OTH-7000

REMOTE OPTICAL TEST HEAD
(PART OF NOVA FIBER)

◾ Scalable test solution for fiber optic network monitoring and management.

KEY FEATURES

Smallest footprint in the industry (up to 16 ports in ½ RU)

Scalable (up to 1024 ports)

Multi-vendor capability

Cost-effective development

Optical transceiver module SFP port

APPLICATIONS

Point-to-point (P2P) links certification with pass/fail thresholds and iconic viewer (with iOLM technology)

Fault analysis and troubleshooting

Advanced analytics

Easy integration with third party solutions using the centralized FMS application

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iOLM TECHNOLOGY

Introducing the OTH-7000

Used with EXFO's Nova Fiber monitoring system (FMS), the OTH-7000 is a compact, scalable and cost-effective unit designed for the central office and ideal for point-to-point link testing and monitoring.
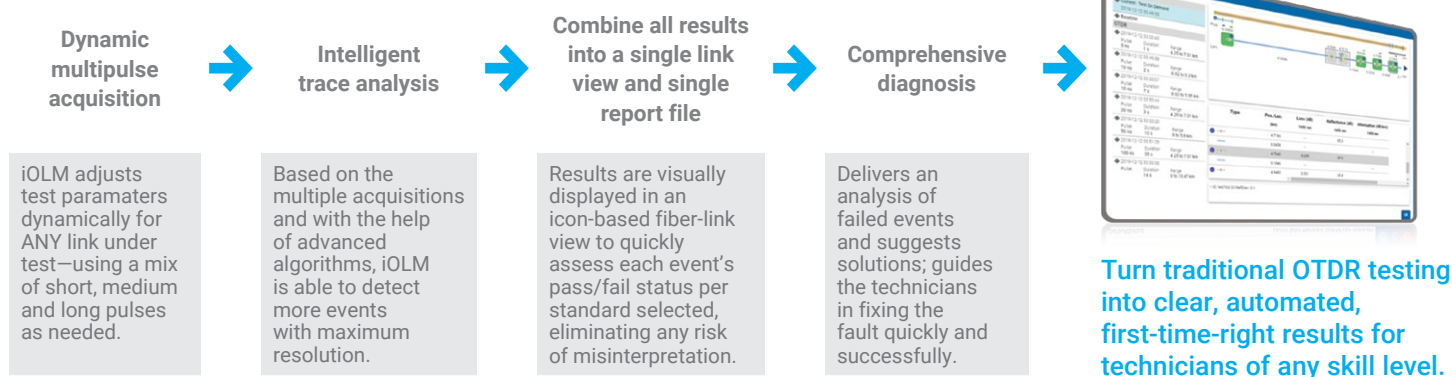
The OTH-7000 uses EXFO's renowned iOLM mode, which allows you to monitor and characterize P2P networks, providing you with a central management view and functions. Automated, expert-level fiber testing eliminates the need to manually configure parameters or analyze and interpret multiple complex OTDR traces.

The iOLM algorithm discovers elements on the fiber and are tested against pass/fail criteria, with loss/reflectance and distance values included in the same structured data.

Providing single-test baselining and on-demand testing for fault analysis, iOLM mode allows the user to see deviation(s) and an iconic view, as well as the ability to view and extract each single-pulse OTDR trace as part of the iOLM measurement. The user can also specify a golden trace among the test sequence, for expert-level testing and diagnosis.

HOW DOES IT WORK?

Dynamic multipulse acquisition	Intelligent trace analysis	Combine all results into a single link view and single report file	Comprehensive diagnosis	
iOLM adjusts test paramaters dynamically for ANY link under test—using a mix of short, medium and long pulses as needed.	Based on the multiple acquisitions and with the help of advanced algorithms, iOLM is able to detect more events with maximum resolution.	Results are visually displayed in an icon-based fiber-link view to quickly assess each event's pass/fail status per standard selected, eliminating any risk of misinterpretation.	Delivers an analysis of failed events and suggests solutions; guides the technicians in fixing the fault quickly and successfully.	

Turn traditional OTDR testing into clear, automated, first-time-right results for technicians of any skill level.

INTEGRATED OTDR MODULE AND OPTICAL SWITCH

The OTH-7000 is the smallest footprint (½ U rackmount space) optical test head with an embedded OTDR module and an optical switch. The EXFO 1650 nm OTDR module is ideal for dark and active monitoring of P2P links.

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With its MEMS-based design, the OTH-7000 delivers durable performance in a compact package. Fast switching time and a 1-billion-cycle lifetime expectancy make it ideal for the demanding needs of production testing and monitoring applications. The OTH-7000 is available for single-mode fibers with a choice of 1, 4, or 16-port optical switch.

