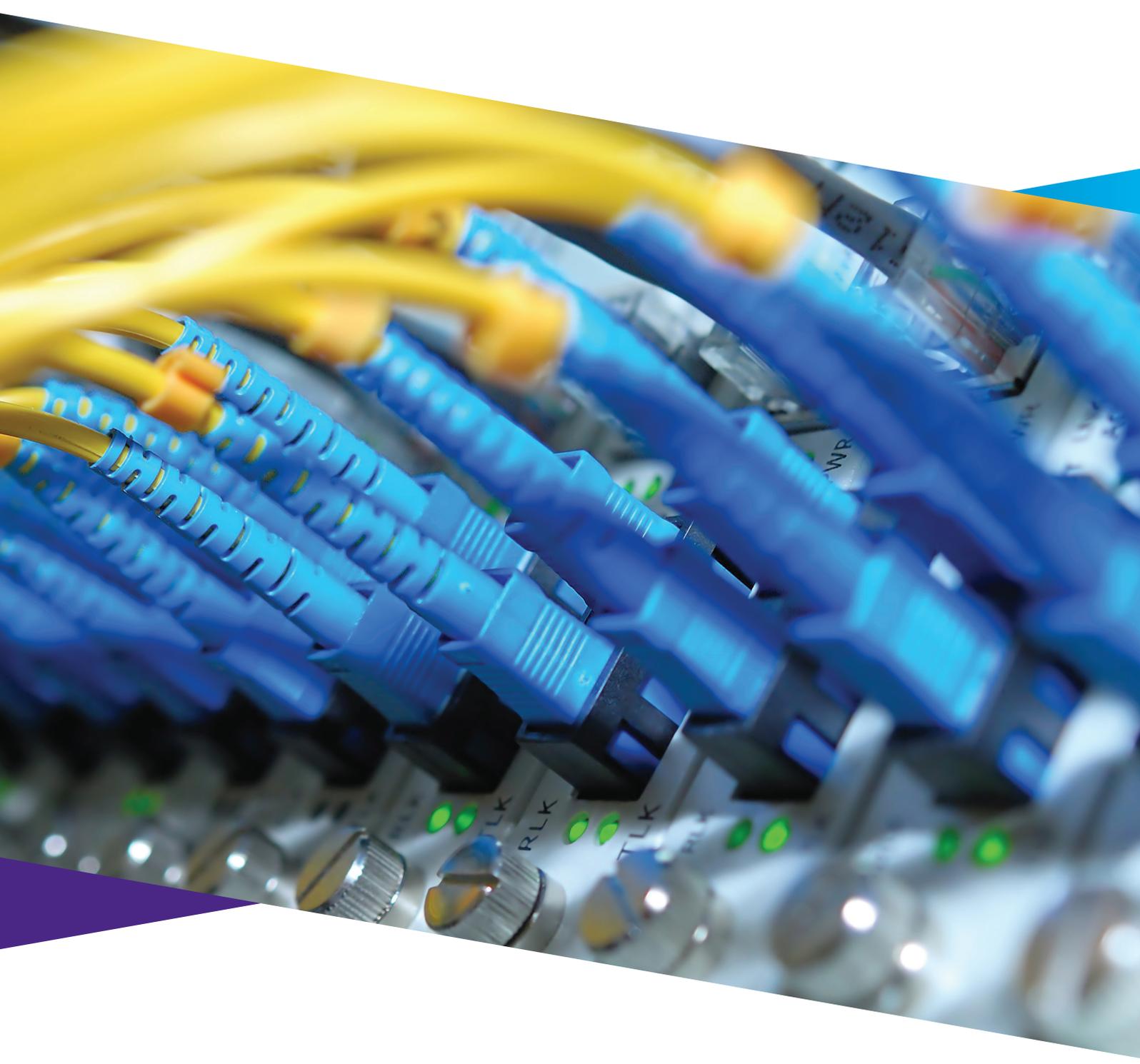


# DWDM Test and Monitoring Solutions for MSOs

OTDR and spectrum analysis test solutions to deploy, maintain, monitor and troubleshoot fiber deep and DAA networks



VIAVI DWDM testing solutions enable cable operators and contractors to perform complete end-to-end link verification, monitoring and troubleshooting of DWDM networks.

