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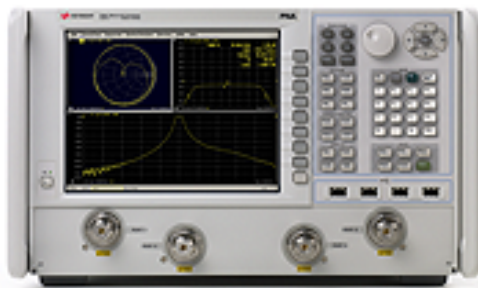
Data Sheet

August 14, 2026

AGILENT / KEYSIGHT

Agilent / Keysight N5221B 13.5 GHz PNA Microwave Network Analyzer

Agilent Keysight N5221B PNA Series Network Analyzer The Keysight N5221B isaPNA Series microwave vector network analyzer covering 10 MHz to 13.5 GHz standard, or 900 Hz to 13.5 GHz with low-frequency extension options. OEM N5221B/N5222B technical specifications (synthesizer revision 7) list 1 Hz frequency resolution and ± 0.7 ppm frequency accuracy. S-parameter characterization of RF/microwave components to 13.5 GHz, calibration with 85052B mechanical kits or N4691 ECal modules, and R&D/production VNA measurements. The Keysight N5221B isaPNA Series microwave vector network analyzer covering 10 MHz to 13.5 GHz standard, or 900 Hz to 13.5 GHz with low-frequency extension options. OEM N5221B/N5222B technical specifications (synthesizer revision 7) list 1 Hz frequency resolution and ± 0.7 ppm frequency accuracy. S-parameter characterization of RF/microwave components to 13.5 GHz, calibration with 85052B mechanical kits or N4691 ECal modules, and R&D/production VNA measurements. Integrated synthesized VNA with built-in S-parameter test set



MODEL

**Agilent / Keysight
N5221B**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

N5221B

LISTING

<https://aumictechlabs.com/products/n5221b-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Keysight N5221B is a 13.5 GHz PNA microwave network analyzer engineered for precision RF and microwave characterization from 900 Hz to 13.5 GHz. Available in 2-port and 4-port configurations with single or dual internal sources, it delivers 137 dB system dynamic range at 10 GHz and supports S-parameter, noise figure, pulsed, and active component measurements across aerospace, defense, and communications sectors.

Technical Specifications

Frequency Range: 900 Hz to 13.5 GHz; 10 MHz to 13.5 GHz

Port Configuration: 2-port and 4-port models

Sources: Single source (2-port); dual source (4-port). Internal second source for IMD, hot-S22, and high-speed swept-LO measurements.

Dynamic Range: 137 dB system dynamic range @ 10 GHz.

Receiver compression at 0.1 dB (typical) at test port.

Output Power: +13 dBm maximum leveled output; 38 dB power sweep range.

Test Ports: 50 Ω ruggedized 3.5 mm male connectors.

Measurement Performance: Trace noise magnitude: 0.003 dB RMS Trace noise phase: 0.007 deg RMS (typical, 100 MHz to 13.5 GHz) Test port noise floor: -140 dBm @ 10 Hz IFBW (typical) Receiver compression: 0.1 dB (typical) Measurement Speed: 201-point sweep in 5.5 to 6.3 ms.

Interfaces: USB, LAN, multi-touch display, solid-state drive.

Physical: 24 × 20 × 16 inches; 50 lbs.

Operating Conditions: Specifications valid 25 °C $\pm$ 5 °C, 90 minutes after power-on.

Key Features

- High-accuracy S-parameter measurements with stability suited for production and R&D
- Pulsed S-parameter capability with built-in pulse modulators and generators
- Noise figure characterization
- Mixer, frequency converter, and group delay measurements with frequency-tracking software
- Amplifier testing: gain, return loss, harmonics, and IMD
- Active component characterization with simplified setup

Typical Applications

Aerospace and defense RF component validation, communications amplifier characterization, mixer and converter analysis, and high-volume manufacturing test.

Compatibility & Integration

USB and LAN connectivity support automated test environments and integration into production workflows.

N5221B Characteristics / Specifications

PARAMETER	VALUE
Model	N5221B
Instrument Type	Microwave vector network analyzer
Instrument Family	PNA Series
Frequency Range Standard	10 MHz to 13.5 GHz
Frequency Range LFE Options	900 Hz to 13.5 GHz (typical 500 Hz to 900 Hz)
Frequency Resolution	1 Hz
Frequency Accuracy	±0.7 ppm
Initial Frequency Accuracy	±0.2 ppm specification, ±0.1 ppm typical
Test Port Impedance	50 ohm
Test Port Connector	ruggedized 3.5 mm male
Port Options	2-port Option 200 class or 4-port Option 400 class
Power Resolution	0.01 dB
Preset Power Standard Options	0 dBm (Options 200, 201, 205, 400, 401, 405)
Preset Power Extended Range Options	minus 5 dBm (Options 217, 219, 220, 417, 419, 420)
Maximum Settable Power Typical	+30 dBm
Minimum Settable Power Typical	minus 30 dBm
System Dynamic Range 10 MHz to 50 MHz Spec	102 dB at test port, Options 200 or 400, ports 1 and 3
System Dynamic Range 50 MHz to 100 MHz Spec	120 dB at test port, Options 200 or 400, ports 1 and 3
System Dynamic Range 500 MHz to 2 GHz Spec	135 dB at test port, Options 200 or 400
System Dynamic Range 3.2 GHz to 10 GHz Spec	137 dB at test port, Options 200 or 400, ports 1 and 3
System Dynamic Range 10 GHz to 13.5 GHz Spec	136 dB at test port, Options 200 or 400, ports 1 and 3
Receiver Dynamic Range Typical 500 MHz to 2 GHz	130 dB typical, all options

