Brochure

VIAVI MAP-2800

Rack-mounted test head for centralized and standalone Ethernet/IP testing up to 800G





The MAP-2800 rack-mounted network test head is the one tool that technicians, engineering and operations staff need to remotely test the transmission quality of their networks or network equipment. Whether it is about Data Center connectivity, WDM wavelength testing or testing of high bandwidth Carrier Ethernet links – the MAP-2800 can test all these scenarios - up to 800G. It can be used and deployed standalone or distributed across the network as part of the Fusion Ethernet/IP assurance system.

High bandwidth 400G and 800G links are increasingly used in today's network infrastructure. Data centers are more geographically distributed due to constraints on power, water, real estate and physical capacity limits. AI is driving much of that expansion, requiring high throughput, low latency and loss for interconnects between AI workloads in scale-across scenarios.

Connections to data centers are mission critical, often with redundant/backup links. Service Level Agreements (SLAs) are strict and penalties/chargebacks can be high. Service providers and network operators are offering new types of WDM or Core Network Services based on 400G or 800G infrastructure. To maintain/assure the performance of these connections, and to verify (and defend) SLAs, a Data Center operator or Service Provider must frequently perform Ethernet and bit-error-rate (BER) tests on line rates up to 800G and beyond, as well as on OTN circuits.

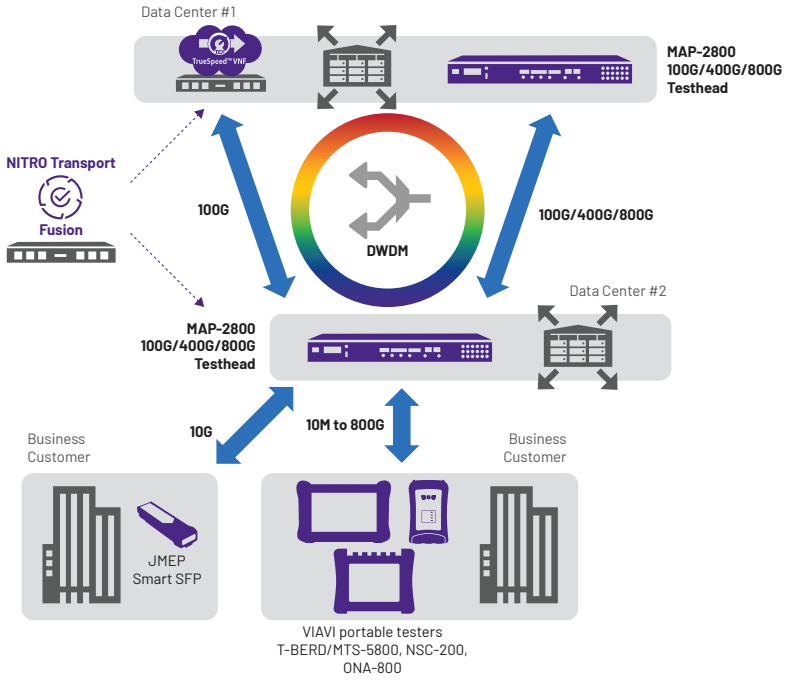
These new challenges are made tougher by the fact that many Data Center operators or Service Providers have limited technicians to run tests ensuring the quality of connections. By deploying the MAP-2800 test head, tests can be run remotely avoiding technician dispatch and allowing a centralized team of staff to test the network regularly with minimal OPEX and instant test access.



VIAVI MAP-2800

Secure Remote Access to test heads across the network

The MAP-2800 was designed to enable Service Providers and Data Center operators the ability to securely run high-performance tests in unstaffed locations. In larger networks test points in remote locations (central offices, data centers, co-lo facilities etc.), either virtual agents, or physical test heads such as MAP-2800, can be controlled via the highly scalable centralized Fusion controller.



For standalone use cases, the MAP-2800 can use its built-in OneAdvisor 800 user interface which can be controlled via these tools:

VNC: Virtual Network Computing (VNC) lets users remotely control a VIAVI test device from another computer. That communication can be secured using VNC with encryption.

Smart Access Anywhere: A VIAVI application that enables remote control from a PC browser or smartphone/tablet app, for launching tests or providing support to techs on site or transfer files. Supports encryption.

