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Data Sheet

August 15, 2026

AGILENT / KEYSIGHT

Agilent/Keysight 83433A Lightwave Source

Keysight 83433A 10 Gb/s Lightwave Transmitter The Keysight 83433A is a 10 Gb/s lightwave transmitter using an internal ITU-grid DFB laser and zero-chirp lithium niobate Mach-Zehnder modulator for SONET/SDH and related BER testing per Agilent product overview 5968-9251E. OC-192 STM-64 and OC-48 STM-16 optical transmitter BER testing, DWDM channel stimulus, and substitution testing with the 83434A receiver. External TLS modulator input 1530 to 1565 nm The Keysight 83433A is a 10 Gb/s lightwave transmitter using an internal ITU-grid DFB laser and zero-chirp lithium niobate Mach-Zehnder modulator for SONET/SDH and related BER testing per Agilent product overview 5968-9251E. OC-192 STM-64 and OC-48 STM-16 optical transmitter BER testing, DWDM channel stimulus, and substitution testing with the 83434A receiver. External TLS modulator input 1530 to 1565 nm Instrument Type: 10 Gb/s lightwave transmitter

**MODEL****Agilent / Keysight
83433A****CALIBRATION****Available on
request****CONDITION****Used****STATUS****In stock****RFQ / SKU****83433A****LISTING**<https://aumictechlabs.com/products/83433a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The Agilent/Keysight 83433A is a 10 Gb/s lightwave transmitter engineered for bit error ratio testing of optical transceivers in high-speed networks including SONET/SDH, 10 GigE, and IP optical systems. It delivers high-fidelity, low-jitter optical signals across data rates from 2.4 Gb/s to 10.7 Gb/s, supporting standards such as STM-16/OC-48 (2.488 Gb/s) and STM-64/OC-192

(9.953 Gb/s). **Technical Specifications** The internal DFB laser operates at a center wavelength of 1552.52 nm with tuning capability across the ITU-T grid (1548.41 nm to 1556.65 nm) and adjustment range of ± 1 nm to ± 1.25 nm around center. Continuous-wave output power ranges from +8.5 dBm to +11.5 dBm (nominal +10 dBm). Spectral width measures 10 MHz maximum at 20 dBc FWHM with side-mode suppression ratio of 30 dB minimum. The Mach-Zehnder modulator accepts electrical data inputs of 0.5 V pk-pk to 1.5 V pk-pk across a 50 ohm impedance. Digital signal modulation requires mark density between 45% and 55%, maximum run length of 100 consecutive bits, and non-inverting polarity. Return loss specifications are 12 dB minimum (0.1 to 5000 MHz) and 9 dB minimum (5000 to 10,700 MHz). Maximum safe input level is 2.0 V pk-pk. Low-frequency modulation operates across 15 kHz to 10 MHz with amplitude of 0.5 V pk-pk to 1.5 V pk-pk for 5% modulation index. Optical output exhibits minimum 12 dB extinction ratio and fixed zero chirp. Output connects via FC/PC connector. The laser is IEC Class 3B.

Key Features DFB laser with ± 1 to ± 1.25 nm wavelength tunability around 1552.52 nm center High extinction ratio (≥ 12 dB) with zero chirp for signal integrity Supports STM-16/OC-48 and STM-64/OC-192 rates plus 2.4 to 10.7 Gb/s operation 30 dB minimum side-mode suppression for spectral purity Mach-Zehnder modulation with flexible input voltage range

Typical Applications BER testing of 10 Gb/s optical transceivers. SONET/SDH network validation. IP optical system characterization. Fiber link performance assessment.

Compatibility & Integration Accepts external tunable laser sources (1530 nm to 1565 nm, such as Agilent 8164A with 81680A option) via polarization-maintaining fiber connection. Integrates with error performance analyzers including the Agilent 71612B/C. Combines with the Agilent 83434A receiver for complete optical link testing.

