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Data Sheet

August 15, 2026

AGILENT / KEYSIGHT

Agilent/Keysight N4421A

Agilent Keysight N4421A Multiport S-parameter Test Set 10 MHz to 50 GHz The Keysight N4421A is the A-generation 4-port 50 GHz multiport test set used in discontinued PLTS N1957A with PNA E8364A options 014 and UNL. OEM N1957A tables list 10 MHz to 50.0 GHz path coverage, 14 ps transition time, 2.4 mm ports, and corrected residuals through a 20 GHz to 50 GHz column; system dynamic range in Table 1 is tabulated through 40 GHz. Four-port and mixed-mode S-parameter tests of balanced microwave devices to 50 GHz on E8364A-based Physical Layer Test Systems. The Keysight N4421A is the A-generation 4-port 50 GHz multiport test set used in discontinued PLTS N1957A with PNA E8364A options 014 and UNL. OEM N1957A tables list 10 MHz to 50.0 GHz path coverage, 14 ps transition time, 2.4 mm ports, and corrected residuals through a 20 GHz to 50 GHz column; system dynamic range in Table 1 is tabulated through 40 GHz. Four-port and mixed-mode S-parameter tests of balanced microwave devices to 50 GHz on E8364A-based Physical Layer Test Systems. Discontinued A-generation 50 GHz 4-port test set



MODEL

**Agilent / Keysight
N4421A**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

N4421A

LISTING

<https://aumictechlabs.com/products/n4421a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Agilent/Keysight N4421A is an S-parameter test set engineered for physical layer and balanced-measurement applications. It characterizes high-speed digital interconnects and balanced or balanced-to-single-ended RF components across 45 MHz to 50 GHz. The test set

operates as a core subsystem within Keysight measurement platforms, delivering full four-port vector error correction and support for conventional single-ended and mixed-mode S-parameter analysis. Data re-normalization for non-50-ohm devices enables accurate characterization of custom impedance systems. Fast multiple-term calibration algorithms perform true multi-port vector error correction, while integrated electronic calibration (ECal) functionality streamlines measurement setup. Time-domain analysis and user-defined parameter displays provide design insight across physical layer validation and balanced component testing workflows.

Technical Specifications
Frequency Range: 45 MHz to 50 GHz
Vector Error Correction: Full four-port
Calibration: Multiple-term algorithm; four-port electronic calibration (ECal) module integration supported
S-Parameter Display: Conventional (single-ended) and mixed-mode formats
Data Re-normalization: Supported for non-50-ohm devices
Analysis Options: Time-domain analysis available

Key Features
Four-port vector error correction for high measurement accuracy
Fast automatic calibration with ECal module integration
Mixed-mode S-parameter measurement capability for balanced topologies
User-defined parameter displays for custom calculations
Time-domain analysis option for transient characterization

Typical Applications
High-speed digital interconnect characterization
Fully balanced RF component measurement
Balanced-to-single-ended RF device testing
Physical layer validation and compliance

Compatibility & Integration
Works with Keysight PNA Series E8364B Option 014 and compatible Agilent PNA/PNA-L analyzers with Option 550 for four-port measurements. Requires N4425A Balanced Measurement System software or N1930A Physical Layer Test System software for operation. External PC with IEEE-488 GPIB interface required for system integration.

