VIAVI Solutions

Brochure

Data Center Interconnect (DCI) Solutions

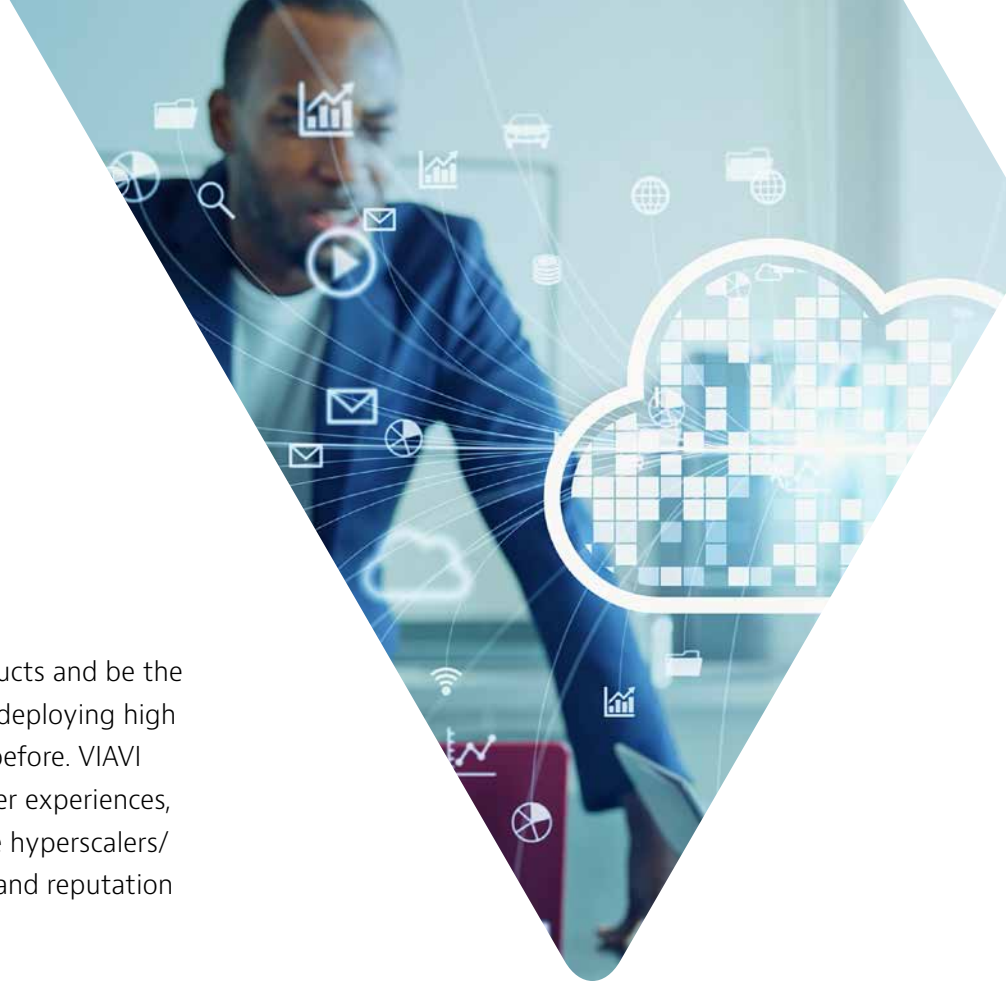
For Construction and Commissioning

Together, we can deliver high quality DCI links faster than ever

Across the hyperscale ecosystem, the aim is to reduce time-to-market and scale fast, often accelerating by a factor of two the deployment of data center capabilities – including the construction of network infrastructure such as data center interconnects (DCIs). This translates to significant time pressure on the installation and certification of high fiber count cables (with 6,912 fibers per cable in a typical data center campus) that connect data centers.

Certifying such a high volume of fibers and ensuring DCI links are built to the required spec, with confidence and speed, is a real challenge. To meet quality standards and follow required methods and procedures, a certain set of tests must be performed. The volume of tests is nearly inconceivable and traditional test and measurement processes, workflow, and instruments are less effective and alternatives must be considered.

