Aumictech
Test & measurement · bought, sold, repaired, calibrated

Data Sheet
August 14, 2026

AGILENT / KEYSIGHT

Agilent / Keysight 8645A Frequency-Agile Signal Generator, 1 GHz or 2 GHz

HP Agilent Keysight 8645A Agile Signal Generator 252 kHz to 2060 MHz The HP/Agilent 8645A is an agile synthesized signal generator covering 251.46485 kHz to 1030 MHz (2060 MHz with Option 002). OEM 8645A data sheet specifies frequency hopping as fast as 15 usec from 128 to 2060 MHz while keeping specified phase noise, spurious, amplitude accuracy, and AM/FM/pulse modulation. Frequency-agile radio and surveillance-receiver testing, hopped-environment susceptibility, and fast-switching production stimulus. The HP/Agilent 8645A is an agile synthesized signal generator covering 251.46485 kHz to 1030 MHz (2060 MHz with Option 002). OEM 8645A data sheet specifies frequency hopping as fast as 15 usec from 128 to 2060 MHz while keeping specified phase noise, spurious, amplitude accuracy, and AM/FM/pulse modulation. Frequency-agile radio and surveillance-receiver testing, hopped-environment susceptibility, and fast-switching production stimulus. Specified agile performance with 15 usec hops from 128 to 2060 MHz

MODEL	CALIBRATION
Agilent / Keysight 8645A	Available on request
CONDITION	**STATUS**
Used	In stock
RFQ / SKU	**LISTING**
8645A	https://aumictechlabs.com/products/8645a-2/

NIST-traceable cal · SAM registered · 30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Agilent/Keysight 8645A is a frequency-agile signal generator delivering precise RF signal generation from 252 kHz to 1030 MHz (extendable to 2060 MHz with Option 002 or HP 11845A

retrofit). It combines static and dynamic signal synthesis capabilities for testing frequency-hopping radios, surveillance receivers, and agile communication systems.Technical Specifications Frequency Performance Range: 252 kHz to 1030 MHz; up to 2060 MHz with Option 002 or HP 11845A retrofit kit Accuracy: ±2 ppm of carrier frequency Fast hop switching: <15 µsec (128 MHz to 2060 MHz), <85 µsec (8 MHz to 2060 MHz), <500 µsec (0.25 MHz to 2060 MHz); add 5 µsec with Option 002 Hop range: 0.25 to 2060 MHz; limited to three consecutive frequency bands when FM is active Fast hop sweep: Linear or log stepped, 10 ms to 100 s Phase continuous sweep: Linear, 10 ms to 10 s Amplitude Maximum output: +16 dBm (0.25–1030 MHz), +13 dBm (1030–2060 MHz); +14 dBm at 0.25–1030 MHz with Option 002 Minimum output: −137 dBm Resolution: 0.1 dB Accuracy: ±1 dB (≥−127 dBm), typically ±3 dB (<−127 dBm); ±1.5 dB during fast hop with amplitude variation up to −5 dB Output impedance: 50Ω; SWR <1.7:1 (output <−2 dBm), <2:1 (≥−2 dBm) Reverse power protection: 50 W from 50Ω source, 25 Vdc Switching time: <50 msec Modulation Types: AM, FM, simultaneous FM/AM, pulse FM: Deviations to 20 MHz, rates to 10 MHz; fast hop limited to 3.5 MHz deviation at 10 MHz rates; distortion <1–6%; residual FM <1–4 Hz AM: Depth 0–99.9% (output ≤+7 dBm); indicator accuracy ±(6% of setting + 1% AM) to 90% depth at 1 kHz Internal modulation: Sine, square, sawtooth, white Gaussian noise; 0.1 Hz–400 kHz (sine/noise), 0.1 Hz–50 kHz (square/sawtooth); ~1 V max into 600ΩKey Features Sub-microsecond frequency hopping for agile signal simulation ±2 ppm frequency stability across extended range Wide dynamic range: −137 to +16 dBm with 0.1 dB resolution Simultaneous FM/AM modulation with low residual FM Pulse modulation support for radar and communication testingTypical Applications Frequency-hopping radio receiver validation Surveillance and electronic warfare receiver testing Communication system dynamic signal simulation Fast-switching RF transceiver characterizationCompatibility & Integration Option 002 extends frequency coverage to 2 GHz and improves switching performance. The HP 11845A 2 GHz retrofit kIt has equivalent high-frequency capability. Both options are field-installable.

