

Brochure

ONMSi Remote Fiber Test and Monitoring

Support Fiber Everywhere
Throughout the Network Lifecycle



**Build Your Fiber
Network Quickly**



**Deploy and Monetize
High Speed Service**

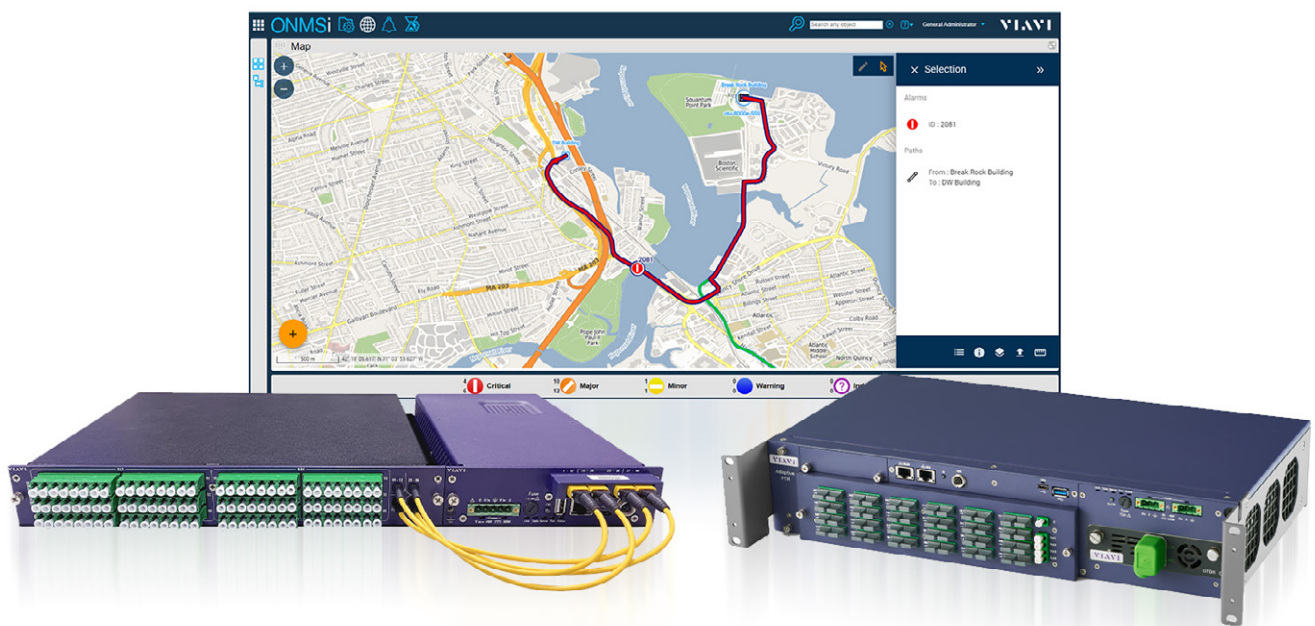


**Cut Workloads to
Maximize Team Efficiency**



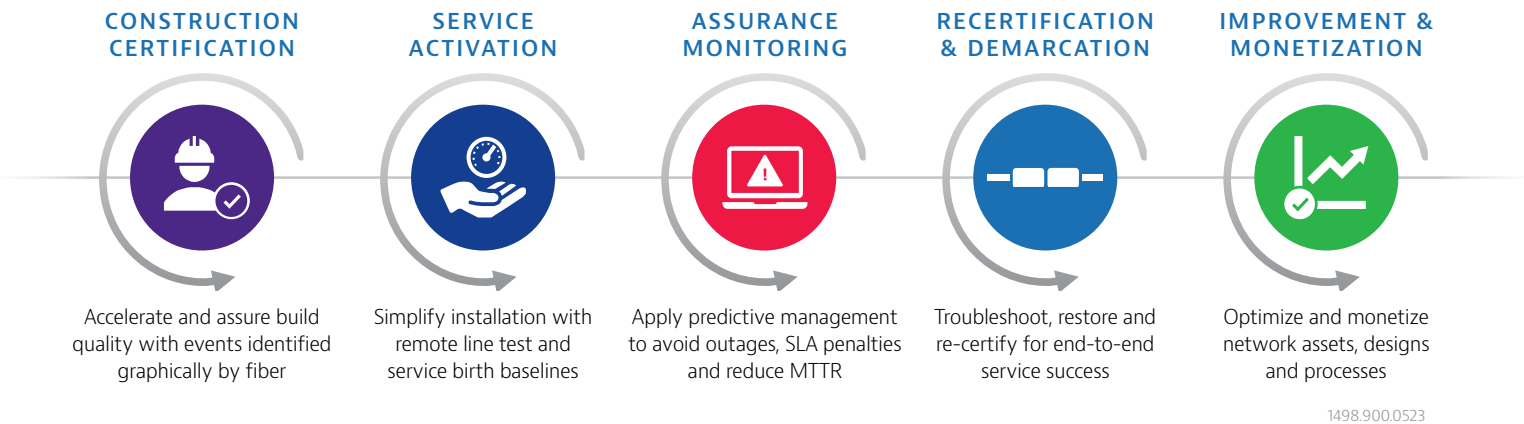
Visualize network issues and discover improvements with the ONMSi RFTS portfolio that scales from one fiber to cover the entire fiber network!

The award-winning ONMSi Remote Fiber Test and Monitoring platform helps transform fiber network performance by making all issues visible: The flexible ONMSi platform helps scale your network build and monetization process up by reducing test labor, improving accuracy, quality and facilitating management of complex network assets for executives and operations. Unlike portable OTDRs, leave your Fiber Test Head installed 24/7 to collect data trends and automate work load and you'll never have to charge a battery! ONMSi and the FTH software packages are proven in over 550 networks globally with every imaginable use case implemented many times over. The software offers ease of use with secure browser access, domain management, notifications with alarm on map capabilities, network topology and APIs for integration to ticketing and process applications.



