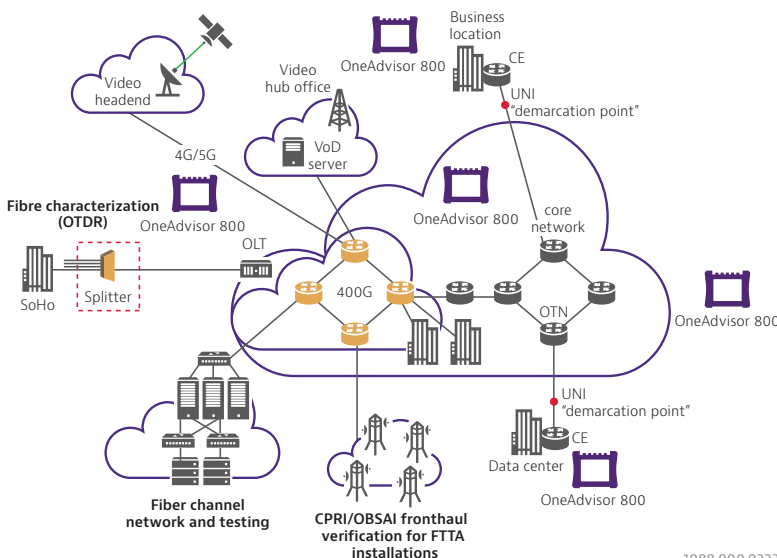# VIAVI
OneAdvisor 800 Transport
Field-Optimized Network Test Tool Up to 400G

The OneAdvisor 800 delivers all the test capabilities technicians and engineers need to install and maintain high-capacity networks up to dual 400G. Its portability and modularity make OneAdvisor 800 perfectly suited for metro/core, data center interconnect, and business services testing. The OneAdvisor 800 400G supports concurrent dual port testing up to 400GE and features the same user interface as all in the T-BERD/MTS Family.

The OneAdvisor 800 is designed to meet the challenges that network operators and datacenters face now that 400GE technology has made its way downstream from the lab to field deployments. No longer in temperature-controlled, laboratory environments, 400GE test devices in the field must be rugged and portable and run cool without sacrificing key test features and measurement accuracy.

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Key Benefits

- **Industry-Leading Expandability.** Tests fiber (OTDR, OSA) and all Ethernet rates single or dual port (400, 200, 100, 50, 40, 25, 10, and 1)
- **Superior Battery Life**. Scalable to multiple batteries which enables hours of unconnected use
- **Unmatched Cooling**. Best in class for 400G portables – easy to cool ZR/ZR+ pluggables
- **Conveniently Portable**. The smallest dual-400G capable test unit on the market
- **Broad Test Coverage**. Modularity delivers all-in-one solution across lines rates and protocols
- **Multiple Optics Support**. QSFP-DD/QSFPx, OSFP, SFP-DD/SFPx enabled, and full coherent optic support

Features

- **Future-Proofed.** Test new and future technology including PAM4, NRZ and Forward Error Correction. Covers unique rates such as 50GE and 64GFC on SFP56 optics
- **Consistent Results**. Scripted workflows that drive test consistency across users; QuickCheck, RFC 2544, OTN Check, Optics Self-Test, AOC/DAC/ AEC Cable Test
- **Modular Flexibility.** Pairs with many VIAVI test modules including OTDRs, WDM Checker/ OSA modules, which enable the testing of wired networks, radio access networks (RAN), and network timing and synchronization
- **Comprehensive.** Tests devices (transport equipment, Ethernet switches, routers), networks, pluggable optics, and AOC/DAC cables

The OneAdvisor 800 with 400G Transport Module is the industry's most integrated and compact tool for up to 400Gbps testing. This solution provides full rate coverage to address service activation, troubleshooting, and maintenance. The 400G Transport Module provides optics coverage for QSFP-DD/QSFPx, OSFP and SFP-DD/SFPx. In addition, the OneAdvisor 800 integrates fiber optic testing with OTDRs, OSAs and can also be combined with 5G RF testing in one.

