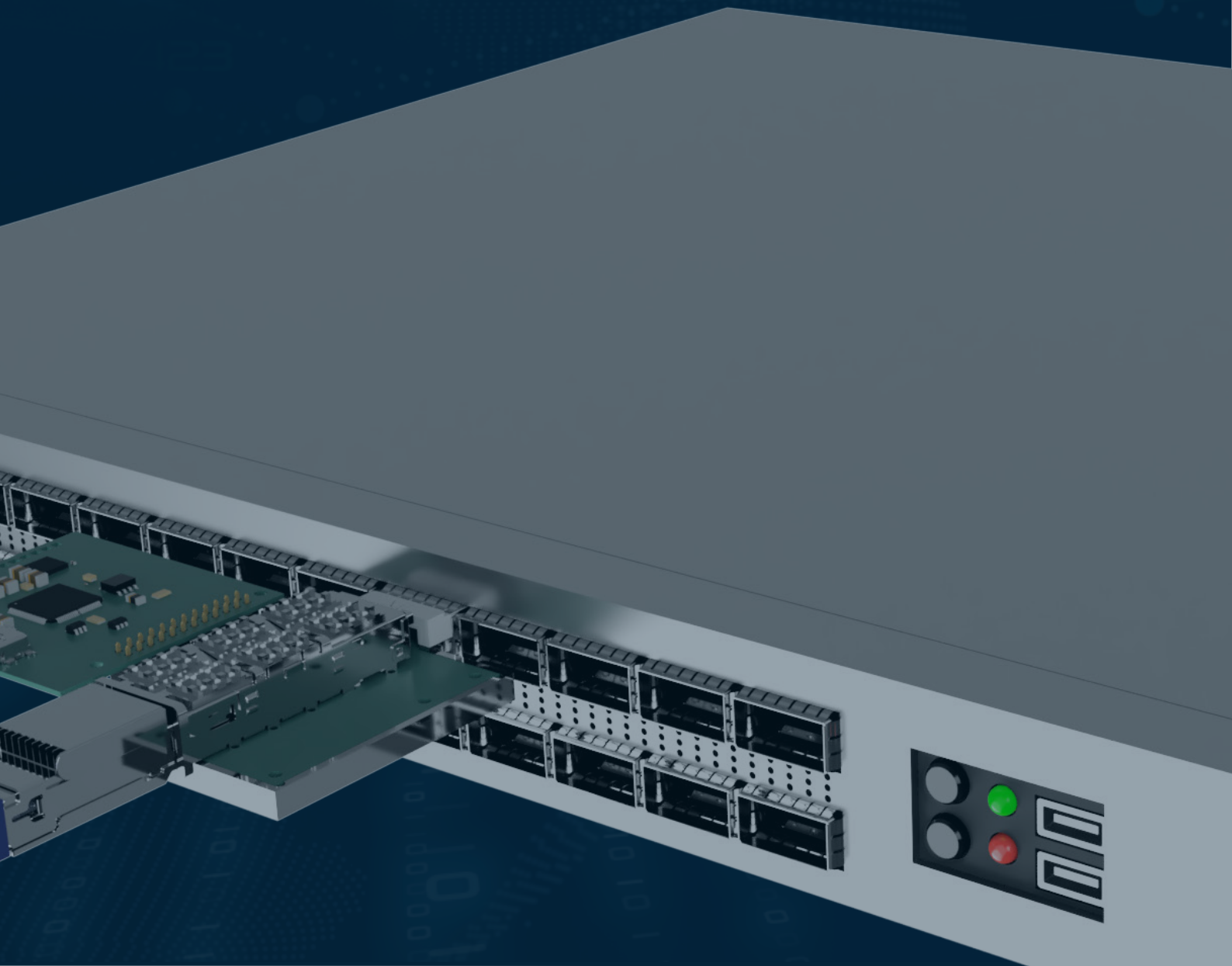




ENGINEERING TEST SERVICES

BROCHURE | 2025



ABOUT US

Since 2006, MultiLane has been offering high speed test and measurement equipment for data communications. We help chart industry evolution and accelerate the adoption of new technologies with a complete cycle support of data center test solutions encompassing IC and transceiver characterization, host line card testing, and link testing. We provide a range of form factors and architectures, from portable instruments, to stand-alone bench top instruments to automated test platforms. We also assist our customer base with compliance and interoperability test services. We serve developers, module vendors, network installers, and data center operators with high-performance, reliable equipment at an attractive price-point. MultiLane provides leading-edge solutions for the latest data center technologies and well-established technologies, from 800G at 112Gbps/lane to industry-first 1.6T thermal testing solutions, with a comprehensive set of development solutions for MSAs ranging from SFP, DSFP, QSFP, QSFP-DD, QSFP-DD800, and OSFP800.