## Easy to Use

Whether it's Fiber Deep, Node+0, Remote PHY, Distributed Access Architecture (DAA), RFoG, or PON, cable MSOs are pushing fiber deeper into their networks to meet customers' demands for more bandwidth. More often, they are turning to dense wavelength division multiplexing (DWDM) to get the most out of their fiber investment. DWDM allows an MSO to increase bandwidth and users by adding wavelengths to already existing fiber.

DWDM OTDR and verifier modules empower technicians to fully certify DWDM links end-to-end after construction, validate transmitted channels during the turn-up phase and troubleshoot any potential issues. While the rack-mounted DWDM monitoring solution provides 24/7 surveillance of live links for signs of degradation or failure.



**OneAdvisor 800**  
with OSA-110 Module



**T-BERD/MTS-4000 V2**  
with DWDM OTDR module and  
DWDM Optical Channel Checker  
or Nano OSA Module



**T-BERD/MTS-5800**  
Ethernet up to 100G with  
DWDM channel verifier and OTDR



**FTH-9000/ONMSi**  
for DWDM link monitoring  
and remote test on demand

## Benefits

- Deploy, activate, maintain and troubleshoot any DWDM link
- Automatically identify DWDM port channel and test link with patented Wavescan\*
- Avoid accidental transceiver damage with SFP Protect
- Validate SFP+ performance with the built-in SFP Tune capability
- Determine bad optics drifting out of the ITU-T channel grid
- Monitor and test DWDM links on demand and get real time alerts with exact fault location

## Applications

- Verifying presence, power levels, and OSNR of DWDM channels
- Certify WDM routes for new nodes or capacity increases
- Check end-to-end continuity prior to service turn-up
- Troubleshooting faulty links without disrupting services
- Monitor live DWDM links via unused DWDM wavelength

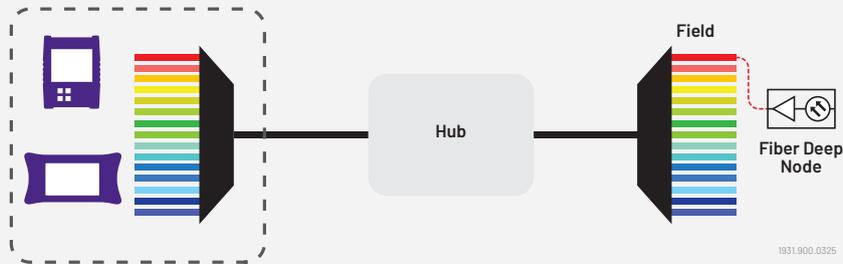
\* Patented as described at [www.viavisolutions.com/patents](http://www.viavisolutions.com/patents)

## Right Tools for the Job

Whatever phase in the life of the network, the ability to measure link loss, channel strength or OSNR, and identify and locate fiber events is crucial. The job must be quick to do and easy to interpret, as well as easy to carry around.

### Construction

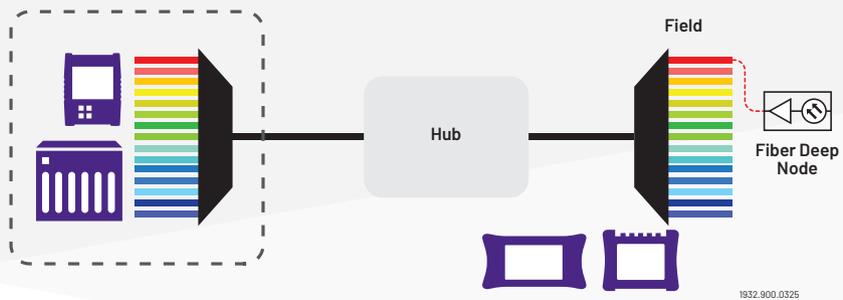
Perform a complete end-to-end link characterization through MUX/DEMUX for all wavelengths to certify the network build and validate performance criteria