Comprehensive Coverage

The OneAdvisor 800 provides modularity with the following attributes:

• Modular base unit with large 8-inch, multi-touch display

• Integrated WiFi, and Bluetooth to wirelessly transfer results. For secure environments, units are available without any WiFi/BT

• Expandable with up to two modules on the back of the unit. Examples include OTDR, OSA/Channel Checker, Timing Expansion Module, Power Expansion Module.

• Scalable battery support which includes a battery in the base and optionally Power Expansion Modules (PEM)

• SmartAccess Anywhere provides easy device access from an Android device, IOS or PC

• Cloud-base StrataSync™ for results collection, data management, and device tracking

• Support of VIAVI Fiber inspection tools and an optional integrated power meter and VFL module

• Stackability of full-size modules to potentially add a Fiber Module Carrier to support dispersion testing or high dynamic range OTDRs/OSAs

400G Transport Module

Both variants of this module provide dual-port testing and broad support of multiple interface types with a built-in GNSS receiver for future expansion. The test interfaces include QSFP-DD (2 ports on TM400GB-QQ), OSFP on the TM400GB-QO version, and two SFP-DD physical ports. The reporting of full power consumption is available for all optics types. Capabilities feature native PAM4 and NRZ with CMIS and electrical pre-emphasis support.

The 400G Transport Module provides strong support for ZR/ZR+ optics with laser tuning and grid granularity. Further, multiple coherent errors and statistics are provided. Supported rates are 400GE, 200GE, 100GE, 100GE KP4, and 4x100GE.

The 400G Transport Module provides the following Ethernet rates: 400GE, 200GE, 4x100GE, 100GE with no FEC, RS (528,514) FEC or full KP4 RS (544,514) FEC, 50GE on SFP56, 40GE, 25GE (FEC or bypass), 10GE; 1GE and 10/100/1000. It also supports OTU4, OTU3, OTU2e, OTU1e, OTU2, and 64G Fibre Channel and provides a loopback capability to help test AOC (Active Optical Cable) and DAC (Direct Attach Cable) cables for data center applications.
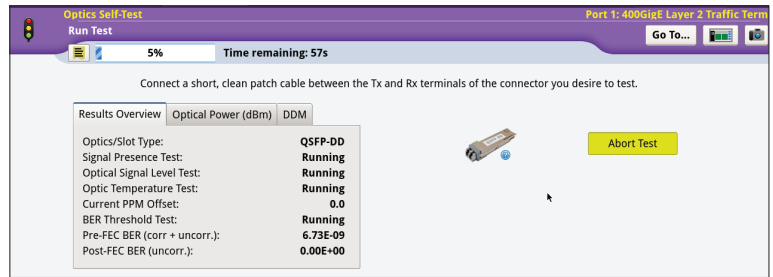

TM400GB-QQ

TM400GB-QO

Capabilities include:

- Dual-port testing up to 400GE. For rates up to 200GE, it is possible to reload a port independently without affecting a test running on the other port; this provides any port, any rate, any time
- Testing using 400GE, 200GE, 100GE and 4x100GE ZR/ZR+ pluggable modules. Can set the transmitter to different channel/wavelength/ frequency values and optical power levels. Reporting of coherent receiver statistics. Support of grid granularity down to 3.125GHz.
- Support of up to 4 VLAN tags y Full line rate bandwidth including Ethernet burst testing. Support of layer 2 and layer 3 IPv4 testing including ARP, DHCP and IPv6.
- Packet capture and decode
- Selection of frame sizes up to 16,000 bytes including random distribution and EMIX
- RS (544,514) FEC testing for correctable errors up to 15 symbols and uncorrectable errors. Monitoring of high BER rates with a user settable alarm threshold. As applicable, support of RS(528,514) FEC.
- Support of a 4x100GE application with 4 independent 100GE engines
- Key Performance Indicator testing using ATPv3 which provides real-time frame loss, out-of-sequence, latency, and packet jitter measurements

