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Data Sheet

August 14, 2026

AGILENT / KEYSIGHT

Agilent / Keysight 8657A Synthesized Signal Generator, 100 kHz to 1040 MHz

HP Agilent Keysight 8657A Synthesized Signal Generator 100 kHz to 1.04 GHz The HP/Agilent 8657A is a synthesized RF signal generator covering 100 kHz to 1.04 GHz. OEM 8657A/8657B technical specifications list plus 13 to minus 143.5 dBm, plus or minus 1.0 dB level accuracy from plus 7 to minus 127 dBm, electronic attenuator reliability, and AM/FM with stable dcFM. AM/FM communications receiver in-channel and adjacent-channel tests, sensitivity measurements on quiet receivers, and VCO simulation using dcFM. The HP/Agilent 8657A is a synthesized RF signal generator covering 100 kHz to 1.04 GHz. OEM 8657A/8657B technical specifications list plus 13 to minus 143.5 dBm, plus or minus 1.0 dB level accuracy from plus 7 to minus 127 dBm, electronic attenuator reliability, and AM/FM with stable dcFM. AM/FM communications receiver in-channel and adjacent-channel tests, sensitivity measurements on quiet receivers, and VCO simulation using dcFM. Electronic PIN attenuator with long MTBF versus mechanical relays 100 nonvolatile store/recall registers with rear-panel sequencing



MODEL

**Agilent / Keysight
8657A**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

8657A

LISTING

<https://aumictechlabs.com/products/8657a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The Agilent/Keysight 8657A is a synthesized signal generator delivering precise RF stimulus across 100 kHz to 1040 MHz. Built for R&D, manufacturing, and field support, it combines

frequency accuracy, low phase noise, and flexible modulation to characterize AM, FM, and pulsed receivers with exceptional spectral purity.

Technical Specifications

Frequency Performance Range: 100 kHz to 1040 MHz Resolution: 10 Hz Underrange capability to 10 kHz (uncalibrated output and modulation) Frequency switching speed: <35 ms (typ. 30 ms at 25 °C) Amplitude Control Output level range: +13 dBm to -143.5 dBm Output resolution: 0.1 dBm Level accuracy: ± 1.0 dB across +13 to -143.5 dBm; ± 1 dB typical (± 0.5 dB typ.) to -127 dBm at 0–55 °C All-electronic PIN-diode attenuator for consistent performance

Modulation Capabilities AM, FM, and phase modulation (Φ M) Simultaneous mixed modulation: AM/FM, AM/AM, FM/FM combinations AM depth: 0 to 99% (level $\leq +7$ dBm, $f_c \geq 400$ kHz) Internal rates: 400 Hz and 1 kHz External rates: 20 Hz to 40 kHz (1 dB bandwidth) dc-coupled FM for digital signals without droop Optional 0.3 GMSK modulation

Spectral Purity SSB phase noise: -136 dBc/Hz at 20 kHz offset Low residual FM for wide test margins Reduced RF leakage and low spurious/noise for in-channel testing

Control & Storage HP-IB remote programming interface 100 non-volatile registers for settings storage and recall Carrier phase adjustment for phase-sensitive device characterization Amplitude offset adjustment

Power & Physical Input: 100/120/220/240 VAC ($\pm 5\%$, -10% for 8657A), 48–440 Hz Consumption: 160 VA max Dimensions: 133 × 425 × 574 mm; Weight: 18.2 kg net Operating temperature: 0 °C to 55 °C

Key Features Synthesized frequency stability and precision across the full operating range Fast frequency switching enables rapid test sequencing Broad dynamic range with 0.1 dBm resolution supports sensitive component testing Dual modulation paths allow complex signal stimulus without external equipment ESD-protected construction; Class I safety compliance

Typical Applications AM/FM receiver characterization and acceptance testing Pulsed receiver validation RF component and subsystem performance evaluation Phase-coherent stimulus applications Digital signal modulation testing

Compatibility & Integration HP-IB control enables integration into automated test systems and remote operation from external controllers. Non-volatile storage supports fast test setup recall in production environments.