SCPI: A common automation command structure specifically for controlling instruments. It provides users with a means to build an automation layer on top of the test function, so users can build repeatable and fast executing scripts.

Key Benefits

- Optimized for remote, unattended testing with a rack-mounted design and remote management functionality either through Fusion integration, or VNC/Smart Access Anywhere/SCPI
- Ethernet testing, 10M through 800G line rates

Key Features

- Rack mounted, 1.5U 19" wide, kits available for 21", 23".
- High reliability with Dual AC or DC (48V) hot swappable power supplies.
- The industry's fastest RFC 2544 and Y.1564 (SAMComplete™) Ethernet service activation test including nanosecond accurate latency measurements.
- RFC 6349 (TrueSpeed™) layer 4 Testing to test user TCP experience.
- Ensures SFP-DD, QSFP-DD, and OSFP modules run error-free with Optics Self-Test
- Verifies AEC, AOC, DAC straight and breakout cables with Cable test
- Test OTN service activation with the OTN Check workflow automated script
- Fibre Channel up to 64G, SONET/SDH, unframed BERT
- Dual 1x4 Optical Switch (hardware option)

Applications

- Integrates into the VIAVI Fusion virtual test system alongside 10G & 100G test heads, smart SFPs and virtual agents
- Remotely test the transmission quality of the network links connecting data centers or central offices/head-ends
- Converged Ethernet/IP network testing and troubleshooting at 10 M to 800G interfaces for data centers and core / metro networks
- Run tests between test-heads, or test-heads & handheld instruments e.g. OneAdvisor 800, or TBERD/MTS-5800
- Installation and maintenance of OTN, FibreChannel and SONET/SDH networks
- System verification of Transport/Ethernet equipment in labs

Four Key MAP-2800 Use Cases

1 Centralized Test (Fusion)

Scenario: A "hybrid" network with a mix of physical and virtual circuits has multiple test points; portable, rack-mounted, and virtual, with ability to control them all from a central location via a dedicated application or automate testing via the Netconf interface. All test results are stored centrally and can be exported to 3rd party applications via KAFKA.

Solution: VIAVI Fusion provides a highly scalable system to control standardized tests over multiple test points: physical test heads, virtual agents and smart SFPs (JMEPs).

2 Portable-to-office (fixed)

Scenario: Two sites, but only one with a portable tester and a technician present – typically, this is a two-person test

Solution: Use a portable OneAdvisor 800 or T-BERD/MTS-5800 on one site and test against a rack-mounted MAP-2800 in the other

- Only one technician is required to run the test saving expense and freeing other resources to be deployed on other jobs
- Either test unit can be controlled by the other using Smart Access Anywhere
- Use loop protection mode to protect the integrity of a currently running test and avoid interruptions as the test progresses

3 Submarine

Scenario: Multiple plants with a mix of terrestrial, dry, and wet. Need to test between plants to ensure the network is performing to capacity.

Solution: Deploy MAP-2800 units at multiple dry plant sites to provide efficient, high-capacity testing with minimal technician intervention.

4 Office (fixed)-to-office (fixed) (e.g. data center interconnect)

Scenario: Need to test the network between sites, but neither site has a technician to run tests via portable, hand-held testers

Solution: MAP-2800 at both sites, run tests remotely via secure communications e.g. VNC

- Encryption up to 256 bits
- Additional security and encryption through SSH (port 22)

Troubleshooting with Optics Self-Test and Cable Test

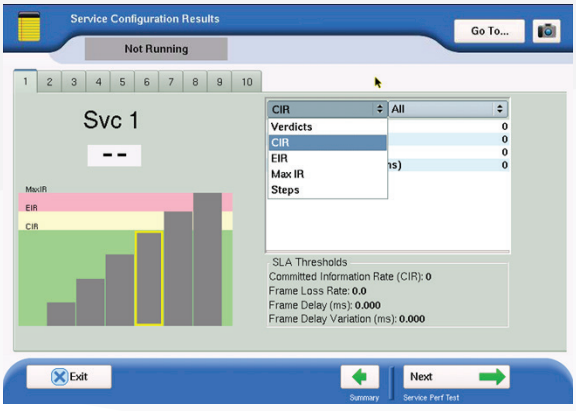
Optics Self-Test is a workflow tool to verify and troubleshoot performance issues related to high-speed optics. It is especially well suited to field environments and helps isolate pluggable optics issues. This easy-to-use test integrates items such as a bit error theory algorithm, clock offset verification, and per-lambda power monitoring. Coupled with RS-FEC, it offers pre-FEC and post-FEC testing.