- Run Ethernet tests with up to 16 parallel streams
- Bit Error Rate testing using PRBS patterns in Ethernet frames. Multi-lane unframed BERT is available as an option. Multiple rates are supported for both PAM4 and NRZ. Support includes full lane independence, per lane pass/fail thresholds, usage of optical pluggables or VIAVI's electrical 402–090.01;QSFP-DD 8x50G PAM4 Electrical Adapter
- Optics Self-Test for QSFP-DD, OSFP, and SFP devices. Includes pre-FEC and post-FEC BER results with pass/fail results based on BER theory, PPM offset testing, and temperature monitoring
- Control of QSFP-DD devices and registers via expert mode. This includes pre-emphasis and per register access and dump to file. Selection of application codes for CMIS pluggables. Support of both CMIS and SFF-8636 devices.
- Ethernet level testing including QuickCheck, RFC 2544, and Y.1564 SAMComplete™
- Selection of host interface based on NRZ (100GAUI-4) or PAM4 (100GAUI-2) for 100GE pluggable devices.
- Cable Test for AOC, DAC, and AEC cables. Support of a QSFP loopback function to test straight and breakout cables with a single module.
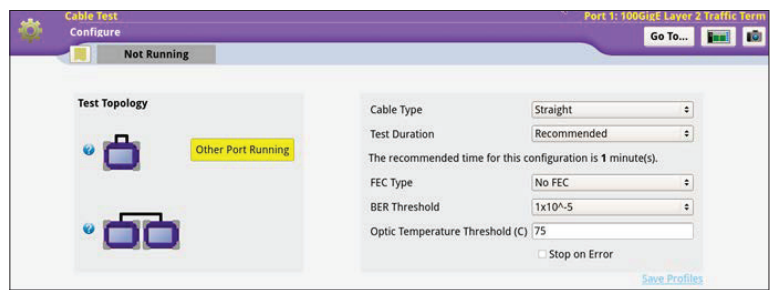
Troubleshooting with Optics Self-Test

Optics Self-Test is a workflow tool to identify and troubleshoot performance issues related to pluggable optics. It is especially well-suited to field environments where pluggable optics issues are difficult to isolate. It is available on QSFP-DD, QSFPx, SFPx. This tool features a recommended test duration calculation based on a target BER. The tool, included with each line rate, monitors information such as optical power and provides a temperature threshold setting.
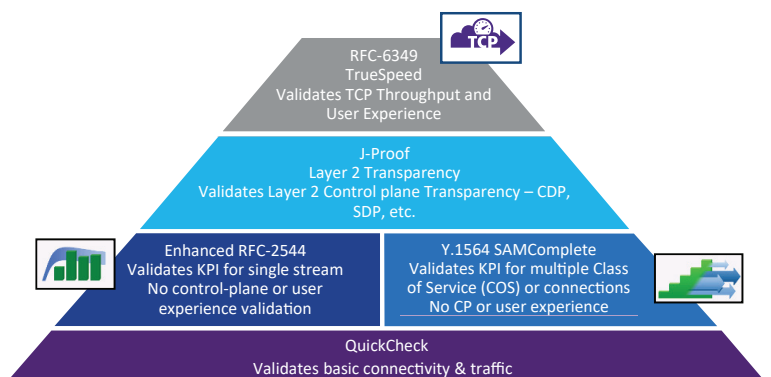

Testing with Cable Test

Cable Test is a workflow tool to troubleshoot sample test AOC/DAC/AEC cables. It applies to optical and copper cables including straight and breakout versions. On OneAdvisor 800, there is a layer 1 loopback feature which enables the testing of multiple cable configurations using a single module. Cable Test verifies multiple parameters in testing cables, the key parameter to help determine the pass/fail criteria is Bit Error Rate (BER); for Ethernet rates using FEC such as 400GE, both pre-FEC and post-FEC results are available.

Time-Saving Ethernet Service Activation

Test more quickly and efficiently using automated tests on OneAdvisor.

- QuickCheck — a fast, automated test that validates end-to-end configurations; runs as a pre-check test before RFC 2544 or Y.1564 or as a stand-alone test

- Enhanced RFC 2544 — an automated turn-up test with built-in time efficiency for validating key performance indicators (KPIs), concurrently measuring throughput, frame delay, and frame delay variation in addition to frame loss and committed burst size (CBS)

- Y.1564 SAMComplete™ — An automated service verification test that speeds the verification of multiple classes of service (COS) or connections based on SLAs

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OTN Service Activation with OTN Check

The unique VIAVI OTN Check tool greatly simplifies the testing OTN services. This workflow tool automates the process of turning up a new OTN service by integrating key tests like OTN payload verification, round-trip delay, overhead transparency testing and encryption testing. OTN Check streamlines the test process and generates pass/fail results.

