Data Sheet

VIAVI
Adaptive Fiber Test Head (FTH-9000)

Rack-mounted FTH for ONMSi Remote Fiber Test System (RFTS): Diagnose and map your core, metro, and access fiber networks for high quality construction, service activation, monitoring, and assurance.

The Adaptive Fiber Test Head (FTH), FTH-9000 lies at the heart of the VIAVI ONMSi RFTS optical network management system. A single FTH-9000 with a high-resolution OTDR can test one critical link or scale to cover thousands of fiber links using an optical-switch to expand link coverage as your network grows. Test either dark or active, lit fibers without disrupting traffic. When a fiber fault occurs, the ONMSi system or the standalone FTH reports the GPS location of the fault within minutes. This adaptive, racked FTH is ideal for Access PON or Distributed Access Architecture networks as well as metro rings, data center interconnects, and long-haul networks utilizing xWDM wavelength plans. FTH-9000 unit is also compatible with VIAVI Fiber Sensing applications for measuring strain and temperature using a single-mode fiber as sensor.

Simplify PON lifecycle management: As part of an ONMSi system, the FTH-9000 accelerates FTTH construction certification, service deployment, and troubleshooting and assurance. It can sectionalize the network to determine the cause of a fault or identify optical budget problems. Trend network health changes over time to monetize valuable links and assure service.

Enhance network security: Detect and locate fiber tapping with extreme precision down to tenths of a decibel of loss.

Deploy fiber sensing applications: Transform a fiber into a sensor, creating thousands of strain and temperature data collection points distributed along the fiber using Raman and Brillouin OTDR modules.

FTH-9000 with the 576 MPO switch with an OTDR module

Benefits

- Configure your FTH to your network with a variety of switches, port connection types, OTDRs and software applications

- Reduce construction costs by accelerating test processes and empowering test staff

- Reduce MTTR by locating fiber optic faults in minutes instead of hours

- Reduce operational costs by eliminating erroneous dispatches to the wrong location through accurate, remote location

- Avoid service disruptions by detecting fiber degradation before it affects service

- Protect your investment by measuring the long-term performance KPIs of your deployed fibers (IL, slope, strain, etc.)

- Protect network integrity by quickly detecting and locating fiber intrusion

Features

- Modular design assuring backward compatibility with existing ONMSi platform elements and with new OTDR modules, including new ultra-high resolution, tunable DWDM and fiber sensing OTDRs

- High density, extensible switch (576p) with Pay as You Grow model

- Scalable up to 4464 ports using additional external switches

- Dual IP communication channels (main and backup), plus an additional local LAN access

- Secured Web-browser access

- 2RU high with dual power feeds (front and rear panel) with power failure indicator and alarm, low power consumption

- Different fan solutions (front, side, extractable)

- Expandable by adding additional option board

- Ruggedized LINUX Operating System

- Implement as a plug and play standalone monitoring tool or in a network wide ONMSi centralized management system

Applications

- Fiber monitoring for service providers, utilities, and dark-fiber providers

- FTTx construction, provisioning, and maintenance tests

- Fiber-tapping detection for security assurance

- Fiber sensing applications (fiber aging, pipeline, power, etc.)

Specifications

Base Unit (typical at 25°C)	
Height	2 RU
Width	19, 21 (ETSI), or 23"
Depth	280 mm
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
Power Supply (with internal switch and 8100 OTDR module)	
DC	-48V
AC	100-240 V, 50/60 Hz (AC/DC Converter)
Power consumption	35W
Internal Optical Switch (typical at 25°C)	
Number of ports Internal ports are available in	
SC/APC	4,8,12,16,24
LC/APC	36,48
MPO-12	288, 576
Insertion loss (excluding connectors)	
Up to 48 SC/APC or LC/APC ports	0.6 dB
288,576 MPO ports	<2.9 dB
Back-reflection	−60 dB
Repeatability	±0.01 dB
Wavelength range	
Up to 48 SC/APC or LC/APC ports	1260−1670 nm
288,576 MPO ports	1480-1670 nm
Lifetime	
4,8,12,16,24 (SC/APC)	100 millions cycles
36,48 (LC/APC)	100 millions cycles
288, 576 (MPO-12)	> 2,5 billion cycles
Housing	
Up to 576 ports	Included in the FTH-9000
Higher port counts	External 1 RU racks
Standard Hardware Warranty*	1 year

*Services: Add up to 5 years of extended hardware warranty or add an ONMSi System annual maintenance contract.

