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Data Sheet

August 14, 2026

AGILENT / KEYSIGHT

Agilent / Keysight E4428C ESG Analog Signal Generator, 250 kHz to 6 GHz

Agilent / Keysight E4428C ESG Analog Signal Generator The Agilent/Keysight E4428C is an ESG Series RF analog signal generator. OEM E4428C data sheet lists Option 503 coverage 250 kHz to 3 GHz with electronic attenuator standard, Option 506 coverage 250 kHz to 6 GHz with mechanical attenuator, frequency resolution 0.01 Hz, and remote GPIB/RS-232/LAN control. Local oscillator substitution, receiver testing, and general purpose CW and analog modulated RF stimulus on the ESG platform. Frequency Range Option 503: 250 kHz to 3 GHz The Agilent/Keysight E4428C is an ESG Series RF analog signal generator. OEM E4428C data sheet lists Option 503 coverage 250 kHz to 3 GHz with electronic attenuator standard, Option 506 coverage 250 kHz to 6 GHz with mechanical attenuator, frequency resolution 0.01 Hz, and remote GPIB/RS-232/LAN control. Local oscillator substitution, receiver testing, and general purpose CW and analog modulated RF stimulus on the ESG platform. Frequency Range Option 503: 250 kHz to 3 GHz Frequency Range Option 506: 250 kHz to 6 GHz



MODEL

**Agilent / Keysight
E4428C**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

E4428C

LISTING

<https://aumictechlabs.com/products/e4428c-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The Agilent/Keysight E4428C ESG is an analog signal generator delivering precise RF and microwave signal generation from 250 kHz to 6 GHz. Built on an oven-controlled crystal oscillator (OCXO) timebase with aging rates below ± 0.1 ppm/yr, it has exceptional frequency stability across demanding test environments. Output power ranges from -136 dBm to $+17$ dBm with level accuracy of ± 0.6 dB below 3 GHz and ± 0.9 dB above 3 GHz (both at output power > -110 dBm). Phase noise performance reaches -134 dBc/Hz typical at 20 kHz offset from a 1 GHz carrier.

Technical Specifications

Frequency & Power Range: 250 kHz to 6 GHz with 0.01 Hz resolution

Output power: -136 dBm to $+17$ dBm (1 GHz); 16 dBm at 3 GHz; 10 dBm at 6 GHz

Phase noise: -134 dBc/Hz SSB at 20 kHz offset from 1 GHz carrier

Timebase stability: $< \pm 0.05$ ppm (0 to 55 °C)

Modulation Capabilities AM, FM, phase modulation (ØM), and pulse modulation

Wideband FM: DC to 10 MHz modulation rates, up to 8 MHz deviation

Simultaneous modulation via dual internal function generators (sine, square, ramps, triangle, Gaussian/uniform noise, swept sine, dual sine)

Sweep & Switching Frequency step, amplitude step, and arbitrary list modes

Dwell time: 1 ms to 60 s

Frequency switching: 9 ms standard; < 9 ms (Option 503) or < 16 ms (Option 506) for hops < 5 MHz

Step mode: 2 to 65,535 points; **List mode:** 2 to 1,601 points

Reference & Interfaces 10 MHz OCXO reference output (4 dBm ± 2 dB); accepts 1/2/5/10 MHz external input (± 0.2 ppm)

10BaseT LAN and GPIB connectivity with SCPI and IVI-COM drivers

Key Features Sub-millisecond frequency switching for rapid test sequencing

Dual modulation generators enable complex signal synthesis

Temperature-compensated output with < 0.03 dB/°C drift over operating range

Configurable front/rear panel connectivity (Options 1EM, 1CM, 1CP)

Typical Applications Component characterization, receiver sensitivity testing, transmitter validation, phase noise measurement, and multimodulation signal development across L-band through microwave frequencies.

Compatibility & Integration Standard SCPI command set and IVI-COM drivers enable integration into automated test systems. LAN and GPIB ports support both local and remote instrument control.

Features & description

From manufacturer datasheet

High Power Option UNB: available (not with Option 506)

Remote Interfaces: GPIB RS-232 LAN 10BaseT Control Language: SCPI 1996.0 Calibration Cycle Class: 2 year class Form Factor: benchtop rack mountable Built In Function Generator: yes Modulation Class: AM FM phase modulation wideband Brand Lineage: Agilent / Keysight Series Family: ESG E4428C Notes From Keysight/Agilent E4428C ESG Analog Signal Generator data sheet.

