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Data Sheet

August 15, 2026

AGILENT / KEYSIGHT

Agilent/Keysight 8981B

HP Agilent 8981B Vector Modulation Analyzer The HP 8981B is a two-channel vector modulation analyzer for I/Q modulators, demodulators, and digitally modulated IF/RF links. OEM 8981A/8981B family literature describes constellation, eye, and vector displays for QPSK, 16QAM, 64QAM, and 256QAM, plus statistical closure, lock-angle error, and quadrature error. The 8981B is listed with 350 MHz I/Q bandwidth. The 8981A family adds a 50 MHz to 200 MHz I/Q demodulator with less than 0.5 degree quadrature error and less than 0.1 dB amplitude imbalance. Pairs with 8780A/8782B vector signal generators. The HP 8981B is a two-channel vector modulation analyzer for I/Q modulators, demodulators, and digitally modulated IF/RF links. OEM 8981A/8981B family literature describes constellation, eye, and vector displays for QPSK, 16QAM, 64QAM, and 256QAM, plus statistical closure, lock-angle error, and quadrature error. The 8981B is listed with 350 MHz I/Q bandwidth. The 8981A family adds a 50 MHz to 200 MHz I/Q demodulator with less than 0.5 degree quadrature error and less than 0.1 dB amplitude imbalance. Pairs with 8780A/8782B vector signal generators. Digital microwave radio, mobile radio, and digital-video I/Q alignment using constellation analysis before BER degrades.



MODEL

**Agilent / Keysight
8981B**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

8981B

LISTING

<https://aumictechlabs.com/products/8981b-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The Agilent/Keysight 8981B is a vector modulation analyzer engineered for precise analysis of digitally modulated microwave and IF signals. It characterizes in-phase (I) and quadrature (Q) signal components across modulation formats including QPSK, 16QAM, 64QAM, and 256QAM, making it essential for troubleshooting I/Q modulators, demodulators, and modulated signals in digital mobile radio, microwave radio, and digital video transmission systems. The instrument connects directly to receiver demodulator I/Q outputs or IF test points, enabling comprehensive signal analysis throughout receiver chains. Real-time constellation, eye diagram, and vector diagram displays reveal signal quality degradations before link performance becomes unacceptable.

Technical Specifications

IF input and demodulator frequency range: 50 MHz to 200 MHz
I vs. Q baseband bandwidth: 350 MHz (DC-coupled with internal filters)
DC vector accuracy (I, Q): $\pm 1\%$ of full scale
Quadrature imbalance: $< 0.5^\circ$
Amplitude imbalance: < 0.1 dB
I-Q crosstalk: -60 dB or 1% of full scale peak (whichever is greater), DC to 350 MHz
I versus Q timing accuracy: ± 1.25 ns or $< \pm 2.5\%$ of full scale
IF input Delay accuracy: $\pm 3\%$ plus delay reference accuracy
Time base jitter: 2% of full scale RMS for delays < 200 divisions
Differential voltage accuracy (I vs. Q): $\pm 1\%$ typical at 100 mV full scale deflection
Input termination: $50\ \Omega$ or $75\ \Omega$ selectable
Input coupling: AC, DC, or ground per channel
Digitizing resolution: 12-bit for GPIB measurements
Power requirements: 100/120/220/240 VAC ($\pm 10\%$), 48–66 Hz; 330 VA maximum
Weight: Approximately 20 kg (45 lb) net

Key Features

- Statistical measurements including closure, lock angle error, and quadrature error
- Marker-based phase, amplitude, and time measurements
- Magnitude and phase display at time marker or versus time sweep
- GPIB (GPIB) interface for automated measurements

Typical Applications

- I/Q modulator and demodulator characterization
- Digital signal quality monitoring in mobile and microwave systems
- IF signal analysis and transmission link degradation detection
- Pre-BER transmission quality assessment

Compatibility & Integration

The 8981B integrates with HP 8780A/8782B vector signal generators for coordinated signal generation and analysis workflows.

8981B Characteristics / Specifications

PARAMETER	VALUE
Model	8981B
Instrument Type	Vector modulation analyzer
Iq Bandwidth	350 MHz I/Q bandwidth (8981B listings)
If Demodulator Family	50 MHz to 200 MHz I/Q demodulator on 8981A/8981 family
Quadrature Error Family	less than plus or minus 0.5 degree corrected (8981A family)
Amplitude Imbalance Family	less than plus or minus 0.1 dB DC to 10 kHz corrected (8981A family)
Modulation Formats	QPSK, 16QAM, 64QAM, 256QAM
Displays	constellation, eye, vector
Statistics	closure, lock angle error, quadrature error
Channels	two-channellandQRelated Generators: HP 8780A and 8782B vector signal generators
Related Analyzer	HP 8980A vector analyzer without the IF demodulator
Use Case	I/Q modulator and demodulator alignment
Form Factor	benchtop vector modulation analyzer
Manufacturer	HP Agilent Keysight
Remote Control	HP-IB class
Input Class	I/Q baseband or IF test points
Operating Temperature Class	laboratory analyzer window
Primary Power Class	mains powered benchtop
Literature	HP 8981B vector modulation analyzer catalogs
System Role	constellation analysis of digital radios
Documentation Type	OEM datasheet and catalog specifications
Bandwidth	350 MHz I/Q bandwidth (8981B listings)
Operating temperature	Class: laboratory analyzer window

8981B Specifications

PARAMETER	VALUE
HP Agilent 8981B Vector Modulation Analyzer	Overview
Applications	Digital microwave radio, mobile radio, and digital-video I/Q alignment using constellation analysis before BER degrades.
Constellation eye and vector diagrams	QPSK through 256QAM formats
Statistical closure and quadrature error	350 MHz I/Q bandwidth on 8981B
Technical Specifications	Model: 8981B

General Specifications & Supplementary Characteristics

PARAMETER	VALUE
Operating temperature	Class: laboratory analyzer window
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Operating Temperature Class	laboratory analyzer window
Primary Power Class	mains powered benchtop
Literature	HP 8981B vector modulation analyzer catalogs
System Role	constellation analysis of digital radios
Documentation Type	OEM datasheet and catalog specifications Notes From HP 8981B vector-modulation-analyzer catalogs and 8981A family demodulator specifications. 350 MHz I/Q bandwidth is the 8981B listing; residual vector-error tables versus format belong on the 8981B data 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	
Technical Specifications	
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Modulation Formats	QPSK, 16QAM, 64QAM, 256QAM
Displays	constellation, eye, vector
Statistics	closure, lock angle error, quadrature error
Channels	two-channel I and Q
Related Generators	HP 8780A and 8782B vector signal generators
Related Analyzer	HP 8980A vector analyzer without the IF demodulator
Use Case	I/Q modulator and demodulator alignment
Form Factor	benchtop vector modulation analyzer
Manufacturer	HP Agilent Keysight
Remote Control	HP-IB class
Input Class	I/Q baseband or IF test points
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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

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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.