

# AP5042A Vector Signal Generator

## Introduction

This configuration guide contains information to help you configure your AP5042A vector signal generator to meet your requirements. Ordering optional capabilities at the time of purchase provides the lowest overall cost of ownership.



# Select Hardware Options

To configure the AP5042A, 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	AP5042A-001	Add channel one	Required for all configurations
Two channels	AP5042A-001 AP5042A-002	Add channel one Add channel two	
Three channels	AP5042A-001 AP5042A-002 AP5042A-003	Add channel one Add channel two Add channel three	
Four channels	AP5042A-001 AP5042A-002 AP5042A-003 AP5042A-004	Add channel one Add channel two Add channel three Add channel four	

## Select system features (ordered once per instrument)

Option	Description	Additional information
<b>Select general performance features (optionally choose any)</b>		
AP5042A-PHS	Phase coherent switching	
AP5042A-SNC	Multi-instrument synchronization	Requires PHS
AP5042A-1ER	Flexible reference input	
AP5042A-GPB	GPIO interface	
AP5042A-006	I/Q waveform data storage on micro-SD card	SD card not included

## Select channel features (ordered once per channel)

Option	Description	Additional information
<b>Select frequency range (one required; will be duplicated on all channels)</b>		
AP5042A-504	Frequency range, 100 kHz to 4 GHz	SMA (f) RF output connector
AP5042A-506	Frequency range, 100 kHz to 6 GHz	SMA (f) RF output connector
AP5042A-512	Frequency range, 100 kHz to 12 GHz	SMA (f) RF output connector
AP5042A-520	Frequency range, 100 kHz to 20 GHz	SMA (f) RF output connector
AP5042A-540	Frequency range, 100 kHz to 40 GHz	2.92 mm (f) RF output connector
<b>Select close in phase noise and long-term frequency stability performance level (one required; will be duplicated on all channels)</b>		
AP5042A-LN1	Ultra-low close in phase noise and long-term frequency stability	
AP5042A-LN2	Enhanced ultra-low close in phase noise and long-term frequency stability	
<b>Select attenuator (optionally choose one; will be duplicated on all channels)</b>		
AP5042A-1E1	Mechanical step attenuator for 4 GHz, 6 GHz, 12 GHz, 20 GHz or 40 GHz	Requires Option 504, 506, 512, 520 or 540, incompatible with option UNZ
AP5042A-1E2	Electronic step attenuator for 4 GHz frequency range	Requires Option 504
AP5042A-1EH	Electronic step attenuator and improved harmonics for 6 GHz, 12 GHz, or 20 GHz frequency range	Requires Option 506, 512, or 520
AP5042A-2E2	Electronic step attenuator for 6 GHz, 12 GHz, or 20 GHz frequency range	Requires Option 506, 512, or 520
AP5042A-3E2	Electronic step attenuator for 40 GHz frequency range	Requires Option 540
<b>Select fast switching (optional; will be duplicated on all channels)</b>		
AP5042A-UNZ	Fast switching	Incompatible with Option 1E1
<b>Select analog modulation (optionally choose any; will be duplicated on all channels)</b>		
AP5042A-UNT	AM, FM, phase modulation	
AP5042A-PMR	Pulse modulation	
<b>Select vector system features (optionally choose any)</b>		
AP5042A-403	Additive white gaussian noise	
AP5042A-FCP	Fast control port, external digital I/Q data & PDW streaming	
AP5042A-PCM	Firmware for Phase Calibratable Mode	Requires option PHS, incompatible with Option 540
AP5042A-EXT	External analog IQ inputs	
AP5042A-PDW	Pulse Descriptor Word (PDW)	
<b>Select calibration documentation (optional; will be duplicated on all channels)</b>		
AP5042A-UK6	Commercial calibration certificate with test data	

# Select Software Applications

Option	Description
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
N7606EMBC	Signal Studio for Bluetooth Classic/EDR/LE, waveform playback
N7608EMBC	Signal Studio Pro for Custom Modulation, waveform playback
N7610EMBC	Signal Studio for IoT, waveform playback
N7611EMBC	Signal Studio for broadcast radio, waveform playback
N7612EMBC	Signal Studio for TD-SCDMA/HSPA, waveform playback
N7615EMBC	Signal Studio for mobile WiMAX, waveform playback
N7617EMBC	Signal Studio for WLAN 802.11, waveform playback
N7623EMBC	Signal Studio for digital video, 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
N7626EMBC	Signal Studio for LTE V2X, waveform playback
N7631EMBC	Signal Studio Pro for 5G NR/5G-Advanced, waveform playback
N7632EMBC	PathWave Signal Generation for NR V2X, waveform playback
N7640EMBC	Signal Studio for LMR, waveform playback
Note:	All software application licenses are node-locked and perpetual

# Recommended Services

Model	Description
R-50C-011-3	Keysight Calibration - Return-to-Keysight - 3 years
R-50C-011-5	Keysight Calibration - Return-to-Keysight - 5 years

# Related Literature

[AP5042A G3 Vector Signal Generator Product Page](#)