VIAVI smart test devices and software solutions for DCI environments are engineered with built-in automation and efficiency, boosting productivity of field technicians by at least 60% and reducing project management complexity and cost.



Exceed Client Expectations

You can confidently leverage VIAVI products and be the trusted partner in DCI environments by deploying high quality fiber networks faster than ever before. VIAVI smart instruments help you deliver better experiences, maintain a trusting relationship with the hyperscalers/ data center owners, and elevate your brand reputation within the industry.

ACCURACY & RELIABILITY

The correct measurement all the time

SPEED

Scaled for high density fiber cables

TECHNOLOGY PIONEER

Multi-award winning time-tested solutions

SIMPLE

All functions available at your fingertips

PERFORMANCE CONTROL

Real-time visibility on reporting progress and asset status

EFFICIENCY

Job is done right the first time

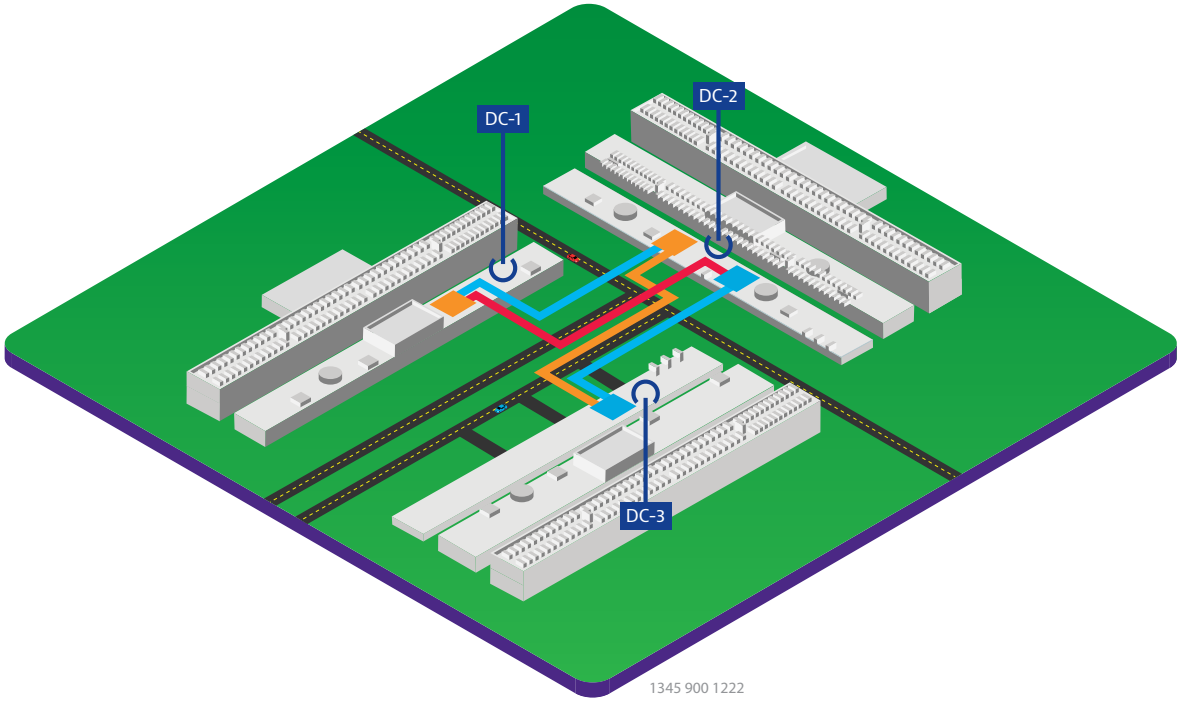
Test and Certification Solutions

From installation and certification to upgrades and troubleshooting, VIAVI test and certification devices have been designed, developed and tuned to deliver the performance needed in even the most demanding network environments. Our tools offer unprecedented capabilities that cover all network testing configurations and requirements for technicians at any skill level:

- A modern, multi-touch user interface with enhanced user experience that enables novice technicians to deliver expert-level test results and close projects on the first try, every time.
- On-board intelligent results analysis and diagnosis to prevent guessing or false results interpretation and for immediate corrective actions.
- The industry's most comprehensive MPO-based high fiber count test portfolio, engineered to simplify operation and reduce manipulation errors.
- Scripted and fully automated test sequences with a simple one-button execution – automating low-value tasks (setting up the instrument, file management, fiber connection/disconnection).
- Integration of all required test functions into one portable unit for faster and cleaner field operations.