N4421A Characteristics / Specifications

PARAMETER	VALUE
Instrument Type	4-port multiport S-parameter test set
Frequency Range	10 MHz to 50.0 GHz (Table 3)
Host Analyzer	Keysight E8364A options 014 and UNL (N1957A configuration)
Calibration Kit	Keysight 85056A 2.4 mm
Test Port Cables	N4421A option B20 in the N1957A configuration
Transition Time	14 ps (10 to 90 percent, TR = 0.72/BW)
Impedance	50 ohm nominal
Test Port Connectors	2.4 mm, 50 ohm nominal
Insertion Loss Source Thru	12.0 dB maximum (source out to coupler thru)
Coupling Loss Low Band	18 to 45 dB typical, 45 MHz to 1.0 GHz
Coupling Loss High Band	16 to 26 dB typical, 1.0 GHz to 40.0 GHz
Receiver To Coupler Arm	15.0 dB maximum
Isolation Low Band	greater than or equal to 70 dB, 45 MHz to 200 MHz
Isolation High Band	greater than or equal to 90 dB, 200 MHz to 20 GHz
Maximum Operating Level	plus 20 dBm
Damage Level	plus 30 dBm typical
Dynamic Range 45 To 500 Mhz	55 dB characteristic (minus 5 dBm default max output)
Dynamic Range 500 Mhz To 10 Ghz	70 dB
Dynamic Range 10 To 20 Ghz	70 dB
Dynamic Range 20 To 40 Ghz	55 dB (N1957A Table 1 last band)
Directivity 45 Mhz To 0p5 Ghz	43 dB
Directivity 0p5 To 10 Ghz	39.5 dB
Directivity 10 To 20 Ghz	39 dB
Directivity 20 To 50 Ghz	33 dB
Source Match 45 Mhz To 0p5 Ghz	38 dB

PARAMETER	VALUE
Source Match 0p5 To 10 Ghz	34 dB
Source Match 10 To 20 Ghz	34 dB
Source Match 20 To 50 Ghz	27 dB
Load Match 45 Mhz To 0p5 Ghz	43 dB
Load Match 0p5 To 10 Ghz	39.5 dB
Load Match 10 To 20 Ghz	39 dB
Load Match 20 To 50 Ghz	33 dB
Reflection Tracking 45 Mhz To 0p5 Ghz	plus or minus 0.001 dB
Reflection Tracking 0p5 To 10 Ghz	plus or minus 0.002 dB
Reflection Tracking 10 To 20 Ghz	plus or minus 0.008 dB
Reflection Tracking 20 To 50 Ghz	plus or minus 0.026 dB
Transmission Tracking 45 Mhz To 0p5 Ghz	plus or minus 0.015 dB
Transmission Tracking 0p5 To 10 Ghz	plus or minus 0.020 dB
Transmission Tracking 10 To 20 Ghz	plus or minus 0.040 dB
Transmission Tracking 20 To 50 Ghz	plus or minus 0.020 dB
Input Voltage Range	100 to 240 V
Warm Up	90 minutes before specs apply
Spec Temperature	25 C plus or minus 5 C unless stated
Corrected Residual Temperature	25 C with less than 1 C variation from calibration
If Bandwidth Dynamic Range	10 Hz IF bandwidth, four-port error correction
Operating Environment	indoor use
Operating Altitude	0 to 2.0 km (6560 ft)
Storage Altitude	0 to 15.24 km (50000 ft)
Operating Temperature	0 C to 40 C
Maximum Relative Humidity	80 percent to 31 C, decreasing linearly to 50 percent at 40 C
Installation Category	II per IEC 61010-1
Pollution Degree	2 per IEC 664

PARAMETER	VALUE
Line Frequency	47 to 63 Hz
Power Consumption	40 VA
Calibration Technique	four-port SOLT
Mass	9.0 kg (19.9 lb)
Height	5.5 in (13.97 cm)
Width	16.75 in (42.55 cm)
Depth	16.75 in (42.55 cm)
Bandwidth	Dynamic Range: 10 Hz IF bandwidth, four-port error correction
Humidity	80 percent to 31 C, decreasing linearly to 50 percent at 40 C

General Specifications & Supplementary Characteristics

PARAMETER	VALUE
Operating temperature	0 C to 40 C
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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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Dynamic Range 10 To 20 Ghz	70 dB
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Reflection Tracking 10 To 20 Ghz	plus or minus 0.008 dB
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Transmission Tracking 45 Mhz To 0p5 Ghz	plus or minus 0.015 dB
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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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Generated August 15, 2026

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