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Data Sheet

August 14, 2026

AGILENT / KEYSIGHT

Agilent / Keysight N5241B 13.5 GHz PNA-X Microwave Network Analyzer

Agilent Keysight N5241B PNA-X Network Analyzer The Keysight N5241B isaPNA-X microwave vector network analyzer covering 10 MHz to 13.5 GHz (900 Hz to 13.5 GHz with Option 425 LFE on related family hardware). OEM N5241B/42B/49B technical specifications (synthesizer revision 7) list 1 Hz frequency resolution, ± 0.7 ppm frequency accuracy, and ruggedized 3.5 mm male test ports. Active-device S-parameter, noise-figure, gain-compression, and mixer measurements to 13.5 GHz on the PNA-X dual-source platform. The Keysight N5241B isaPNA-X microwave vector network analyzer covering 10 MHz to 13.5 GHz (900 Hz to 13.5 GHz with Option 425 LFE on related family hardware). OEM N5241B/42B/49B technical specifications (synthesizer revision 7) list 1 Hz frequency resolution, ± 0.7 ppm frequency accuracy, and ruggedized 3.5 mm male test ports. Active-device S-parameter, noise-figure, gain-compression, and mixer measurements to 13.5 GHz on the PNA-X dual-source platform. PNA-X integrated VNA with one or two synthesized sources



MODEL

**Agilent / Keysight
N5241B**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

N5241B

LISTING

<https://aumictechlabs.com/products/n5241b-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Agilent/Keysight N5241B is a 2-port microwave network analyzer operating from 300 kHz to 13.5 GHz, engineered for precise characterization of active and passive RF components in

development and manufacturing environments. This instrument delivers 140 dB dynamic range and 0.001 dB RMS trace noise, enabling accurate S-parameter measurements, impedance analysis, and advanced nonlinear characterization. With measurement speeds reaching 45,000 points/sec in list mode and sub-microsecond sweep capabilities, the N5241B supports multiple calibration standards including SOLT, TOSM, and SSM. Power level accuracy of ± 0.15 dB and phase noise below -105 dBc/Hz at 10 kHz offset ensure reliable results across the measurement bandwidth up to 1 MHz.

Technical Specifications
Frequency Range: 300 kHz to 13.5 GHz
Ports: 2-port configuration
Dynamic Range: 140 dB typical at 10 Hz IF bandwidth
Trace Noise: 0.001 dB RMS typical at 10 kHz IF bandwidth
Measurement Bandwidth: Up to 1 MHz
Output Power: -60 dBm to +10 dBm typical
Power Level Accuracy: ± 0.15 dB typical
Phase Noise: < -105 dBc/Hz at 10 kHz offset typical
Source Harmonics: < -50 dBc
Source Non-Harmonics: < -40 dBc
Measurement Speed: Up to 125 μ s per point typical; 45,000 points/sec in list mode
Impedance: Configurable characteristic impedance (50 ohms, 75 ohms)

Key Features
S-parameter measurements (S11, S12, S21, S22)
Sweep types: Power, Frequency, Electrical Delay, Power Sweep with list
Calibration standards: SOLT, TOSM, SSM, Response, One-port, Custom kits
Gain compression and P1dB characterization
IP3 and intermodulation distortion (IMD) analysis
Time domain analysis capabilities
Noise figure measurements
Harmonic and spur detection
Pulse measurement support for RF device characterization
Modulation distortion analysis under non-linear conditions
Vector Signal Analysis (VSA) option available

Typical Applications
Component characterization across microwave frequencies
Nonlinear device testing and modeling
Mixed-signal component evaluation
Pulsed RF device measurements
High-power signal sourcing and measurement

Compatibility & Integration
Type-N female RF connectors for input/output ports
External reference input capability