The MultiLane portfolio encompasses optical and electrical oscilloscopes, bit error rate testers, time domain reflectometers (TDR) for TIA and cable testing, interconnect products, as well as fully automated DAC and transceiver test solutions, and compliance test services for 100G and 800G technologies. Developers, manufacturers, and installers of these new technologies all need the wide portfolio of solutions to be able to do their jobs successfully.

MULTILANE EXPERTISE AT YOUR FINGERTIPS

With a decade of experience developing solutions at the forefront of the industry, MultiLane has cultivated a wealth of engineering and high speed physical layer testing expertise that stands ready to be placed at your fingertips. MultiLane Engineering Test Services leverage Tier-1 instrumentation solutions to ensure optical transceivers, cables, and systems adhere to the highest industry standards.

Test as a Service

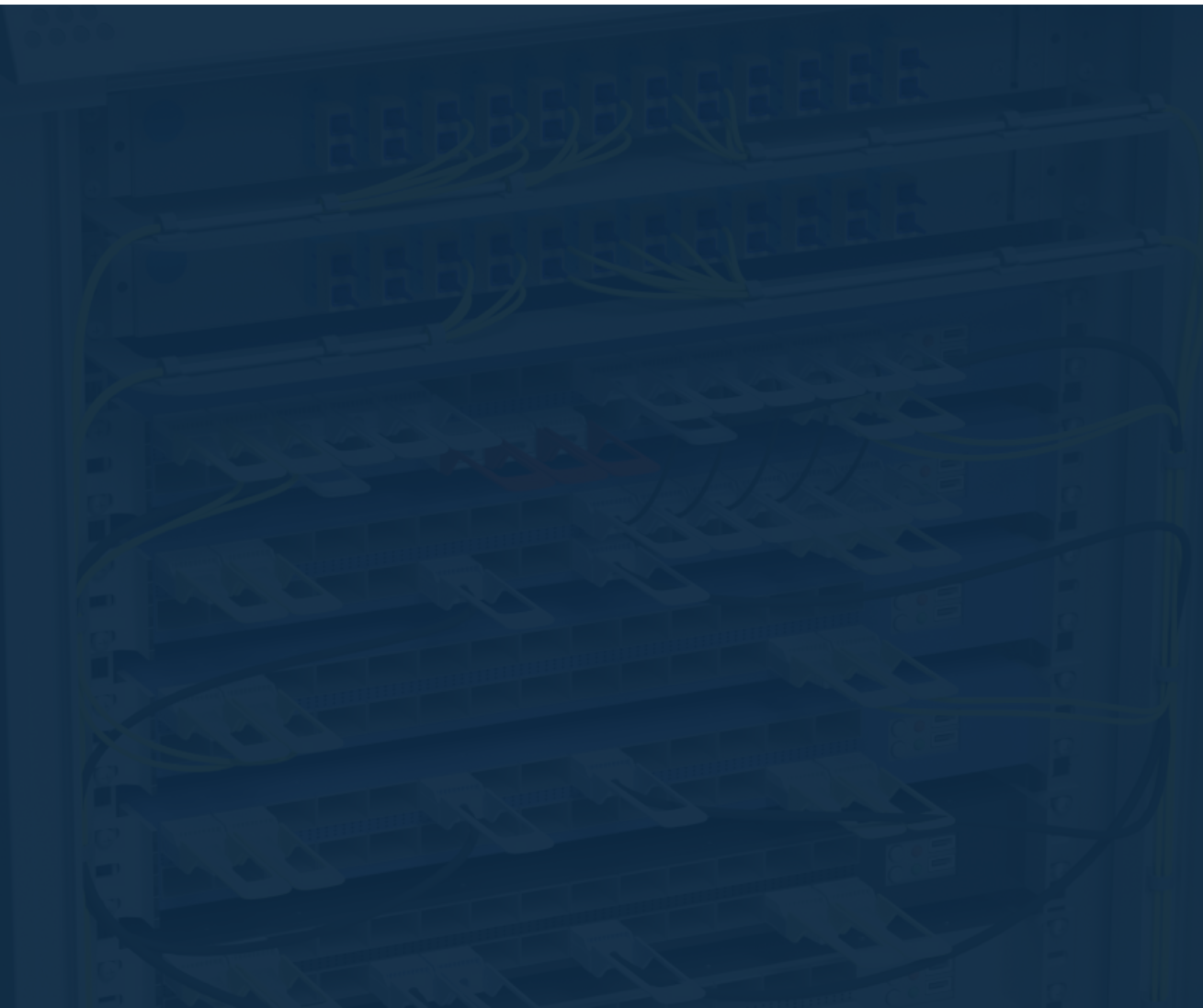
MultiLane Engineering Test Services (ETS) are committed to confidence, enabling accelerated pluggable development and qualification thanks to comprehensive compliance testing and team augmentation. MultiLane testing services are optimized for high-throughput, enabling volume testing for pre-production and RMA scale validation.

