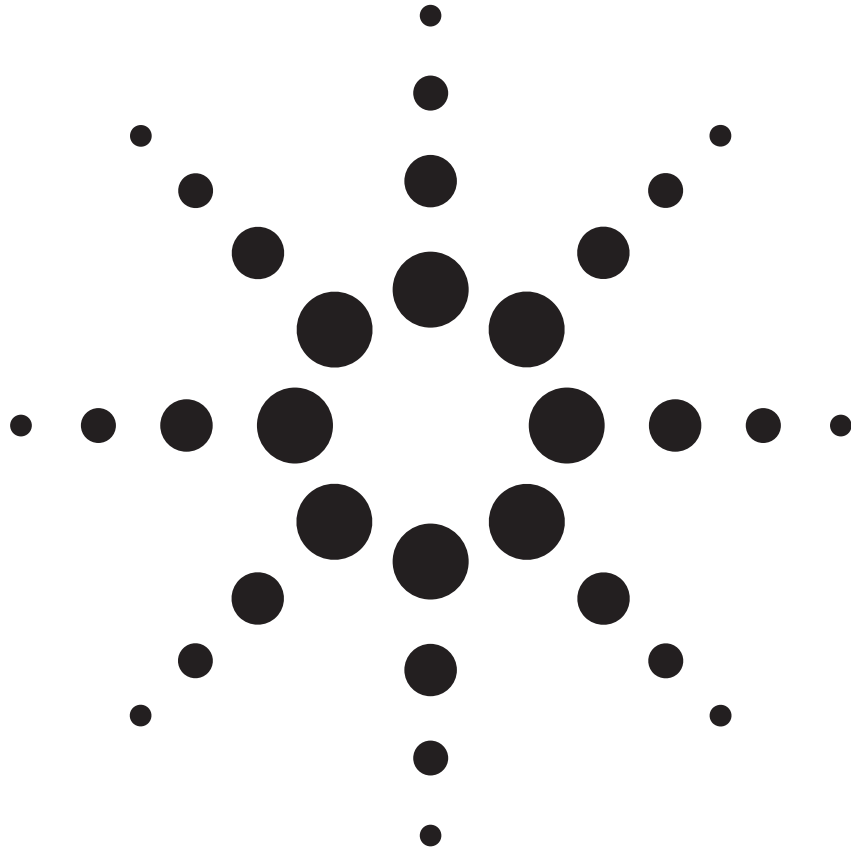


# Agilent E4438C ESG Vector Signal Generator

Configuration Guide



Agilent Technologies

# E4438C ESG Vector Signal Generator

To add options to a Model, use the following ordering scheme:

	Example
Model #	E4438C
Model #-option #	E4438C-001
Model #-option #	E4438C-400

## Step 1 Choose a frequency range (Mandatory)

Ordering #	Description	Requires	Not Compatible	For more information
E4438C-501	250 kHz to 1 GHz frequency range			
E4438C-502	250 kHz to 2 GHz frequency range			
E4438C-503	250 kHz to 3 GHz frequency range			
E4438C-504	250 kHz to 4 GHz frequency range			
E4438C-506	250 kHz to 6 GHz frequency range <b>*(Mechanical attenuator only– Do not need to order Option UNB)</b>	UNJ	UNB*, 300	

## Step 2 Choose phase noise performance (NOT mandatory)

Ordering #	Description	Requires	Not Compatible	For more information
<i>Standard</i>	Standard phase noise performance			Data Sheet: 5988-4039EN or <a href="http://www.agilent.com/find/esg">www.agilent.com/find/esg</a>
E4438C-UNJ	Enhanced phase noise performance: Up to 20 dB Single Sideband (SSB) improvement over standard performance. (Option 1E5 performance is included)		300, 1E5	Data Sheet: 5988-4039EN or <a href="http://www.agilent.com/find/esg">www.agilent.com/find/esg</a>

## Step 3 Choose a frequency reference (NOT mandatory)

Ordering #	Description	Requires	Not Compatible	For more information
<i>Standard</i>	Standard stability time base			Data Sheet: 5988-4039EN or <a href="http://www.agilent.com/find/esg">www.agilent.com/find/esg</a>
E4438C-1E5	High-stability time base: Provides improved frequency accuracy over time and with temperature variation. (Option 1E5 performance is included with Option UNJ)		UNJ	Data Sheet: 5988-4039EN or <a href="http://www.agilent.com/find/esg">www.agilent.com/find/esg</a>
	32 Msample memory; extra memory for when longer waveform playback is desired. Used to produce arbitrary and real-time I/Q waveforms. A variety of standard compliant firmware and software personalities are available. Option 001 is NOT required.			<a href="http://www.agilent.com/find/esg">www.agilent.com/find/esg</a>

