Agilent Rack OTDR E6053A, E6058B E6059A/B, E6060A, E6062A

Technical Specifications

Specifications describe the instrument's warranted performance, measured with typical PC-type connectors. Uncertainties due to the refractive index of the fiber are not considered. Characteristics and typical data provide information about the non-warranted instrument performance.

The Agilent Rack- OTDR is produced to the ISO 9001 international quality system standard as part of Agilent's commitment to continually increasing customer satisfaction through improved quality control.

Agilent Technologies

Single-Mode Modules
Agilent E6053A, E6058B; E6059A/B, E6060A and E6062A

Optical Performance [1]

Module	Agilent E6053A					Agilent E6058B				
Central wavelength	**1310/1550** ± 25 nm					**1310/1550** ± 25 nm				
Fiber type	single-mode					single-mode				
Pulsewidth	10 ns	100 ns	1 μs	10 μs	20 μs	10 ns	100 ns	1 μs	10 μs	20 μs
Dynamic range (dB)[2]	19/17	24/22	30/29	35/34	na	24/22	29/27	35/34	42/41	**45/43**

Module	Agilent E6059A					Agilent E6059B				
Central wavelength	**1550** ± 25 nm					**1550** ± 25 nm				
Fiber type	single-mode					single-mode				
Pulsewidth	10 ns	100 ns	1 μs	10 μs	20μs	10 ns	100 ns	1 μs	10 μs	20 μs
Dynamic range (dB)[2]	17	22	29	37	**39**	22	27	34	41	**43**

Module	Agilent E6060A					Agilent E6062A				
Central wavelength	**1625** ± 20 nm					**1550/1625** ± 25/20 nm				
Fiber type	single-mode					single-mode				
Pulsewidth	10 ns	100 ns	1 μs	10 μs	20 μs	10 ns	100 ns	1 μs	10 μs	20 μs
Dynamic range (dB)[2]	18	24	30	**40**	na	22/18	27/24	34/30	41/**40**	**43**/-

In all Agilent OTDR single-mode modules, the following pulswidths are selectable: 10 ns, 30 ns, 100 ns, 300 ns, 1 μs, 3 μs, 10 μs (20 μs is only selectable with the Agilent E6058B, E6059A, E6059B, E6062A@1550nm)
All Agilent OTDR modules are equipped with a CW-Source capability at the selected wavelength.
Typ. values are printed in **BOLD.**

Note:

[1] Guaranteed specifications measured at 22 °C ± 3 °C. Bold values are typical specifications.

[2] Measured with a standard single-mode fiber at SNR = 1 noise level and with 3 minutes averaging time. Optimize mode: dynamic.

Characteristics

Resolution

Module	all single-mode modules
Event deadzone[3]	**3m**
Attenuation deadzone[4]	**10m @** 1310nm / **12m @** 1550nm / **14m @**1625nm

Distance accuracy

Offset error	Scale error	Sampling error
±1 m	$\pm 10^{-4}$	±0.5 sampling spacing

Loss/reflectance accuracy

Backscatter measurements 1 dB steps	Reflectance measurements[7]
±0.05 dB	±2.0 dB

Minimum sample spacing: 8 cm.
Modulation: 270 Hz, 1 kHz, and 2 kHz squarewave.
Pulsewidth: selectable, from 10 ns to 20 μs.

CW-Source mode:
Output power level: -3dBm.
Stability: [8]. ±0.1 dB (±0.15 dB @ 1625 nm)

General

Laser safety class:
21 CFR Class I, IEC825 Class 3A.
Operating temperature:
0 °C to +50 °C.
Storage temperature:
-40 °C to +60 °C.
Humidity: 95 % R.H. from 0 °C to +40 °C.
Recommended recalibration period: 2 years