Internal OTDR Modules

Compatible with all VIAVI OTDR modules: 8100-series plug-in module, 4100-series plug-in module, single or multiple wavelengths, FiberComplete, Tunable DWDM, Fiber Sensing (DTS, DTSS).

OTDR Portfolio	4100 Series Modules				8100 Series Modules			
Function	**Optimized OTDR**		**Tunable OTDR**		**Ultra-High Performance OTDR**		**Fiber Sensing OTDRs**	
Application	Medium Range	Long Range	CWDM	DWDM	Very Long Range	PON	Temperature	Temperature and Strain
Wavelengths	Single and Multiple		Tunable	Tunable	Single and Multiple	1650 nm	Dual Source	B-OTDR
Dynamic Range or WDM band	40 dB	45 dB	O,E band S,C,L band	C band	50 dB	Ultra-High Resolution	DTS Raman	DTSS Brillouin

Please refer to 4100,8100 series plug-in module and fiber sensing datasheet for technical specifications.

Ordering Information

Part	Description
E9H-A-LF-4KMOD	Mainframe FTH-9000 with left fans and 4K OTDR
E9H-A-LF-6K1MOD	Mainframe FTH-9000 with left fans and compatible 6K V1 OTDR mainframe with TACB
E9H-A-LF-6K2MOD	Mainframe FTH-9000 with left fans and compatible 6K V2 OTDRs
Memory Storage Options	
E9H-A-SSD-HC	FTH high-capacity mass storage
Power Supply Options	
E9H-A-ACDC	FTH-9000 AC/DC converter 90-264V to 48V without power cord (input C14)
E9H-A-ACDC-DUAL	FTH-9000 dual AC/DC converter 90-264V to 48V without power cord (input C14)
E9H-A-ACDC-TRAY	1U power supply tray
E9H-A-PC–C13-EU	Power cord 3C L2.5m STR black Euro to C13 (power supply input type C14)
E9H-A-PC–C13-UK	Power cord 3C L2m STR black UK to C13 (power supply input type C14)
E9H-A-PC–C13-US	Power cord 3C L2m STR black USA to C13 (power supply input type C14)
Rack Mounting Options	
E9H-A-ADP2RU21P	2RU bracket kit adaptor 19 to 21P
E9H-A-ADP2RU23P	2RU bracket kit adaptor 19 to 23P
E9H-A-PLEXI	FTH-9000 front panel plexi protection

Ordering Information continued

Part	Description
Internal Optical Switch Options	
E9H-A-X01	FTH-9000 no optical switch front panel
E98X04	Optical switch 1X4 plug in module (SC/APC)
E98X08	Optical switch 1X8 plug in module (SC/APC)
E98X12	Optical switch 1X12 plug in module (SC/APC)
E98X16	Optical switch 1X16 plug in module (SC/APC)
E98X24	Optical switch 1X24 plug in module (SC/APC)
E98X36LCAPC	Optical switch 1X36 plug in module (LC/APC)
E98X48LCAPC	Optical switch 1X48 plug in module (LC/APC)
E98X288MPO	Optical switch 1X288 plug in module with MPO-12 connectors
E98X288MPO-PAYG	Initial configuration with 144 ports for 288 optical switch ports
E98X576MPO	Optical switch 1X576 plug in module with MPO-12 connectors
E98X576MPO-PAYG	Initial configuration with 288 Ports for 576 optical switch ports
E98XMOD12-PAYG	Additional 12 ports switch for 144/288/576 optical switch ports with MPO-12 connectors
E98XMOD12-PAYG-UPG	SW license for 12 additional ports for existing 288 or 576 internal switch
Accessories and Options	
E9H-A-SP-LF-Kit	Spare FTH-9000 left fan kit
E9H-A-SP-RCKKIT-QTY10	Spare FTH-9000 sets rack assembly kit - Qty 10
E9H-A-SP-CONKIT-QTY10	Spare FTH-9000 sets electricals connectors kit DC input grounding - Qty 10
E9H-A-SP-RK-LF	Spare FTH-9000 19P rack mounting kit left fan