

KEYSIGHT TECHNOLOGIES (AGILENT HP)

E4425B

The Keysight Agilent E4425B is a high-performance analog RF signal generator belonging to the ESG-AP series, offering outstanding phase noise and level accuracy across its frequency range of 250 kHz to 3 GHz. Designed to meet the demanding requirements of today's receiver test, component test, and local oscillator applications, the E4425B provides comprehensive analog modulation capabilities, including AM, FM, phase modulation, and pulse modulation, alongside a built-in function generator and highly stable ovenized reference oscillator as standard.

SPECIFICATIONS

General

Interfaces	GPIO (IEEE-488.2), RS-232
Display	Backlit LCD

Physical

Operating Temperature	0 to 55 °C
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Frequency Specifications

Frequency Range	250 kHz to 3.0 GHz
Frequency Resolution	0.01 Hz

Frequency Reference

Internal Reference Oscillator Aging Rate	< ±0.1 ppm/year
Internal Reference Oscillator Temperature Stability	< ±0.05 ppm (0 to 55 °C)
Internal Reference Oscillator Line Voltage Influence	< ±0.002 ppm for ±10% change
External Reference Input Frequency	1, 2, 5, 10 MHz
Reference Output Frequency	10 MHz

Amplitude Specifications

Maximum Output Power (250 kHz to 1.0 GHz)	+13 dBm
Maximum Output Power (1.0 to 3.0 GHz)	+10 dBm
Minimum Output Power	-136 dBm
Amplitude Resolution	0.02 dB
Level Accuracy (250 kHz to 2.0 GHz, levels > -127 dBm)	±0.5 dB
Level Accuracy (2.0 to 3.0 GHz, levels > -127 dBm)	±0.9 dB
Output Impedance	50 ohms
Maximum Reverse Power Protection (DC Voltage)	50 Vdc
Maximum Reverse Power Protection (RF Power, < 2 GHz)	50 W
Maximum Reverse Power Protection (RF Power, 2 to 3 GHz)	25 W

Spectral Purity

SSB Phase Noise at 500 MHz (20 kHz offset)	<-134 dBc/Hz
SSB Phase Noise at 1 GHz (20 kHz offset)	<-130 dBc/Hz
SSB Phase Noise at 2 GHz (20 kHz offset)	<-124 dBc/Hz
SSB Phase Noise at 3 GHz (20 kHz offset)	<-121 dBc/Hz
Harmonics (at Specified Level < +10 dBm)	<-30 dBc
Non-Harmonic Spurious (offsets > 10 kHz, < 1 GHz)	<-80 dBc
Non-Harmonic Spurious (offsets > 10 kHz, 1 to 2 GHz)	<-74 dBc
Non-Harmonic Spurious (offsets > 10 kHz, 2 to 3 GHz)	<-68 dBc

Inputs & Outputs

RF Output Connector	Type-N female, 50 ohms
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Physical & Environmental

Storage Temperature Range	-40 to +71 °C
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System Features

Programming Language	SCPI (Standard Commands for Programmable Instruments)
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Environmental

Operating Altitude	Up to 4,570 m (15,000 ft)
Storage Altitude	Up to 15,240 m (50,000 ft)

Power Requirements

AC Input Voltage	90 to 254 VAC
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Options

Option 1EM	Rear panel RF output and all other front panel connectors moved to rear panel
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TECHNOLOGY

Analog RF Signal Generation

APPLICATIONS

Receiver test, component test, local oscillator emulation

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