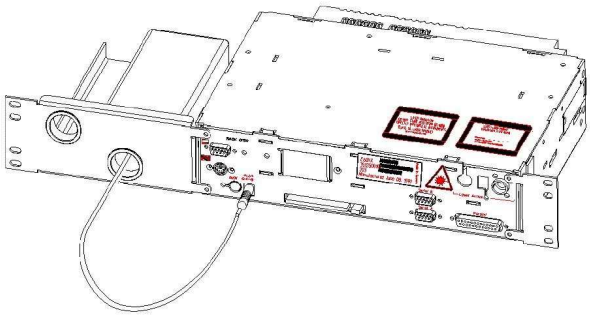

Figure 1: Rack OTDR with Rack Mount Kit and attached Power Supply

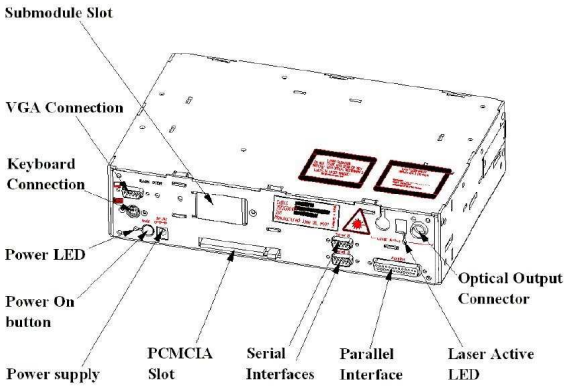

Figure 2: Rack OTDR front panel

Note:

[3] Reflectance ≤ -35 dB at 10 ns pulsewidth, and with span ≤ 400 m at 8 cm sample spacing, optimize resolution.

[4] Typical specification @ Reflectance ≤ -50 dB at a pulsewidth of 30 ns, span ≤ 4 km.
Guaranteed specification @ Reflectance ≤ -35 dB at a pulsewidth of 30 ns and with a span of ≤ 4 km. Optimize mode: resolution:
20m @ 1310 nm: Agilent E6053A &E6058B
25m @ 1550 nm: all single-mode modules
28m @ 1625 nm: Agilent E6060A / Agilent E6062A.

[5] Distance accuracy: offset error + scale error * distance + sampling error.

[6] SNR ≥ 15 dB and with 1 μs, averaging time maximum 3 minutes.

[7] -20 dB to -60 dB.

Horizontal parameters

Start: 0 km to 400 km.
Span: 0.1 km to 400 km.
Readout resolution: 0.1 m.
Minimum sample spacing: 8 cm.
Refractive index: 1.00000 - 2.00000.
Length unit: km, ft or miles.
Measurement points: up to 16000.

Vertical parameters

Vertical scale: 0.1 - 10.0 dB/Div.
Readout resolution: 0.001 dB.
Reflectance range: -14 dB to -60 dB.
Backscatter coefficient: 10 - 70 dB at 1 μs.
Auto setup and analysis: provided.
Instrument settings: storage and recall of user-selectable instrument settings.

Optical Interfaces
Output connector: optional Diamond HMS-10, FC/PC, DIN 47256, ST, FC/APC, Biconic, SC, NEC D4 and E2000. All are user-exchangeable.

Scan trace

Type of events: reflective and non-reflective events.
Maximum number of events: 100.
Threshold for non-reflective events: 0.0 to 5.0 dB, selectable in 0.01 dB steps.
Threshold for reflective events: -14.0 to -65.0 dB and 0.00 dB (disabled), selectable in 0.1 dB steps.
Threshold for fiber breaks:
0.1 to 10 dB and 0.00 dB (disabled), selectable in 0.1 dB steps.

Built-in Applications
Automatic Multifiber Test
Trace Checker (Pass/Fail)
Optical Return loss
Fiber Break Locator

Storage

Flash Disk: 440 MB with up to 13000 traces.
Internal memory: up to
200 traces (typ. with 4000 data points selected).
Trace format: Bellcore compliant according to Bellcore/Telcordia OTDR trace formats:
–GR 196,Revision 1.0
–GR 196,Revision 1.1
–SR-4731 Revision 2.0
Trace information: five comment labels of up to 15 alpha-numeric characters and five comments of up to 41 alpha-numeric characters are provided for each trace.