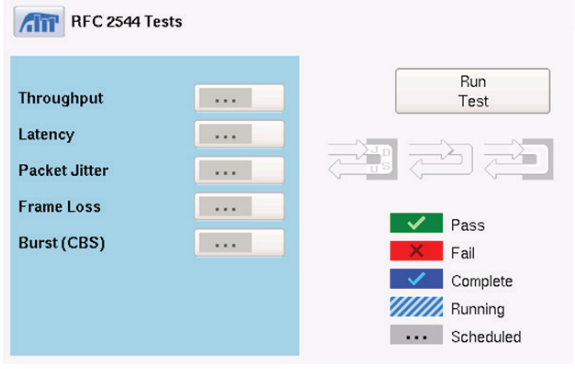
Cable Test enables the testing of AOC (Active Optical Cable), AEC (Active Electrical Cable) DAC (Direct Attach Copper) straight and breakout cables.

Efficient Ethernet Testing

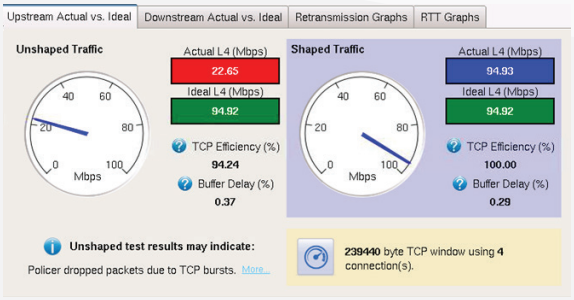
Test more quickly and efficiently using automated tests combined into one integrated module covering electrical and optical interfaces from 10M to 800G Ethernet:

- Built-in Fusion Test Controller application
- QuickCheck — quick pre-check test before RFC 2544 or Y.1564 or as a stand-alone test
- Enhanced RFC 2544 — an automated test with built-in time efficiency for validating key performance indicators (KPIs)
- Y.1564 (SAMComplete™) — An automated service verification test that speeds the verification of multiple classes of service (COS)
- RFC 6349 (TrueSpeed™) layer 4 Testing to test user TCP experience.
- RS-FEC testing for interfaces such as IEEE 802.3 SR4. Required for data center and short reach testing
- Capture and decode — available at all Ethernet rates
- IPv4 and IPv6 support including RFC 2544 and Y.1564 SAMComplete





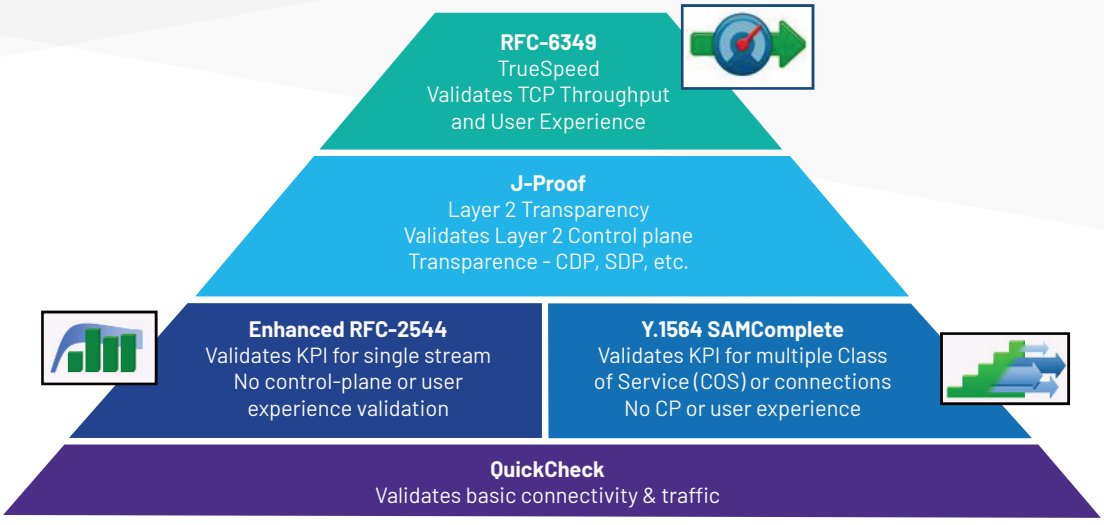
- Service Disruption testing with numerous triggers
- Layer 2 transparency testing with J-Proof — confirms end-to-end transparency between two endpoints anywhere in a network using control plane protocol data unit (PDU) information
- Operator lab evaluation tools — includes functionality such as skew injection, and per-lane alarms/errors injection, and reporting