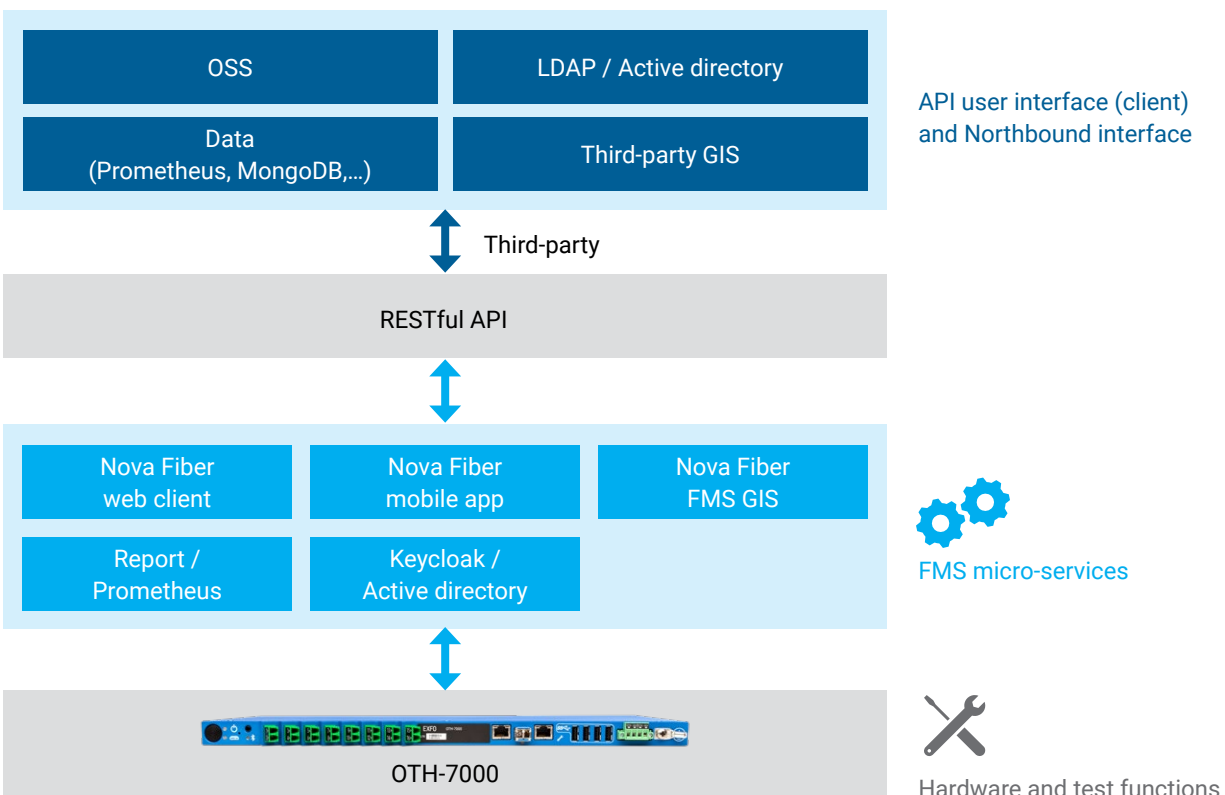## OPTICAL SWITCHES: SCALING REMOTE TESTING CAPABILITIES

Expansion unit – external 1xN optical switch (RTUe-9120)

Connect the single port OTH-7000 unit directly to the common port of the RTUe-9120 external optical switch unit. The RTUe-9120 is a highly dense switch allowing up to 256 ports (MPO 16f connectors).

RTUe-9120 external switch

OTH-7000

SCALABLE SYSTEM WITH GREAT FLEXIBILITY

- OTH-7000 platform is managed by the Nova Fiber's fiber monitoring system,, which is a scalable system that can control and manage up to 1000 units with horizontal scaling capabilities.
- OTH-7000 platform is a true client requiring a minimal outbound firewall to be opened for messaging-based communication using https encrypted protocol.
- Integration by third-parties can be done through Nova Fiber's micro-services APIs offering the exact functional capability as Nova Fiber web and mobile clients (UIs).
- Nova Fiber analytics includes customizable dashboards and customizable APIs. Key fiber metrics such as length, end-to-end loss, dB/km, are trackable in time and/or by domain – allowing pro-active maintenance of the network.
- GIS Integration through standard Nova Fiber APIs can be performed to connect to a third-party GIS.

| OSS | LDAP / Active directory |
| Data (Prometheus, MongoDB,...) | Third-party GIS |

API user interface (client) and Northbound interface

Third-party

RESTful API

| Nova Fiber web client | Nova Fiber mobile app | Nova Fiber FMS GIS |
| Report / Prometheus | Keycloak / Active directory | |

FMS micro-services

OTH-7000

Hardware and test functions

PLATFORM SPECIFICATIONS

1 Power button

2 Power LED

3 Bluetooth button

4 System status LED

5 Bluetooth status LED

6 Optical ports (1, 4 or 16)

7 Ethernet ports

8 SFP port (SFP not included)

9 USB 2.0 (4)

10 −48VDC dual feed input

11 Ground lug

12 Removable rackmount brackets

SPECIFICATIONS

All specifications valid at 23°C ± 2°C unless otherwise specified.

