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Data Sheet

August 15, 2026

AGILENT / KEYSIGHT

Agilent/Keysight N1231A

Keysight N1231A PCI Three-Axis Laser Board The Keysight N1231A is a register-based PCI board that implements three axes of laser interferometer measurement for position monitoring and closed-loop servo control. OEM data sheet 5989-1787 lists a 20 MHz hardware update rate, parallel digital position outputs to 4 MHz for DeltaTau PMAC, PCI sample rates to 100 kHz (three axes of position and velocity) or 200 kHz (position or velocity only), and resolutions of 0.6 nm, 0.3 nm, and 0.15 nm depending on interferometer type. The Keysight N1231A is a register-based PCI board that implements three axes of laser interferometer measurement for position monitoring and closed-loop servo control. OEM data sheet 5989-1787 lists a 20 MHz hardware update rate, parallel digital position outputs to 4 MHz for DeltaTau PMAC, PCI sample rates to 100 kHz (three axes of position and velocity) or 200 kHz (position or velocity only), and resolutions of 0.6 nm, 0.3 nm, and 0.15 nm depending on interferometer type. Multi-axis laser position feedback and closed-loop servo on semiconductor and precision-motion tools using 5517-class lasers and linear, plane-mirror, or high-resolution interferometers.



MODEL

**Agilent / Keysight
N1231A**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

N1231A

LISTING

<https://aumictechlabs.com/products/n1231a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Keysight N1231A is a register-based PCI bus board that delivers three-axis laser position measurement with 0.31 nm resolution and direct hardware outputs for closed-loop servo control. Designed for tight integration with DeltaTau PMAC and UMAC systems, this card streams parallel

digital position data at rates up to 4000 kHz via hardware outputs, while PCI bus access supports 100 kHz for all three axes (position and velocity combined) or 200 kHz for single-axis data. The board's 20 MHz position data update rate, paired with asynchronous data hold uncertainty of ± 25 ns and synchronous uncertainty of ± 1 ns, enables high-precision real-time feedback control.

Technical Specifications

Form Factor: PC-PCI (33 MHz), PCI local bus spec rev 2.2

Dimensions: 98 × 312 mm

Axes per Board: 3

Resolution (plane mirror optics): 0.31 nm

Resolution Extension: ×512

Maximum Velocity: 2800 mm/sec (limited by laser head)

Position Data Update Rate: 20 MHz

Direct Hardware Output Rate: 4000 kHz

PCI Bus Data Rates: 100 kHz (3 axes) / 200 kHz (single axis)

Asynchronous Data Hold Uncertainty: ± 25 ns (relative to OCLK)

Synchronous Data Hold Uncertainty: ± 1 ns (relative to ICLK)

External Sample and Data Hold Inputs: 3

Key Features

- Single-board three-axis laser measurement eliminates multiple cards
- Direct hardware interface to DeltaTau PMAC/UMAC servo systems
- Parallel digital outputs for ultra-low-latency control loops
- Windows NT4/2000/XP API library for programmable access
- PCI Compliant design ensures broad host compatibility

Typical Applications

- Precision XYZ motion control and position feedback
- High-speed closed-loop servo systems
- Laser-based metrology and positioning
- Industrial automation requiring sub-nanometer resolution

Compatibility & Integration

The N1231A connects directly to DeltaTau PMAC and UMAC servo controllers via hardware outputs, eliminating PCI latency for time-critical feedback paths. API software and monitor programs ship with documentation and datasheets.

N1231A Characteristics / Specifications

PARAMETER	VALUE
Model	N1231A
Instrument Type	PCI three-axis laser measurement board
Axis Count	3
Hardware Update Rate	20 MHz
Hardware Output Rate	adjustable, 4 MHz maximum
Pci Position Velocity Rate	100 kHz for 3 axes of position and velocity
Pci Position Or Velocity Only	200 kHz
Resolution Linear	0.6 nm ($\lambda/1024$) with linear or single beam interferometers
Resolution Plane Mirror	0.3 nm ($\lambda/2048$) with plane mirror interferometers
Resolution High Res	0.15 nm ($\lambda/4096$) with high resolution interferometers
Servo Interface	parallel digital position data optimized for DeltaTau PMAC
Bus Interface	33 MHz PCI at 3.3 V or 5 V signal levels
Data Transfers	16 or 32 bit
Irq	can generate IRQ on error conditions
Board Size	98 × 312 mm
Power Plus Five	plus 5 VDC plus 0.25 V / minus 0.125 V at approximately 2.8 A typical
Power Plus Twelve	plus 12 VDC plus or minus 0.5 V at approximately 50 mA typical
Power Minus Twelve	minus 12 VDC plus or minus 0.5 V at approximately 50 mA typical
Programming Api	Windows NT4 / 2000 / XP
Manufacturer	HP Agilent Keysight
Documentation	Keysight N1231A PCI Three-Axis Laser Board data sheet 5989-1787
Form Factor	full-length PCI board
Pci Compliance	PCI compliant register-based board
Application	position monitoring and closed-loop servo control

N1231A Specifications

PARAMETER	VALUE
Three laser axes on one PCI board	20 MHz hardware update rate
Technical Specifications	Model: N1231A
Notes	From Keysight N1231A PCI Three-Axis Laser Board data sheet 5989-1787. N1231B adds external sampling and is a different SKU.

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	
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Instrument Type	PCI three-axis laser measurement board
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Irq	can generate IRQ on error conditions
Board Size	98 x 312 mm
Power Plus Five	plus 5 VDC plus 0.25 V / minus 0.125 V at approximately 2.8 A typical
Power Plus Twelve	plus 12 VDC plus or minus 0.5 V at approximately 50 mA typical
Power Minus Twelve	minus 12 VDC plus or minus 0.5 V at approximately 50 mA typical
Programming Api	Windows NT4 / 2000 / XP
Manufacturer	HP Agilent Keysight
Documentation	Keysight N1231A PCI Three-Axis Laser Board data sheet 5989-1787
Form Factor	full-length PCI board
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Notes	
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isadifferent SKU.

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>

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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.