RFTS Accelerates and Automates Fiber Workload

ONMSi Remote Fiber Test, Network Diagnostics and Inventory Mapping



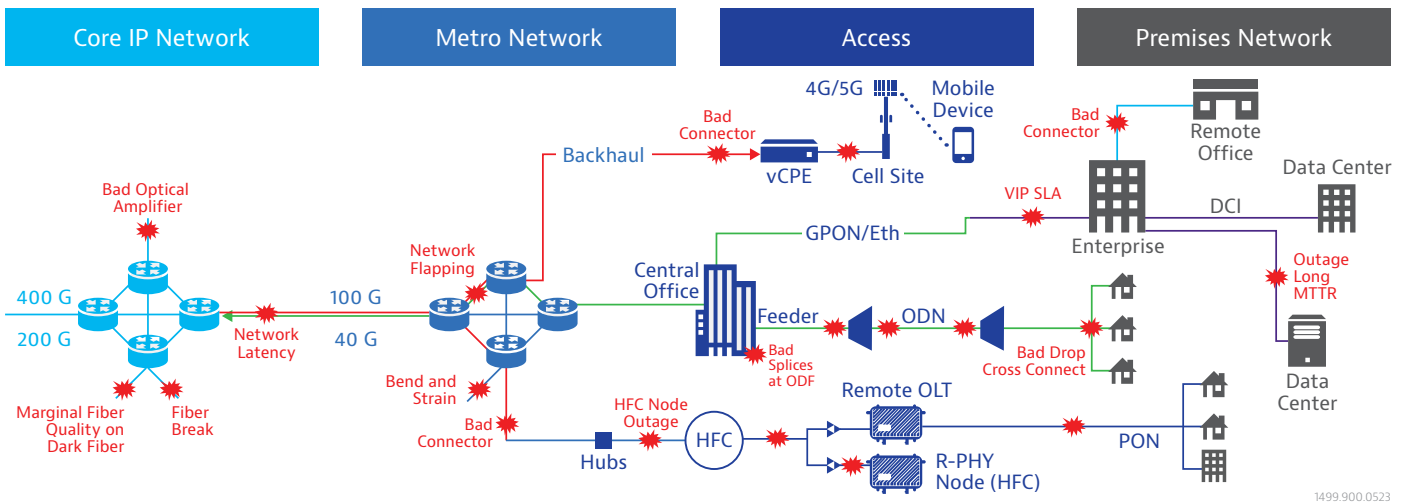
What are your Goals?

Set goals and measure results with ONMSi RFTS for P2P or P2MP test cases. We will support your team to implement a design that scales for your growing network challenges. Get started with one simple standalone FTH or implement a network wide system and start driving results.

- Construction or activation certification
- Building and maintaining high quality infrastructure
- Controlling workmanship and process/project reporting for contractor or staff
- Delivering high quality, high speed services
- Converting customer service requests to revenue quickly
- Meeting government regulations or SLAs
- Assuring investors of the resale investment value
- Accelerating and automating workloads to gain staff efficiency
- High availability or reliability (99.999% uptime)
- Low latency and latency issue analysis
- Security – Tapping intrusion detection
- Demarcation of ownership, responsibility, and problem location
- Track KPIs, faults/alarm cause root analysis
- Network data analytics for sales and correlation to service issues



Challenges Across the Fiber Network



Key Benefits of Remote Fiber Test and Monitoring

Accelerate revenue with rapid network deployment and improved service performance

- Construct high quality networks with graphical presentation of certification test data.
- Deploy new services quickly with visibility to real time progress of network qualification
- Monetize fiber links with objective network topology and optical budget reports
- Ensure sales activation readiness at a customer port
- Deliver low latency, high uptime service with latency test and fiber degradation analysis
- Facilitate SLA management with objective reporting to hold responsible parties accountable

Deliver operations cost savings using automation and executive network analytics

- Reduce the work required to accept fiber for service and monitor and maintain the network.
- Lower the cost/effort of contractor audit and ensure your SLAs meet customer service quality
- Significantly reduce rework (remedials) while keeping procedures compliant.
- Minimize MTTR (mean time to repair) with automatic detection, location and demarcation
- Assure the plant: See any damage/change after build, even before the network is activated
- Use Fiber Analytics to turn data into revenue, enhance network designs and process, and to manage staff operations

Which Use Cases Help Me Manage My Network?

Life Cycle Management For Point-to-Point (P2P) Fiber Networks and Point-to-Multi-Point P2MP/PON Networks

Point-to-Point: P2P networks are implemented in data center interconnects, enterprise Ethernet service, metro area rings and long haul, core network segments. These P2P Network legs may be owned or leased, so it is critical to locate issues and dispatch the responsible party.

Point-to-Multi-Point: P2MP Fiber Access Networks that offer FTTH via PON of HFC architecture are complex, and suffer from frequent handling with damaging disconnects and reconnects. Minimizing handling and mis/cross connects requires vigilant lifecycle management, or the network will age quickly. P2MP architectures include both balanced and tap architecture GPON/EPON XG-PON, XGS-PON and DAA on the Hybrid HFC network. These networks may be sold as wholesale networks or retail subscriber networks with various copper, WiFi or wireless termination technologies.



Configuring ONMSi For Your Network Architecture

ONMSi RFTS scales from one fiber to cover every fiber network.

1. What service types and architecture are present? P2P DWDM, CWDM, or P2MP FTTx PON, DAA, Fiber to Wireless RAN?

We seek to understand the service and customer type (residential, business, military or government), the distances to be covered and the FTH locations and server for generating data.

2. Which use case, data and domains do you require from your system?

Do you want construction certification, service activation, monitoring, and data analytics?

