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Data Sheet

August 14, 2026

AGILENT / KEYSIGHT

Agilent / Keysight 8642B Synthesized Signal Generator, 100 kHz to 2100 MHz

HP Agilent Keysight 8642B Synthesized Signal Generator 100 kHz to 2115 MHz The HP/Agilent 8642B is the 2115 MHz sibling of the 8642A synthesized signal generator. OEM 8642A/8642B catalog and 8642A data sheet list 100 kHz to 2115 MHz coverage, 1 Hz resolution, AM/FM/phase/pulse, and HP-IB control, with an extra octave above 1057.5 MHz versus the 8642A. UHF receiver out-of-channel tests to 2 GHz, high-level mixer drive, and automated RF stimulus via HP-IB. Same low-noise architecture as 8642A on overlapping bands The HP/Agilent 8642B is the 2115 MHz sibling of the 8642A synthesized signal generator. OEM 8642A/8642B catalog and 8642A data sheet list 100 kHz to 2115 MHz coverage, 1 Hz resolution, AM/FM/phase/pulse, and HP-IB control, with an extra octave above 1057.5 MHz versus the 8642A. UHF receiver out-of-channel tests to 2 GHz, high-level mixer drive, and automated RF stimulus via HP-IB. Same low-noise architecture as 8642A on overlapping bands Pulse on/off greater than 80 dB above 1057.5 MHz



MODEL

**Agilent / Keysight
8642B**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

8642B

LISTING

<https://aumictechlabs.com/products/8642b-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Agilent/Keysight 8642B is a synthesized signal generator delivering precise RF signal generation across 100 kHz to 2115 MHz. Built for receiver measurements, it combines broad

frequency coverage with exceptional spectral purity and output stability, serving research, development, and manufacturing applications requiring demanding signal fidelity.

Technical Specifications

Frequency Range: 100 kHz to 2115 MHz in one continuous span

Resolution: 1 Hz (0.1 Hz with special function)

Stability: ± 2 ppm/year standard; Option 001 provides $< 10 \times 10^{-9}$ /day aging rate after 8-day warmup

Output Level Range: -140 dBm to +20 dBm (band-dependent; Band 8 reaches +19 dBm, higher bands down to +16 dBm)

Resolution: 0.01 dB

Absolute Accuracy: ± 1 dB down to -127 dBm

Flatness: $\leq \pm 0.75$ dB at +10 dBm

Impedance: 50 ohms nominal

VSWR: $< 1.5:1$ below 0 dBm; $< 2.0:1$ at or above 0 dBm

Reverse Power Protection: 25 W from 50 ohm source, 50 Vdc

Spectral Purity SSB Phase Noise: -144 dBc/Hz @ 125 MHz; -141 dBc/Hz @ 200 MHz; -137 dBc/Hz @ 500 MHz; -134 dBc/Hz @ 1 GHz; -125 dBc/Hz @ 2 GHz (all at 20 kHz offset)

Non-Harmonic Spurious: < -100 dBc to 1 GHz; < -94 dBc above 1 GHz

Harmonics: -30 dBc $\leq +10$ dBm (-25 dBc above 1057.5 MHz)

Subharmonics: -45 dBc above 1057.5 MHz carrier

Third-Order IMD: < -50 dBc @ +10 dBm (two signals 25 kHz apart into resistive combiner)

Residual FM: < 1.2 Hz @ 500 MHz (0.3–3 kHz BW); < 2 Hz @ 1 GHz (0.3–3 kHz BW); < 5 Hz @ 2 GHz (0.3–3 kHz BW)

Residual AM: $< 0.01\%$ rms (0.3–3 kHz BW)

Modulation Types: AM, FM, Phase Modulation, Pulse Modulation across full frequency range

Internal Modulation Oscillator: 20 Hz to 100 kHz rates with low distortion

Key Features

- 1 Hz frequency resolution enables precise carrier and offset tuning
- Output span from -140 dBm to +20 dBm supports both low-noise and high-power testing
- Phase noise performance ensures confident automated receiver spurious rejection testing
- Multiple modulation types support complex signal simulation

Typical Applications

- RF receiver sensitivity and selectivity characterization
- Spurious response validation
- Intermodulation and harmonic distortion testing
- Modulation quality assessment

Compatibility & Integration

- 50 ohm output impedance matches standard RF test system configurations.
- Reverse power protection to 25 W and 50 Vdc guards against load impedance variations.

8642B Characteristics / Specifications

PARAMETER	VALUE
Instrument Type	Synthesized signal generator
Series Family	HP Agilent 8642A/8642B
Frequency Range	100 kHz to 2115 MHz
Upper Band	1057.500001 MHz to 2115 MHz (8642B only)
Frequency Resolution	1 Hz; 0.1 Hz with special function
Standard Timebase Aging	plus or minus 2 ppm per year
Residual FM at 500 MHz	less than 1.2 Hz (0.3 to 3 kHz BW); less than 2 Hz (0.05 to 15 kHz BW)
Residual FM at 1000 MHz	less than 2 Hz (0.3 to 3 kHz BW); less than 5 Hz (0.05 to 15 kHz BW)
SSB Phase Noise 20 kHz Offset 125 MHz	minus 144 dBc/Hz
SSB Phase Noise 20 kHz Offset 500 MHz	minus 137 dBc/Hz
SSB Phase Noise 20 kHz Offset 1000 MHz	minus 134 dBc/Hz
Residual AM	less than 0.01 percent AM rms, 0.3 to 3 kHz BW
Harmonics	minus 30 dBc at output less than or equal to plus 10 dBm
Nonharmonics Offsets Greater Than 10 kHz	minus 100 dBc on 8642A overlapping bands
Output Level Range	maximum available to minus 140 dBm
Maximum Level Bands 1 through	plus 20 dBm
Maximum Level Bands 8 and HET	plus 18 dBm
Maximum Level Band 9 to 1057.5 MHz	plus 16 dBm
Level Resolution	0.01 dB
Absolute Level Accuracy	plus or minus 1 dB at output greater than or equal to minus 127 dBm (8642A overlapping specification)
Flatness at plus 10 dBm	less than or equal to plus or minus 0.75 dB (8642A overlapping specification)
SWR	less than 1.5:1 level less than 0 dBm; less than 2.0:1 level greater than or equal to 0 dBm