83433A Characteristics / Specifications

PARAMETER	VALUE
Instrument Type	10 Gb/s lightwave transmitter
Data Rate Compatibility	2.4 to 10.7 Gb/s NRZ
Data Input Amplitude	0.5 to 1.5 V pk-pk
Data Input Impedance	50 ohm
Data Input Return Loss 0.1 To 5000 MHz	12 dB minimum
Data Input Return Loss 5000 To 10700 MHz	9 dB minimum
Mark Density	45 to 55 percent
Max Consecutive Identical Bits	100
Internal Laser Cw Power	plus 8.5 to plus 11.5 dBm plus 10 dBm nominal
Internal Laser Wavelength Range	1548.41 to 1556.65 nm ITU grid
Wavelength Adjustment Range	minus 1 to plus 1 nm
Spectral Width At Minus20 Dbc Fwhm	10 MHz maximum
Side Mode Suppression Ratio	30 dB minimum
Lf Modulation Frequency 3 Db	0.015 to 10 MHz
Optical Modulator Input Wavelength	1530 to 1565 nm
Optical Modulator Input Power	plus 2 to plus 12 dBm
Modulator Input Return Loss	27 dB minimum
Modulator Insertion Loss	3 to 7 dB 5 dB nominal
Modulated Optical Output Power	0 to plus 5.5 dBm average with PRBS
Extinction Ratio Minimum	12 dB
Output Return Loss	27 dB minimum
Jitter Generation Oc1	0.15 UI pk-pk
Maximum Safe External Optical Input	plus 14 dBm
Operating Temperature	0 to plus 45 C
Storage Temperature	minus 40 to plus 70 C

PARAMETER	VALUE
Weight	3.5 kg
Dimensions HxWxD	102 mm x 216 mm x 444 mm
Ac Line	100 120 220 240 VAC plus or minus 10 percent 47 to 63 Hz
Wavelength range	1548.41 to 1556.65 nm ITU grid
Data Rate	Compatibility: 2.4 to 10.7 Gb/s NRZ
Return loss	0.1 To 5000 MHz: 12 dB minimum

General Specifications & Supplementary Characteristics

PARAMETER	VALUE
Storage temperature	minus 40 to plus 70 C
Operating temperature	0 to plus 45 C
Operating Temperature	0 to plus 45 C
Weight	3.5 kg
Dimensions HxWxD	102 mm x 216 mm x 444 mm
Ac Line	100 120 220 240 VAC plus or minus 10 percent 47 to 63 Hz Notes Numeric rows from Agilent 83433A 10 Gb/s Lightwave Transmitter product overview 5968-9251E. Extinction ratio and jitter conditions as stated on the OEM sheet.

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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PARAMETER	VALUE
Instrument Type	10 Gb/s lightwave transmitter
Data Rate Compatibility	2.4 to 10.7 Gb/s NRZ
Data Input Amplitude	0.5 to 1.5 V pk-pk
Data Input Impedance	50 ohm
Data Input Return Loss 0.1 To 5000 MHz: 12 dB minimum	
Data Input Return Loss 5000 To 10700 MHz: 9 dB minimum	
Specifications	
PARAMETER	VALUE
Mark Density	45 to 55 percent
Max Consecutive Identical Bits	100
Internal Laser Cw Power	plus 8.5 to plus 11.5 dBm plus 10 dBm nominal
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Wavelength Adjustment Range	minus 1 to plus 1 nm
Spectral Width At Minus20 Dbc Fwhm	10 MHz maximum
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Lf Modulation Frequency 3 Db	0.015 to 10 MHz
Optical Modulator Input Wavelength	1530 to 1565 nm
Optical Modulator Input Power	plus 2 to plus 12 dBm
Modulator Input Return Loss	27 dB minimum
Modulator Insertion Loss	3 to 7 dB 5 dB nominal
Modulated Optical Output Power	0 to plus 5.5 dBm average with PRBS
Extinction Ratio Minimum	12 dB
Output Return Loss	27 dB minimum
Jitter Generation Oc192	0.15 UI pk-pk
Maximum Safe External Optical Input	plus 14 dBm
Operating Temperature	0 to plus 45 C

PARAMETER	VALUE
Storage Temperature	minus 40 to plus 70 C
Weight	3.5 kg
Dimensions HxWxD	102 mm x 216 mm x 444 mm
Ac Line	100 120 220 240 VAC plus or minus 10 percent 47 to 63 Hz

Notes

Numeric rows from Agilent 83433A 10 Gb/s Lightwave Transmitter product overview 5968-9251E. Extinction ratio and jitter conditions as stated on the OEM sheet.

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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Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.