Expansion Modules

These modules can perform several additional functions and connect onto the back of the unit.

Modules include:

- An optional expansion battery. With one expansion battery, it is possible to support 400GE ZR+ without AC. It is possible to run 400GE up to 2 hours with 2 Power Expansion Modules; via hot-swapping, it is possible to run on battery indefinitely.
- A full family of OTDR modules, with Smart Link Mapper which provides an icon-based map view for clear diagnostics of detected issues
- The OSA-4100 Optical Spectrum Analyzer with full band support and tunable SFP control
- Channel Checkers which display the spectrum of an incoming signal
- Timing Expansion Module Version 2: Provides a stable Rubidium timing source when in holdover
- Cable Antenna Analyzer: Calculates the length of a coax cable to an antenna

StrataSync — Empower Your Assets

StrataSync is a hosted, cloud-enabled solution for managing assets, configurations, and test data on VIAVI instruments. It ensures that all instrument software is current, improving instrument efficiency and technician effectiveness. StrataSync enables inventory management, test result consolidation, and performance data distribution with browser-based ease. StrataSync manages and tracks test instruments, collects and analyzes results from the entire network, and helps train and inform the workforce.

Generic Packages

Part ONA800A-TRANSPORT-FAMILY is for the OneAdvisor 800A Transport Family Configurator.

TM400GB-QO		TM400GB-QQ	
Part Number	Description	Part Number	Description
ONA8-400GE-NOPT-NOG	OneAdvisor 800 400G QO Pkg with 400GE, No Optics, No WiFi, No BT	ONA8Q-400GE-NOPT-NOG	OneAdvisor 800 400G QQ Pkg with 400GE, No Optics, No WiFi, No BT
ONA8-100GE400GHW-NOPTNOG	OneAdvisor 800 400G ready QO Pkg with 100GE, No Optics, No WiFi, No BT	ONA8Q-100GE400GHW-NOPTNOG	OneAdvisor 800 400G-ready QQ Pkg with 100GE, No Optics, No WiFi, No BT
ONA8-400GE-NOPT	OneAdvisor 800 400G QO Pkg with 400GE, No Optics	ONA8Q-400GE-NOPT	OneAdvisor 800 400G QQ pkg with 400GE, No Optics
ONA8-400GE-FR4	OneAdvisor 800 400G QO Pkg with 400GE, FR4 Optics	ONA8Q-400GE-FR4	OneAdvisor 800 400G QQ pkg with 400GE, FR4 Optics
ONA8-100GE-400GHW-NOPT	OneAdvisor 800 400G-ready QO Pkg with 100GE, No Optics	ONA8Q-100GE-400GHW-NOPT	OneAdvisor 800 400G-ready QQ Pkg with 100GE, No Optics
ONA8-10G-100G-400G-NOPT	OneAdvisor 800 400G QO Pkg with 10GE, 100GE, 400GE, No Optics	ONA8Q-10G-100G-400G-NOPT	OneAdvisor 800 400G QQ Pkg with 10GE, 100GE, 400GE, No Optics
ONA8-10G-100G-400G	OneAdvisor 800 400G QO Pkg with 10GE, 100GE, 400GE, Optics	ONA8Q-10G-100G-400G	OneAdvisor 800 400G QQ Pkg with 10GE, 100G,E 400GE, Optics
ONA8-1G-10G-100G-400G	OneAdvisor 800 400G QO Pkg with 1GE, 10GE, 100GE, 400GE, Optics	ONA8Q-1G-10G-100G-400G	OneAdvisor 800 400G QQ Pkg with 1GE, 10GE, 100GE, 400GE, Optics
ONA8-64GFC-NOPT	OneAdvisor 800 400G QO Pkg with 64GFC, No Optics	ONA8Q-64GFC-NOPT	OneAdvisor 800 400G QQ Pkg with 64GFC, No Optics

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