End to end DWDM link characterization: DWDM OTDR

### Wavelength Provisioning

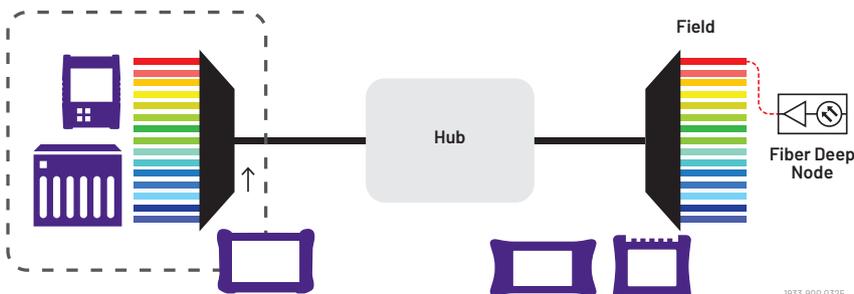
Test and verify specific DWDM wavelengths and routes without interrupting existing services to ensure network and service performance. Program (or tune) SFP transceivers in the field, activate channels and verify power, wavelength offsets and drift to ensure maximum QoS for your new DAA nodes and business customers.



DWDM link wavelength provisioning diagram for DAA Fiber Deep architecture: DWDM Optical Channel Checker, Nano OSA

### Monitoring and Troubleshooting

Avoid incurring SLA penalties; investigate and fix faulty links without disrupting traffic on active channels and avoid excessive network downtime or maintenance windows. Verify correct SFP operation and configuration (wavelength/channel). Identify weak channels on a link. Detect optics going bad before a service outage with drift and offset check.



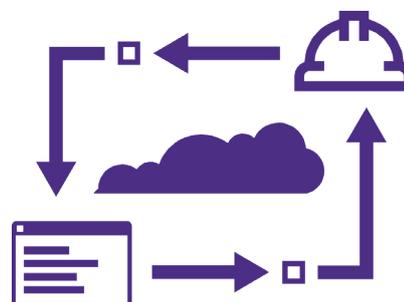
DWDM monitoring and troubleshooting: FTH-9000, DWDM OTDR, DWDM Optical Channel Checker, Nano OSA

Part Number	Description
E41DWDMC-PC/-APC	DWDM OTDR Module with tunable laser source, C-Band tunable from channels 12-62 (1567.91e5 nm - 1527.99 nm) - 50 GHz/100 GHz/200 GHz channel spacing.
2331/12	OCC-4056C DWDM Optical Channel Checker module with SFP/SFP+ bays, C-band, APC, SC mounted FC enclosed.
410SA-PC/APC	Nano OSA module (4100 series) full band, high resolution, optical spectrum analyzer with SFP/SFP+ bay, options for SFP programming, OSNR, wavelength and power drift measurement
OSA-110M/H	Full-band compact OSA modules +23 dBm (-110M) or +30 dBm (-110H) versions.
ONMSi Optical Network Management Solution	Fiber Test Head FTH-9000 with DWDM OTDR module and associated monitoring software.

For more information on ONMSi and FTH-9000 or T-BERD/MTS-2000 V2, -4000 V2, -5800, or OneAdvisor 800 test platforms or individual modules, refer to their respective data sheets.

### Test Process Automation (TPA)

Allows your team to deliver expert-level test results and close projects on the first try, every time. TPA is a closed loop test system that optimizes workflows, eliminates manual, error prone work and automates immediate data reporting for job close out, team progress updates and network health analytics. Execute jobs efficiently to ensure high quality network builds, rapid turn-up/activation and enhanced operational visibility.



### Inspect Before You Connect (IBYC)

Contamination is the number 1 reason for troubleshooting optical networks. Proactive inspection and cleaning of fiber connectors can prevent poor signal performance, equipment damage, and network downtime.





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