Plug and play one, simple FTH or choose coverage for the whole network with a configuration and reporting structure to reflect regional and domain team assignments.

3. Are you testing lit or dark fiber or performing fiber optic sensing on infrastructure?

The service on the network, distance and resolution will determine your OTDR plan.

4. What port density exists or is expected at the FTH location?

Does the test application require high port density, or low port density with frequent scan cycles? We plan room to grow as fibers or customers are added.

5. What services are optimal for your situation?

Are you a start-up customer or expanding to a new use case or are you just adding new Fiber Test Heads?

Once the use case scale is defined, select ONMSi Server or Independent Standalone Fiber Test Head mode.

ONMSi RFTS Fiber Test Heads work in both modes and can flip from independent to central server mode with a remote software update.

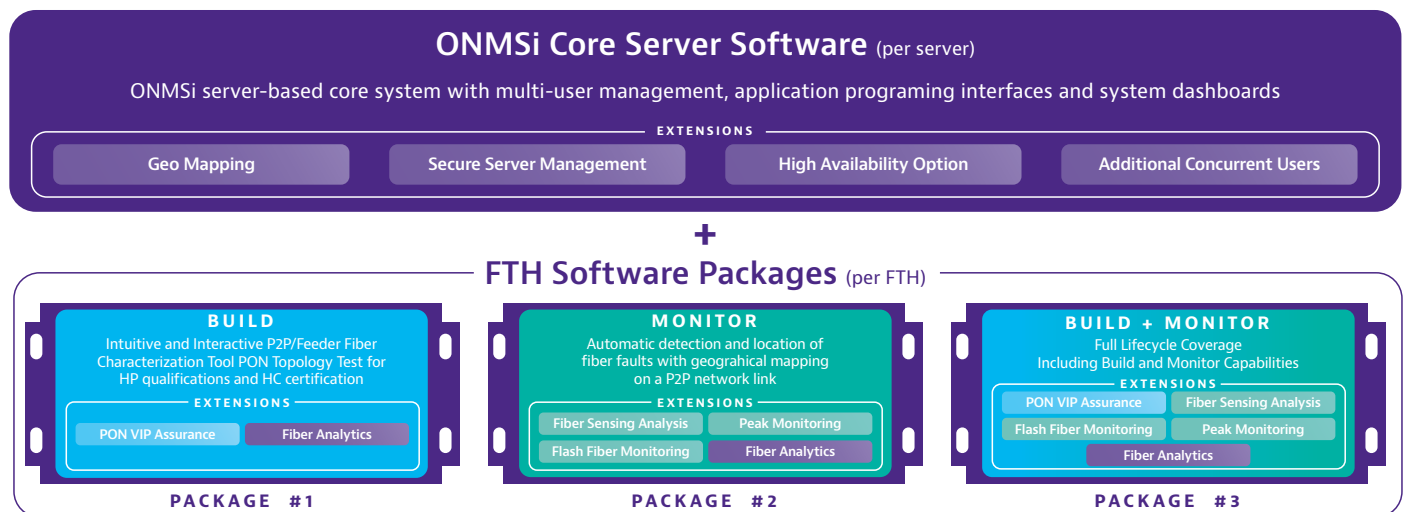
FTH in Standalone Mode For Fiber Monitoring – No Server Required:

- Automatically detects and locates faults on network critical fibers
- Google™ KML file importation for geographical fault location
- Fault notifications automatically sent via SMTP, SMS and SNMP traps
- Simple to setup with secure web browser access
- Easy migration path to Server based ONMSi

ONMSi Network Mode For Both Build and Fiber Monitoring – Add Server:

- The server provides all historic alarms/traces, trends, richer fault on map with high precision OTDR traces, plus concurrent multi-user web browser construction or monitoring scheduling. Gain landmarks documentation in linear view above the OTDR trace, the P2MP PON topology view, and build module for high fiber count or P2MP, multi-wavelength tests or specialized fiber sensing applications.
- Full integrated application and views (user management, mapview, OTDR viewer, reports)
- Domain management and link segmentation
- Landmark documentation and adjustments with linear view above OTDR traces
- PON topology views and Build Smart Fiber Grid, OTDR Smart Link Mapper for drill down by fiber, by fault
- Automatic and scheduled test times for construction to enable multi-tasking
- A monitored path can be segmented and assigned to users' domains. Users receive notifications if there is a break/degradation in the assigned link segment.

Software Packages Overview

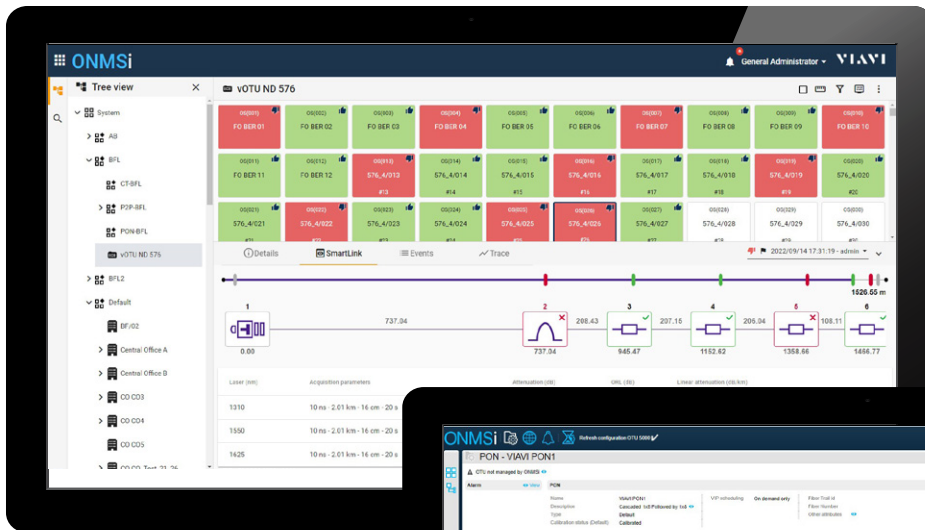


The ONMSi Core Server applies system wide and is administered from the central network server. Applications (Build, Monitor, or Combo) and extensions, such as Fiber Sensing Analysis apply to specific FTHs to allow specialized teams to select functionality they need for tasks such as construction or maintenance.