PARAMETER	VALUE
Receiver Dynamic Range Typical 2 GHz to 13.5 GHz	131 dB typical, all options
If Bandwidth For Dynamic Range Tables	10 Hz
System If Bandwidth Range	1 Hz to 15 MHz, nominal
Corrected Directivity 10 MHz to 2 GHz	48 dB with 85052B calibration kit
Corrected Directivity 2 GHz to 13.5 GHz	44 dB with 85052B calibration kit
Display	12.1 inch LCD touch screen
Remote Interfaces	USB LAN GPIBSPParameter Test Set: built-in integrated
Operating Temperature Spec	25 C $\pm$ 5 C for warranted specs unless stated
Warm Up Time	90 minutes after turn-on for warranted specs
Form Factor	benchtop PNA
Bandwidth	For Dynamic Range Tables: 10 Hz
Operating temperature	Spec: 25 C $\pm$ 5 C for warranted specs unless stated

General Specifications & Supplementary Characteristics

PARAMETER	VALUE
Operating temperature	Spec: 25 C ±5 C for warranted specs unless stated
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Warm Up Time	90 minutes after turn-on for warranted specs
Form Factor	benchtop PNA Notes Numeric rows from Keysight N5221B and N5222B PNA Network Analyzer Technical Specifications Sheet (synthesizer revision 7). Warranted specs apply at 25 C ±5 C after 90 minutes warm-up unless stated. Dynamic-range tables are at 10 Hz IF bandwidth with isolation averaging factor of 8.

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 (synthesizer revision 7) list 1 Hz frequency resolution and ± 0.7 ppm frequency accuracy.

Applications

S-parameter characterization of RF/microwave components to 13.5 GHz, calibration with 85052B mechanical kits or N4691 ECal modules, and R&D/production VNA measurements.

Key Features

Integrated synthesized VNA with built-in S-parameter test set

12.1 inch LCD touch screen and solid-state drive

USB LAN GPIB remote IO

Two-port or four-port option architectures

Low frequency extension hardware options to 900 Hz

Ruggedized 3.5 mm male test ports

Option 200/400 standard test sets plus 217/219/417/419 extended power range

Technical Specifications

Specifications

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If Bandwidth For Dynamic Range Tables	10 Hz
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Technical Specifications

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Model	N5221B
Instrument Type	Microwave vector network analyzer
Instrument Family	PNA Series
Frequency Range Standard	10 MHz to 13.5 GHz
Frequency Range LFE Options	900 Hz to 13.5 GHz (typical 500 Hz to 900 Hz)
Frequency Resolution	1 Hz

PARAMETER	VALUE
Frequency Accuracy	±0.7 ppm
Initial Frequency Accuracy	±0.2 ppm specification, ±0.1 ppm typical
Test Port Impedance	50 ohm
Test Port Connector	ruggedized 3.5 mm male
Port Options	2-port Option 200 class or 4-port Option 400 class
Power Resolution	0.01 dB
Preset Power Standard Options	0 dBm (Options 200, 201, 205, 400, 401, 405)
Preset Power Extended Range Options	minus 5 dBm (Options 217, 219, 220, 417, 419, 420)
Maximum Settable Power Typical	+30 dBm
Minimum Settable Power Typical	minus 30 dBm

System Dynamic Range 10 MHz to 50 MHz Spec: 102 dB at test port, Options 200 or 400, ports 1 and 3
System Dynamic Range 50 MHz to 100 MHz Spec: 120 dB at test port, Options 200 or 400, ports 1 and 3
System Dynamic Range 500 MHz to 2 GHz Spec: 135 dB at test port, Options 200 or 400
System Dynamic Range 3.2 GHz to 10 GHz Spec: 137 dB at test port, Options 200 or 400, ports 1 and 3
System Dynamic Range 10 GHz to 13.5 GHz Spec: 136 dB at test port, Options 200 or 400, ports 1 and 3
Receiver Dynamic Range Typical 500 MHz to 2 GHz: 130 dB typical, all options
Receiver Dynamic Range Typical 2 GHz to 13.5 GHz: 131 dB typical, all options

Specifications

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Remote Interfaces	USB LAN GPIBSPParameter Test Set: built-in integrated
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Notes
Numeric rows from Keysight N5221B and N5222B PNA Network Analyzer Technical Specifications Sheet (synthesizer revision 7). Warranted specs apply at 25 C ±5 C after 90 minutes warm-up unless stated. Dynamic-range tables are at 10 Hz IF bandwidth with isolation averaging factor of 8.

Ordering Information

OPTION	DESCRIPTION
Option 200	class or 4-port Option 400 class

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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<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.