Compliance Testing

Multilane compliance testing services encompass the entire spectrum of Tx and Rx testing for transceivers, cables and modules ranging from 1G to 800G; covering rigorous evaluations for electrical, optical and environmental measurement as well as extensive testing capabilities for jitter and noise analysis.

MultiLane multi-corner environment tests allow for a fully customisable approach to seeing how devices perform in a variety of situations, with any combination of the following factors:

- High, low, or nominal temperature
- High, low, or nominal voltage



A Comprehensive Suite of Tests

Module-Level Electrical, Optical, and VNA Testing

Test Category	Subset of Supported Measurements	Trace Number	VNA Measurements
Electrical TX Test	<ul style="list-style-type: none"> • Rise Time • Fall Time • Near End ESMW • Near End Eye Height • Far End ESMW • Far End Eye Height • Differential output voltage • Differential PK-PK Input Voltage 	1	Output return loss Sdd22
		2	Output common to differential mode conversion Scd22
		3	Input return loss Sdd11
		4	Input differential to common mode conversion Sdc11
Electrical RX Test	<ul style="list-style-type: none"> • BER • Stress Input Low & High Loss Channel • Jitter Injection and Tolerance • Noise/Crosstalk Injection and Tolerance 		
Optical TX Test	<ul style="list-style-type: none"> • Transmit Power (OMA, AOP) • TDEC(Q) • Extinction Ratio • Transmitter Eye Mask Definition • Rise Time • Fall Time 		
Optical RX Test	<ul style="list-style-type: none"> • Receiver Sensitivity • Waterfall Curve • Stressed Receiver Sensitivity 		

MultiLane System-Level Testing

MultiLane system-level services use instruments and Ethernet Switches to provide system-level insight and real-world DUT performance.

Types of System Testing



BER Switch Test:

Validate switch performance at different optical attenuations with MLO4034 optical switch box.

