384B-PME	Limited pulse modulation	
Step 7. Select general performance features on channel 2 (optional)		
M9384B-1EH	Improved harmonics below 2 GHz	

Select accessories

Select accessories (optional)	
Y1164A	Rack mount kit for M9384B
Y1165A [1]	Additional removable solid-state drive
Y1260A	Micro GPIB Cable
11900B [2]	Adapter, 2.4 mm (f) to 2.4 mm (f), DC to 50 GHz
11904B [2]	Adapter, 2.4 mm (f) to 2.9 mm (f), DC to 40 GHz
83059B [3]	Coaxial Adapter, 3.5 mm (f) to 3.5 mm (f), DC to 26.5 GHz
83059C	Coaxial Adapter, 3.5 mm (m) to 3.5 mm (f), DC to 26.5 GHz

Software

Included software

Step 1. Start with the M9384B VXG base configuration
The VXG base configuration includes the following software: • PathWave General Purpose Signal Generation • Keysight IO Libraries Suite including Connection Expert • Sample waveforms and programming examples

PathWave software tools

Step 2: Add PathWave Software Tools [4, 5] (optional)	
N7631APPC	PathWave Signal Generation for 5G NR
N7621APPC	PathWave Signal Generation for basic multitone
N7642APPC	PathWave Signal Generation for IQ based AM, FM, phase modulation
N7653APPC	PathWave automatic channel response correction and S-parameter de-embedding

1 If PathWave or Signal Studio 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.
2 When options F32 or F44 are ordered, each channel of the M9384B VXG includes one 11900B adapter and one 11904B adapter to help interface with the 2.4 mm (m) RF output. Additional adapters of interest can be found here.
3 When options F14 or F20 are ordered, each channel of the M9384B VXG includes one 83059B.
4 For more information, see PathWave Signal Creation - Brochure, literature number 5989-6448EN.
5 PathWave software tools can be used to create, download, and playback waveforms through the VXG touch-optimized graphical user interface.

Signal Studio and MATLAB

Step 3: Add Signal Studio [6] and MATLAB Software (optional)	
Cellular Communications	
N7600EMBC	Signal Studio for W-CDMA/HSPA+, waveform playback
N7601EMBC	Signal Studio for cdma2000/1xEV-DO, waveform playback
N7602EMBC	Signal Studio for GSM/EDGE/Evo, waveform playback
N7612EMBC	Signal Studio for TD-SCDMA/HSPA, waveform playback
N7624EMBC	Signal Studio for LTE/LTE-Advanced/LTE-A Pro FDD, waveform playback
N7625EMBC	Signal Studio for LTE/LTE-Advanced TDD, waveform playback
N7630EMBC	Signal Studio Pro for Pre-5G, waveform playback
N7631EMBC	Signal Studio Pro for 5G NR, waveform playback
Wireless Connectivity	
N7606EMBC	Signal Studio for Bluetooth, waveform playback
N7610EMBC	Signal Studio for IoT, waveform playback
N7615EMBC	Signal Studio for mobile WiMAX, waveform playback
N7617EMBC	Signal Studio for WLAN 802.11, waveform playback
Audio/Video Broadcasting, Public Safety	
N7611EMBC	Signal Studio for broadcast radio, waveform playback
N7623EMBC	Signal Studio for digital video, waveform playback
N7640EMBC	Signal Studio for LMR, waveform playback
Detection, Positioning, Tracking and Navigation	
N7609EMBC	Signal Studio for Global Navigation Satellite System (GNSS), waveform playback [7]
General RF and Microwave	
N7608EMBC	Signal Studio Pro for Custom Modulation, waveform playback
N7614EMBC	Signal Studio for power amplifier test
N6171A	MATLAB software

[6] Signal Studio licenses can be used to playback exported waveforms offline.
[7] Real-time signal generation is not supported.

Services

Select KeysightCare, warranty, and start-up assistance (optional)	
The base configuration includes the following services: • One day of start-up assistance • KeysightCare Assured first year support	
KeysightCare Upgrades	
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
R-55B-001-1	Upgrade to 1-year KeysightCare Enhanced
R-55B-001-2	Upgrade to 2 years KeysightCare Enhanced
R-55B-001-3	Upgrade to 3 years KeysightCare Enhanced
R-55B-001-5	Upgrade to 5 years KeysightCare Enhanced
R-55C-001-1	Upgrade to 1-year KeysightCare Performance
R-55C-001-2	Upgrade to 2 years KeysightCare Performance
R-55C-001-3	Upgrade to 2 years KeysightCare Performance
R-55C-001-5	Upgrade to 2 years KeysightCare Performance

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. He or she 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:

Description	Publication number
VXG M9384B and VXG-m M9383B - Data Sheet	5992-4260EN
PathWave Signal Creation - Brochure	5989-6448EN

Learn more at: www.keysight.com

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

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