

**Aumictech**

Test & measurement · bought, sold, repaired, calibrated

Data Sheet

August 15, 2026

AGILENT / KEYSIGHT

Agilent/Keysight N4421B

Agilent Keysight N4421B Multiport S-parameter Test Set 10 MHz to 50 GHz The Keysight N4421B is a 4-port multiport S-parameter test set for PNA E8364B (options 014 and UNL) covering 10 MHz to 50 GHz. OEM PLTS N1957B tables list 14 ps 10-to-90 percent transition time, 2.4 mm 50 ohm ports, 12.0 dB max source-out to coupler-thru loss, and corrected residuals to 50 GHz with 85056A SOLT. Four-port and mixed-mode S-parameter characterization of balanced microwave devices, interconnects, and packages to 50 GHz with Physical Layer Test System software. The Keysight N4421B is a 4-port multiport S-parameter test set for PNA E8364B (options 014 and UNL) covering 10 MHz to 50 GHz. OEM PLTS N1957B tables list 14 ps 10-to-90 percent transition time, 2.4 mm 50 ohm ports, 12.0 dB max source-out to coupler-thru loss, and corrected residuals to 50 GHz with 85056A SOLT. Four-port and mixed-mode S-parameter characterization of balanced microwave devices, interconnects, and packages to 50 GHz with Physical Layer Test System software. Four-port vector error correction with PNA configurable test set

**MODEL****Agilent / Keysight
N4421B****CALIBRATION****Available on
request****CONDITION****Used****STATUS****In stock****RFQ / SKU****N4421B****LISTING**<https://aumictechlabs.com/products/n4421b-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Agilent/Keysight N4421B is a multiport S-parameter test set that extends Vector Network Analyzer capabilities for complex multi-port measurements. Integrated with PNA and PNA-L series VNAs, it delivers 4-port error-corrected measurements using electronic calibration (ECal)

for fast, accurate, and repeatable characterization. The test set eliminates mechanical calibration procedures, reducing setup time and operator-induced measurement errors.

Technical Specifications

Frequency Range: 10 MHz to 50 GHz (Option H67 extends range to 67 GHz when paired with E8361A). **Port Configuration:** Supports 2-port VNAs for 4-port measurements. Multiport family extends to 16-port capability. **Calibration:** Electronic calibration via single-connection process. USB-controlled ECal modules operate directly from the network analyzer without external PC. **Transmission Loss (Typical):** 20–30 GHz: –31 dB 30–40 GHz: –36 dB 40–50 GHz: –41 dB 50–60 GHz: –47 dB 60–67 GHz: –48 dB 67 GHz: –50 dB **Switching:** Solid-state switches for reliable, high-speed operation.

Key Features

- Direct VNA control via PNA/PNA-L Option 550 or compatible models (E8364B with Option 014)
- Balanced measurement architecture for differential device testing
- Time-domain reflectometry (TDR) enhancements
- Single USB cable integration

Typical Applications

- Wireless infrastructure components and integrated modules
- High-speed digital interconnect characterization
- Signal integrity analysis including eye diagram measurements at elevated bit rates
- RLCG extraction for differential transmission line modeling
- Broadband device modeling with extended calibration range capability

Compatibility & Integration

Designed for Agilent/Keysight PNA and PNA-L series network analyzers. ECal modules integrate via USB with no external software or controllers required.

N4421B Characteristics / Specifications

PARAMETER	VALUE
Instrument Type	4-port multiport S-parameter test set
Frequency Range	10 MHz to 50.0 GHz
Host Analyzer	Keysight E8364B options 014 and UNL (N1957B configuration)
Calibration Kit	Keysight 85056A 2.4 mm
Test Port Cables	N4421B option B20 in the N1957B 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, port 2 to RcvrAin and port 4 to RcvrBin, 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 (Rcvr A/B in to coupler arm)
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 10 To 45 Mhz	55 dB characteristic (minus 5 dBm default max output)
Dynamic Range 45 To 500 Mhz	55 dB
Dynamic Range 500 Mhz To 10 Ghz	70 dB
Dynamic Range 10 To 20 Ghz	70 dB
Dynamic Range 20 To 50 Ghz	55 dB
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

PARAMETER	VALUE
Source Match 45 Mhz To 0p5 Ghz	38 dB
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

PARAMETER	VALUE
Pollution Degree	2 per IEC 664
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
Operating Temperature	0 C to 40 C
Humidity	80 percent to 31 C, decreasing linearly to 50 percent at 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
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) Notes From Keysight PLTS N1957B Electrical Specifications (test set Keysight N4421B with E8364B options 014 and UNL, 85056A, N4421B option B20, four-port SOLT). Tables 1 to 6. Test-set path values are characteristics/typicals; the install guide states there are no warranted test-set specifications.

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.

performance
Pairs with N4421B option B20 cables and 85056A calibration kit
Technical Specifications

Technical Specifications

PARAMETER	VALUE
Instrument Type	4-port multiport S-parameter test set
Frequency Range	10 MHz to 50.0 GHz
Host Analyzer	Keysight E8364B options 014 and UNL (N1957B configuration)
Calibration Kit	Keysight 85056A 2.4 mm
Test Port Cables	N4421B option B20 in the N1957B 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, port 2 to RcvrAin and port 4 to RcvrBin, 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 (Rcvr A/B in to coupler arm)
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 10 To 45 Mhz	55 dB characteristic (minus 5 dBm default max output)
Dynamic Range 45 To 500 Mhz	55 dB
Dynamic Range 500 Mhz To 10 Ghz	70 dB
Dynamic Range 10 To 20 Ghz	70 dB
Dynamic Range 20 To 50 Ghz	55 dB
Directivity 45 Mhz To 0p5 Ghz	43 dB
Directivity 0p5 To 10 Ghz	39.5 dB
Directivity 10 To 20 Ghz	39 dB

PARAMETER	VALUE
Directivity 20 To 50 Ghz	33 dB
Source Match 45 Mhz To 0p5 Ghz	38 dB
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
Line Frequency	47 to 63 Hz
Power Consumption	40 VA
Calibration Technique	four-port SOLT

PARAMETER	VALUE
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)

Notes

From Keysight PLTS N1957B Electrical Specifications (test set Keysight N4421B with E8364B options 014 and UNL, 85056A, N4421B option B20, four-port SOLT). Tables 1 to 6. Test-set path values are characteristics/typicals; the install guide states there are no warranted test-set specifications.

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

788 S 500 E, Pleasant Grove, UT 84062
sales@aumictech.com · +1 (484) 841-9341
<https://aumictechlabs.com>

NIST-traceable calibration · SAM registered ·
30-day returns
NAICS 423690 · 811210 · 541380
Generated August 15, 2026

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