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Data Sheet

August 14, 2026

AGILENT / KEYSIGHT

Agilent / Keysight 8654A Signal Generator 10Hz to 520MHz

HP Agilent Keysight 8654A Solid State Signal Generator 10 MHz to 520 MHz The HP/Agilent 8654A is a compact solid-state signal generator covering 10 to 520 MHz with automatically leveled output from plus 10 to minus 130 dBm. OEM literature describes it as a transistor replacement for earlier vacuum-tube VHF generators, with AM and a companion 8655A synchronizer/counter for near-8640 stability. VHF receiver checks, service-bench AM stimulus, and portable field generation where a compact 10 to 520 MHz source is required. The HP/Agilent 8654A is a compact solid-state signal generator covering 10 to 520 MHz with automatically leveled output from plus 10 to minus 130 dBm. OEM literature describes it as a transistor replacement for earlier vacuum-tube VHF generators, with AM and a companion 8655A synchronizer/counter for near-8640 stability. VHF receiver checks, service-bench AM stimulus, and portable field generation where a compact 10 to 520 MHz source is required. Compact portable form versus cavity 8640-class generators Companion 8655A synchronizer/counter for phase-locked stability



MODEL

**Agilent / Keysight
8654A**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

8654A

LISTING

<https://aumictechlabs.com/products/8654a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The Agilent/Keysight 8654A is a compact RF signal generator delivering stable, accurate signals from 10 Hz to 520 MHz. Engineered for receiver testing, system calibration, and general-purpose signal generation, it combines broad frequency coverage with excellent output control and signal purity in a single instrument.

Technical Specifications

Frequency Range: 10 Hz to 520 MHz across six contiguous bands: 10–18.6 MHz, 18.6–35 MHz, 35–66 MHz, 66–130 MHz, 130–250 MHz, and 250–520 MHz.

Output Level: +10 dBm to –130 dBm into 50 Ω load. Option 003 reduces maximum output to +8 dBm.

Output resolution is 0.1 dB, with absolute accuracy of ± 1 dB above –127 dBm and typically ± 3 dB below that threshold.

Output Impedance: 50 Ω , AC coupled.

Signal Purity:

- Harmonic distortion below +3 dBm is < -20 dBc (or < -15 dBc with Option 003).
- Subharmonic and non-harmonic spurious signals measure < -100 dBc.
- Residual AM averages < -55 dBc in a 50 Hz to 15 kHz post-detection bandwidth.
- Residual FM on CW is < 0.3 ppm (0.3–3 kHz bandwidth) or < 0.5 ppm (50 Hz–15 kHz bandwidth).
- SWR: $< 1.7:1$ below –2 dBm output; < 1.3 on 0.1 V range or lower (0.1% deviation).

8654B variant provides calibrated, metered FM across four deviation ranges: 0–3 kHz, 0–10 kHz, 0–30 kHz, and 0–100 kHz.

External modulation bandwidth > 25 kHz when driven from 600 Ω or lower impedance source.

Typical Applications

- Receiver sensitivity and linearity measurements
- RF and intermediate-frequency system calibration
- General laboratory signal generation
- Modulation index testing and AM/FM performance validation

Compatibility & Integration

Standard 50 Ω output connector. AC-coupled design. Accepts both internal and external modulation signals via dedicated 600 Ω input.

8654A Characteristics / Specifications

PARAMETER	VALUE
Instrument Type	Solid state analog signal generator
Series Family	HP Agilent 8654A/8654B
Frequency Range	10 MHz to 520 MHz
Output Level Range	plus 10 dBm to minus 130 dBm
Output Leveling	automatic
Modulation Types	AM
Output Impedance	50 ohm
Minimum Frequency	10 MHz
Maximum Frequency	520 MHz
Maximum Output Level	plus 10 dBm
Minimum Output Level	minus 130 dBm
Level Control	calibrated attenuator plus vernier
Carrier Band	VHF 10 to 520 MHz
Architecture	fully transistor solid state
Form Factor	compact portable benchtop
Companion Synchronizer	HP 8655A synchronizer/counter
Intended Replacement Class	solid-state substitute for HP 608 class generators
Spectral Purity Class	analog oscillator with leveled output
Display Class	analog frequency dial and meter
Operating Context	VHF receiver and service benches
Power	mains powered portable generator
Calibration Note	finer residual FM and AM depth limits belong on the faceplate/calibration certificate
Brand Lineage	HP / Agilent
Remote Interface	none (front panel analog)
Series Documentation	OEM 8654A/B product literature

PARAMETER	VALUE
Leveled Power	plus 10 to minus 130 dBm into 50 ohm
Frequency Coverage Verified	10 to 520 MHz
Modulation Path	AM on 8654A (FM on 8654B)
Connector Class	50 ohm RF output
Operating Temperature Class	laboratory portable environment
Operating temperature	Class: laboratory portable environment

General Specifications & Supplementary Characteristics

PARAMETER	VALUE
Operating temperature	Class: laboratory portable environment
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Operating Temperature Class	laboratory portable environment Notes Numeric coverage and plus 10 to minus 130 dBm leveled range are from HP 8654A product literature and companion 8655A synchronizer descriptions. Residual FM, exact AM depth table, and power-line ratings belong on the OEM catalog sheet/calibration certificate when not reproduced on the short product page.

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	
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Notes

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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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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.