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Data Sheet

August 14, 2026

AGILENT / KEYSIGHT

Agilent / Keysight 8648C Synthesized RF Signal Generator, 9 kHz to 3200 MHz

HP Agilent 8648C Synthesized Signal Generator The HP/Agilent 8648C extends the 8648 family to 9 kHz through 3200 MHz with the same 0.001 Hz resolution and modulation feature set as 8648B/D. OEM specs list leveled power +13 to -136 dBm to 2500 MHz and +10 to -136 dBm to 4000 MHz class, with spectral purity and modulation tables spanning the family. RF/microwave receiver test to 3.2 GHz, production stimulus, and general-purpose synthesized source work requiring AM/FM/phase and optional pulse modulation. The HP/Agilent 8648C extends the 8648 family to 9 kHz through 3200 MHz with the same 0.001 Hz resolution and modulation feature set as 8648B/D. OEM specs list leveled power +13 to -136 dBm to 2500 MHz and +10 to -136 dBm to 4000 MHz class, with spectral purity and modulation tables spanning the family. RF/microwave receiver test to 3.2 GHz, production stimulus, and general-purpose synthesized source work requiring AM/FM/phase and optional pulse modulation. Family options 1EA high power, 1E6 pulse, 1E5 oven, 1E2 mod generator



MODEL

**Agilent / Keysight
8648C**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

8648C

LISTING

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

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Agilent/Keysight 8648C is a synthesized RF signal generator delivering 9 kHz to 3.2 GHz frequency coverage for manufacturing test, receiver validation, and general R&D signal

generation. It combines cost-effective operation with enhanced residual FM, level accuracy, and phase noise performance over its 8647A predecessor.

Technical Specifications

Frequency Range: 9 kHz to 3.2 GHz

Frequency Resolution: 0.001 Hz (settleable); 10 Hz (display)

Output Power: +13 dBm to -136 dBm typical; +16 dBm typical for carrier frequencies between 100 kHz and 100 MHz. Optional high-power output available. Combining options 1E6 with 1EA reduces maximum output power by 2 dB above 100 MHz.

Level Accuracy: ± 1 dB from maximum specified output power to -127 dBm below 1 GHz. Typically ± 3 dB below -127 dBm in the range 100 kHz to 2500 MHz. At $25^{\circ}\text{C} \pm 5^{\circ}\text{C}$; typically degrades ± 0.5 dB over 0°C to 50°C or at output levels > 13 dBm. ± 3 dB for power levels between -100 dBm and -127 dBm below 100 kHz or above 2500 MHz.

Modulation: AM, FM, and phase modulation standard. Optional pulse modulation available. FSK deviation accuracy with Option 1EP: ± 60 Hz. AM accuracy $\pm 7\%$ of setting $\pm 1.5\%$ at $< 70\%$ depth over 0°C to 50°C .

Spectral Purity: Harmonics $\leftarrow 30$ dBc (output $\leq +4$ dBm). Subharmonics $\leftarrow 60$ dBc below 1 GHz, $\leftarrow 50$ dBc to 3.2 GHz.

Residual FM: < 7 Hz typical < 4 Hz below 249 MHz; < 4 Hz typical < 2 Hz below 501 MHz; < 7 Hz typical < 4 Hz below 1 GHz; < 14 Hz typical < 8 Hz below 2 GHz; < 28 Hz typical < 12 Hz to 4 GHz.

SSB phase noise at 20 kHz offset: $\leftarrow 120$ dBc/Hz at 500 MHz, $\leftarrow 116$ dBc/Hz at 1 GHz, $\leftarrow 110$ dBc/Hz at 2 GHz.

Internal Modulation Sources: 400 Hz or 1 kHz; audio generator option available. Front panel BNC connector at nominally 1 Vp into 600 Ω .

External Reference: Accepts 2, 5, 10 MHz ± 10 ppm typical.

Typical Applications

High-volume manufacturing test (cordless phones, pagers, two-way radios) Semi-automated receiver testing General-purpose R&D signal generation Extended frequency coverage applications

8648C Characteristics / Specifications

PARAMETER	VALUE
Frequency Range	9 kHz to 3200 MHz
Frequency Resolution Settable	0.001 Hz
Frequency Display Resolution	10 Hz
Harmonics	less than -30 dBc (output $\leq$ +4 dBm)
SSB Phase Noise Typical 3000 MHz 20 kHz Offset	less than -106 dBc/Hz
Residual FM less than 2001 MHz	less than 14 Hz CCITT rms
FM Peak Deviation less than 2001 MHz	0 to 400 kHz
AM Range	0 to 100% (output $\leq$ +4 dBm)
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
AM Resolution	0.1%
Phase Modulation Peak Deviation less than 1001 MHz	0 to 10 radians
Output Impedance	nominally 50 ohms
Storage Registers	300
Control Language	SCPI 1992.0 with 8656B/8657 compatibility

8648C Specifications

PARAMETER	VALUE
HP Agilent 8648C Synthesized Signal Generator	Overview
Key Features	3.2 GHz upper frequency
Technical Specifications	Frequency Range: 9 kHz to 3200 MHz

General Specifications & Supplementary Characteristics

PARAMETER	VALUE
Operating temperature	0 to 50 C
Operating Temperature	0 to 50 C
AM Resolution	0.1%
Phase Modulation Peak Deviation less than 1001 MHz	0 to 10 radians
Output Impedance	nominally 50 ohms
Storage Registers	300
Control Language	SCPI 1992.0 with 8656B/8657 compatibility Notes From HP 8648A/B/C/D technical specifications. Performance below 250 kHz is typical per sheet; confirm Option 1EA/1E6 interaction on max power.

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
Frequency Range	9 kHz to 3200 MHz
Frequency Resolution Settable	0.001 Hz
Frequency Display Resolution	10 Hz
Output Range ≤2500 MHz: +13 to -136 dBm Output Range ≤4000 MHz Class: +10 to -136 dBm Level Accuracy ≤2500 MHz: ±1.0 dB Level Accuracy ≤3200 MHz: ±1.5 dB Harmonics: less than -30 dBc (output ≤+4 dBm) Subharmonics ≤3200 MHz: less than -50 dBc (output ≤+4 dBm) SSB Phase Noise Typical 3000 MHz 20 kHz Offset: less than -106 dBc/Hz Residual FM less than 2001 MHz: less than 14 Hz CCITT rms FM Peak Deviation less than 2001 MHz: 0 to 400 kHz FM Peak Deviation ≤4000 MHz Class: 0 to 800 kHz AM Range: 0 to 100% (output ≤+4 dBm) Switching Speed ≥1001 MHz: less than 100 ms typical Reverse Power Protection ≤4000 MHz: 25 W	
Specifications	
PARAMETER	VALUE
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
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 Registers	300
Control Language	SCPI 1992.0 with 8656B/8657 compatibility

Notes

From HP 8648A/B/C/D technical specifications. Performance below 250 kHz is typical per sheet; confirm Option 1EA/1E6 interaction on max power.

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 ·
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.