## E4438C ESG Vector Signal Generator (continued)

### Step 4 Choose an attenuator (NOT mandatory)

Ordering #	Description	Requires	Not Compatible	For more information
Standard with Options 501,502,503,504	State-of-the-art electronic attenuator: Includes excellent adjacent channel performance(ACP) for CDMA application (previously Option H99). Also provides alternate timeslot power control ideal for GSM receiver and transmitter designs (previously Option UNA).		506	Data Sheet: 5988-4039EN or <a href="http://www.agilent.com/find/esg">www.agilent.com/find/esg</a>
E4438C-UNB	High output power with mechanical attenuator: Increase the output power up to 6 dB for higher power applications. (Option UNB performance is included with Option 506)		300, 506	Data Sheet: 5988-4039EN or <a href="http://www.agilent.com/find/esg">www.agilent.com/find/esg</a>

### Step 5 Choose baseband generator with memory (NOT mandatory)

Ordering #	Description	Requires	Not Compatible	For more information
E4438C-001	Internal baseband generator with 8 Msample memory; used to produce arbitrary and real-time I/Q waveforms. A variety of standard compliant firmware and software personalities are available.			Data Sheet: 5988-4039EN or <a href="http://www.agilent.com/find/esg">www.agilent.com/find/esg</a>
E4438C-002	Internal baseband generator with 32 Msample memory; extra memory for when longer waveform playback is desired. Used to produce arbitrary and real-time I/Q waveforms. A variety of standard compliant firmware and software personalities are available. Option 001 is NOT required.			Data Sheet: 5988-4039EN or <a href="http://www.agilent.com/find/esg">www.agilent.com/find/esg</a>
E4438C-005	6G Byte hard drive for non-volatile waveform storage	001 (or 002)		Data Sheet: 5988-4039EN or <a href="http://www.agilent.com/find/esg">www.agilent.com/find/esg</a>

### Step 6 Choose a firmware personality for your internal baseband generator (NOT mandatory)

Ordering #	Description	Requires	Not Compatible	For more information
E4438C-400	3GPP W-CDMA (FDD) personalities	001 (or 002)		Product Overview: 5988-4449EN <a href="http://www.agilent.com/find/esg">www.agilent.com/find/esg</a>
E4438C-401	cdma2000 and IS-95-A personalities	001 (or 002)		Product Overview: 5988-4430EN <a href="http://www.agilent.com/find/esg">www.agilent.com/find/esg</a>
E4438C-402	TDMA personalities Includes GSM, EDGE, NADC, PDC, PHS, DECT, TETRA.	001 (or 002)		Product Overview: 5988-4431EN <a href="http://www.agilent.com/find/esg">www.agilent.com/find/esg</a>
E4438C-403	Calibrated noise personality: Provides settable Eb/No used for sensitivity testing in cdma2000 and W-CDMA applications	001 (or 002)		
E4438C-409	GPS personality	001 (or 002)		Product Overview: 5988-6256EN <a href="http://www.agilent.com/find/esg">www.agilent.com/find/esg</a>

## E4438C ESG Vector Signal Generator (continued)

### Step 7 Choose a Signal Studio software with your internal baseband generator (NOT mandatory)

Ordering #	Description	Requires	Not Compatible	For more information
E4438C-404	1xEV-DO Signal Studio software	001 (or 002) and a PC		Product Note: 5988-5416EN Product Overview: 5988-5459EN <a href="http://www.agilent.com/find/signalstudio">www.agilent.com/find/signalstudio</a>
E4438C-405	802.11b WLAN Signal Studio software	001 (or 002) and a PC		Product Note: 5988-5415EN Product Overview: 5988-5766EN <a href="http://www.agilent.com/find/signalstudio">www.agilent.com/find/signalstudio</a>
E4438C-406	Bluetooth™ Signal Studio software	001 (or 002) and a PC		Product Note: 5988-5417EN Product Overview: 5988-5458EN <a href="http://www.agilent.com/find/signalstudio">www.agilent.com/find/signalstudio</a>
E4438C-408	Enhanced Multitone Signal Studio software	001 (or 002) and a PC		Product Overview: 5988-5639EN <a href="http://www.agilent.com/find/signalstudio">www.agilent.com/find/signalstudio</a>
E4438C-410	802.11a WLAN Signal Studio software	001 (or 002) and a PC		Product Note: 5988-5414EN Product Overview: 5988-5765EN <a href="http://www.agilent.com/find/signalstudio">www.agilent.com/find/signalstudio</a>
E4438C-411	TD-SCDMA (TSM) Signal Studio software	001 (or 002) and a PC		Product Overview: 5988-6552EN <a href="http://www.agilent.com/find/signalstudio">www.agilent.com/find/signalstudio</a>