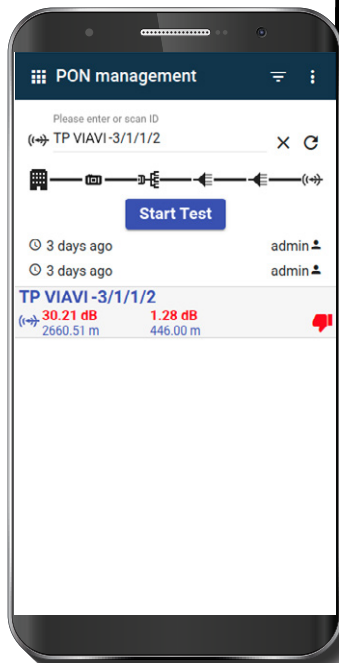
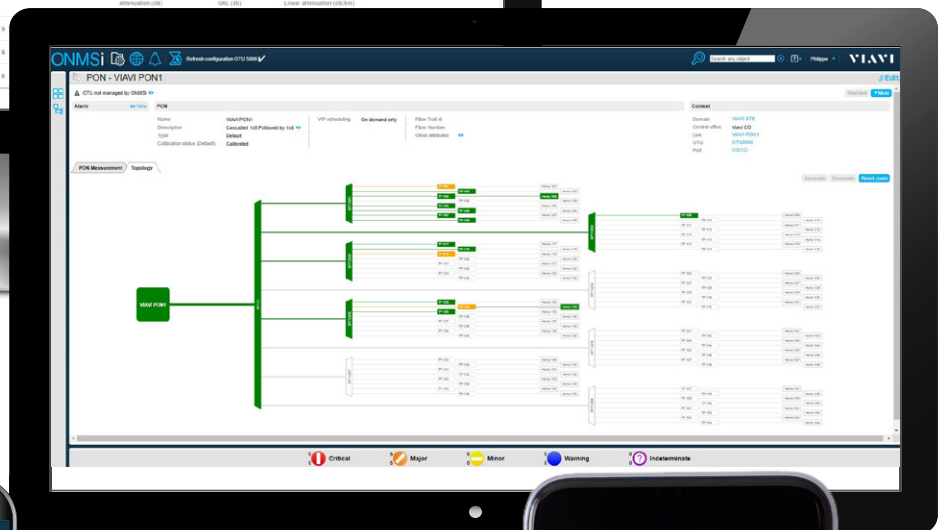
1. Build Application Package 1–Accelerate Construction!

The Build Software Package is optimized for construction test acceptance qualification. It allows both test on demand to qualify a network link from point a to point z, and scheduled test routines that allow your team to set the test to run while they multi-task with construction activities. The system can scale to cover 1000's of fibers to ensure an entire PON exchange or hub is built with the highest quality. It simplifies the work for technicians, automating the capture and recording of topology, optical KPIs and project metrics. Technicians perform tests using their mobile phone to test pre-planned topology eliminating test errors. With Fiber Analytics, the team can manage progress, quality, staffing productivity and understand which network sections are ready for sale.



Left: Smart Fiber Grid with Smart Link Mapper with Multi-Wavelength Test

Below: PON Build Topology View



Fast results automatically produce trouble diagnostics by fiber, by event

Left: PON test point qualification test result showing failure of the optical budget at that test point

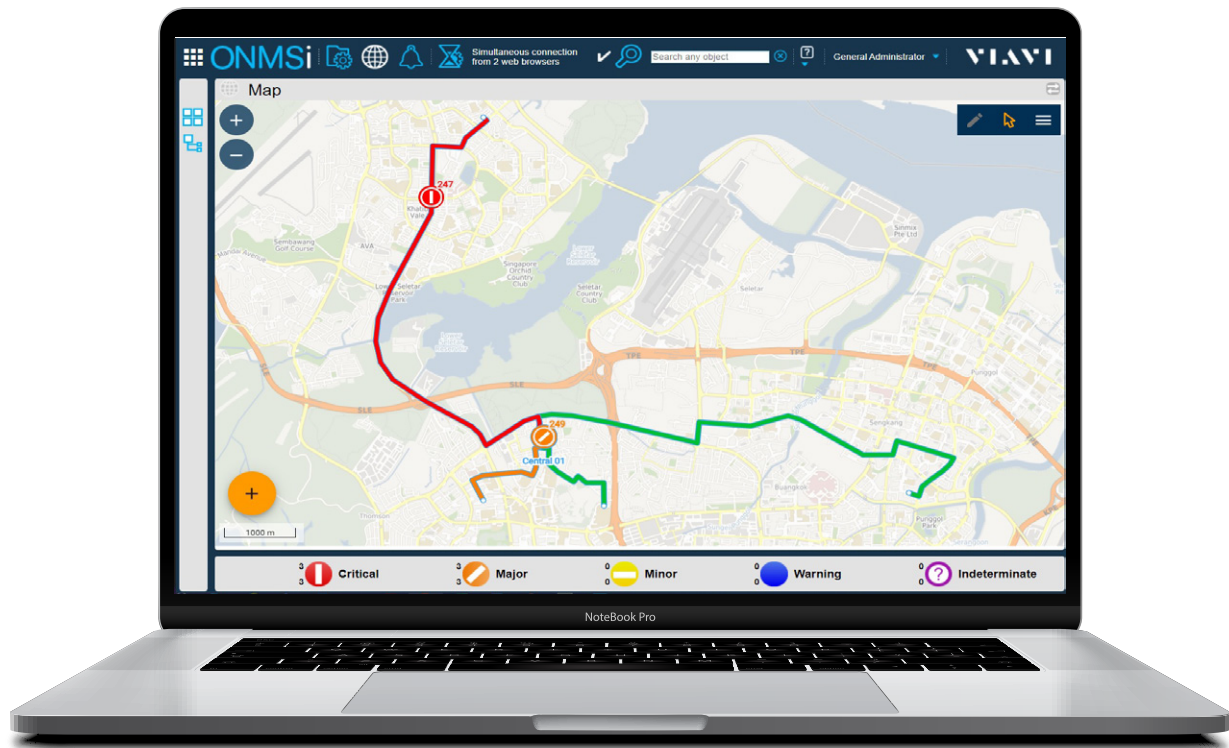
Right: Smart Fiber Grid with Smart Link Mapper to show pass/fail and root cause of issues on the link



