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Data Sheet

August 12, 2026

KEYSIGHT

Keysight N5251A PNA Network Analyzer, 10MHz to 110 GHz

Keysight N5251A Millimeter-Wave PNA Network Analyzer System The Keysight N5251A is a single-sweep broadband VNA solution from 10 MHz to 110 GHz, based on an N5227A PNA with N5261A/N5262A millimeter-wave test-set controller and broadband frequency extenders. 1.0 mm male test ports; 2- or 4-port configurations. Intended replacement for HP 8510XF-class systems. On-wafer and in-fixture broadband S-parameter characterization; Cascade Infinity 1.0 mm probe stations; true differential / pulsed / scalar mixer apps via PNA options. The Keysight N5251A is a single-sweep broadband VNA solution from 10 MHz to 110 GHz, based on an N5227A PNA with N5261A/N5262A millimeter-wave test-set controller and broadband frequency extenders. 1.0 mm male test ports; 2- or 4-port configurations. Intended replacement for HP 8510XF-class systems. On-wafer and in-fixture broadband S-parameter characterization; Cascade Infinity 1.0 mm probe stations; true differential / pulsed / scalar mixer apps via PNA options.



MODEL

Keysight N5251A

CALIBRATION

Available on request

CONDITION

Used

STATUS

In stock

RFQ / SKU

N5251A

LISTING

<https://aumictechlabs.com/products/n5251a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Keysight N5251A PNA Network Analyzer delivers S-parameter measurements from 10 MHz to 110 GHz in a single sweep. Built on the N5227A PNA platform, this instrument characterizes

passive, active, and frequency-converting devices with exceptional accuracy across 2-port and 4-port configurations. Integrated broadband frequency extenders with tri-axial bias tees enable stable on-wafer and in-fixture measurements, while pulsed-RF, scalar mixer, differential, and time-domain capabilities support advanced device characterization, modeling, and parameter extraction.

Technical Specifications

Frequency Coverage & Performance 10 MHz to 110 GHz
operating range Male 1.0 mm test port connections throughout entire frequency range System dynamic range defined as source maximum output power minus noise floor Receiver dynamic range: test port compression at 0.1 dB (typical) minus noise floor (typical) Frequency extender dynamic range with N5262A test set controller: 100 dB typical in 10 Hz IFBW Frequency stability: less than 1% drift over 24-hour period Test port input power rating: maximum +27 dBm

Measurement Capabilities 2-port and 4-port S-parameter measurements Pulsed-RF measurements Scalar mixer characterization True differential measurements Time-domain response characterization Gain compression and IMD (Intermodulation Distortion) measurements

Bias & Control Integrated tri-axial bias tees with force/sense capability for accurate device bias control Bias tees mounted on combiners positioned close to DUT for enhanced measurement stability

Key Features Patented weighted least squares calibration method optimized for 110 GHz performance Supports coaxial and wafer probe measurement configurations Integrates N5261A or N5262A millimeter-wave head controllers Available as single integrated solution or modular configuration

Compatibility & Integration The N5251A extends existing N5227A PNA installations through addition of the N5261A or N5262A test controller and broadband frequency extenders, enabling seamless migration to millimeter-wave capabilities.

Features & description

From manufacturer datasheet

Features

- Frequency: 10 MHz to 110 GHz single-sweep solution; guaranteed system table 50 MHz–110 GHz (typical below 50 MHz per OEM notes)
- Frequency resolution: 1 Hz
- Frequency accuracy: ± 1 ppm
- Architecture: N5227A PNA + N5261A (2-port) or N5262A (4-port) mm-wave controller + broadband T/R modules with bias tees near DUT
- Test port: 1.0 mm male
- Ports: 2-port or 4-port option families (200/217/218/219 vs 400/417/418/419)
- Power control: receiver leveling at 1.0 mm port for accurate power set
- Extenders: built-in bias tees close to DUT for on-wafer stability
- Dynamic accuracy: specified vs frequency bands in N5251A tech specs (compression/IF linearity tables)
- Measurements: full PNA apps across band when licensed (true differential, pulsed, scalar mixer, etc.)
- Interconnect: standard 48-inch cables between controller and frequency extenders (OEM config kits)
- Extensible toward THz with additional millimeter/sub-mm extensions (family overview)

N5251A Characteristics / Specifications

PARAMETER	VALUE
Model	N5251A
Manufacturer	Keysight Technologies
Instrument Type	Broadband Millimeter-Wave Vector Network Analyzer System
Alias	N5251A; Keysight N5251A; Agilent N5251A RF
Frequency	10 MHz to 110 GHz single-sweep solution; guaranteed system table 50 MHz–110 GHz (typical below 50 MHz per OEM notes)
Connector	1.0 mm male
Ports	2 or 4 (option) Notes Specs from Keysight N5251A technical overview and broadband VNA technical specifications. Exact dynamic range, power, and accuracy vs frequency depend on option (attenuator placement, 2 vs 4 port)–confirm configuration and calibration kit on the system.
Frequency resolution	1 Hz
Frequency accuracy	±1 ppm
Architecture	N5227A PNA + N5261A (2-port) or N5262A (4-port) mm-wave controller + broadband T/R modules with bias tees near DUT
Test port	1.0 mm male
Power control	receiver leveling at 1.0 mm port for accurate power set
Extenders	built-in bias tees close to DUT for on-wafer stability
Dynamic accuracy	specified vs frequency bands in N5251A tech specs (compression/IF linearity tables)
Measurements	full PNA apps across band when licensed (true differential, pulsed, scalar mixer, etc.)
Interconnect	standard 48-inch cables between controller and frequency extenders (OEM config kits)

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

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Model	N5251A
Manufacturer	Keysight Technologies
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RF

Specifications

PARAMETER	VALUE
Frequency	10 MHz–110 GHz (single sweep solution)
Connector	1.0 mm male
Ports	2 or 4 (option)

Notes

Specs from Keysight N5251A technical overview and broadband VNA technical specifications. Exact dynamic range, power, and accuracy vs frequency depend on option (attenuator placement, 2 vs 4 port)–confirm configuration and calibration kit on the system.

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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Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.