8645A Characteristics / Specifications

PARAMETER	VALUE
Instrument Type	Agile synthesized RF signal generator
Series Family	HP Agilent 8645A performance signal generator series
Frequency Range	251.46485 kHz to 1030 MHz
Frequency Range Option 0	251.46485 kHz to 2060 MHz
Frequency Resolution	0.01 Hz
Frequency Switching Time Standard	less than 85 msec to within 100 Hz
Fast Hop Switching 128.75 to 2060 MHz	less than 15 usec
Fast Hop Switching 8 to 2060 MHz	less than 85 usec
Fast Hop Switching 0.25 to 2060 MHz	less than 500 usec
Fast Hop Frequency Accuracy	plus or minus 2 ppm of carrier (typically plus or minus 1 ppm)
Maximum Channels	2400
Maximum Sequence Length	4000
Hop Rate Range Internal	8 Hz to 50 kHz
Dwell Time Range Internal	6.4 usec to 99 msec
Output Maximum Level 0.25 to 1030 MHz	plus 16 dBm
Output Maximum Level Option 0	plus 14 dBm to 1030 MHz; plus 13 dBm from 1030 to 2060 MHz
Output Minimum Level	minus 137 dBm
Absolute Level Accuracy	plus or minus 1 dB at output greater than or equal to minus 127 dBm
Display Resolution Amplitude	0.1 dB
Harmonics	less than minus 30 dBc at output less than or equal to plus 10 dBm
Subharmonics 0.25 to 515 MHz	none
Subharmonics 515 to 1030 MHz	less than minus 70 dBc
Subharmonics 1030 to 2060 MHz	less than minus 40 dBc
Nonharmonics 0.25 to 1030 MHz	less than minus 100 dBc at offsets greater than 20 kHz
SSB Phase Noise 515 to 1030 MHz	minus 127 dBc/Hz at 20 kHz offset

PARAMETER	VALUE
SSB Phase Noise 1030 to 2060 MHz	minus 120 dBc/Hz at 20 kHz offset
Residual FM 515 to 1030 MHz	less than 2 Hz rms in 0.3 to 3 kHz BW
Residual AM	less than 0.01 percent AM rms, 0.3 to 3 kHz BW
SSB AM Noise Floor	less than minus 157 dBc/Hz at plus 10 dBm, 0.25 to 1030 MHz
AM Depth	0 to 99.9 percent at output less than or equal to plus 7 dBm
FM Maximum Peak Deviation 1030 to 2060 MHz	20 MHz standard; 10 MHz rate
Pulse On Off Ratio	greater than 35 dB
Pulse Rise Fall	less than 100 nsec, 10 to 90 percent
Pulse Maximum Rate	1 MHz
Pulse Minimum Width	0.5 usec
Reverse Power Protection	50 watts from a 50 ohm source; 25 Vdc
Output Impedance	50 ohm
SWR below minus 2 dBm	less than 1.7:1
Reference Option 001 Aging	less than 5e-10 per day after 10 day warmup
External Reference Input	10 MHz plus or minus 1 kHz, 0.5 to 2 Vrms into 50 ohm
Remote Interface	GPIB with HPSL
Net Weight	approximately 29 to 31 kg (63 to 69 lb)
Dimensions	177 mmHby 426 mmWby 624 mmDOperating Temperature: 0 to 55 C
Operating temperature	0 to 55 C

General Specifications & Supplementary Characteristics

PARAMETER	VALUE
Operating temperature	0 to 55 C
Operating Temperature	0 to 55 C

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 with 15 usec hops from 128 to 2060 MHz
Up to 2400 unique channels and 4000-step sequences
Hop rates from 8 Hz to 50 kHz from the internal timer
Simultaneous FM, AM, and pulse while hopping
Phase-continuous sweep spans to 40 MHz at the top band

