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Data Sheet

August 14, 2026

AGILENT / KEYSIGHT

Agilent / Keysight 8644A Synthesized Signal Generator 0.25-1030 M

HP Agilent Keysight 8644A High Performance RF Signal Generator 252 kHz to 1030 MHz The HP/Agilent 8644A is the original 1 GHz high-performance member of the 8644/8664/8665 family, covering 252 kHz to 1030 MHz (2060 MHz with Option 002). OEM 8644A literature lists 0.01 Hz resolution, AM/FM/pulse modulation, and optional low-leakage Option 010. Out-of-channel receiver testing needing low phase noise and spurious, mixer high-level stimulus, and avionics VOR/ILS simulation with the optional internal modulation source. The HP/Agilent 8644A is the original 1 GHz high-performance member of the 8644/8664/8665 family, covering 252 kHz to 1030 MHz (2060 MHz with Option 002). OEM 8644A literature lists 0.01 Hz resolution, AM/FM/pulse modulation, and optional low-leakage Option 010. Out-of-channel receiver testing needing low phase noise and spurious, mixer high-level stimulus, and avionics VOR/ILS simulation with the optional internal modulation source. Lowest specified leakage class of this generator generation with Option 010



MODEL

**Agilent / Keysight
8644A**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

8644A

LISTING

<https://aumictechlabs.com/products/8644a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The Agilent/Keysight 8644A is a synthesized signal generator delivering precise RF signal generation across 252 kHz to 1030 MHz, with optional coverage to 2060 MHz. This instrument

combines exceptional frequency resolution, low phase noise, and configurable modulation to support demanding RF and communications testing in laboratory, manufacturing, and service environments.

Technical Specifications

Frequency Performance

Frequency range: 252 kHz to 1030 MHz (Option 002 extends to 2060 MHz)

Frequency resolution: 0.01 Hz

Frequency accuracy: Traceable to internal reference; with Option 031 (High Stability Time Base), aging $<5 \times 10^{-8}$ /day after 10 days warm-up

Frequency switching time: <50 msec to within 100 Hz of final frequency; <200 msec with FM enabled; -127 dBm

Output SWR: Typically $<1.7:1$ at outputs <-2 dBm

Reverse power protection: 50 W from 50Ω source, 25 Vdc

Spectral Purity

Phase noise: -128 dBc/Hz standard at 20 kHz offset, 1 GHz carrier (Option 004: -136 dBc/Hz)

Harmonic content: -30 dBc at $+10$ dBm output; Option 002 achieves <-30 dBc (0.25–1030 MHz) and <-25 dBc (1030–2060 MHz) at $+8$ dBm

Nonharmonic spurious: 15 kHz offset, 0.25–1030 MHz; 15 kHz offset, 1030–2060 MHz)

Third-order intermodulation: Typically <-50 dBc at outputs <8 dBm

Modulation Types: AM, FM, pulse modulation

AM depth: 0–100%; rates to 100 kHz; 0.1% resolution; distortion $\sim 2\%$ for 0–30% depth at 0.25–1030 MHz

FM deviation: Up to 20 MHz

Key Features

Modular platform architecture for application-specific configuration

0.01 Hz resolution for precision frequency setting

Wide amplitude control from -137 dBm to $+16$ dBm

Low phase noise and spurious content for sensitive RF applications

Multiple sweep modes supporting both analog and stepped frequency control

Typical Applications

RF component testing, communications system development, receiver and transmitter characterization, phase noise measurements, modulation testing, and broadband system validation.

8644A Characteristics / Specifications

PARAMETER	VALUE
Instrument Type	High performance RF signal generator
Series Family	HP Agilent 8643A/8644A/8644B/8664A/8665A/8665B
Frequency Range	251.46485 kHz to 1030 MHz
Frequency Range Option 0	251.46485 kHz to 2060 MHz
Frequency Resolution	0.01 Hz
Frequency Accuracy Standard Timebase	0.375e-6 times carrier in Hz within 1 year of calibration
Switching Speed Typical	less than 350 ms within 100 Hz
Output Level Range	plus 16 dBm to minus 137 dBm
Output Level Option 002 or 0	plus 13 dBm maximum
Absolute Level Accuracy	plus or minus 1 dB at output greater than or equal to minus 127 dBm
Absolute Level Accuracy Low	plus or minus 3 dB at output less than minus 127 dBm
Harmonics	less than minus 25 dBc at output less than or equal to plus 10 dBm
Subharmonics 252 kHz to 515 MHz	none
Subharmonics 515 to 1030 MHz	less than minus 52 dBc (8644B column less than minus 60 dBc on later sheet)
Nonharmonics 252 kHz to 1030 MHz	less than minus 105 dBc at offsets greater than 10 kHz
SSB Phase Noise 515 to 1030 MHz	minus 136 dBc/Hz at 20 kHz offset (minus 142 typical)
Residual FM 515 to 1030 MHz	less than 1 Hz rms in 3 kHz BW
Residual AM	less than 0.01 percent AM rms (0.3 to 3 kHz post-detection BW)
SSB AM Noise Floor	less than minus 157 dBc/Hz at plus 10 dBm, offsets greater than 100 kHz, below 1030 MHz
Reference Aging Standard	plus 1.5e-8 per day after ten days
External Reference Input	10 MHz plus or minus 5 ppm, 0.5 V to 2 Vrms into 50 ohm
AM Depth	0 to 100 percent, output less than or equal to plus 7 dBm
AM Resolution	0.1 percent
FM Maximum Peak Deviation above 1030 MHz	20 MHz / 200 kHz in low noise mode three