E4428C Characteristics / Specifications

PARAMETER	VALUE
Model	E4428C
Frequency Range Option 5	250 kHz to 3 GHz
Frequency Minimum	100 kHz
Frequency Resolution	0.01 Hz
Frequency Switching Option 5	less than 16 ms class
Phase Offset Resolution Nominal	0.1 degree
Band	greater than 250 MHz to less than or equal to 500 MHz
Attenuator Option 5	electronic attenuator standard
High Power Option UNB	available (not with Option 506)
Remote Interfaces	GPIB RS-232 LAN 10BaseT
Control Language	SCPI 1996.0
Calibration Cycle Class	2 year class
Form Factor	benchtop rack mountable
Built In Function Generator	yes
Modulation Class	AM FM phase modulation wideband
Brand Lineage	Agilent / Keysight
Series Family	ESG E4428C

E4428C Specifications

PARAMETER	VALUE
Agilent / Keysight E4428C ESG Analog Signal Generator	Overview
Applications	Local oscillator substitution, receiver testing, and general purpose CW and analog modulated RF stimulus on the ESG platform.
ESG analog signal generator platform	Option 503 3 GHz or Option 506 6 GHz
Technical Specifications	Model: E4428C
Notes	From Keysight/Agilent E4428C ESG Analog Signal Generator data sheet.

Specifications

PARAMETER	VALUE
Model	E4428C
Frequency Range Option 503	250 kHz to 3 GHz
Frequency Range Option 506	250 kHz to 6 GHz
Frequency Minimum	100 kHz
Frequency Resolution	0.01 Hz
Frequency Switching Option 503	less than 9 ms class
Frequency Switching Option 506	less than 16 ms class
Phase Offset Resolution Nominal	0.1 degree
Band 1	250 kHz to less than or equal to 250 MHz
Band 2	greater than 250 MHz to less than or equal to 500 MHz
Band 3	greater than 500 MHz to less than or equal to 1 GHz
Band 4	greater than 1 GHz to less than or equal to 2 GHz
Band 5	greater than 2 GHz to less than or equal to 4 GHz
Band 6	greater than 4 GHz to less than or equal to 6 GHz
Attenuator Option 503	electronic attenuator standard
Attenuator Option 506	mechanical attenuator only
High Power Option UNB	available (not with Option 506)
Remote Interfaces	GPIB RS-232 LAN 10BaseT
Control Language	SCPI 1996.0
Calibration Cycle Class	2 year class
Form Factor	benchtop rack mountable
Built In Function Generator	yes
Modulation Class	AM FM phase modulation wideband
Brand Lineage	Agilent / Keysight
Series Family	ESG E4428C

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
Model	E4428C
Frequency Range Option 503	250 kHz to 3 GHz
Frequency Range Option 506	250 kHz to 6 GHz
Frequency Minimum	100 kHz
Frequency Resolution	0.01 Hz
Frequency Switching Option 503	less than 9 ms class
Frequency Switching Option 506	less than 16 ms class
Phase Offset Resolution Nominal	0.1 degree
Band 1	250 kHz to less than or equal to 250 MHz
Band 2	greater than 250 MHz to less than or equal to 500 MHz
Band 3	greater than 500 MHz to less than or equal to 1 GHz
Band 4	greater than 1 GHz to less than or equal to 2 GHz
Band 5	greater than 2 GHz to less than or equal to 4 GHz
Band 6	greater than 4 GHz to less than or equal to 6 GHz
Attenuator Option 503	electronic attenuator standard
Attenuator Option 506	mechanical attenuator only
High Power Option UNB	available (not with Option 506)
Remote Interfaces	GPIB RS-232 LAN 10BaseT
Control Language	SCPI 1996.0
Calibration Cycle Class	2 year class
Form Factor	benchtop rack mountable
Built In Function Generator	yes
Modulation Class	AM FM phase modulation wideband
Brand Lineage	Agilent / Keysight
Series Family	ESG E4428C

Notes

From Keysight/Agilent E4428C ESG Analog Signal Generator data sheet.

Ordering Information

OPTION	DESCRIPTION
Option 503	coverage 250 kHz to 3 GHz with electronic attenuator standard, Option 506 coverage 250 kHz to 6 GHz with mechanical attenuator, frequency resolution 0.01 Hz, an

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

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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.