OTDR TEST MODULE	
Central wavelength (nm) [a]	1650 ± 10
Acquisition mode	OTDR through API
Internally filtered (live port)	Yes
Internal filter width (nm)	High pass at 1630 nm
Event dead zone (m) [a, b]	0.9
Attenuation dead zone (m) [a, b]	3.5
Sampling points	132 000
Sampling resolution (m)	0.04 to 10
Pulse width (ns)	3 to 20 000
Distance range (km)	Up to 320
Display resolution (dB)	0.001 − Attenuation/loss 0.01 − Reflectance
ORL uncertainty (dB) [a]	± 2
Reflectance uncertainty (dB) [a, c]	± 2
Linearity (dB/dB) [a, d]	0.05
Dynamic range (dB) [a, d, e] OTH-7000-AWAT-01	42
Distance uncertainty (m) [f]	±(0.75 + 0.0025 % x distance + sampling resolution)

a. Typical

b. For reflectance below −55 dB, using the smallest pulse width available, with 45 s averaging.

c. For 3 ns to 1 000 ns pulses, 45 s averaging, −45 dB reflectance, not including RBS uncertainty.

d. Measurement of fiber length corresponding to 0.5 dB loss within ±0.05 dB of reference trace result with 45 s averaging.

e. 4-port switch, typical IL is 1 dB; 16-port switch, typical IL is 2 dB.

f. Does not include uncertainty due to fiber index or cable characteristics (e.g., helix factor).

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GENERAL SPECIFICATIONS

|	
Mainframe	Linux
USB interfaces	USB 2.0 (4)
Number of optical ports	1-port SC/APC or 4-port SC/APC or 16-port duplex LC/APC
Internal optical switch type	MEMS
Internal optical switch lifetime (minimum number of cycles)	1 000 000 000 (10^9)
Wired network interfaces	2x 10/100/1000 Base-T Ethernet IP-V4 and V6 (network and management interfaces) 1x SFP (network interface)
Unit status front LEDs	Power, system status and Bluetooth LEDs
Storage	16 GB
Dual feed power supply	−48VDC 2A (ordering option: external AC-DC adapter for AC operation)
Power consumption	10 W (typical) Over entire operating temperature range
Dimensions (for 19 in or ETSI racks) (H x W x D)	22 mm (1/2 U) x 440 mm x 220 mm ($7/8$ in x 17 $5/16$ in x 8 $11/16$ in) Compatible with ETSI 300 mm deep racks
Weight (includes brackets)	1.4 kg (3.1 lb)
Temperature Operating [a] Storage	0 °C to 45 °C (32 °F to 113 °F) −40 °C to 70 °C (−40 °F to 158 °F)
Relative humidity	< 95 % non-condensing
Heat management	No fan
Maximum operation altitude [a]	3000 m (9843 ft)
Product certification	CE, cNEMKOus, RoHS, ETSI [b], NEBS [c]

SOFTWARE OPTIONS AND OPTIONAL ACCESSORIES

SFP-85919	SFP copper, multirate optical transceiver module 10/100/1000 BASE-T
FTB-8591	SFP multirate optical transceiver module LC, SMF, 10 km reach
FTB-8196	SFP multirate optical transceiver module, rates: 155/622 Mbit/s, 1550 nm, LC, SMF, 80 km reach

STANDARD RTU ACCESSORIES

User guide
Rackmount kit

LASER SAFETY

ATTENTION
CAUTION
LASER
1M
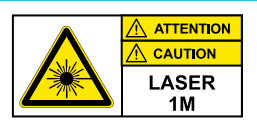
a. For DC operation
b. ETSI EN300 019, ETSI EN 300 132-2, ETSI EN 300 386, ETSI EN 300 753
   (Please refer to the Nova Fiber Business Unit for additional details on the Environmental Conditions and Environmental Tests)
c. This equipment is NEBS level-1 compliant and AT&T ATTTP-76200 (Carrier Grade Level 1) for DC model.
   Contact factory or visit the following URL for more details about this certification: **www.verizonnebs.com/TPRs/VZ-TPR-9303.pdf**

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ORDERING INFORMATION

OTH-7000-XX-XX-XX-XX

Wavelength
AWAT = 1650 nm (filtered)

Port option
01 = 1 port
04 = 4 ports
16 = 16 ports

Power
AC = External 100-240 VAC converter with power cord
DC = Internal DC 48V power supply

Rackmount option
RK19-HALFU = ½ U rackmount kit (19 inch)
RKET-HALFU = ½ U rackmount kit (ETSI)

Example: OTH-7000-AWAT-16-DC-RK19-HALFU

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