Testing high fiber count campus DCI

DCI connects data centers in a campus or within premises. In this scenario, the fiber cable density is high (up to 6,912 fiber cores) and the maximum distance is typically 5 kilometers (km).

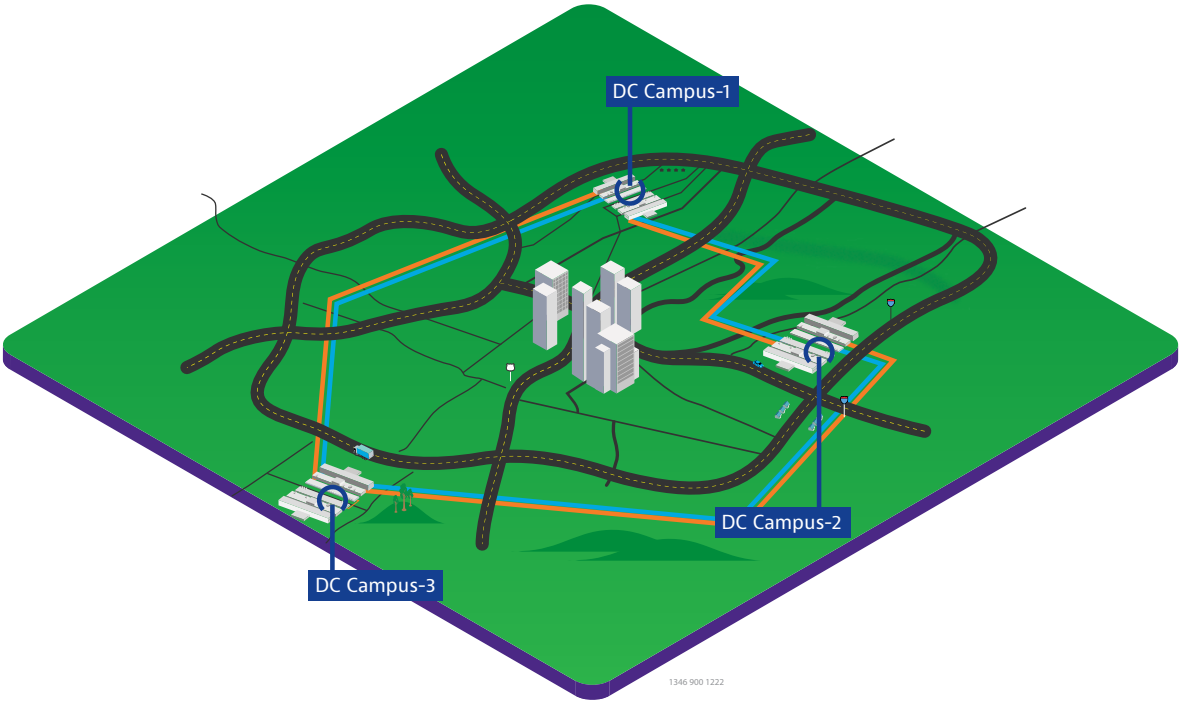


DCIs in a basic campus environment

Fiber endface inspection	**Fiber Certification: Basic Tier-1 / Optical Loss, Length, and Polarity**	**Fiber Certification & Troubleshooting: Advanced Tier-2 / Optical Time Domain Reflectometry (OTDR)**
Validates pristine fiber endface before making a connection	Certifies proper fiber installation and ensures infrastructure supplier warranties	Verifies the integrity of the link and ensures proper installation of passive optical elements and fiber sections. Locates and identifies fiber faults
· Ready for next gen connectors (ie: VSFF) · Fully automated inspection and analysis · Standardized; bias-free pass/fail assessment	· Designed to drive best practices: unique integration with a patchcord microscope · Fastest True MPO Tier-1 solution : 15,000 MORE fibers tested per week · Simple, one-button execution	· Fully automated 12-fibers/MPO cable testing · Simplified icon-based link view · Evolutive to Bi-Directional OTDR
 **FiberChek Probe (single fiber ferrule)**  **FiberChek Sidewinder (multi-fiber ferrule)**	 **SmartClass Fiber OLTS-85**  **SmartClass Fiber MPOLx**	 **T-BERD/MTS-4000 V2 with OTDR and MPO switch modules**

Testing metro DCI

Where multiple campuses or sites are connected to each other in a specific geographic area, they are often referred as Metro. Metro DCI distances can vary from a few km to 100 km. This interconnection between DC campus requires network performance (ie high-capacity and speed) and availability to deliver quality services and guarantee data center uptime.



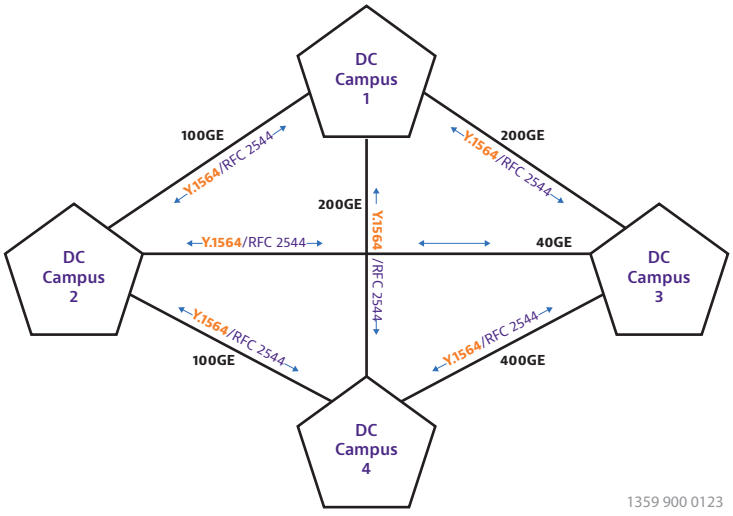
