

OTU-8000 Optical Test Units

Ultra-High-Resolution (UHR) 1650 nm Filtered OTDR Module



Key Benefits

- **Drastically reduce truck rolls** and test time using FTTH/PON tests conducted from the central office during construction, provisioning, and maintenance
- **Locate in-service fiber faults in minutes** on FTTH, access, metro, or core networks
- **Comprehensively verify network construction and degradation** using macro-bending detection as well as standard OTDR tests
- **Protect the network** with the ability to locate fiber intrusions that breach network security

Key Features

- Event dead zone of 30 cm up to 20 km to test PON with a split ratio up to 1x128
- In-service PON test that is compatible with GPON, EPON, NG PON with amplified analog video
- Dynamic range of up to 43 dB for long-haul testing
- In-service fiber testing in the presence of C and L band traffic with an amplifier
- Field-installable, single-slot plug-in module for the optical test unit (OTU-8000)

High resolution OTDR for PON testing

Service providers who are migrating to passive optical networks (PONs) need a fast, cost-effective method of turning-up and restoring service. Traditional PON troubleshooting requires dispatching field personnel with an OTDR to the customer premises, because PONs are characterized by the proximity of many connection points and the high attenuation of the splitter.

The ultra-high resolution (UHR) OTDR with its outstanding event dead zone (30 cm) combined with an excellent dynamic range enables troubleshooting PONs from the central office, avoiding costly dispatches.

Ideal for in-service fiber testing

Using the out-of-band wavelength of 1650 nm, the UHR OTDR can test in-service fiber under the most stringent conditions. The integrated thin band-pass filter rejects the C and L band traffic and protects the OTDR against the Raman effect, even in presence of high amplification.

These characteristics make the UHR OTDR ideal for continuous monitoring of strategic fiber because it can locate fiber intrusions quickly.

Specifications

Ultra High Resolution (UHR) OTDR Plug-in General Technical Specifications (Typical at 25°C)

Weight	0.6 kg (1.1 lb)
Dimensions (w × h × d)	213 × 124 × 32 mm (8.38 × 4.88 × 1.26 in)

Optical interfaces

Applicable fiber	SMF 9/125 μm
Interchangeable optical connectors	PC, FC, SC, DIN, LC, and ST

OTDR optical performance

	<i>RUHR Plug-in</i>
Central wavelength ¹	1650 nm ±5 nm
Laser safety class (21 CFR)	Class 1
Pulsewidth	3 ns to 20 μs
Distance range	Up to 380 km
RMS dynamic range ²	43 dB
Event dead zone ³	30 cm up to 20 km
Attenuation dead zone ⁴	2 m

1. Laser at 25°C and measured at 10 μs. Other wavelengths are available.
2. Typical value corresponding to the difference (in dB) between the level of back-diffusion extrapolated at the beginning of the fiber and the RMS noise level, after 3 minutes of averaging, with the largest pulse width.
3. Measured at ±1.5 dB down from the peak of an unsaturated reflective event.
4. ADZ measured at +/± 0.5 dB on the basis of a linear regression from a reflectance of type FC/UPC (-55 dB) at shortest pulse width.

Technical characteristics

Distance units	Kilometers, feet, and miles
Group index range	1.30000 to 1.70000 in 0.00001 steps
Number of data points	Up to 512,000 data points
Distance measurement	Automatic or dual cursor
Display span	2.6 m to 380 km
Cursor resolution	1 cm
Sampling resolution	4 cm
Accuracy	±1 m ±sampling resolution ±1.10 ⁻⁵ x distance (Excluding group index uncertainties)

Attenuation measurement

Automatic, manual, 2-point, 5-point, and LSA	
Display span	1.25 to 55 dB
Display resolution	0.001 dB
Cursor resolution	0.001 dB
Linearity	±0.03 dB/dB
Threshold	0.01 to 5.99 dB in 0.01 dB steps

Reflectance/ORL measurements

Reflectance accuracy	±2 dB
Automatic or manual	
Display resolution	0.01 dB
Threshold	-11 to -99 dB in 1 dB steps
Storage	Bellcore/Telcordia compatible Version 1.1 and Version 2.0

Ordering Information

Product Number	Description
E8118RUHR65	Ultra-high-resolution filtered 1650 nm OTDR plug-in
Universal optical connectors	
Straight connectors	EUNIPCFC, EUNIPCSC, EUNIPCST, EUNIPCDIN, EUNIPCLC
8° angled connectors	EUNIAPCFC, EUNIAPCSC, EUNIAPCST, EUNIAPCDIN, EUNIAPCLC

For more information about the OTU-8000 remote test unit, test modules, adapters, and fiber-optic couplers, refer to their respective data sheets and brochures.

Test & Measurement Regional Sales

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