Interfaces

- Serial A RS232C: maximum baud rate: 115200 bps

Transmission time at 115200 bps:
Trace data: 1s (4000 data points); 4s (16000 data points)

- Serial B RS232C: can be used for optical switch control.
- Centronics: standard parallel port (SPP).
- CRT: Standard analog VGA monitor.
- Keyboard: AT or PS/2 keyboard with mini DIN connector.

General

Operating temperature: 0°C to 50+°C
Storage temperature:
-40 °C to + 60 °C
Humidity: 95% R.H from 0 °C to
+ 40 °C.

- Laser Safety Class: 21 CFR Class 1, IEC 825 Class 3A
- Recalibration period: 2 years.
- Dimensions:75mm H, 290 mm W, 194mm D (3.0" x 11.6" x 8.0").
- Rackmountkit: 483mm (19")
- Weight:net < 2.0 kg (6.2 lbs).
- Traffic detection: provided
- Real time clock and date: provided

Power

AC: 100 –240 Vrms ± 10% 50-60 Hz.
DC: 16 – 24 V.
Pd = 20VA

Ordering Information

Options:
021 Straight connector interface.
022 Angled connector interface.
023 Pigtail, 3m with SC connector

Connector Interfaces:

81000AI	Connector interface Diamond HMS-10.
81000FI	Connector interface FC/PC/SPC.
81000GI	Connector interface NEC D4.
81000HI	Connector interface E-2000.
81000KI	Connector interface SC.
81000NI	Connector FC/APC.
81000SI	Connector interface DIN 47256/4108.
81000VI	Connector interface ST.
81000WI	Connector interface Biconic.

Accessories supplied:

- Rack Mount Kit
- Rack-OTDR User's Guide
- Programming Guide
- AC/DC power supply
- Upgrade CD
- RS232 cable, 9-pin to 9-pin

Power Cord Options:

Opt.:-900:	Power Cord - United Kingdom
Opt.:-901:	Power Cord - Australia and New Zealand
Opt.:-902:	Power Cord - Continental Europe
Opt.:-903:	Power Cord - United States (120 V)
Opt.:-905:	Power Cord - Systems Cabinet Use - IEC 320 C13/C14
Opt.:-906:	Power Cord - Switzerland
Opt.:-912:	Power Cord - Denmark
Opt.:-917:	Power Cord - Republic of South Africa and India
Opt.:-918:	Power Cord - Japan
Opt.:-919:	Power Cord - Israel
Opt.:-922:	Power Cord - China
Opt.:-927:	Power Cord - Thailand

For all Agilent-OTDR modules the following support options are available:

W30 3 Years of Customer Return Repair Service
W32 3 Years of Customer Return Calibration Service
W50 5 Years of Customer Return Repair Service
W52 5 Years of Customer Return Calibration Service
All modules come with a commercial cal. certificate.

Agilent E6091A Toolkit II plus
OTDR Toolkit (PC Analysis Software) for OTDR Trace post processing and remote OTDR control.
English, German, French, Chinese, Spanish, and Portuguese localization

Agilent Technologies E6006A Power Meter Submodule

Characteristics	
Sensor element	InGaAs
Wavelength range	800 - 1650 nm
Calibrated wavelengths	850 nm, 1300 nm, 1310 nm, 1550 nm (special wavelength on request).
Power range	+10 to -70 dBm
Max. input power (damage level)	+13 dBm/20 mW
Display Resolution	0.01 dB
Display Units	dBm, dB, mW, μW, nW, pW
Display Contents	Calibrated λ in nm
Modulation frequency	in Hz
Reference value	in dB
Display Updates	per second 3
Optical input	User-exchangeable Connector Interface
Applicable fiber type	9/125 μm, 50/125 μm, 62.5/125 μm

Related Agilent literature:

Enclosures Solutions Product Catalog for Rack Cabinets, Rack Accessories.
P/N 5980-0450E

Agilent E6000C Mini-OTDR / E6091A Toolkit II *plus*
P/N 5988-2238EN

Agilent E6000C Mini-OTDR Technical Specifications
P/N 5988-2302EN

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By internet, phone, or fax, get assistance with all your test & measurement needs

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