FEC Link Test

Pre- and Post- FEC BER validation with real-HW FEC enabled MultiLane BERTs

CMIS Testing

Extensive Host to Module and Module to Host CMIS validation

Interoperability Between Two Modules

Ensure Seamless Communication Across Single and Multi-Switch Configurations

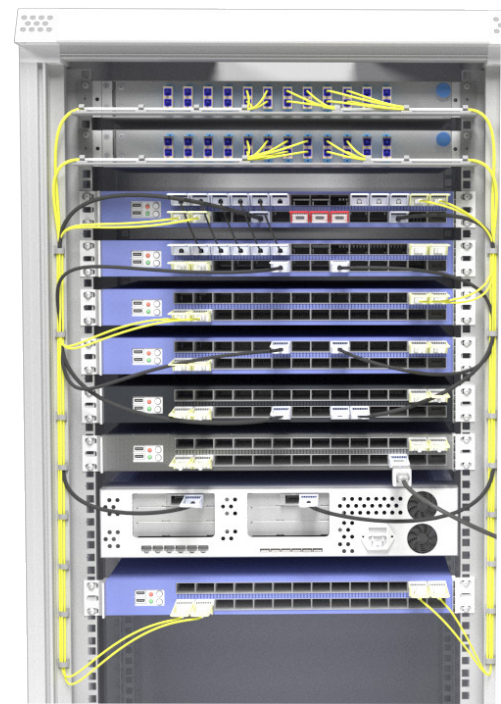
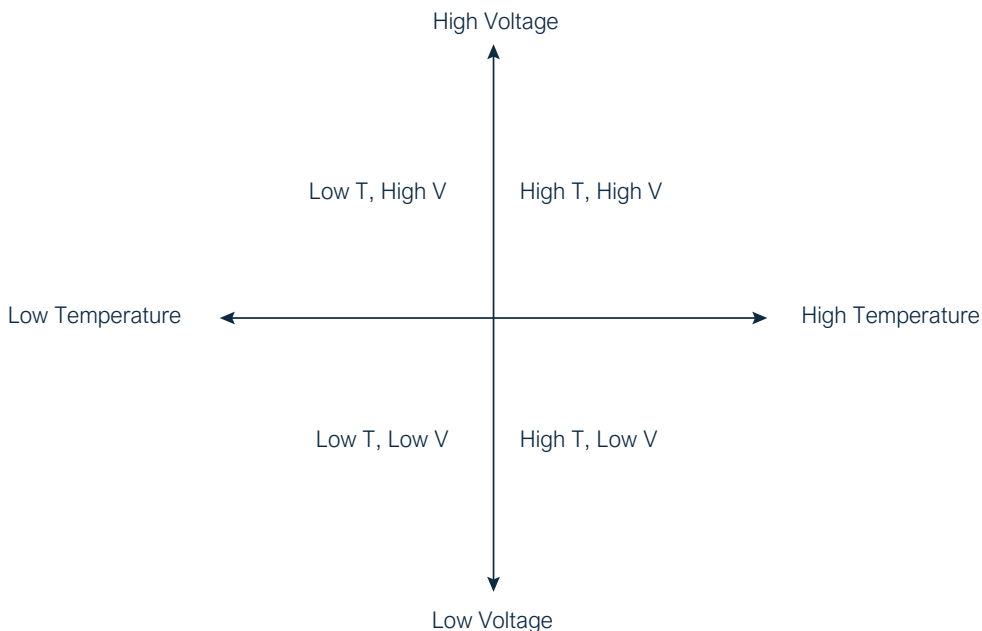
- Verify seamless communication and data transmission between two different optical modules from different manufacturers
- Conduct L2/L3 Traffic Testing across complete system topology
- Test Forward Error Correction (FEC) and Bit Error Rate (BER) to focus on marginal-performance links
- Entire test bed can be placed in thermal chamber to specifically emulate all environmental conditions



Full System Interoperability

Pre-Deployment Rack Certification

- Complete Rack Integration with all supported transceiver/switch topologies
- Layer 2+ traffic testing with industry-standard Ethernet traffic generators
- A-to-Z test automation
- Large thermal chambers for multi-corner testing with full load traffic
- **Moldable capacity tailored to the customer's specific business needs**
- Available in both Fremont and Lebanon facilities



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