8657A Characteristics / Specifications

PARAMETER	VALUE
Instrument Type	Synthesized RF signal generator
Series Family	HP Agilent 8656/8657A/8657B/8657D
Frequency Range	100 kHz to 1.04 GHz
Frequency Underrange	to 10 kHz with uncalibrated output and modulation
Frequency Resolution	10 Hz
Frequency Accuracy	same as timebase
Switching Speed	less than 35 ms to within 100 Hz (30 ms typical at 25 C)
Phase Offset	1 degree nominal increments
Output Level Range	plus 13 dBm to minus 143.5 dBm into 50 ohm
Output Level 100 kHz to 1 MHz	plus 10 dBm to minus 143.5 dBm
Level Resolution	0.1 dB
Absolute Level Accuracy above plus 7 dBm	less than plus or minus 1.5 dB
Absolute Level Accuracy plus 7 to minus 127 dBm	less than plus or minus 1.0 dB
Absolute Level Accuracy below minus 127 dBm	less than plus or minus 1.5 dB
Level Flatness	plus or minus 0.5 dB at 0 dBm from 100 kHz to 2.06 GHz family spec
Reverse Power Protection	50 watts from a 50 ohm source
Maximum DC Voltage	50 V
SWR below minus 3.5 dBm	less than 1.5 for carriers above 400 kHz
Output Impedance	50 ohm nominal
Harmonics	less than minus 30 dBc at output less than or equal to plus 7 dBm
Subharmonics 0.1 to 1.03 GHz	none
SSB Phase Noise 130 to 260 MHz	less than minus 136 dBc/Hz at 20 kHz offset
SSB Phase Noise 520 MHz to 1.04 GHz	less than minus 124 dBc/Hz at 20 kHz offset
Residual FM 130 to 260 MHz	less than 1 Hz rms in 0.3 to 3 kHz BW typical less than 0.5 Hz

PARAMETER	VALUE
Residual AM	less than 0.04 percent AM in 50 Hz to 15 kHz BW
Standard Timebase Aging	plus or minus 2 ppm per year typical
AM Depth	0 to 99 percent at level less than or equal to plus 7 dBm, carrier at or above 400 kHz
AM Resolution	1 percent
FM DC Mode Max Deviation 0.1 to 130 MHz	99 kHz
FM DC Mode Max Deviation 130 to 260 MHz	50 kHz
Internal Modulation Tones	400 Hz and 1 kHz plus or minus 2 percent
Save Recall Registers	100 nonvolatile
Remote Interface	GPIB
Power Requirements	100/120/220/240 V plus 5 percent minus 10 percent, 48 to 440 Hz, 160 VA maximum
Net Weight	18.2 kg (40 lb)
Dimensions	133 mmHby 425 mmWby 574 mmDOperating Temperature: 0 to 55 C
Storage Temperature	minus 40 to plus 71 C
Leakage	less than 1.0 uV in a 2.5 cm two-turn loop 2.5 cm from the front surface
Operating temperature	0 to 55 C

General Specifications & Supplementary Characteristics

PARAMETER	VALUE
Storage temperature	minus 40 to plus 71 C
Operating temperature	0 to 55 C
Operating Temperature	0 to 55 C
Leakage	less than 1.0 uV in a 2.5 cm two-turn loop 2.5 cm from the front surface Notes Numeric rows from Agilent 8657A/8657B Signal Generators technical specifications (5968-2704E) model column 8657A. Specifications above 1.04 GHz on that sheet apply only to 8657B.

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 list plus 13 to minus 143.5 dBm, plus or minus 1.0 dB level accuracy from plus 7 to minus 127 dBm, electronic attenuator reliability, and AM/FM with stable dcFM.

