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Data Sheet

August 14, 2026

AGILENT / KEYSIGHT

Agilent / Keysight 87510A Gain-Phase Analyzer

HP Agilent Keysight 87510A Gain Phase Analyzer 100 kHz to 300 MHz The HP/Agilent 87510A is a gain-phase analyzer covering 100 kHz to 300 MHz for vector transmission measurements on electronic components. OEM specification summaries list 1 mHz frequency resolution, source minus 15 to plus 5 dBm (minus 45 to plus 15 dBm with Option 010), dynamic accuracy plus or minus 0.05 dB and plus or minus 0.3 deg, and selectable IF bandwidths from 20 Hz to 8 kHz. Filter and resonator characterization with automatic parameter extraction, amplifier gain/phase, and high-speed vector transmission on A and R inputs. The HP/Agilent 87510A is a gain-phase analyzer covering 100 kHz to 300 MHz for vector transmission measurements on electronic components. OEM specification summaries list 1 mHz frequency resolution, source minus 15 to plus 5 dBm (minus 45 to plus 15 dBm with Option 010), dynamic accuracy plus or minus 0.05 dB and plus or minus 0.3 deg, and selectable IF bandwidths from 20 Hz to 8 kHz. Filter and resonator characterization with automatic parameter extraction, amplifier gain/phase, and high-speed vector transmission on A and R inputs.

**MODEL****Agilent / Keysight
87510A****CALIBRATION****Available on
request****CONDITION****Used****STATUS****In stock****RFQ / SKU****87510A****LISTING**<https://aumictechlabs.com/products/87510a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Agilent/Keysight 87510A Gain-Phase Analyzer is a precision instrument for measuring gain and phase characteristics of electronic components and systems from 100 kHz to 300 MHz. It delivers vector transmission measurements with 1 mHz frequency resolution and dynamic

accuracy of ± 0.05 dB and $\pm 0.3^\circ$. The analyzer supports multiple measurement modes (A/R, A, R) and features automatic parameter-extraction commands for filter and resonator characterization.

Technical Specifications

Signal Source Frequency range: 100 kHz to 300 MHz
Frequency resolution: 1 mHz
Output level range: -15 dBm to $+5$ dBm (standard); -45 dBm to $+15$ dBm with Option 010
Output level accuracy: ± 1 dB at 50 MHz, 0 dBm, $23^\circ\text{C} \pm 5^\circ\text{C}$
Frequency stability: $\pm 5 \times 10^{-7}$ /day typical at $23^\circ\text{C} \pm 5^\circ\text{C}$; $\pm 2.5 \times 10^{-9}$ /8 h with Option 001
Frequency accuracy: ± 20 ppm at $23^\circ\text{C} \pm 5^\circ\text{C}$; ± 1 ppm with Option 001
Receiver Frequency range: 100 kHz to 300 MHz
IF bandwidth: 20 Hz, 200 Hz, 1 kHz, 4 kHz, 8 kHz
Maximum input level: 0 dBm
Noise floor: -110 dBm (IFBW = 20 Hz)
Dynamic accuracy: ± 0.05 dB, $\pm 0.3^\circ$ at IFBW 20 Hz, -10 dBm (A and R channels)
Power Splitter (standard, except Option 004)
Insertion loss: 6 dB nominal
Tracking: 0.1 dB (100 kHz to 100 MHz); 0.2 dB (>100 MHz)
Input Connectors Standard: BNC, 50Ω (two inputs: R, A)
Option 003: Type-N (A channel), BNC (R channel)
Option 004: Single BNC input (A channel only)

Key Features

High-speed vector transmission measurement: 0.25 ms per point at 8 kHz IFBW
Automatic filter and resonator parameter extraction
Selectable IF bandwidths for noise-sensitivity optimization
SWEEP END output signal: 10 μs negative pulse, $+5$ V logic level, 100 mA maximum current

Typical Applications

Amplifier and filter characterization
Audio system analysis
Resonator production line testing
Component gain-phase measurement in R&D and manufacturing

Compatibility & Integration

Input impedance is 50Ω nominal. Connector options accommodate standard BNC installations or high-frequency Type-N implementations. Maximum input damage level: 20 dBm, 50 Vdc.

