SmartOTU™

A plug-and-play fiber monitoring solution

SmartOTU is an innovative solution that monitors critical fibers in small networks such as data centers, industrial sites, utilities, municipalities, and government agencies.

Maintaining fiber integrity is critical, yet outages are still one of the major causes of network disruption, incurring millions of dollars of lost revenue. And, incidents of accidental dig-ups, vehicle collisions, and sabotage multiply as fiber moves deeper into data centers and storage area networks.

Combining a JDSU optical time domain reflectometer (OTDR) with advanced optical-switch technology, SmartOTU monitors tens of fiber links across hundreds of kilometers. When a fiber event occurs, it alerts users either by e-mail, SMS, or SNMP within minutes.

Modular in design, SmartOTU monitors both dark and lit fiber. It is ideal for network security protection, pinpointing events such as fiber tapping to a few tenths of a decibel. SmartOTU is a standalone remote fiber test solution that can be deployed right out of the box with no training or IT configuration required.

It includes an SNMP interface and an embedded Web server. And, it easily integrates into third-party systems. SmartOTU is fully compatible with the JDSU optical network monitoring system (ONMSi) and can be upgraded to be a comprehensive remote fiber test system as the network grows.

Features and Benefits

- Reduce mean-time-to-repair by locating fiber optic faults in minutes instead of hours
- Reduce operational costs by eliminating erroneous dispatches
- Anticipate service disruptions by detecting fiber degradation before it affects service
- Protect your investment by monitoring the long-term performance of installed fiber
- Quickly detect and locate fiber intrusion for 24/7 network protection
- Ready to deploy right out of the box: no server or local PC required
- Easy to use
- Web browser access
- E-mail and SMS notifications
- SNMP interface
- Dual power feed
- Solid-state disk for better reliability
- Low power consumption
- LAN-based firmware upload

Applications

- Fiber monitoring of data centers, industrial sites, and municipalities
- Fiber security — tap detection
- Fiber monitoring for system integrators

Specifications (typical at 25°C)

Base Unit	
Height	2 RU
Width	19, 21 (ETSI), or 23"
Depth	260 mm (ETSI) 280 mm (19 or 23")
Operating temperature	–20 to 50°C
Storage temperature	–20 to 60°C
Humidity	95% without condensing
EMI/ESD	CE compliant
Interfaces	2 RJ45 Ethernet 10/100/1000BaseT ports, GSM an option
Media	Solid-state disk
Optical Switch	
Number of ports	4, 8, 12, 16, 24, 36, 48
Insertion loss (excluding connectors)	0.6 dB
Backreflection	–60 dB
Repeatability	±0.01 dB
Wavelength range	1260 –1670 nm
Lifetime	10^7 cycles
OTDR (general)	
Laser safety	Class 1
Number of data points	Up to 512,000
Sampling resolution	From 4 cm
Distance range	Up to 360 km
Distance accuracy	±0.75 m ±sampling resolution ±distance x 1.10^{-5}

OTDR	Module B	Module C	Module D
Wavelength[1] (nm)	1550/1625/1650	1550/1625/1650	1550/1625/1650
Wavelength accuracy[1] (nm)	±20/±20/+15, –5	±20/±20/±1	±20/±10/±1
Dynamic range[2] (dB)	40/40/43	45/44/43	50/50/48
Pulse width	5 ns to 20 µs	2 ns to 20 µs	2 ns to 20 µs
Event dead zone[3] (m)	0.65	0.6	0.5
Attenuation dead zone[4] (m)	2	2	2.5

1. Laser at 25°C and measured at 10 µs. 1650 nm ±1 nm for the E81165C module.
2. The one way difference between the extrapolated backscattering level at the start of the fiber and the RMS noise level, after 3 minutes averaging and using the largest pulsewidth.
3. Measured at ±1.5 dB down from the peak of an unsaturated reflective event using the shortest pulsewidth.
4. Measured at ±0.5 dB from the linear regression using a FC/PC reflectance and using the shortest pulsewidth.

Ordering Information

Description	Part Number
Base Unit	
OTU-8000 base unit V2 48 VDC, 2 RU/19"	EOTU8000E
SmartOTU software	E98Smart OTU
Base Unit Options	
Internal GSM modem for alarm notification by SMS	E98EGSM
Relay for external alarm reporting device	E98RELAYS
23" rack-mounting kit for OTU-8000	E98RACK23
21" rack-mounting kit for OTU-8000	E98RACK21
AC/DC converter (external unit)	E98ACDC
Optical Switch Plug-In Modules	
Optical switch 1x4 plug-in module (SC/APC)	E98X04
Optical switch 1x8 plug-in module (SC/APC)	E98X08
Optical switch 1x12 plug-in module (SC/APC)	E98X12
Optical switch 1x16 plug-in module (SC/APC)	E98X16
Optical switch 1x24 plug-in module (SC/APC)	E98X24
Optical switch 1x36 plug-in module (LC/APC)	E98X36LCAPC
Optical Switch 1x48 Plug-In Module (LC/APC)	E98X48LCAPC
OTDR Plug-In Modules	
OTDR module D with 1550 nm wavelength	E8115D
OTDR module D with 1625 nm filtered wavelength	E81162D
OTDR module D with 1650 nm filtered wavelength	E81165D
OTDR module D 1550/1625 nm	E8129D
OTDR module C with 1550 nm wavelength	E8115C
OTDR module C with 1625 nm filtered wavelength	E81162C
OTDR module C with 1650 nm filtered wavelength	E81165C
OTDR module B with 1650 nm filtered wavelength	E81165B
OTDR module B 1310/1550 nm	E8126B
OTDR module B 1310/1550/1625 nm	E8136B

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