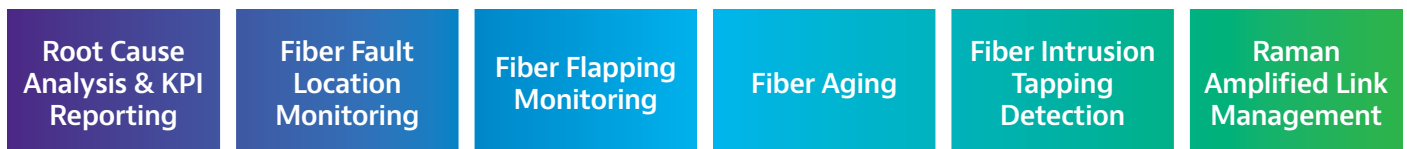


2. Monitor Application Package 2 – Automate Fault Discovery and Location in Minutes with Route-on-Map!

The Monitor Software Package is designed for constant, automated surveillance of the network to identify high risk nodes and to alarm according to critical thresholds via notification by text, email or with integration into your trouble ticket systems. Maximize uptime, minimize MTTR and avoid some quality issues all together with preventative action. Use the geolocated fault on map tools to direct your staff to critical faults and dispatch to fix, not to find the issue. Reduce service disruptions and improve SLA management. Reduce finger pointing between owned and leased network sections or operator and customer premise sections. Below is an example of routes with critical faults geolocated as a fault on map.



Critical Monitoring Processes Include:



3. Build + Monitor Application Package 3

The combined Build + Monitor package allows customers to maximize ROI in remote fiber test and monitoring across the entire network lifecycle. Correlate issues during construction and service activation activities to ongoing maintenance success to radically improve network services.

Extensions: ONMSi Fiber Analytics – Gain Insight and Reporting From 1000's of Data Points To Optimize and Monetize Network Assets

Fiber Analytics is hosted on a separate server and records 1000's of events and data points from ONMSi to provide network information and reporting on cable and fiber health, faults, staff productivity and design opportunities. Take control with proactive action and network insight. Using Grafana reporting, access standard reports, customize reporting thresholds, or create custom tailored reports. Examples below demonstrate network performance KPI conditions. Start at the HeatMap and drill down from there to all faults or insights that require action.



Core Server Software Options

Package Name	License Coverage	Description
ONMSi Core Server Software	Perpetual per Server	System administration, alarm notification, geolocalization, interfaces, reports, dashboard, P2P and P2MP compatible
ONMSi GeoLocalization Mapping		Use the integrated mapping system, GeoView to draw and manage your network using a map, to use landmark information (from/to) for the fault location.
ONMSi Secure Server Management package		Additional features as SSO, HTTPS, LDAPS, AAA interfaces or HTTPS protocol
ONMSi High Availability Standby Server Software Option		Automatically or manually switch over to a standby server in case of technical issue with primary server
ONMSi Additional Concurrent Users		Add new users to the concurrent simultaneous and mobile field app users provided with ONMSi Core
FTH Software Packages		
Build Application	Perpetual Per FTH	Intuitive and Interactive P2P/Feeder Fiber Characterization Tool PON Topology Test for HP qualifications and HC certification. Only compatible with ONMSi server mode.
Monitor Application		Automatic detection and location of fiber faults with geographical mapping on a P2P network link
Build + Monitor Combo Application		Full Lifecycle Coverage Including Build and Monitor Capabilities
Fiber Analytics		Monitor P2P links for end of fiber connectivity + intrusion monitoring
Extensions		
PON VIP Assurance for Build	Perpetual Per FTH	Continuous VIP customers links assurance, including fault demarcation along the network
Peak Monitoring for Monitor or Combo Build + Monitor		Monitor P2P links for end of fiber connectivity + intrusion monitoring
Flash Fiber Monitoring for Monitor or Combo Build + Monitor		Monitor and detect intermittent short duration fault events of less than 1s
Fiber Sensing Analysis for Monitor or Combo Build + Monitor		Monitor temperature / strain on a fiber link
VIAVI Hosted Cloud SaaS Package		
Hosted ONMSi	Annual Subscription	Ideal for the Build App for contractors or operators constructing a new network without future monitoring needs.