Technical Specifications

Technical Specifications

PARAMETER	VALUE
Instrument Type	Agile synthesized RF signal generator
Series Family	HP Agilent 8645A performance signal generator series
Frequency Range	251.46485 kHz to 1030 MHz
Frequency Range Option 002	251.46485 kHz to 2060 MHz
Frequency Resolution	0.01 Hz
Frequency Switching Time Standard	less than 85 msec to within 100 Hz
Fast Hop Switching 128.75 to 2060 MHz	less than 15 usec
Fast Hop Switching 8 to 2060 MHz	less than 85 usec
Fast Hop Switching 0.25 to 2060 MHz	less than 500 usec
Fast Hop Frequency Accuracy	plus or minus 2 ppm of carrier (typically plus or minus 1 ppm)
Maximum Channels	2400
Maximum Sequence Length	4000
Hop Rate Range Internal	8 Hz to 50 kHz
Dwell Time Range Internal	6.4 usec to 99 msec
Output Maximum Level 0.25 to 1030 MHz	plus 16 dBm
Output Maximum Level Option 002	plus 14 dBm to 1030 MHz; plus 13 dBm from 1030 to 2060 MHz
Output Minimum Level	minus 137 dBm
Absolute Level Accuracy	plus or minus 1 dB at output greater than or equal to minus 127 dBm
Display Resolution Amplitude	0.1 dB
Harmonics	less than minus 30 dBc at output less than or equal to plus 10 dBm
Subharmonics 0.25 to 515 MHz	none
Subharmonics 515 to 1030 MHz	less than minus 70 dBc
Subharmonics 1030 to 2060 MHz	less than minus 40 dBc

PARAMETER	VALUE
Nonharmonics 0.25 to 1030 MHz	less than minus 100 dBc at offsets greater than 20 kHz
SSB Phase Noise 515 to 1030 MHz	minus 127 dBc/Hz at 20 kHz offset
SSB Phase Noise 1030 to 2060 MHz	minus 120 dBc/Hz at 20 kHz offset
Residual FM 515 to 1030 MHz	less than 2 Hz rms in 0.3 to 3 kHz BW
Residual AM	less than 0.01 percent AM rms, 0.3 to 3 kHz BW
SSB AM Noise Floor	less than minus 157 dBc/Hz at plus 10 dBm, 0.25 to 1030 MHz
AM Depth	0 to 99.9 percent at output less than or equal to plus 7 dBm

FM Maximum Peak Deviation 1030 to 2060 MHz: 20 MHz standard; 10 MHz rate

Specifications

PARAMETER	VALUE
Pulse On Off Ratio	greater than 35 dB
Pulse Rise Fall	less than 100 nsec, 10 to 90 percent
Pulse Maximum Rate	1 MHz
Pulse Minimum Width	0.5 usec
Reverse Power Protection	50 watts from a 50 ohm source; 25 Vdc
Output Impedance	50 ohm
SWR below minus 2 dBm	less than 1.7:1
Reference Option 001 Aging	less than 5e-10 per day after 10 day warmup
External Reference Input	10 MHz plus or minus 1 kHz, 0.5 to 2 Vrms into 50 ohm
Remote Interface	GPIB with HPSL
Net Weight	approximately 29 to 31 kg (63 to 69 lb)
Dimensions	177 mmHby 426 mmWby 624 mmDOperating Temperature: 0 to 55 C

Notes
Numeric rows from Agilent 8645A Agile Signal Generator data sheet. Fast-hop specifications assume 2 hour warmup; standard specifications assume 10 minutes after turn-on and 24 hours after ac connection. Option 002 or 11845A retrofit is required for 2060 MHz.

Ordering Information

OPTION	DESCRIPTION
Option 001	Aging: less than 5e-10 per day after 10 day warmup
Option 002	or 11845A retrofit is required for 2060 MHz.

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
NAICS 423690 · 811210 · 541380
Generated August 14, 2026