

KEYSIGHT TECHNOLOGIES (AGILENT HP)

83434A

The Keysight (Agilent/HP) 83434A is a high-performance 10 Gb/s Lightwave Receiver designed for optical-to-electrical conversion and precision clock and data recovery. Operating primarily at 9.953 Gb/s (OC-192/STM-64) with available options for other rates up to 10.7 Gb/s, this standalone instrument features a high-sensitivity InGaAs PIN photodiode and robust GPIB control, making it ideal for characterizing high-speed optical transmitters and transceivers in laboratory and production environments.

SPECIFICATIONS

General

Display	Front-panel LED status indicators
Product Type	10 Gb/s Lightwave Receiver
Primary Function	Optical-to-electrical conversion with clock and data recovery

Physical

Power Supply	100 - 240 V AC (±10%), 50 / 60 Hz
Operating Temperature	0 °C to +55 °C (operating), 15 °C to +35 °C (specified performance) °C
Dimensions (W×H×D)	213 mm × 89 mm × 348 mm mm
Weight	4.1 kg kg
Form Factor	Half-rack width standalone benchtop/rackmount

Optical Input

Wavelength Range	1200 nm to 1600 nm
Photodetector Type	InGaAs PIN photodiode
Fiber Type	9/125 μm single-mode (SMF)
Optical Input Connector	Keysight/HP Universal Connector Interface (supports FC/PC, SC, ST, HMS-10)

Clock & Data Recovery

Standard CDR Frequency	9.95328 Gb/s (Option 100)
10GbE CDR Option	10.3125 Gb/s (Option 101)
FEC CDR Option	10.664 Gb/s (Option 102)
OTU2 CDR Option	10.709 Gb/s (Option 103)
Clock Output Jitter	< 1.0 ps RMS (typical)

Electrical Outputs

Clock Output Connector	3.5 mm female (SMA compatible)
Data Output Connector	3.5 mm female (SMA compatible)
Output Impedance	50 Ω nominal

Power Specifications

Input Power Configuration	AC Mains (Universal Input)
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Optical Performance

Optical Return Loss	> 24 dB
Maximum Safe Input Power	+10 dBm (average)

Electrical Performance

Data Output Amplitude	300 mV to 600 mV p-p (typical)
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Optical Interface

Optical Connector Interface	Agilent 81000 series interchangeable connector adapters (FC, SC, ST, DIN, HMS-10)
Optical Input Location	Front panel (Option 201) or Rear panel (Option 200)

RF Outputs

Data Output Coupling	AC-coupled
Clock Output Coupling	AC-coupled

Power Requirements

Power Supply Voltage	100 - 240 V AC
Power Supply Frequency	50 / 60 Hz

Environmental

Storage Temperature Range	-40 °C to +70 °C
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TECHNOLOGY

InGaAs PIN Optical-to-Electrical Converter

APPLICATIONS

Optical transceiver testing, SONET/SDH OC-192/STM-64 physical layer testing, and 10 Gb/s clock recovery

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