OTN Testing

The MAP-2800 provides comprehensive OTN test functionality that includes:

- RFC 2544 for Ethernet clients in OTN
- Bit Error testing
- Complete ODU multiplexing mappings with nested ODU functionality including ODU0, ODU1, ODU2/2e, and ODUFLEX
- FEC testing for correctable and uncorrectable errors
- All 6 TCMs concurrently
- Service disruption with numerous triggers
- GCC transparency testing



Management and Control of MAP-2800

The MAP-2800 can be managed and controlled in different ways depending on use case and deployment model.

Deployment of Multiple MAP-2800s using a centralized and systemized management approach

Nitro Fusion Test System

The Fusion Test System enables the management of MAP-2800s from a central site. Users must log into the Fusion Test Controller to get access to the MAP-2800 thereby implementing a central authentication and enforcing user access rights. No specific knowledge of the MAPs management IP or MAP login credentials is required since the Fusion system takes care of this. Test can be stored as templates and are made available to each user. After each test run a test report, acting as a birth certificate can be downloaded. In addition, for more sophisticated users, Fusion enables VNC access to the connected MAP-2800s.

Deployment of individual MAP-2800s, each managed as single entity

For customer who want to deploy single, independent MAP-2800s the device supports key management tools already known from VIAVI's field instruments: Job Manager, StrataSync and VNC access.

Job Manager

Job Manager eliminates the need for technicians to remember which tests to run or how to run them. Users can set up a test plan in a website, download it the test units, and work through a prompted, step-by-step checklist to ensure all tests are executed properly. A single summary report provides an easy-to-read indication of test results.

StrataSync: Empower Your Assets

StrataSync

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 and the latest options are installed. StrataSync enables inventory management, test result consolidation, and performance data distribution anywhere with browser-based ease. It also improves technician and instrument efficiency. StrataSync manages and tracks test instruments, collects and analyses results from the entire network, and helps train and inform the workforce.

VNC access

Using VNC viewing software each MAP-2800 can be accessed offering the same setup and control functions a user would have using a field test instrument. The access is secured via a dedicated VNC password.

Automation Capable

The MAP-2800 supports various northbound automation interfaces allowing to integrate the test head into a automation framework

NetCONF/RestCONF via the Fusion Test Controller using YANG data models allows in-depth integration via a well-known SW API. Test can be started and reports can be retrieved from the system enabling a fully automated test solution.

SCPI, a common command structure specifically for controlling instruments. Issuing SCPI command to individual MAP-2800s provides users with a means to build an automation layer on top of the test function to easily repeat and speed up test execution.

VIAVI Care Support Plans

Increase your productivity for up to 5 years with optional VIAVI Care Support Plans:

- Maximize your time with on-demand training, priority technical application support and rapid service.
- Maintain your equipment for peak performance at a low, predictable cost.

Plan availability depends on product and region. Not all plans are available for each product or in every region. To find out which VIAVI Care Support Plan options are available for this product in your region, contact your local representative or visit: viavisolutions.com/viavicareplan

Features:

*5-year plans only

Plan	Objective	Technical Assistance	Factory Repair	Priority Service	Self-paced Training	5 Year Battery and Bag Coverage	Factory Calibration	Accessory Coverage	Express Loaner
BronzeCare	Technician Efficiency	Premium	✓	✓	✓				
SilverCare	Maintenance & Measurement Accuracy	Premium	✓	✓	✓	✓*	✓		
MaxCare	High Availability	Premium	✓	✓	✓	✓*	✓	✓	✓

viavisolutions.com

Contact Us +1 844 GO VIAVI | (+1 844 468 4284)
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