N5241B Characteristics / Specifications

PARAMETER	VALUE
Model	N5241B
Instrument Type	Microwave vector network analyzer
Instrument Family	PNA-X Series
Frequency Range Standard	10 MHz to 13.5 GHz
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 201 class or 4-port Option 401 class
Power Resolution	0.01 dB
Preset Power Options 201 4	0 dBm
Preset Power Extended Options	minus 5 dBm on 21x/22x/41x/42x class ports
Maximum Settable Power Typical	+30 dBm
Minimum Settable Power Typical Standard	minus 30 dBm, Options 201 or 401
Minimum Settable Power Typical Extended	minus 95 dBm, Options 21× 41× 22× 42x
System Dynamic Range 10 MHz to 50 MHz Spec	104 dB Option 201/401, ports 1 and 3
System Dynamic Range 500 MHz to 2 GHz Spec	132 dB Option 201/401, ports 1 and 3
System Dynamic Range 10 GHz to 13.5 GHz Spec	133 dB Option 201/401, ports 1 and 3
If Bandwidth For Dynamic Range Tables	10 Hz
Operating Temperature Spec	25 C ±5 C after 90 minutes warm-up
Display	12.1 inch LCD touch screen

PARAMETER	VALUE
Remote Interfaces	USB LAN GPIB
Noise Figure Option	Option 029 high-accuracy noise figure
Form Factor	benchtop PNA-X
Bandwidth	For Dynamic Range Tables: 10 Hz
Operating temperature	Spec: 25 C ±5 C after 90 minutes warm-up

N5241B Specifications

PARAMETER	VALUE
Applications	Active-device S-parameter, noise-figure, gain-compression, and mixer measurements to 13.5 GHz on the PNA-X dual-source platform.
Technical Specifications	Model: N5241B
Notes	Numeric rows from Keysight N5241B/42B/49B Technical Specifications 9018-04469 (synthesizer revision 7).

General Specifications & Supplementary Characteristics

PARAMETER	VALUE
Operating temperature	Spec: 25 C ±5 C after 90 minutes warm-up
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Operating Temperature Spec	25 C ±5 C after 90 minutes warm-up
Display	12.1 inch LCD touch screen
Remote Interfaces	USB LAN GPIB
Noise Figure Option	Option 029 high-accuracy noise figure
Form Factor	benchtop PNA-X Notes Numeric rows from Keysight N5241B/42B/49B Technical Specifications 9018-04469 (synthesizer revision 7).

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, ± 0.7 ppm frequency accuracy, and ruggedized 3.5 mm male test ports.

Applications

Active-device S-parameter, noise-figure, gain-compression, and mixer measurements to 13.5 GHz on the PNA-X dual-source platform.

Key Features

PNA-X integrated VNA with one or two synthesized sources

Configurable test sets with combiner and mechanical switches (Option 22x/42x)

Option 029 high-accuracy noise-figure hardware

12.1 inch LCD touch screen

USB LAN GPIB remote IO

Technical Specifications

Technical Specifications

PARAMETER	VALUE
Model	N5241B
Instrument Type	Microwave vector network analyzer
Instrument Family	PNA-X Series
Frequency Range Standard	10 MHz to 13.5 GHz
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 201 class or 4-port Option 401 class
Power Resolution	0.01 dB
Preset Power Options 201 401	0 dBm
Preset Power Extended Options	minus 5 dBm on 21x/22x/41x/42x class ports
Maximum Settable Power Typical	+30 dBm
Minimum Settable Power Typical Standard	minus 30 dBm, Options 201 or 401
Minimum Settable Power Typical Extended	minus 95 dBm, Options 21x 41x 22x 42x

System Dynamic Range 10 MHz to 50 MHz Spec: 104 dB Option 201/401, ports 1 and 3

System Dynamic Range 500 MHz to 2 GHz Spec: 132 dB Option 201/401, ports 1 and 3

System Dynamic Range 10 GHz to 13.5 GHz Spec: 133 dB Option 201/401, ports 1 and 3

Specifications

PARAMETER	VALUE
If Bandwidth For Dynamic Range Tables	10 Hz
Operating Temperature Spec	25 C ±5 C after 90 minutes warm-up
Display	12.1 inch LCD touch screen
Remote Interfaces	USB LAN GPIB
Noise Figure Option	Option 029 high-accuracy noise figure
Form Factor	benchtop PNA-X

Notes
Numeric rows from Keysight N5241B/42B/49B Technical Specifications 9018-04469 (synthesizer revision 7).

Ordering Information

OPTION	DESCRIPTION
Option 425	LFE on related family hardware). OEM N5241B/42B/49B technical specifications (synthesizer revision 7) list 1 Hz frequency resolution, ± 0.7 ppm frequency accurac
Option 029	high-accuracy noise-figure hardware
Option 201	class or 4-port Option 401 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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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.