PARAMETER	VALUE
FM Bandwidth 3 dB	dc to 100 kHz
Pulse On Off Ratio	greater than 35 dB; greater than 80 dB above 1030 MHz
Pulse Rise Fall	less than 100 ns, 10 to 90 percent
Output Impedance	50 ohm
Reverse Power Protection	50 watts
Internal Modulation Sources	two independent sources, sine to 400 kHz
Remote Interface	GPIB
Net Weight	30 kg (67 lb)
Dimensions	177 mmHby 426 mmWby 601 mmDOperating Temperature: 0 to 55 C
Power Requirements	100/120/220/240 V plus or minus 10 percent, 48 to 440 Hz, 400 VA
Calibration Interval	recommended three years MTBC
Bandwidth	3 dB: dc to 100 kHz
Operating temperature	0 to 55 C

General Specifications & Supplementary Characteristics

PARAMETER	VALUE
Operating temperature	0 to 55 C
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Power Requirements	100/120/220/240 V plus or minus 10 percent, 48 to 440 Hz, 400 VA
Calibration Interval	recommended three years MTBC Notes Numeric rows from HP 8644A synthesized signal generator datasheet and the later 8644B family column that replaced 8644A. 8644A coverage starts at 251.46485 kHz. Option 002 doubles output to 2060 MHz.

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.

Performance RF Signal Generator 252 kHz to 1030 MHz

Overview

The HP/Agilent 8644A is the original 1 GHz high-performance member of the 8644/8664/8665 family, covering 252 kHz to 1030 MHz (2060 MHz with Option 002). OEM 8644A literature lists 0.01 Hz resolution, AM/FM/pulse modulation, and optional low-leakage Option 010.

Applications

Out-of-channel receiver testing needing low phase noise and spurious, mixer high-level stimulus, and avionics VOR/ILS simulation with the optional internal modulation source.

Key Features

Lowest specified leakage class of this generator generation with Option 010

Modular platform shared with 8644B/8664A/8665A

AM, FM, and pulse modulation

Optional internal modulation synthesizer 0.1 Hz to 400 kHz

On-site firmware calibration and module diagnostics

Technical Specifications

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PARAMETER	VALUE
Instrument Type	High performance RF signal generator
Series Family	HP Agilent 8643A/8644A/8644B/8664A/8665A/8665B
Frequency Range	251.46485 kHz to 1030 MHz
Frequency Range Option 002	251.46485 kHz to 2060 MHz
Frequency Resolution	0.01 Hz
Frequency Accuracy Standard Timebase	0.375e-6 times carrier in Hz within 1 year of calibration
Switching Speed Typical	less than 350 ms within 100 Hz
Output Level Range	plus 16 dBm to minus 137 dBm
Output Level Option 002 or 005	plus 13 dBm maximum
Absolute Level Accuracy	plus or minus 1 dB at output greater than or equal to minus 127 dBm
Absolute Level Accuracy Low	plus or minus 3 dB at output less than minus 127 dBm
Harmonics	less than minus 25 dBc at output less than or equal to plus 10 dBm
Subharmonics 252 kHz to 515 MHz	none
Subharmonics 515 to 1030 MHz	less than minus 52 dBc (8644B column less than minus 60 dBc on later sheet)
Nonharmonics 252 kHz to 1030 MHz	less than minus 105 dBc at offsets greater than 10 kHz
SSB Phase Noise 515 to 1030 MHz	minus 136 dBc/Hz at 20 kHz offset (minus 142 typical)
Residual FM 515 to 1030 MHz	less than 1 Hz rms in 3 kHz BW

PARAMETER	VALUE
Residual AM	less than 0.01 percent AM rms (0.3 to 3 kHz post-detection BW)
SSB AM Noise Floor	less than minus 157 dBc/Hz at plus 10 dBm, offsets greater than 100 kHz, below 1030 MHz
Reference Aging Standard	plus 1.5e-8 per day after ten days
External Reference Input	10 MHz plus or minus 5 ppm, 0.5 V to 2 Vrms into 50 ohm
AM Depth	0 to 100 percent, output less than or equal to plus 7 dBm
AM Resolution	0.1 percent
FM Maximum Peak Deviation above 1030 MHz	20 MHz / 200 kHz in low noise mode three
FM Bandwidth 3 dB	dc to 100 kHz
Pulse On Off Ratio	greater than 35 dB; greater than 80 dB above 1030 MHz
Pulse Rise Fall	less than 100 ns, 10 to 90 percent
Output Impedance	50 ohm
Reverse Power Protection	50 watts
Internal Modulation Sources	two independent sources, sine to 400 kHz
Remote Interface	GPIO
Net Weight	30 kg (67 lb)
Dimensions	177 mmHby 426 mmWby 601 mmD0perating Temperature: 0 to 55 C
Power Requirements	100/120/220/240 V plus or minus 10 percent, 48 to 440 Hz, 400 VA
Calibration Interval	recommended three years MTBC

Notes

Numeric rows from HP 8644A synthesized signal generator datasheet and the later 8644B family column that replaced 8644A. 8644A coverage starts at 251.46485 kHz. Option 002 doubles output to 2060 MHz.

Ordering Information

OPTION	DESCRIPTION
Option 010	Modular platform shared with 8644B/8664A/8665A
Option 002	or 005: plus 13 dBm maximum

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

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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.