ONMSi Core Service Administration and User Experience Overview

Usability	User Interface	Intuitive GUI requires no OTDR training and can be learned in less than 1 hour due to simple Smart Link Mapper
	Mobile Apps	Mobile device support for field technicians running tests on any mobile OS. Running on-demand tests with specific parameters
	Ease of setup/provisioning	Graphical icon based smart link setup with less than 1 minute per fiber for reference trace on the Smart Fiber Grid
	PON topology	Tree topology views for PON
	Link segmentation	A monitored path can be segmented and assigned to users' domains. Users receive notifications if there is a break/degradation in the assigned link segment.
	Trace browser	Historical OTDR traces can be filtered and shown by RTU, by port or by date
	Trace viewer	OTDR trace viewer with the option to upload OTDR traces from local computer
	Testing port sequencer	Scheduling periodical tests every x minutes. Prioritizing/Changing testing port number sequence
	Integration/Interfacing	Full set of APIs and interfaces via Web Services, SNMP and Kafka event streams
Networking	Multiple IP addresses or DNS support	Multiple IP addresses and DNS can be configured to contact the server from a local, private or public networks
Cable documentation and mapping tools	KML support	Support KML files in stand-alone and central server mode
	Landmarks	Adding landmarks information such as connector, splice or splitter event type as well as landmark's name
	Detailed fault distance	Fault distance is displayed in terms of OTDR distance and landmark distance (nearest and farthest sites)
	Fault-on-map capability	Integrated mapping interface for better fault location
	KML importation in mapping tool	Import routes, and objects from KML files into the mapping tool. Routes segments can be modified after importation.
	OTDR viewer with map location	Navigate from OTDR events to mapping view. Display geo-location from OTDR trace
Performance	Speed	Ultra-fast measurement times of 10 seconds per fiber for high productivity
	Fault Localization	Highest resolution OTDR for accurate fault finding
	Users / Peak Loading	Up to 1000 simultaneous field tech users for the mobile app
	Failover and Backups	High Availability with multiple levels of Primary/Backup and disaster recovery

Scalability	Network growth	One instance of Server software can manage hundreds of Fiber Test Heads
	Switch scalability	Pay-as-you-grow for additional test ports for build, provisioning and assurance
	Upgradability	xWDM ready for channel verification, add Fiber Sensing for temp and strain fiber aging
Security	User Management	Single Sign-on, Triple A and LDAP support
	Domain Management	User domain management. Users are limited to access and to see their specific domain.
	Architecture/OS	Linux based OS SW with Vulnerability/Penetration protection & System health monitoring
Reporting	Fiber Analytics	Short and long term analysis of fiber network performance. Easy reporting on the performance of the network, and metrics tracking.

Plug and Play Fiber Test Heads (FTH) with OTDRs and Switch Options

Deploy advanced fault location with alarm notification using secure web-browser access and a ruggedized LINUX® OS that forwards alarms to your ticket or SMS/Email systems.

RFTS Fiber Test Heads are rack-mounted OTDR mainframe units that include firmware, and an internal switch, with port expansion using external switches. All operate in FTH standalone mode for test-on-demand and monitoring capabilities or as part of a networked ONMSi RFTS System controlled by the central server. Add the ONMSi server to gain additional software capabilities, including advanced GeoView route/fault mapping, domain and user management, fiber data analytics, topology and features that expand use cases.

Typically, customers control FTHs under an ONMSi central server after they install 5 in their network to add additional software capabilities, including advanced GeoView route/fault mapping, domain and user management, trend fiber data analytics, topology and database software features that expand their use cases.



Compare FTH options

Compact FTH-5000 with Fixed OTDR



FTH-5000 Fixed OTDR in 1625, 1650 for mid or long range at 1/3 RU wide with 4 to 48 internal switchports

Lit-Fiber Ready FTH-5000 shelf with 48 internal switchports and built in WDM Multiplexer

Adaptive FTH-9000 with Modular OTDR



FTH-9000 with 576 ports and High Resolution OTDR

Features

- Smallest power and space footprint in the market; easy installation and port access with dual power feeds for reliability
- Stand-alone or ONMSi system modes that scales over 2000 ports
- 1625 nm short range or medium range OTDR for links with Raman amps
- 1650nm medium range OTDR to support C+L bands in unamplified P2P and or PON links
- Extend port capacity with pay as you grow external switch ports using the VIAVI traditional connector external switch or the high density MPO external switch.
- Ideal for small PON deployments or links that require short monitoring scan cycles on a few ports
- Tests a line distance range of up to 150Km

Features

- Easy installation and port access with many switch configurations, including high-density internal switch (up to 576 ports in 2RU). Dual power feeds for reliability and 10G SFP port with multiple fan configurations.
- Stand-alone or ONMSi system modes that scales over 4000 ports
- Largest selection of modular OTDRs including unique OTDRs for, Long range, high resolution OTDR (up to 50 dB), tune-able DWDM with 40 channels and fiber sensing Raman and Brillouin strain and temperature OTDRs
- Extend port capacity with pay as you grow external switch ports using the traditional connector or high density MPO external switches.
- Ideal for large PON exchange, HFC deployments or high fiber count cables
- Tests ultra-long line distance ranges over 200Km with a 50dB OTDR with 1000's of data points for accurate fault location

Summary of sizing details

FTH Model	Internal Port Capacity with Connector Type	Cascaded External Port Capacity	OTDR Options	Size
FTH-5000	1, 4, 8, 16, (LCAPC) or 48 (MPO 12)+2 Extended ports	Over 2000 ports	Fixed Rayleigh OTDR, 1625 or 1650 short or medium range	1/3 RU Wide x 1 RU High
FTH-9000	1, 4, 8, 12, 16, 24 (SC/APC) or 36, 48 (LCAPC) or 288, 576 (MPO 12) +4 Extended ports	Over 4000 ports	Modular Rayleigh, Raman DTS and Brillouin DTSS OTDRs. All Rayleigh loss OTDR wavelengths and dynamic ranges from 4100 and 8100 Series	2RU

Which FTH for Which Use Case?

Optimize the price point and hardware footprint by mixing the FTH configurations for the use case or architecture.