Fiber endface inspection	**Fiber Certification: Bi-Dir. Loss/ORL/OTDR, length and continuity**	**Network characterization: Chromatic Dispersion, Polarization Mode Dispersion**	**Network infrastructure acceptance: Ethernet BERT**	**DWDM channels test and spectrum analysis**
Validates pristine fiber endface before making a connection	Certifies end-to-end the integrity of the link and characterizes, bi-directionally each passive optical elements and fiber sections	Ensures fiber sections and components do not cause additional bit-error-rate (BER)	Proves the complete network infrastructure success and performance (SLA benchmarking)	Validates DWDM signal performance and channel routes
· Fully automated inspection and analysis · Standardized; bias-free pass/fail assessment	· No post processing required: on-board instant bi-directional analysis (TrueBIDIR) · 60-80% time saving on a complete certification · Simple, one-button execution, fully automated test process	· Predictable, repeatable and fast testing time - less than 2 min/fiber · Compact design for field operations – integrated dispersion analyzer and lightweight broadband source · Support short, metro & very long range, amplified links & APC-based	· Comprehensive pluggable optics support and futureproof optics slots · Fast RFC 2544, Y.1564 workflows · Most Compact, smallest 1G-400G tester	· Full band (1260 to 1650 nm) scanning at high optical resolution · Smallest, most robust full-band handheld OSA · Qualify new high speed coherent signals
				
FiberChek	**T-BERD/MTS-4000 V2 – FiberComplete PRO**	**OneAdvisor 800 Fiber – Optical Dispersion Module (ODM)**	**OneAdvisor 800 Transport**	**OneAdvisor 800 Fiber – Nano OSA**

Throughput Testing of DCI Links

The vast majority of DCI links use Ethernet protocol, for its scalability, ease of use, and cost. So, after the integrity of fiber between two datacenters has been verified, attention turns to service activation of the Ethernet.

