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Data Sheet

August 14, 2026

AGILENT / KEYSIGHT

Agilent / Keysight 8647A Synthesized Signal Generator, 250 kHz to 1000 MHz

HP Agilent Keysight 8647A Synthesized Signal Generator 250 kHz to 1000 MHz The HP/Agilent 8647A is the basic economy synthesized signal generator in the 8647/8648 family, covering 250 kHz to 1000 MHz. OEM 8647A and 8648A/B/C/D technical specifications list 1 Hz settable resolution, plus 10 to minus 136 dBm output, an all-electronic attenuator, and SCPI HP-IB programming. High-volume cordless telephone, pager, and two-way radio manufacturing tests, semi-automated receiver alignment, and general-purpose 1 GHz benches. The HP/Agilent 8647A is the basic economy synthesized signal generator in the 8647/8648 family, covering 250 kHz to 1000 MHz. OEM 8647A and 8648A/B/C/D technical specifications list 1 Hz settable resolution, plus 10 to minus 136 dBm output, an all-electronic attenuator, and SCPI HP-IB programming. High-volume cordless telephone, pager, and two-way radio manufacturing tests, semi-automated receiver alignment, and general-purpose 1 GHz benches. All-electronic attenuator for high cycle-count amplitude reliability



MODEL

**Agilent / Keysight
8647A**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

8647A

LISTING

<https://aumictechlabs.com/products/8647a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Agilent/Keysight 8647A Synthesized Signal Generator delivers precision RF signal generation across 250 kHz to 1000 MHz with 1 Hz resolution. Built for receiver testing, system calibration,

and high-volume manufacturing, this instrument combines synthesized signal generation with electronic attenuation to achieve repeatable output levels from +10 dBm to -136 dBm. The front panel interface supports direct manual control alongside programmable operation via HP-IB (IEEE-488.2-1987) and SCPI commands.

Technical Specifications

Frequency Performance Range: 250 kHz to 1000 MHz Resolution: 1 Hz Frequency accuracy (internal reference, post warm-up, within one year calibration): $\pm 3 \times 10^{-6} \times$ carrier frequency in Hz Aging rate: $< \pm 2$ ppm/yr; Temperature drift: $< \pm 1$ ppm; Line voltage effects: $< \pm 0.5$ ppm Carrier frequency accuracy (CW, dc FM, 25°C $\pm 5^\circ\text{C}$): ± 100 Hz typical (40 Hz typical) with deviations < 10 kHz

Output Characteristics Level range: +10 dBm to -136 dBm (unlevelled to +13 dBm) Accuracy: ± 1.5 dB (+13 dBm to -127 dBm) Output impedance: 50 Ω nominal; SWR $< 2.0:1$ (output < -6 dBm) Reverse power protection: 50 watts into 50 Ω

Modulation Capabilities Amplitude Modulation (AM): 0-100% depth; 0.1% resolution; $\pm 5\%$ accuracy at 1 kHz rate; $< 1\%$ THD+N at 30% AM; rates from 400 Hz/1 kHz internal or dc-25 kHz external Frequency Modulation (FM): Peak deviation 0-100 kHz (< 249 MHz), 0-50 kHz (< 501 MHz), 0-100 kHz (≤ 1000 MHz); $\pm 7.5\%$ deviation accuracy ± 30 Hz; 4 kHz; rates from 400 Hz/1 kHz internal or 20 Hz-75 kHz external Phase Modulation (PM): Supported with frequency-dependent peak deviation ranges

Key Features Electronic attenuator for repeatable, controllable output power 1 Hz frequency resolution enables fine tuning for precision testing Flexible modulation: AM, FM, and PM with internal/external source selection HP-IB and SCPI programmability for automated test sequences Stable internal reference oscillator with $< \pm 2$ ppm/year aging

Typical Applications Receiver sensitivity and selectivity testing System calibration and alignment Manufacturing test for cordless telephones and pagers

Compatibility & Integration Program via HP-IB (IEEE-488.2-1987) interface using SCPI command set. Output impedance of 50 Ω with reverse power protection to 50 watts rated into matched load.