FTH Model	Application: Assurance Monitoring	Application: PON Network Construction or Service Activation Test	Benefits
FTH-5000	Point-to-Point lit or dark fiber monitoring and intrusion detection / short to medium distances with low to medium fiber count cables	PON Test or Monitoring, Suburban or Rural Exchange	Small form factor & power consumption FTH, formerly named OTU-5000
FTH-9000	Point-to-Point lit or dark fiber monitoring and intrusion detection and fiber sensing in all distances with any fiber count cable	PON Test or Monitoring, Suburban or Urban Exchange for High Fiber Count Cables	New generation all purpose Adaptive FTH for maximum port density

FTH-9000 OTDR Choices

OTDR Modules for the FTH-9000 include the 4100 series and 8100 series which includes the Fiber Sensing series.



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		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

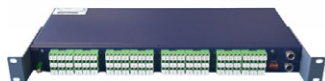
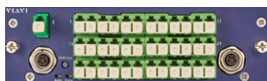
Please refer to 4100, 8100 series plug-in module and fiber sensing datasheet for technical specifications

Select From Two ONMSi RFTS External Switch Families

Extend test capacity with pay-as-you grow licensing on external switch ports using one of the ONMSi RFTS External Switches. All switches are compatible with any FTH or OTU. All feature:

- Exceptional durability provides reliable test and monitoring with automatic routines.
- Rackmount single-mode switches transmit a test signal from a common input fiber to any one output fibers. Switches are powered by the FTH with low power consumption.
- Versatile, easy installation rack mounts fit most rack enclosures.

Traditional LC/APC Connector Port Switches



Traditional 36 or 144 LC/APC Ports

Features

- Cascade up to 31 switches with the 144 unit to increase the switch capacity up to 4464 fibers
- 36 Port LC/APC Switch: 1/3 RU wide x 1 RU high
- 144 Port LC/APC Switch: 1RU wide x 1 RU high

High Density MPO Connector Port Switches



High Density 48 MPO Ports

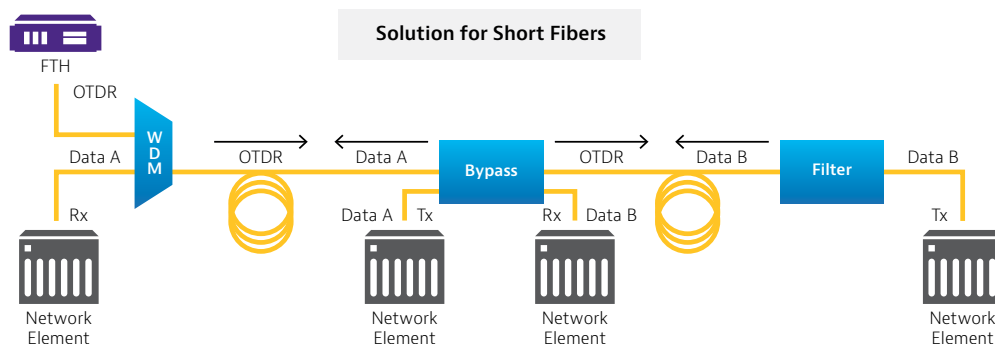
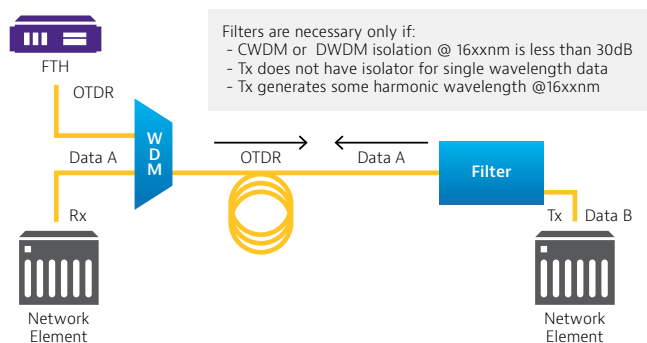
Features

- Cascade up to 31 switches to increase the switch capacity up to 1488 fibers
- 48 Port MPO Switch: 1/3 RU wide x 1 RU high

ONMSi RFTS Lit-Fiber Ready Passive Components

When you test lit fiber, you avoid dispatch, and most importantly, excess network handling disconnects/reconnects that disrupt service by damaging connectors or causing route mis-matches. These passive components are designed into the network in order to extend remote visibility into the network.

Principle for Active or 'In Service' Monitoring



Component	Function
WDM (Wavelength Division Multiplexer)	Combines the test signal into the traffic signals
Bypass	Extracts the test signal to route the test signal around an active network element and recombines it with the traffic signal to extend test reach.
Filter	Filters the test signal wavelength out of the network line to prevent it from entering a network element.
Reflector	Reflects the test signal at a test point, typically in a PON network to capture a clear OTDR peak that can be used to ID and demarcate that port with a unique OTDR trace peak signature. Reflector wavelength matches the OTDR wavelength.
Cables	Soft, flexible and hard cables are available to connect the FTH switch ports to the network lines. Cables in various lengths with FCAPC, FCUPC, SCAPC or SCUPC, and MPO breakout connections.

LGX Boxes Offered by OTDR Wavelength	Description: LGX Boxes Height: 129.5mm, Width: 28.5mm,L: 160.3mm
OTDR @ 1625nm	Traffic/Data range : 1260-1580nm
WDM	LGX BOX WITH TWO 1625NM WDM -SC/APC
BYPASS	LGX BOX WITH ONE 1625NM BYPASS -SC/APC
FILTER	LGX BOX WITH TWO 1625NM FILTERS -SC/APC
OTDR @ 1650nm	Traffic/Data range : 1260-1620nm
WDM	LGX BOX WITH TWO 1650NM WDM -SC/APC
BYPASS	LGX BOX WITH ONE 1650NM BYPASS -SC/APC
FILTER	LGX BOX WITH TWO 1650NM FILTERS -SC/APC

VIAVI Reflectors

Pluggable Optical Reflectors To Improve Test Resolution

The SC-APC pluggable optical reflector is a monodirectional reflector optimized for performance with low insertion loss in passbands should the reflector reference port be required for through mode service delivery connection. The reflect band is tightly tuned for VIAVI 1650nm OTDR wavelength to ensure there is no adverse effect to service channels. The reflector clarifies the 1650 test signal for a port under test and can remain in place without disturbing the traffic signal.

