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Data Sheet

August 14, 2026

AGILENT / KEYSIGHT

Agilent / Keysight 8648B Synthesized RF Signal Generator, 9 kHz to 2000 MHz

HP Agilent 8648B Synthesized Signal Generator The HP/Agilent 8648B is an economical synthesized RF signal generator covering 9 kHz to 2000 MHz with 0.001 Hz settable resolution. OEM technical specifications detail leveled output from +13 to -136 dBm (≤ 2500 MHz class), AM/FM/phase modulation, optional pulse modulation and high power, and SCPI HP-IB control with 300 storage registers. Receiver and component testing to 2 GHz, semi-automated production stimulus, and general-purpose CW/modulated RF source applications. The HP/Agilent 8648B is an economical synthesized RF signal generator covering 9 kHz to 2000 MHz with 0.001 Hz settable resolution. OEM technical specifications detail leveled output from +13 to -136 dBm (≤ 2500 MHz class), AM/FM/phase modulation, optional pulse modulation and high power, and SCPI HP-IB control with 300 storage registers. Receiver and component testing to 2 GHz, semi-automated production stimulus, and general-purpose CW/modulated RF source applications. Optional 1E6 pulse modulation and 1EA high power



MODEL

**Agilent / Keysight
8648B**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

8648B

LISTING

<https://aumictechlabs.com/products/8648b-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The Agilent/Keysight 8648B is a synthesized RF signal generator delivering frequency coverage from 9 kHz to 2000 MHz with 0.001 Hz resolution. Built for R&D, manufacturing, and field testing,

this instrument combines fast frequency switching, wide dynamic range output control, and multiple modulation modes in a platform engineered for straightforward operation and long-term reliability.

Technical Specifications

Frequency Performance Range: 9 kHz to 2000 MHz Resolution: 0.001 Hz Switching speed: <75 ms (≤ 1001 MHz), 1001 MHz) Frequency accuracy: $\pm 3 \times 10^{-6} \times$ carrier frequency (standard); $\pm 0.15 \times 10^{-6} \times$ carrier frequency with Option 1E5 High Stability Time Base External reference inputs: 2, 5, and 10 MHz ± 10 ppm (± 1 ppm with Option 1E5) Output Power Range: +13 dBm to -136 dBm Resolution: 0.1 dB Power accuracy: ± 1 dB (up to 27 dBm below 1 GHz); ± 1.0 dB (up to 2500 MHz); ± 3 dB (-100 dBm to -127 dBm, select frequency ranges) Output impedance: 50 ohms nominal Reverse power protection: 25 W (1 GHz) Modulation AM: $\pm 7\%$ of setting $\pm 1.5\%$ (typical, <70% depth, 25°C $\pm 5^\circ$ C) FM deviation: $\pm 3\% \pm 30$ Hz @ 1 kHz rate (<1001 MHz) Phase modulation deviation: $\pm 3\% \pm 0.05$ radians @ 1 kHz rate (80 dB (<2000 MHz), rise/fall times <10 ns Spectral Purity Harmonics: <-30 dBc (output $\leq +4$ dBm) Subharmonics: <-60 dBc (<1001 MHz, output $\leq +4$ dBm) Nonharmonics: <-55 dBc (<249 MHz, output $\leq +4$ dBm) Phase noise (SSB @ 20 kHz offset): <-120 dBc/Hz (500 MHz), <-116 dBc/Hz (1000 MHz), <-110 dBc/Hz (2000 MHz)

Key Features GPIB (IEEE-488.2-1987) remote control interface Selectable external reference oscillator support Optional high-stability time base for improved frequency accuracy and temperature stability Optional modulation generator and pulse modulation capabilities

Typical Applications Component and subsystem testing, RF receiver validation, transmitter characterization, signal path verification in communication systems, and production manufacturing test.

Compatibility & Integration Standard GPIB connectivity enables integration into automated test systems and bench setups requiring remote frequency, power, and modulation control.

8648B Characteristics / Specifications

PARAMETER	VALUE
Frequency Range	9 kHz to 2000 MHz
Frequency Resolution Settable	0.001 Hz
Frequency Display Resolution	10 Hz
Output Display Resolution	0.1 dB
Harmonics	less than -30 dBc (output $\leq$ +4 dBm)
SSB Phase Noise Typical at 500 MHz 20 kHz Offset	less than -120 dBc/Hz
SSB Phase Noise Typical at 1000 MHz	less than -116 dBc/Hz
SSB Phase Noise Typical at 2000 MHz	less than -110 dBc/Hz
Residual FM less than 501 MHz	less than 4 Hz CCITT rms
AM Range	0 to 100% (output $\leq$ +4 dBm)
FM Peak Deviation less than 1001 MHz	0 to 200 kHz
Switching Speed less than 1001 MHz	less than 75 ms typical
Power Requirements	90 to 264 V; 48 to 440 Hz; 170 VA max
Net Weight	8.5 kg (19 lb)
Dimensions	165 H x 330 W x 368 D mm
Operating Temperature	0 to 50 C
Storage Registers	300
AM Resolution	0.1%
Phase Modulation Peak Deviation less than 1001 MHz	0 to 10 radians
Output Impedance	nominally 50 ohms
Storage Sequences	up to 10 sequences with 30 registers each
IEEE 488 Functions	SH1, AH1, T6, TE0, L4, LE0, SR1, RL1, PP0, DC1, DT0, C0, E2