8647A Characteristics / Specifications

PARAMETER	VALUE
Instrument Type	Economy synthesized RF signal generator
Series Family	HP Agilent 8647A and 8648A/B/C/D
Frequency Range	250 kHz to 1000 MHz
Frequency Resolution Settable	1 Hz
Frequency Display Resolution	10 Hz
Switching Speed Typical	less than 120 ms
Frequency Accuracy Typical	plus or minus 3e-6 times carrier after 1 hour warmup within 1 year of calibration
Frequency Accuracy Option 1E5 Typical	plus or minus 0.15e-6 times carrier
Standard Timebase Aging	less than plus or minus 2 ppm per year
Standard Timebase Temperature	less than plus or minus 1 ppm
Line Voltage Effect Standard	less than plus or minus 0.5 ppm for plus or minus 5 percent
External Reference Input	2, 5, or 10 MHz plus or minus 5 ppm, 0.5 V to 2 Vrms into 50 ohm
Harmonics	less than minus 30 dBc at output less than or equal to plus 4 dBm
Nonharmonics	less than minus 60 dBc at offsets greater than or equal to 5 kHz (minus 55 dBc from 220 to 250 MHz)
Residual FM below 249 MHz	less than 20 Hz CCITT rms (typically less than 11 Hz)
Residual FM below 501 MHz	less than 10 Hz CCITT rms (typically less than 6 Hz)
SSB Phase Noise at 500 MHz	less than minus 110 dBc/Hz at 20 kHz offset typical
SSB Phase Noise at 1000 MHz	less than minus 106 dBc/Hz at 20 kHz offset typical
Output Level Range	plus 10 dBm to minus 136 dBm
Display Resolution Amplitude	0.1 dB
Absolute Level Accuracy	plus or minus 1.5 dB from specified power less than 13 dBm to minus 127 dBm
Reverse Power Protection	50 watts into 50 ohm
SWR Typical	less than 2.0:1 at output less than minus 6 dBm
Output Impedance	nominally 50 ohm

PARAMETER	VALUE
FM Peak Deviation below 249 MHz	0 to 100 kHz
FM Peak Deviation below 501 MHz	0 to 50 kHz
FM Peak Deviation below 1001 MHz	0 to 100 kHz
FM Deviation Accuracy	plus or minus 7.5 percent of FM deviation plus or minus 30 Hz at internal 1 kHz rate
AM Range	0 to 100 percent at output less than or equal to plus 4 dBm
AM Resolution	0.1 percent
AM Distortion at 30 percent	less than 2 percent
AM Distortion at 90 percent	less than 3 percent
Internal Modulation Rates	400 Hz or 1 kHz
Remote Interface	HP-IB IEEE 488.2 SCPI 1992.0
Power Requirements	90 to 264 V, 48 to 440 Hz, 170 VA maximum
Operating Temperature	0 to 50 C
Net Weight	7 kg (15 lb)
Dimensions	165 mmHby 330 mmWby 333 mmDLeakage Typical: less than 1 uV

General Specifications & Supplementary Characteristics

PARAMETER	VALUE
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Net Weight	7 kg (15 lb)
Dimensions	165 mmHby 330 mmWby 333 mmDLeakage Typical: less than 1 uV Notes Numeric rows from HP 8647A and 8648A/B/C/D Signal Generators technical specifications (catalog/data sheet 5965-3432E family). 8647A is the 1 Hz / 1 GHz basic model; 8648A/B/C/D add 0.001 Hz resolution and higher frequency coverage.

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 list 1 Hz settable resolution, plus 10 to minus 136 dBm output, an all-electronic attenuator, and SCPI HP-IB programming.

Applications

High-volume cordless telephone, pager, and two-way radio manufacturing tests, semi-automated receiver alignment, and general-purpose 1 GHz benches.

Key Features

All-electronic attenuator for high cycle-count amplitude reliability

Simple functional-block front panel for inexperienced operators

300 storage registers with ten user-definable sequences

SCPI 1992.0 remote language

Optional high-stability timebase Option 1E5

Technical Specifications

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Frequency Resolution Settable	1 Hz
Frequency Display Resolution	10 Hz
Switching Speed Typical	less than 120 ms
Frequency Accuracy Typical	plus or minus 3e-6 times carrier after 1 hour warmup within 1 year of calibration
Frequency Accuracy Option 1E5 Typical	plus or minus 0.15e-6 times carrier
Standard Timebase Aging	less than plus or minus 2 ppm per year

Option 1E5 Aging: less than plus or minus 0.1 ppm per year; less than plus or minus 0.0005 ppm per day

Specifications

PARAMETER	VALUE
Standard Timebase Temperature	less than plus or minus 1 ppm
Line Voltage Effect Standard	less than plus or minus 0.5 ppm for plus or minus 5 percent
External Reference Input	2, 5, or 10 MHz plus or minus 5 ppm, 0.5 V to 2 Vrms into 50 ohm
Harmonics	less than minus 30 dBc at output less than or equal to plus 4 dBm
Nonharmonics	less than minus 60 dBc at offsets greater than or equal to 5 kHz (minus 55 dBc from 220 to 250 MHz)
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AM Distortion at 90 percent	less than 3 percent
Internal Modulation Rates	400 Hz or 1 kHz
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Power Requirements	90 to 264 V, 48 to 440 Hz, 170 VA maximum
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Notes

Numeric rows from HP 8647A and 8648A/B/C/D Signal Generators technical specifications (catalog/data sheet 5965-3432E family). 8647A is the 1 Hz / 1 GHz basic model; 8648A/B/C/D add 0.001 Hz resolution and higher frequency coverage.

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 ·
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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.