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Data Sheet

August 14, 2026

AGILENT / KEYSIGHT

Agilent / Keysight E4438C ESG Vector Signal Generator, 250 kHz to 6 GHz

Agilent E4438C ESG Vector Signal Generator The Agilent E4438C ESG vector signal generator provides frequency coverage from 250 kHz to 1, 2, 3, 4, or 6 GHz via Options 501 through 506. OEM E4438C data sheet lists 0.01 Hz frequency resolution, leveled output to -136 dBm, and extensive digital modulation personalities. Wireless transmitter simulation, receiver testing with I/Q modulation, and ATE stimulus for cellular and connectivity standards. Vector and analog modulation in one platform The Agilent E4438C ESG vector signal generator provides frequency coverage from 250 kHz to 1, 2, 3, 4, or 6 GHz via Options 501 through 506. OEM E4438C data sheet lists 0.01 Hz frequency resolution, leveled output to -136 dBm, and extensive digital modulation personalities. Wireless transmitter simulation, receiver testing with I/Q modulation, and ATE stimulus for cellular and connectivity standards. Vector and analog modulation in one platform Frequency options to 6 GHz with Option 506 and UNJ



MODEL

**Agilent / Keysight
E4438C**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

E4438C

LISTING

<https://aumictechlabs.com/products/e4438c-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The Keysight E4438C ESG is a vector signal generator delivering RF signals from 250 kHz to 6 GHz with integrated baseband generation and arbitrary waveform playback. It combines analog

and digital modulation capabilities with real-time I/Q symbol generation up to 50 Msym/s, supporting standards including LTE, HSPA+, WiMAX, WLAN, DVB-H, and GPS/GNSS. The instrument accommodates external I/Q inputs for modulation bandwidths to 160 MHz and internal baseband operation to 80 MHz. With configurable memory up to 64 MSa and optional 6 GB non-volatile storage, the E4438C suits wireless transceiver verification, aerospace and defense signal simulation, and manufacturing test environments.

Technical Specifications

Frequency: 250 kHz to 6 GHz (Option 506); alternative ranges from 250 kHz to 1 GHz (Option 501) through 250 kHz to 4 GHz (Option 504)

Output Power: +17 dBm typical at 1 GHz; range +13 dBm to -136 dBm; 50 Ω nominal impedance

Phase Noise: < -134 dBc/Hz at 1 GHz and 20 kHz offset typical; enhanced performance available with Option UNJ

Modulation Bandwidth: 160 MHz external I/Q inputs; 80 MHz internal baseband generator

Baseband Specifications:

- Sample rate:** Up to 100 MSa/s
- Playback memory:** Up to 64 MSa (1 GSa storage)
- Real-time I/Q generation:** Up to 50 Msym/s
- Non-volatile storage:** Up to 6 GB (Option 005)
- Modulation Types:** AM, FM, Phase Modulation, Pulse; ASK, FSK, MSK, PSK, QAM, custom I/Q
- Sweep Capabilities:** Step and list sweep for frequency and power

Key Features

- Dual baseband architecture:** internal 80 MHz bandwidth generator or external I/Q inputs to 160 MHz
- Supports 3GPP W-CDMA FDD (Option 400), cdma2000/IS-95A (Option 401), TDMA variants (Option 402)**
- Signal Studio personalities for protocol-specific signal creation**
- Real-time arbitrary waveform generation with 100 MSa/s baseband sample rate**
- SCPI and IVI-COM driver support**

Interfaces 10BaseT LAN, GPIB, RS-232; optional N5102A Digital I/O module for multi-channel baseband generation

Typical Applications Wireless communication system verification, transceiver design validation, RF signal simulation for aerospace and defense, manufacturing test automation.

E4438C Characteristics / Specifications

PARAMETER	VALUE
Frequency Range Option 5	250 kHz to 6 GHz requires Option UNJ
Frequency Minimum Specified	100 kHz
Frequency Resolution	0.01 Hz
Level Resolution	0.02 dB
Output Power Range Options 501 to 5	+11 to -136 dBm class by band
Output Power With Option UNB	+13 to -136 dBm class by band
Output Power Option 5	+10 to -136 dBm class by band
Level Accuracy to 2 GHz Mid Levels	+/-0.5 dB
Level Accuracy 2 to 3 GHz Mid Levels	+/-0.6 dB
Level Accuracy 3 to 4 GHz Mid Levels	+/-0.7 dB
RF Reference Input Frequencies Standard	1 2 5 10 MHz +/-10 ppm
RF Reference Input Frequencies UNJ or 1E	1 2 5 10 MHz +/-0.2 ppm
RF Reference Input Amplitude	-3.5 dBm to 20 dBm
RF Reference Input Impedance	50 Ohm
Instrument Type	ESG vector signal generator
ALC On Constant Amplitude Accuracy Opts 501 to 5	+/-0.1 dB
Remote Interface	GPIB LAN class
Switching Speed Class	less than 15 ms ALC on typical class

E4438C Specifications

PARAMETER	VALUE
Agilent E4438C ESG Vector Signal Generator	Overview
Vector and analog modulation in one platform	Frequency options to 6 GHz with Option 506 and UNJ
Technical Specifications	Frequency Range Option 501: 250 kHz to 1 GHz

Full OEM specifications

Complete technical content extracted from the manufacturer datasheet. Sparse OEM tables are reconstructed as tables below; other text is preserved as paragraphs.

Specifications

Specifications

PARAMETER	VALUE
Frequency Range Option 501	250 kHz to 1 GHz
Frequency Range Option 502	250 kHz to 2 GHz
Frequency Range Option 503	250 kHz to 3 GHz
Frequency Range Option 504	250 kHz to 4 GHz
Frequency Range Option 506	250 kHz to 6 GHz requires Option UNJ
Frequency Minimum Specified	100 kHz
Frequency Resolution	0.01 Hz
Level Resolution	0.02 dB
Output Power Range Options 501 to 504	+11 to -136 dBm class by band
Output Power With Option UNB	+13 to -136 dBm class by band
Output Power Option 506	+10 to -136 dBm class by band
Level Accuracy to 2 GHz Mid Levels	+/-0.5 dB

Level Accuracy 2 to 3 GHz Mid Levels: +/-0.6 dB
Level Accuracy 3 to 4 GHz Mid Levels: +/-0.7 dB

Specifications

PARAMETER	VALUE
RF Reference Input Frequencies Standard	1 2 5 10 MHz +/-10 ppm
RF Reference Input Frequencies UNJ or 1E5	1 2 5 10 MHz +/-0.2 ppm
RF Reference Input Amplitude	-3.5 dBm to 20 dBm
RF Reference Input Impedance	50 Ohm
Instrument Type	ESG vector signal generator

ALC On Constant Amplitude Accuracy Opts 501 to 504: +/-0.1 dB
Remote Interface: GPIB LAN class
Switching Speed Class: less than 15 ms ALC on typical class

Notes
From Agilent/Keysight E4438C ESG Vector Signal Generator data sheet. Maximum power varies by band and UNB/506

options; cite the full power table for calibration limits. Mid level accuracy rows refer to +7 to -50 dBm conditions on the OEM sheet.

Available from Aumictech

Used and refurbished unit evaluated in-house. Calibration: Available on request. Used · In stock.

Request a quote: sales@aumictech.com · +1 (484) 841-9341

Aumictech

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NIST-traceable calibration · SAM registered ·
30-day returns
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Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.