Applications

AM/FM communications receiver in-channel and adjacent-channel tests, sensitivity measurements on quiet receivers, and VCO simulation using dcFM.

Key Features

Electronic PIN attenuator with long MTBF versus mechanical relays

100 nonvolatile store/recall registers with rear-panel sequencing

Phase offset in 1 degree increments

Stable dc-coupled FM for digital squelch and VCO work

Optional high-stability timebase Option 001

Technical Specifications

Technical Specifications

PARAMETER	VALUE
Instrument Type	Synthesized RF signal generator
Series Family	HP Agilent 8656/8657A/8657B/8657D
Frequency Range	100 kHz to 1.04 GHz
Frequency Underrange	to 10 kHz with uncalibrated output and modulation
Frequency Resolution	10 Hz
Frequency Accuracy	same as timebase
Switching Speed	less than 35 ms to within 100 Hz (30 ms typical at 25 C)
Phase Offset	1 degree nominal increments
Output Level Range	plus 13 dBm to minus 143.5 dBm into 50 ohm
Output Level 100 kHz to 1 MHz	plus 10 dBm to minus 143.5 dBm
Level Resolution	0.1 dB
Absolute Level Accuracy above plus 7 dBm	less than plus or minus 1.5 dB

Absolute Level Accuracy plus 7 to minus 127 dBm: less than plus or minus 1.0 dB

Specifications

PARAMETER	VALUE
Absolute Level Accuracy below minus 127 dBm	less than plus or minus 1.5 dB
Level Flatness	plus or minus 0.5 dB at 0 dBm from 100 kHz to 2.06 GHz family spec
Reverse Power Protection	50 watts from a 50 ohm source
Maximum DC Voltage	50 V

PARAMETER	VALUE
SWR below minus 3.5 dBm	less than 1.5 for carriers above 400 kHz
Output Impedance	50 ohm nominal
Harmonics	less than minus 30 dBc at output less than or equal to plus 7 dBm
Subharmonics 0.1 to 1.03 GHz	none
SSB Phase Noise 130 to 260 MHz	less than minus 136 dBc/Hz at 20 kHz offset

SSB Phase Noise 520 MHz to 1.04 GHz: less than minus 124 dBc/Hz at 20 kHz offset

Specifications

PARAMETER	VALUE
Residual FM 130 to 260 MHz	less than 1 Hz rms in 0.3 to 3 kHz BW typical less than 0.5 Hz
Residual AM	less than 0.04 percent AM in 50 Hz to 15 kHz BW
Standard Timebase Aging	plus or minus 2 ppm per year typical

Option 001 Aging 8657A: 1.5e-8 per day after 10 days
 AM Depth: 0 to 99 percent at level less than or equal to plus 7 dBm, carrier at or above 400 kHz
 AM Resolution: 1 percent
 FM DC Mode Max Deviation 0.1 to 130 MHz: 99 kHz
 FM DC Mode Max Deviation 130 to 260 MHz: 50 kHz

Specifications

PARAMETER	VALUE
Internal Modulation Tones	400 Hz and 1 kHz plus or minus 2 percent
Save Recall Registers	100 nonvolatile
Remote Interface	GPIO
Power Requirements	100/120/220/240 V plus 5 percent minus 10 percent, 48 to 440 Hz, 160 VA maximum
Net Weight	18.2 kg (40 lb)
Dimensions	133 mmHby 425 mmWby 574 mmD0operating Temperature: 0 to 55 C
Storage Temperature	minus 40 to plus 71 C
Leakage	less than 1.0 uV in a 2.5 cm two-turn loop 2.5 cm from the front surface

Notes
 Numeric rows from Agilent 8657A/8657B Signal Generators technical specifications (5968-2704E) model column 8657A. Specifications above 1.04 GHz on that sheet apply only to 8657B.

Ordering Information

OPTION	DESCRIPTION
Option 001	Technical Specifications

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>

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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.