- **Reflector Option 1: In-line Plug-Type SCAPC Reflector**

This reflector can be used at the customer ONU connection outlet side.

- **Reflector Option 2: Small Form Factor Plug-Terminal SC Reflector**

This reflector is designed to remain behind in an aggregation point.

This reflector is designed with a small footprint (SC connector shroud) in order to fit within the aggregation point.



Interconnectivity Cable to Connect the FTH to Network Elements

In a lit fiber network scenario, the centralized OTDR signal is coupled with the traffic signal using a WDM Lit Fiber Module (LFM) and transmitted through an Optical Distribution Frame (ODF). In a dark fiber scenario, the remote OTDR signal is connected directly to the network through an ODF.

Current available options (other connector types available on demand): See example cables below.

- Traffic-LFM Breakout Cable (LCAPC-LCAPC)
- OTDR-LFM Patchcord Cable (MPO-MPO)
- LFM-ODF Breakout Cable (MPO-LCAPC)



Traffic-LFM breakout cable (LCAPC-LCAPC) and OTDR-LFM patch cord cable (MPO-MPO)

Services For Rapid Adoption and Long-Term Support



**Software
Maintenance and
Support Contracts**



**Operational
Assistance System
Administration**



**Mentorship
Test Procedure
Consultation**



**Project Management
and Installation or
Cloud Onboarding**



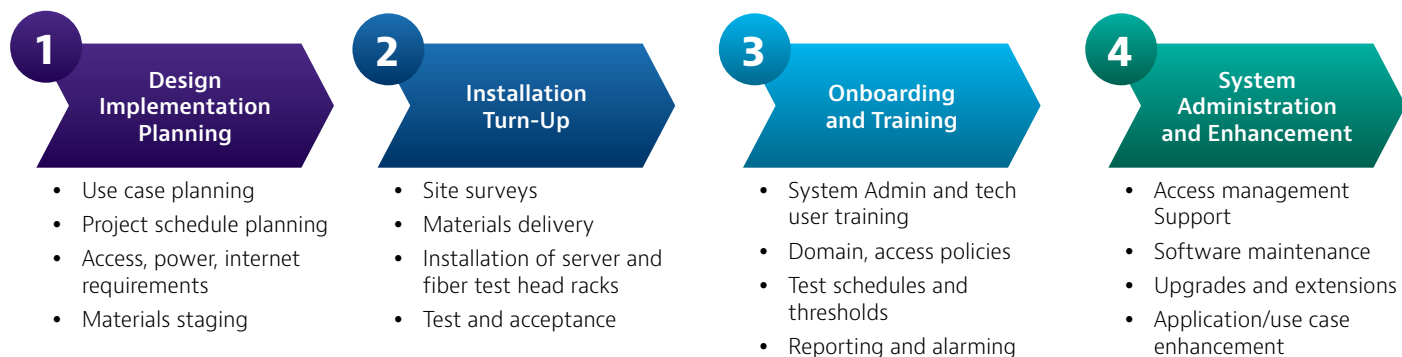
**API Integration Services,
Custom Applications
and Reports**

ONMSi SystemCare: A Services Portfolio Designed To Achieve ROI and Business Objectives

VIAVI Project Managers routinely deliver multi-year system turn ups across large customer PON, Metro, Long-Haul and Data Center networks. We are the only global test company with the experience to help your team drive adoption to deliver fiber test efficiency and insightful network data analytics. Our services team includes experts in project management, logistics, training, support and process implementation.

Anatomy of a Successful ONMSi Adoption Project

We help accelerate a smooth installation and ROI



1500.900.0523

A Service Team Partnership to Accomplish Your Goals

- Design, and plan deployment and integration in your network
- Install and adopt test procedures to operationalize management capabilities
- Migrate workloads and train up staff on time saving procedures
- Drive adoption, reporting and process enhancement

Our Services Portfolio Delivers Quick ROI and Benefits

- Launch your ONMSi system faster and transform your process to capture data and gain workflow efficiency
- Minimize disruption to existing IT resources and operations with expert, specialized program management
- Streamline and accelerate test processes with automation
- Gain automated test processes and best practices assistance for set-up, on-boarding and training
- Enable your team to perform additional migrations through knowledge transfer and solid support with flexible technical support and maintenance options

Service	Required or Optional?
VIAVI Project Planning	Required
Site Survey Requirements Document	
VIAVI material staging service and storage	Optional
Site Survey Audit 1st site is required.	Required 1st site, then optional
Patching of Monitored Fiber to Ensure Monitored Fiber Continuity with cables	Optional
ONMSi Server Software Integration including Installation of first Fiber Test Head	Required
Fiber Test Head Installation 2-N	Optional
Monitoring fiber connections 2-N	
ONMSi Administrator and Operator Training	Required
Support installation of software upgrade to an existing ONMSi system	Required as needed
System Maintenance Annual System Software Maintenance and Support for an operational ONMSi system with Standard 8X5 or Premium 7X24 and FTH Hardware Extended Warranty	Required
ONMSi Operational Assistance	Optional
ONMSi Mentor Service	



To learn more about **ONMSi** or our Fiber Test Heads, use cases and remote fiber test, go to [VIAVISolutions.com](https://viavisolutions.com) or contact your local representative.



Contact Us

+1 844 GO VIAVI
(+1 844 468 4284)

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