

KEYSIGHT TECHNOLOGIES (AGILENT HP)

E4420B

The Keysight (Agilent) E4420B is a member of the ESG-A series of analog RF signal generators. Spanning a frequency range of 250 kHz to 2 GHz, the E4420B is engineered for high reliability, excellent level accuracy, and precise frequency control. It features standard analog modulation capabilities including AM, FM, phase modulation, and pulse modulation, making it a robust and versatile tool for receiver test, RF component evaluation, and local oscillator emulation. This model provides an upgradeable architecture, with options like a high-stability oven timebase (Option 1E5) and high-performance pulse modulation with a mechanical attenuator (Option 1E6).

SPECIFICATIONS

Frequency

Minimum Frequency	250 kHz Hz
Maximum Frequency	2 GHz Hz
Frequency Resolution	0.01 Hz

Modulation

Modulation	AM, FM, Phase Modulation, Pulse Modulation
Sweep Modes	Step sweep (frequency, power, and list)

General

Interfaces	GPIB (IEEE-488.2), RS-232
Recommended Calibration Cycle	2 years

Physical

Rack Height	3U
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Frequency Specifications

Frequency Range	250 kHz to 2.0 GHz
Internal Reference Frequency	10 MHz
Reference Output Frequency	10 MHz

Amplitude & Output Power

Amplitude Resolution	0.02 dB
Output Impedance	50 ohms
Reverse Power Protection	50 W (from 50 ohm source), 50 VDC
Leveling Modes	Internal, External, ALC off

Frequency Modulation (FM)

FM Resolution	0.1% of deviation or 1 Hz, whichever is greater
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Amplitude Modulation (AM)

Maximum AM Depth	100%
AM Resolution	0.1%
AM Depth Accuracy	±(6% of setting + 1%) at 1 kHz rate, depth < 90%

Phase Modulation (Phi-M)

Phase Modulation Resolution	0.1% of set deviation
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Connectivity & Interfaces

RF Output Connector Type	Type-N female
GPIB Interface	Yes, IEEE-488.2
Sweep Trigger Input	BNC female (rear panel)
Reference In/Out Connectors	BNC female (rear panel)

Physical, Power & Environmental

Power Consumption	< 200 W
Operating Temperature Range	0 to 55 °C
Storage Temperature Range	-40 to 71 °C

Hardware Options & Configurations

High-Stability Oven Timebase Option	Option 1E5
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Inputs & Outputs

External 1 Input Impedance	50 Ω, 600 Ω, or 100 kΩ (selectable, nominal)
External 2 Input Impedance	50 Ω, 600 Ω, or 100 kΩ (selectable, nominal)
Trigger Input Connector	BNC female
Trigger Output Connector	BNC female
Sweep Output Connector	BNC female

Programming & Control

Command Language Compatibility	SCPI, HP 8656B, HP 8657A/B
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TECHNOLOGY

Analog RF Signal Generator

APPLICATIONS

Receiver test, component test, and local oscillator emulation

Generated by SpecAtlasHub (specatlashub.com). Specifications are compiled from available sources and are subject to change — verify critical values against the manufacturer before purchase.