PARAMETER	VALUE
Reverse Power Protection	50 W from a 50 ohm source; 25 Vdc
AM Depth	0 to 99.9 percent, output less than or equal to plus 10 dBm
AM Resolution	0.1 percent
Pulse On Off Ratio Above 1057.5 MHz	greater than 80 dB
Pulse Rise Fall	less than 400 ns, 10 to 90 percent
Pulse Maximum Repetition	100 kHz
Pulse Minimum Width	2 us
Output Impedance	50 ohm nominal
Remote Interface	HP-IB IEEE-488-1978
Operating Temperature	0 C to 55 C
Storage Temperature	minus 55 C to plus 75 C
Line Power	100, 120, 220, or 240 V; plus 5 percent minus 10 percent; 48 to 440 Hz; 300 VA max
Dimensions WxHxD	425 mm x 133 mm x 617 mm
Net Weight	32.7 kg (71.5 lb)

General Specifications & Supplementary Characteristics

PARAMETER	VALUE
Storage temperature	minus 55 C to plus 75 C
Operating temperature	0 C to 55 C
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Line Power	100, 120, 220, or 240 V; plus 5 percent minus 10 percent; 48 to 440 Hz; 300 VA max
Dimensions WxHxD	425 mm x 133 mm x 617 mm
Net Weight	32.7 kg (71.5 lb) Notes Range 100 kHz to 2115 MHz and extra octave band from HP 8642A/8642B catalog. Overlapping spectral-purity, level, modulation, and general rows from HP/Agilent 8642A data sheet; pulse on/off greater than 80 dB is specified for fc greater than 1057.5 MHz. Finer 2115 MHz-only limits belong on the 8642B calibration certificate when not tabulated on the 8642A sheet.

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
Instrument Type	Synthesized signal generator
Series Family	HP Agilent 8642A/8642B
Frequency Range	100 kHz to 2115 MHz
Upper Band	1057.500001 MHz to 2115 MHz (8642B only)
Frequency Resolution	1 Hz; 0.1 Hz with special function
Standard Timebase Aging	plus or minus 2 ppm per year
Option 001 Aging: less than 10e-9 per day after 8 days warmup Residual FM at 500 MHz: less than 1.2 Hz (0.3 to 3 kHz BW); less than 2 Hz (0.05 to 15 kHz BW) Residual FM at 1000 MHz: less than 2 Hz (0.3 to 3 kHz BW); less than 5 Hz (0.05 to 15 kHz BW) SSB Phase Noise 20 kHz Offset 125 MHz: minus 144 dBc/Hz SSB Phase Noise 20 kHz Offset 500 MHz: minus 137 dBc/Hz SSB Phase Noise 20 kHz Offset 1000 MHz: minus 134 dBc/Hz	
Specifications	
PARAMETER	VALUE
Residual AM	less than 0.01 percent AM rms, 0.3 to 3 kHz BW
Harmonics	minus 30 dBc at output less than or equal to plus 10 dBm
Nonharmonics Offsets Greater Than 10 kHz	minus 100 dBc on 8642A overlapping bands
Output Level Range	maximum available to minus 140 dBm
Maximum Level Bands 1 through 7	plus 20 dBm
Maximum Level Bands 8 and HET	plus 18 dBm
Maximum Level Band 9 to 1057.5 MHz	plus 16 dBm
Level Resolution	0.01 dB
Absolute Level Accuracy	plus or minus 1 dB at output greater than or equal to minus 127 dBm (8642A overlapping specification)
Flatness at plus 10 dBm	less than or equal to plus or minus 0.75 dB (8642A overlapping specification)
SWR	less than 1.5:1 level less than 0 dBm; less than 2.0:1 level greater than or equal to 0 dBm
Reverse Power Protection	50 W from a 50 ohm source; 25 Vdc

PARAMETER	VALUE
AM Depth	0 to 99.9 percent, output less than or equal to plus 10 dBm
AM Resolution	0.1 percent
Pulse On Off Ratio Above 1057.5 MHz	greater than 80 dB
Pulse Rise Fall	less than 400 ns, 10 to 90 percent
Pulse Maximum Repetition	100 kHz
Pulse Minimum Width	2 us
Output Impedance	50 ohm nominal
Remote Interface	HP-IB IEEE-488-1978
Operating Temperature	0 C to 55 C
Storage Temperature	minus 55 C to plus 75 C
Line Power	100, 120, 220, or 240 V; plus 5 percent minus 10 percent; 48 to 440 Hz; 300 VA max
Dimensions WxHxD	425 mm x 133 mm x 617 mm
Net Weight	32.7 kg (71.5 lb)

Notes

Range 100 kHz to 2115 MHz and extra octave band from HP 8642A/8642B catalog. Overlapping spectral-purity, level, modulation, and general rows from HP/Agilent 8642A data sheet; pulse on/off greater than 80 dB is specified for fc greater than 1057.5 MHz. Finer 2115 MHz-only limits belong on the 8642B calibration certificate when not tabulated on the 8642A sheet.

Ordering Information

OPTION	DESCRIPTION
Option 001	Aging: less than 10e-9 per day after 8 days warmup

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.