Service activation testing is designed to verify that you are getting what you or the client ordered and that it is in full working order before you accept it from the network provider. The most common test for Ethernet service activation, RFC 2544, is the industry standard for single-service Ethernet and IP (i.e. "pipe test"). The industry standard for multi-service Ethernet and IP is Y.1564. Both tests measure key transmission indicators and bandwidth profile such as: throughput, latency, latency variation/jitter, frame loss, and committed burst size (CBS). The most frequent service activation test is a loop-back of the remote test device (although it is more informative to test in both directions).

Knowing those critical transmission metrics will help you answer key questions including: Am I able to send traffic at the rate I expect (Committed Information Rate – CIR) and what will happen in case of a data burst? How many packets are being retransmitted? Does my equipment need to be adjusted? And so on.



Empower Your Assets with VIAVI StrataSync, a Cloud-Based Solution

Maximize Workforce and Workflow Efficiency

Optimization and efficiency are requirements in order to adapt to constant change and keep pace with insatiable demand. In the field, this means developing and ensuring best practices, finding new ways to reduce idle time and maximizing technician time-on-site. To transform and continuously evolve, better visibility on the test processes is required.

VIAVI offers StrataSync Test Process Automation to help you be in control:

- Push a universal test plan to tech instruments throughout the workforce and ensure compliance with methods and procedures, test flow consistency and error-free setup.
- Get real-time visibility of measurement progress and detect failure before commissioning/handover.
- Effectively plan for remedials and make on-time delivery a habit.

Simplify and reduce administrative workload

As a manager, you may spend up to 50% of your time hunting down progress updates, compiling and manually validating measurement data, and/or keeping track of equipment. Less admin work usually equals less time wasted, which leads to fewer unanticipated schedule delays. In the end, better management of the administrative workload will help you reduce project costs and time.

StrataSync hassle-free Data and Asset Management enables you to:

- Streamline results collection with simple report consolidation thanks to the combination of connected instruments and a centralized cloud data base.
- Keep track of the assets' status to ensure technicians are equipped with up-to-date equipment, calibrated and with the latest capabilities.
- Make your data meaningful with trends and statistics to gain performance insights.

Empower technicians in the field

Supporting techs in the field is a key element to improving many aspects of your business operations. The challenge has always been: how to do this securely, in real time, faster, and "right the first time." Doing so helps avoid costly site revisits due to incomplete certification/testing. This applies equally to new techs who are learning and gaining experience as well as experienced techs who come up against those tougher, more complex tasks.

Smart Access Anywhere (SAA) allows secure, remote assistance for field techs directly on their instrument from a product or technical specialist in another location, including a central office or even another job site.

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.

For more Information: go to 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	✓	✓	✓	✓*	✓	✓	✓

About VIAVI

VIAVI Solutions is an active participant in over thirty standards bodies worldwide, including ISO, IEC, IEEE, ITU-T and TIA. We participate in test methodology definition so we can anticipate any technology change and adapt our solutions accordingly.

We are certified to TL 9000 / ISO 9001, which guarantees quality is considered throughout every phase of our product life cycle, ensuring VIAVI delivers the highest quality hardware, software, and services to our customers.

VIAVI offers a fully integrated portfolio of cloud-enabled instruments and systems, software automation, and services for network testing, performance optimization, and service assurance. Highly flexible and interoperable, each solution lets you leverage prior monitoring investments and streamline workflows for greater operational and capital efficiency. Our global team of technologists and consultants have decades of experience addressing the toughest network challenges. To help you keep pace with ever-changing industry trends, we work side-by-side with standards bodies and equipment manufacturers to ensure our products and services support next-generation technologies.

VIAVI helps you get the most from your network and the data it generates so you can turn up infrastructure, successfully scale, and profitably innovate —today and tomorrow.

VIAVI Solutions

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