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Data Sheet

August 14, 2026

AGILENT / KEYSIGHT

Agilent / Keysight 86109A 30 GHz optical / 40 GHz electrical module range: 1000-1600 nm

Agilent Keysight 86109A 30 GHz Optical 40 GHz Electrical DCA Module The Agilent 86109A combines a 30 GHz unfiltered optical channel (1000-1600 nm) with an 18/40 GHz electrical channel for 10 Gb/s waveform analysis without SONET/SDH reference-receiver filters. OEM 86100 module tables list 16 ps optical 10-90 percent transition, 12 uW characteristic optical RMS noise, 9 ps electrical transition at 40 GHz, and 2.4 mm electrical input. 10 Gb/s optical pulse-fidelity measurements and 40 GHz electrical eyes on 86100 DCA mainframes. The Agilent 86109A combines a 30 GHz unfiltered optical channel (1000-1600 nm) with an 18/40 GHz electrical channel for 10 Gb/s waveform analysis without SONET/SDH reference-receiver filters. OEM 86100 module tables list 16 ps optical 10-90 percent transition, 12 uW characteristic optical RMS noise, 9 ps electrical transition at 40 GHz, and 2.4 mm electrical input. 10 Gb/s optical pulse-fidelity measurements and 40 GHz electrical eyes on 86100 DCA mainframes. Unfiltered optical response (no switched SDH/SONET filter)



MODEL

**Agilent / Keysight
86109A**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

86109A

LISTING

<https://aumictechlabs.com/products/86109a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Agilent/Keysight 86109A is a plug-in module for 86100 series oscilloscopes that combines optical and electrical measurement channels in a single unit. It delivers 30 GHz optical bandwidth

and 40 GHz electrical bandwidth across the 1000–1600 nm wavelength range, making it suitable for high-speed optical networking, component characterization, and advanced research in data transmission systems.

Technical Specifications

Optical Channel Bandwidth: 30 GHz (amplified, optimized for 9/125 μm fibers) Wavelength range: 1000–1600 nm Characteristic RMS noise: 15 μW at 30 GHz BW Maximum average input power: 2 mW Flat frequency response designed to minimize pulse distortion Electrical Channel Bandwidth: 40 GHz (switchable to 18 GHz for improved noise performance) Input connector: 3.5 mm male Characteristic RMS noise: 0.5 mV at 40 GHz BW; 0.25 mV at 18 GHz BW Maximum input signal: ± 2 Vdc

Integrated Functions

Built-in average power meter (calibrated optical receiver)

Key Features

Single module integrates both optical and electrical measurement paths Selectable electrical bandwidth (40 GHz or 18 GHz) optimizes measurement noise for signal dynamics Flat frequency response minimizes distortion in optical pulse analysis Designed for 9/125 μm single-mode fiber Low characteristic noise across both channels

Typical Applications

High-speed optical waveform characterization Optical receiver and transmitter testing Data center and telecom component validation Optical signal quality assessment in 1000–1600 nm systems

Compatibility & Integration

The 86109A plugs into the following Agilent/Keysight mainframes: 86100A/B (Infiniium DCA), 86100C (Infiniium DCA-J), and 86100D (Infiniium DCA-X).

86109A Characteristics / Specifications

PARAMETER	VALUE
Instrument Type	Optical and electrical sampling plug-in
Series Family	Agilent 86100 DCA modules
Wavelength Range	1000 nm to 1600 nm
Calibrated Wavelengths	1310 nm and 1550 nm
Optical Transition	16 ps (10-90 percent, 0.48/BW optical)
Optical Rms Noise Characteristic	12 uW characteristic
Optical Rms Noise Maximum	30 uW maximum
Electrical Bandwidth	18 GHz and 40 GHz
Electrical Transition 18 Ghz	19.5 ps (10-90 percent, 0.35/BW)
Electrical Transition 40 Ghz	9 ps (10-90 percent, 0.35/BW)
Electrical Rms Noise Characteristic 18 Ghz	0.25 mV characteristic
Electrical Rms Noise Characteristic 40 Ghz	0.5 mV characteristic
Electrical Rms Noise Maximum 18 Ghz	0.5 mV maximum
Electrical Rms Noise Maximum 40 Ghz	1.0 mV maximum
Electrical Input	2.4 mm male
Maximum Input Signal Electrical	plus or minus 2 V (plus 16 dBm)
Fiber Input	9/125 um, user-selectable connector
Input Return Loss Family	30 dB HMS-10 fully filled fiber (86106B/86109A class in that table)
Average Power Monitor Family	minus 27 dBm to plus 3 dBm specified operating range (86106B/86109A class)
Maximum Nondestruct Average Optical Family	2 mW (plus 3 dBm) for 86106B/86109A class in that table
Host Mainframe	86100A/B/C/D Infiniium DCA family (see notes for exceptions)
Form Factor	86100 plug-in module
Specified Temperature Family	plus 10 C to plus 40 C class of 86100 modules unless noted

PARAMETER	VALUE
Bandwidth	Unfiltered: 30 GHz
Return loss	Family: 30 dB HMS-10 fully filled fiber (86106B/86109A class in that table)

86109A Specifications

PARAMETER	VALUE
Applications	10 Gb/s optical pulse-fidelity measurements and 40 GHz electrical eyes on 86100 DCA mainframes.
Reduced 18 GHz electrical setting for lower noise	1310/1550 nm calibration
Technical Specifications	Instrument Type: Optical and electrical sampling plug-in

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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Electrical Rms Noise Characteristic 18 Ghz	0.25 mV characteristic
Electrical Rms Noise Characteristic 40 Ghz	0.5 mV characteristic
Electrical Rms Noise Maximum 18 Ghz	0.5 mV maximum
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Host Mainframe	86100A/B/C/D Infiniium DCA family (see notes for exceptions)
Form Factor	86100 plug-in module
Specified Temperature Family	plus 10 C to plus 40 C class of 86100 modules unless noted

Notes

Numeric rows from Agilent/Keysight 86100 single-mode optical/electrical module table (86109A column: 30 GHz optical, 18/40 GHz electrical). 86109B isadifferent 40 GHz optical / 50 GHz electrical module.

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
NAICS 423690 · 811210 · 541380
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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.