87510A Characteristics / Specifications

PARAMETER	VALUE
Instrument Type	Gain phase analyzer
Series Family	HP Agilent 87510A
Frequency Range	100 kHz to 300 MHz
Frequency Resolution	1 mHz
Output Level Range Standard	minus 15 dBm to plus 5 dBm
Output Level Range Option 0	minus 45 dBm to plus 15 dBm
Output Level Accuracy	plus or minus 1 dB at 50 MHz, 0 dBm, 23 plus or minus 5 C
Frequency Stability Typical	plus or minus 5e-7 per day at 23 plus or minus 5 C
Frequency Stability Option 0	plus or minus 2.5e-9 per 8 h
Frequency Accuracy	plus or minus 20 ppm at 23 plus or minus 5 C
Frequency Accuracy Option 0	plus or minus 1 ppm
Receiver Frequency Range	100 kHz to 300 MHz
IF Bandwidth Settings	20 Hz, 200 Hz, 1 kHz, 4 kHz, 8 kHz
Maximum Input Level	0 dBm
Noise Floor at 20 Hz IFBW	minus 110 dBm
Dynamic Accuracy	plus or minus 0.05 dB, plus or minus 0.3 deg at IFBW 20 Hz, minus 10 dBm (A and R)
Measurement Modes	A/R, A, R
Input Connectors Standard	BNC 50 ohm onRandAOption 003 Inputs: TypeNon A, BNC onROption 004 Inputs: single BNC onAonly
Sweep Speed	0.25 ms per point at 8 kHz IFBW
Sweep End Output	10 usec negative pulse, plus 5 V logic, 100 mA maximum
Source Output Accuracy Condition	50 MHz, 0 dBm, 23 plus or minus 5 C
Receiver Inputs	two (R and A) standard
Impedance	50 ohm
Remote Interface	HP-IB

PARAMETER	VALUE
Form Factor	benchtop gain-phase analyzer
Operating Context	component gain and phase characterization
Brand Lineage	HP / Agilent
Calibration Note	group delay and aperture tables belong on the 87510A data sheet when not in the summary
Bandwidth	Settings: 20 Hz, 200 Hz, 1 kHz, 4 kHz, 8 kHz

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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PARAMETER	VALUE
Instrument Type	Gain phase analyzer
Series Family	HP Agilent 87510A
Frequency Range	100 kHz to 300 MHz
Frequency Resolution	1 mHz
Output Level Range Standard	minus 15 dBm to plus 5 dBm
Output Level Range Option 010	minus 45 dBm to plus 15 dBm
Output Level Accuracy	plus or minus 1 dB at 50 MHz, 0 dBm, 23 plus or minus 5 C
Frequency Stability Typical	plus or minus 5e-7 per day at 23 plus or minus 5 C
Frequency Stability Option 001	plus or minus 2.5e-9 per 8 h
Frequency Accuracy	plus or minus 20 ppm at 23 plus or minus 5 C
Frequency Accuracy Option 001	plus or minus 1 ppm
Receiver Frequency Range	100 kHz to 300 MHz
IF Bandwidth Settings	20 Hz, 200 Hz, 1 kHz, 4 kHz, 8 kHz
Maximum Input Level	0 dBm
Noise Floor at 20 Hz IFBW	minus 110 dBm
Dynamic Accuracy	plus or minus 0.05 dB, plus or minus 0.3 deg at IFBW 20 Hz, minus 10 dBm (A and R)
Measurement Modes	A/R, A, R
Input Connectors Standard	BNC 50 ohm onRandAOption 003 Inputs: TypeNon A, BNC onR0Option 004 Inputs: single BNC onAonly
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Source Output Accuracy Condition	50 MHz, 0 dBm, 23 plus or minus 5 C
Receiver Inputs	two (R and A) standard
Impedance	50 ohm
Remote Interface	HP-IB
Form Factor	benchtop gain-phase analyzer

PARAMETER	VALUE
Operating Context	component gain and phase characterization
Brand Lineage	HP / Agilent

Option 001: high stability frequency reference
Option 010: extended source power range
Calibration Note: group delay and aperture tables belong on the 87510A data sheet when not in the summary

Notes

Numeric rows from HP/Agilent 87510A gain-phase analyzer specification summaries (100 kHz to 300 MHz, 1 mHz resolution, minus 15 to plus 5 dBm standard, plus or minus 0.05 dB / 0.3 deg dynamic accuracy). Option 010 and Option 001 values are from the same OEM summary table.

Ordering Information

OPTION	DESCRIPTION
Option 001	and extended source Option 010
Option 003	Inputs: TypeNon A, BNC onROption 004 Inputs: single BNC onAonly
Option 010	and Option 001 values are from the same OEM summary table.

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.