### Step 8 Choose a bit-error-rate(BER) analyzer (NOT mandatory)

Ordering #	Description	Requires	Not Compatible	For more information
E4438C-UN7	Internal bit-error-rate analyzer			
E4438C-300	GSM/EDGE basestation loopback BER test capability	001 (or 002), 402, UN7	UNJ, UNB, 506	

### Step 9 Choose accessories or instrument connector configuration (NOT mandatory)

Ordering #	Description	Requires	Not Compatible	For more information
E4438C-1EM	Moves all front panel connectors to rear panel			
E4438C-1CP	Rack mount kit with handles			Catalog: 5980-0450E
E4438C-1CN	Handle kit			Catalog: 5980-0450E

### Step 10 Choose a warranty plan (Mandatory)

Ordering #	Standard warranty is 36 months. For warranty and service of 5 years, please order 60 months of R-51B (quantity = 60).
R-51B	Return-to-Agilent warranty and service plan

### Step 11 Choose a calibration plan<sup>1</sup> (Mandatory)

Ordering #	For 3 years, order 36 months of the appropriate calibration plan shown below. For 5 years, specify 60 months.
R-50C-001	Standard calibration
R-50C-002	Standards compliant calibration

<sup>1</sup> Options not available in all countries.

## E4438C ESG Vector Signal Generator (continued)

### Step 12 Choose any documentation (NOT mandatory)

Ordering #	Description	Requires	Not Compatible	For more information
E4438C-CD1 (Standard)	CD-ROM - English Documentation Set			
E4438C-0BW	Service documentation, assembly level (Hardcopy)			
E4438C-0BV	Service documentation, component level (Hardcopy)			
E4438C-UK6	Commercial calibration certificate with test data (Hardcopy)			
E4438C-ABA	United States - English documentation set (Hardcopy)			
E4438C-AB0	Taiwan - Chinese localization (Hardcopy)			
E4438C-AB1	Korean - Korean localization (Hardcopy)			
E4438C-AB2	China - Chinese localization (Hardcopy)			
E4438C-ABF	French - French localization (Hardcopy)			
E4438C-ABJ	Japanese - Japanese localization (Hardcopy)			

## **Additional Agilent literature**

***E4438C ESG Vector Signal Generator***, Brochure,  
literature number 5988-3935EN.

***RF Source Basics, a self-based tutorial (CD ROM)***,  
literature number 5980-2060E.

***Digital Modulation in Communications Systems – An Introduction***,  
Application Note 1298,  
literature number 5965-7160E.

***Using Vector Modulation Analysis in the Integration, Troubleshooting and Design of Digital RF Communications Systems***, Product Note 89400-8,  
literature number 5091-8687E.

***Testing CDMA Base Station Amplifiers***,  
Application Note 1307,  
literature number 5967-5486E.

***Understanding GSM Transmitter Measurements for Base Transceiver Stations and Their Components***,  
Application Note 1312,  
literature number 5968-2320E.

***Understanding CDMA Measurements for Base Stations and their Components***,  
Application Note 1311,  
literature number 5968-0953E.

***Testing and Troubleshooting Digital RF Communications Receiver Designs***,  
Application Note 1314,  
literature number 5968-3579E.

***Bluetooth™ RF Measurements Fundamentals***,  
Application Note 1333-1,  
literature number 5988-3760EN.

***Designing and Testing 3GPP W-CDMA Base Stations***,  
Application Note 1355,  
literature number 5980-1239E.

***Designing and Testing 3GPP W-CDMA User Equipment***,  
Application Note 1356,  
literature number 5980-1238E.

***Designing and Testing cdma2000 Base Stations***,  
Application Note 1357,  
literature number 5980-1303E.

***Designing and Testing cdma2000 Mobile Stations***,  
Application Note 1358,  
literature number 5980-1237E.

## Additional Agilent literature (continued)

### Product literature

***E4438C ESG Vector Signal Generator***, Brochure, literature number 5988-3935EN.

***E4438C ESG Vector Signal Generator***, Data Sheet, literature number 5988-4039EN.

***RF and Microwave Signal Generators***, Catalog, literature number 5965-3094E.

***IntuiLink Software***, Data Sheet, literature number 5980-3115EN.

### See the ESG Web page

Get the latest news, product and support information, application literature and more. The Agilent Technologies Internet address for the ESG family is:  
**<http://www.agilent.com/find/esg>**

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