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Data Sheet

August 15, 2026

AGILENT / KEYSIGHT

Agilent/Keysight N4916B

Agilent Keysight N4916B De Emphasis Signal Converter 14.2 Gb/s The Keysight N4916B is a 4-tap de-emphasis signal converter for high-speed serial receiver test. OEM N4916B data sheet lists 660 Mb/s to 14.2 Gb/s NRZ, pre-cursor 0 to plus 12.0 dB, post-cursor 1 0 to minus 12.0 dB, post-cursor 2 0 to minus 8.0 dB (0.1 dB resolution), 100-800 mV single-ended output, and less than 30 ps typical 20-80 percent transitions. PCI Express and other multi-tap de-emphasis generation ahead of a pattern generator for channel-emulation and receiver compliance. The Keysight N4916B is a 4-tap de-emphasis signal converter for high-speed serial receiver test. OEM N4916B data sheet lists 660 Mb/s to 14.2 Gb/s NRZ, pre-cursor 0 to plus 12.0 dB, post-cursor 1 0 to minus 12.0 dB, post-cursor 2 0 to minus 8.0 dB (0.1 dB resolution), 100-800 mV single-ended output, and less than 30 ps typical 20-80 percent transitions. PCI Express and other multi-tap de-emphasis generation ahead of a pattern generator for channel-emulation and receiver compliance. Three programmable de-emphasis cursors plus clock multiplier



MODEL

**Agilent / Keysight
N4916B**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

N4916B

LISTING

<https://aumictechlabs.com/products/n4916b-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Keysight N4916B is a de-emphasis signal converter that enables accurate characterization of high-speed serial interfaces by emulating transmitter de-emphasis at the front end of pattern generators. It compensates for signal distortions introduced by transmission media, cables, fixtures, and test boards - critical for receiver tolerance characterization in multi-gigabit

applications. The N4916B generates 4-tap de-emphasis with one pre-cursor and two post-cursors, each with individually adjustable levels ranging from 0 to 12.0 dB. This architecture mirrors real-world transmitter behavior and allows optimization of jitter budgets during compliance testing. The converter operates across data rates from 660 Mb/s to 14.2 Gb/s, making it suitable for PCI Express, USB 3, SATA, and IEEE 802.3 backplane standards.

Technical Specifications

De-Emphasis Configuration: One pre-cursor and two post-cursors with independent level adjustment

De-Emphasis Range: 0 to 12.0 dB per tap

Data Rate Support: 660 Mb/s to 14.2 Gb/s

Jitter Transparency: Maintains jitter characteristics from source pattern generator on both data and clock paths

Pattern Tolerance: Accepts non-balanced patterns via DC coupling

Control Interface: USB programmable via J-BERT N4903B user interface or standalone control

Interconnect: Matched cable pair (N4915A-010) for DATA IN/OUT and CLK IN/AUX CLK OUT

Termination Requirement: Unused pattern generator DATA OUT ports require 50 Ω termination

Key Features

- Transparent to jitter on data and clock signals
- Compensates for channel, cable, fixture, and test board degradation
- DC-coupled architecture for non-balanced pattern support
- Optional clock multiplier (Option 001) for half-rate clock device analysis and full-rate error/eye/jitter measurement

Typical Applications

- Multi-gigabit serial interface characterization (5 Gb/s and above)
- Receiver compliance and tolerance testing
- Transmitter de-emphasis emulation and validation
- Channel loss compensation in high-speed digital testing

Compatibility & Integration

Designed as a front-end module for the Keysight J-BERT N4903B pattern generator and ParBERT 81250A. Integrates directly between pattern generator DATA OUT and device under test, with auxiliary clock connection from pattern generator AUX CLK OUT.

N4916B Characteristics / Specifications

PARAMETER	VALUE
Instrument Type	De-emphasis signal converter
Data Rate	660 Mb/s to 14.2 Gb/s
Output Format	NRZ
Precursor Range	0 to plus 12.0 dB, 0.1 dB resolution
Postcursor 1 Range	0 to minus 12.0 dB, 0.1 dB resolution
Postcursor 2 Range	0 to minus 8.0 dB, 0.1 dB resolution
Cursor Accuracy	plus or minus 1.0 dB typical at PCI Express 3.0 presets for 8 Gb/s
Clock Data Input	50 ohm single ended, DC coupled
Deemphasis Output	50 ohm differential, DC coupled; terminate unused output
Output Amplitude Single Ended	100 mV to 800 mV
Output Amplitude Differential	200 mV to 1600 mV
Output Voltage Window	plus or minus 2 V
External Termination Voltage	plus or minus 2 V
Output Transition Time	less than 30 ps typical (20 to 80 percent)
Jitter Added Data	less than 300 fs rms typical (0101 pattern)
Clock Multiplier Input Frequency	1 to 7.5 GHz, duty cycle 45 to 55 percent
Clock Multiplier Factors	1, 2
Clock Multiplier Input	50 ohm single ended, AC coupled
Clock Multiplier Input Swing	100 mV to 1 V differential
Clock Multiplier Output Swing	greater than 500 mV differential
Clock Multiplier Transition Time	less than 30 ps typical (20 to 80 percent)
Clock Multiplier Jitter Added	less than 500 fs rms typical
Connector Type	SMA female
Operating Temperature	5 C to 40 C
Storage Temperature	minus 40 C to plus 70 C

PARAMETER	VALUE
Operating Humidity	95 percent RH non-condensing
Power Requirements	100 V to 240 V, 47 Hz to 63 Hz, 80 VA
Dimensions Bench	228 × 59 × 246 mm with bumper
Dimensions Rack	213 × 44.5 × 245 mm (1/2 of 19 inch, 1U)
Weight Net	2.05 kg
Weight Shipping	4.65 kg
Calibration Interval	1 year recommended
Humidity	95 percent RH non-condensing

General Specifications & Supplementary Characteristics

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Storage temperature	minus 40 C to plus 70 C
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Calibration Interval	1 year recommended Notes From Keysight N4916B De-emphasis Signal Converter data sheet electrical, clock-multiplier, and general-characteristics tables.

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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Notes
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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

Aumictech

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NIST-traceable calibration · SAM registered ·
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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.