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Data Sheet

August 15, 2026

AGILENT / KEYSIGHT

Agilent / Keysight 83434A 10 Gb/s Lightwave Receiver

Agilent Keysight HP 83434A 10 Gb/s Lightwave Receiver The Agilent 83434A recovers clock and linear non-retimed data from OC-192/STM-64 optical signals. OEM 83434A datasheet rates 1300 to 1600 nm operation, -16 to 0 dBm optical input, -16 dBm sensitivity for $2^{31}-1$ PRBS at BER $1E-10$, and standard clock recovery at 9953.28 MHz. 10 Gb/s BER testing, optical eye triggering for sampling scopes, and substitution testing with the 83433A transmitter. Amplified PIN receiver with AGC stabilization The Agilent 83434A recovers clock and linear non-retimed data from OC-192/STM-64 optical signals. OEM 83434A datasheet rates 1300 to 1600 nm operation, -16 to 0 dBm optical input, -16 dBm sensitivity for $2^{31}-1$ PRBS at BER $1E-10$, and standard clock recovery at 9953.28 MHz. 10 Gb/s BER testing, optical eye triggering for sampling scopes, and substitution testing with the 83433A transmitter. Amplified PIN receiver with AGC stabilization Linear non-retimed data output for eye and Q-factor analysis



MODEL

**Agilent / Keysight
83434A**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

83434A

LISTING

<https://aumictechlabs.com/products/83434a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Agilent/Keysight 83434A is a 10 Gb/s amplified PIN diode optical receiver that converts high-speed optical signals to electrical domain with -16 dBm sensitivity and BER performance of $1E-10$

or better. It detects SDH/SONET STM-64/OC-192 signals and FEC-encoded data at 10.664 Gb/s, delivering non-retimed linear data output and recovered clock signals suitable for BER measurements, eye contour analysis, Q-factor evaluation, and optical eye diagram acquisition.

Technical Specifications

Data Rate: 10 Gb/s optical signal detection and processing

Modulation Support: Digitally modulated SDH/SONET STM-64/OC-192 signals; FEC signals at 10.664 Gb/s (Option 106)

Receiver Architecture: Amplified PIN diode with AGC stabilization

Sensitivity: -16 dBm for $\text{BER} \geq 1 \times 10^{-10}$ (PRBS up to $2^{31} - 1$)

BER Performance: $\geq 1\text{E-}10$

Wavelength Range: 1300–1600 nm

Clock Recovery: 9953.28 MHz (standard); 10.664 GHz (Option 106); 10.3125 GHz (Option H31 10 GigE)

Data Output: Linear, non-retimed; suitable for BER, eye contour, and Q-factor measurements

Trigger Output: Recovered clock available as trigger input for oscilloscopes (e.g., Infiniium DCA)

Optical Interface: FC/PC connector; alternative interfaces available via 81000XI series

Key Features

- Recovers clock and non-retimed data from 10 Gb/s optical signals
- Single-instrument solution for optical-to-electrical signal conversion
- AGC-stabilized receiver architecture ensures consistent performance across optical power levels
- Selectable clock recovery rates support multiple standards (SDH/SONET, FEC, 10 GigE)
- Trigger capability enables direct oscilloscope eye diagram measurement without external reference clock

Typical Applications

- High-speed optical receiver testing in 10 Gb/s fiber optic networks
- BER measurement and optimization in optical communication systems
- Eye pattern and jitter analysis in SDH/SONET OC-192 systems
- Signal integrity validation for FEC-encoded optical links

Compatibility & Integration

- Pairs with Agilent/Keysight 83433A 10 Gb/s Lightwave Transmitter for complete bidirectional optical link testing
- Clock output interfaces with error performance analyzers (e.g., Agilent 71612B) and 12.5 Gb/s Error Performance Analyzers (e.g., Agilent 71612C)
- Non-retimed data output optimizes threshold and timing adjustment in external error detectors
- Compatible with sampling oscilloscopes like the Agilent 86100B Infiniium DCA for optical eye diagram analysis

83434A Characteristics / Specifications

PARAMETER	VALUE
Model	83434A
Instrument Type	10 Gb/s lightwave receiver
Wavelength Range	1300 to 1600 nm
Optical Input Power Operating	-16 to 0 dBm
Optical Return Loss Minimum	28 dB
Loss Of Optical Input Alarm Threshold	-25 to -20 dBm
Maximum Safe Optical Input	+7 dBm
Receiver Sensitivity	-16 dBm for 2 ³¹ -1 PRBS BER at least 1E-10
Data Output Amplitude	0.5 to 1.5 V pk-pk
Data Lower 3 Db Frequency	0.10 MHz
Data Upper 3 Db Frequency	6.5 GHz
Data Output Return Loss Minimum	9.5 dB
Data Output Impedance	50 Ohm
Clock Frequency Standard	9953.26 to 9953.30 MHz nominal 9953.28 MHz
Clock Frequency Fec Order 1	10664.03 to 10664.43 MHz nominal 10664.23 MHz
Clock Duty Cycle Maximum	45/55 percent nominal 50/50
Clock To Data Alignment Maximum	25.12 ps
Clock Bandwidth Nominal	8 to 12 MHz typical 10 MHz
Jitter Generation Maximum	2 ps rms
Clock Output Return Loss Minimum	12 dB
Clock Output Impedance	50 Ohm
Standards Supported	SDH/SONET STM-64/OC-192
Companion Transmitter	83433A
Bandwidth	Nominal: 8 to 12 MHz typical 10 MHz
Optical Return Loss	Minimum: 28 dB

PARAMETER	VALUE
Return loss	Minimum: 28 dB

83434A Specifications

PARAMETER	VALUE
Agilent Keysight HP 83434A 10 Gb/s Lightwave Receiver	Overview
Applications	10 Gb/s BER testing, optical eye triggering for sampling scopes, and substitution testing with the 83433A transmitter.
Recovered clock for DCA trigger or error detector	FEC clock recovery path at 10.664 GHz on order 106
Technical Specifications	Model: 83434A

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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Standards Supported	SDH/SONET STM-64/OC-192
Companion Transmitter	83433A
Notes	
From Agilent 83434A Lightwave Receiver user's guide / 83433A-83434A data sheet specification tables. Order 106 and H31 clock rates are configuration-dependent.	

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
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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.