8648B Specifications

PARAMETER	VALUE
HP Agilent 8648B Synthesized Signal Generator	Overview
Applications	Receiver and component testing to 2 GHz, semi-automated production stimulus, and general-purpose CW/modulated RF source applications.
Key Features	0.001 Hz frequency resolution
Optional 1E6 pulse modulation and 1EA high power	Optional 1E5 high-stability timebase and 1E2 modulation generator
SCPI plus 8656B/8657 code compatibility	300 storage registers in sequenced memory
Technical Specifications	Frequency Range: 9 kHz to 2000 MHz

General Specifications & Supplementary Characteristics

PARAMETER	VALUE
Operating temperature	0 to 50 C
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Storage Registers	300
AM Resolution	0.1%
Phase Modulation Peak Deviation less than 1001 MHz	0 to 10 radians
Output Impedance	nominally 50 ohms
Storage Sequences	up to 10 sequences with 30 registers each
IEEE 488 Functions	SH1, AH1, T6, TE0, L4, LE0, SR1, RL1, PP0, DC1, DT0, C0, E2 Notes Specs from HP 8647A and 8648A/B/C/D Signal Generators technical specifications (5965-3432E). Option 1EA/1E6 change maximum power; verify options on the unit.

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 detail leveled output from +13 to -136 dBm (≤ 2500 MHz class), AM/FM/phase modulation, optional pulse modulation and high power, and SCPI HP-IB control with 300 storage registers.

Applications

Receiver and component testing to 2 GHz, semi-automated production stimulus, and general-purpose CW/modulated RF source applications.

Key Features

0.001 Hz frequency resolution

Optional 1E6 pulse modulation and 1EA high power

Optional 1E5 high-stability timebase and 1E2 modulation generator

SCPI plus 8656B/8657 code compatibility

300 storage registers in sequenced memory

Technical Specifications

Technical Specifications

PARAMETER	VALUE
Frequency Range	9 kHz to 2000 MHz
Frequency Resolution Settable	0.001 Hz
Frequency Display Resolution	10 Hz

Output Range ≤ 2500 MHz Class: +13 to -136 dBm

Output Display Resolution: 0.1 dB

Output Accuracy ≤ 2500 MHz: ± 1.0 dB

Harmonics: less than -30 dBc (output $\leq +4$ dBm)

SSB Phase Noise Typical at 500 MHz 20 kHz Offset: less than -120 dBc/Hz

Specifications

PARAMETER	VALUE
SSB Phase Noise Typical at 1000 MHz	less than -116 dBc/Hz
SSB Phase Noise Typical at 2000 MHz	less than -110 dBc/Hz
Residual FM less than 501 MHz	less than 4 Hz CCITT rms
AM Range	0 to 100% (output $\leq +4$ dBm)
FM Peak Deviation less than 1001 MHz	0 to 200 kHz
Switching Speed less than 1001 MHz	less than 75 ms typical

Reverse Power Protection ≤ 2000 MHz: 50 W into 50 ohm

Specifications

PARAMETER	VALUE
Power Requirements	90 to 264 V; 48 to 440 Hz; 170 VA max

PARAMETER	VALUE
Net Weight	8.5 kg (19 lb)
Dimensions	165 H x 330 W x 368 D mm
Operating Temperature	0 to 50 C
Storage Registers	300
AM Resolution	0.1%

Phase Modulation Peak Deviation less than 1001 MHz: 0 to 10 radians

Specifications

PARAMETER	VALUE
Output Impedance	nominally 50 ohms
Storage Sequences	up to 10 sequences with 30 registers each
IEEE 488 Functions	SH1, AH1, T6, TE0, L4, LE0, SR1, RL1, PP0, DC1, DT0, C0, E2

Notes
Specs from HP 8647A and 8648A/B/C/D Signal Generators technical specifications (5965-3432E). Option 1EA/1E6 change maximum power; verify options on the unit.

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

788 S 500 E, Pleasant Grove, UT 84062
sales@aumictech.com · +1 (484) 841-9341
<https://aumictechlabs.com>

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.