multiLane

Turnkey Testing from SerDes to System

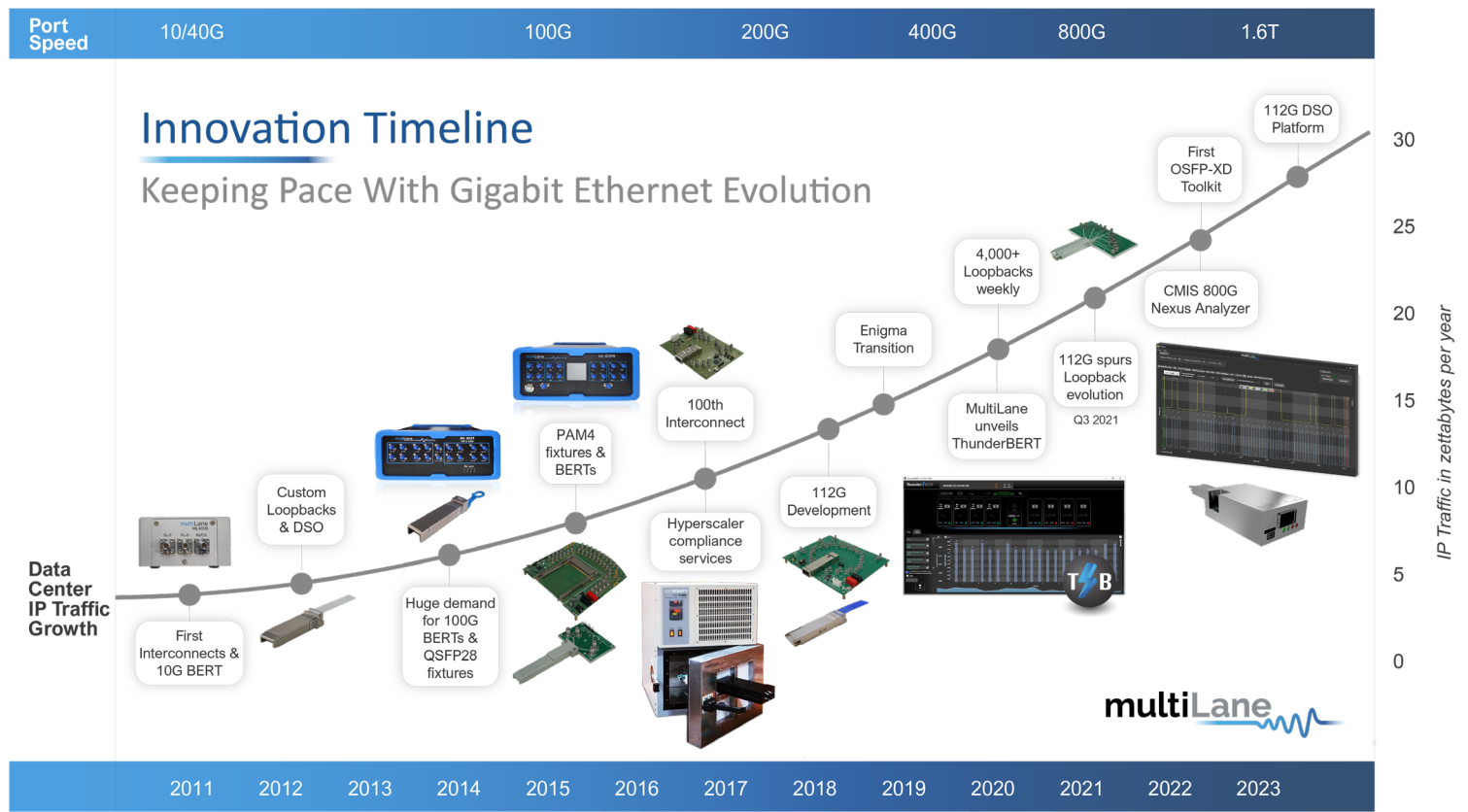2023 Product Brochure

ecoc
2023 GLASGOW
EXHIBITION 2-4 OCTOBER

A Comprehensive Approach to a Diverse Industry

As MultiLane continues to develop leading-edge solutions to drive the industry forward through 800G and into the Terabit generation, we have recognized the need for a more targeted approach. This brochure reflects the full diversity of our solutions, from Loopbacks and CMIS management, testing instruments, personalized engineering services, to creating the building blocks for our products with our new interconnects, we have cast a wide net while maintaining our exceptional quality to ensure we can continue to meet and exceed market expectations. Happy browsing!

Innovation Timeline

Our journey of growth over the past ten years to meet the rising demands of high speed networks.

Port Speed	10/40G		100G	200G	400G	800G	1.6T

Innovation Timeline
Keeping Pace With Gigabit Ethernet Evolution

- First Interconnects & 10G BERT
- Custom Loopbacks & DSO
- Huge demand for 100G BERTs & QSFP28 fixtures
- PAM4 fixtures & BERTs
- 100th Interconnect
- Hyperscaler compliance services
- 112G Development
- Enigma Transition
- MultiLane unveils ThunderBERT
- 4,000+ Loopbacks weekly
- 112G spurs Loopback evolution Q3 2021
- CMIS 800G Nexus Analyzer
- First OSFP-XD Toolkit
- 112G DSO Platform

Data Center IP Traffic Growth

IP Traffic in zettabytes per year: 0, 5, 10, 15, 20, 25, 30

2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023

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DATA CENTER TEST SOLUTIONS

ACCELERATING HIGH-SPEED ADOPTION ACROSS THE INDUSTRY

MultiLane's Data Center Test Solutions offer an extensive selection of testing capabilities to enable the modern day data center. We have ready solutions for the most dominant form factors across many generations. Our focus is on the specialized tools that allow for the development of 800G host ports, and the preliminary steps towards 1.6T; accelerating both the current and next generation of Giga/Terabit ethernet.
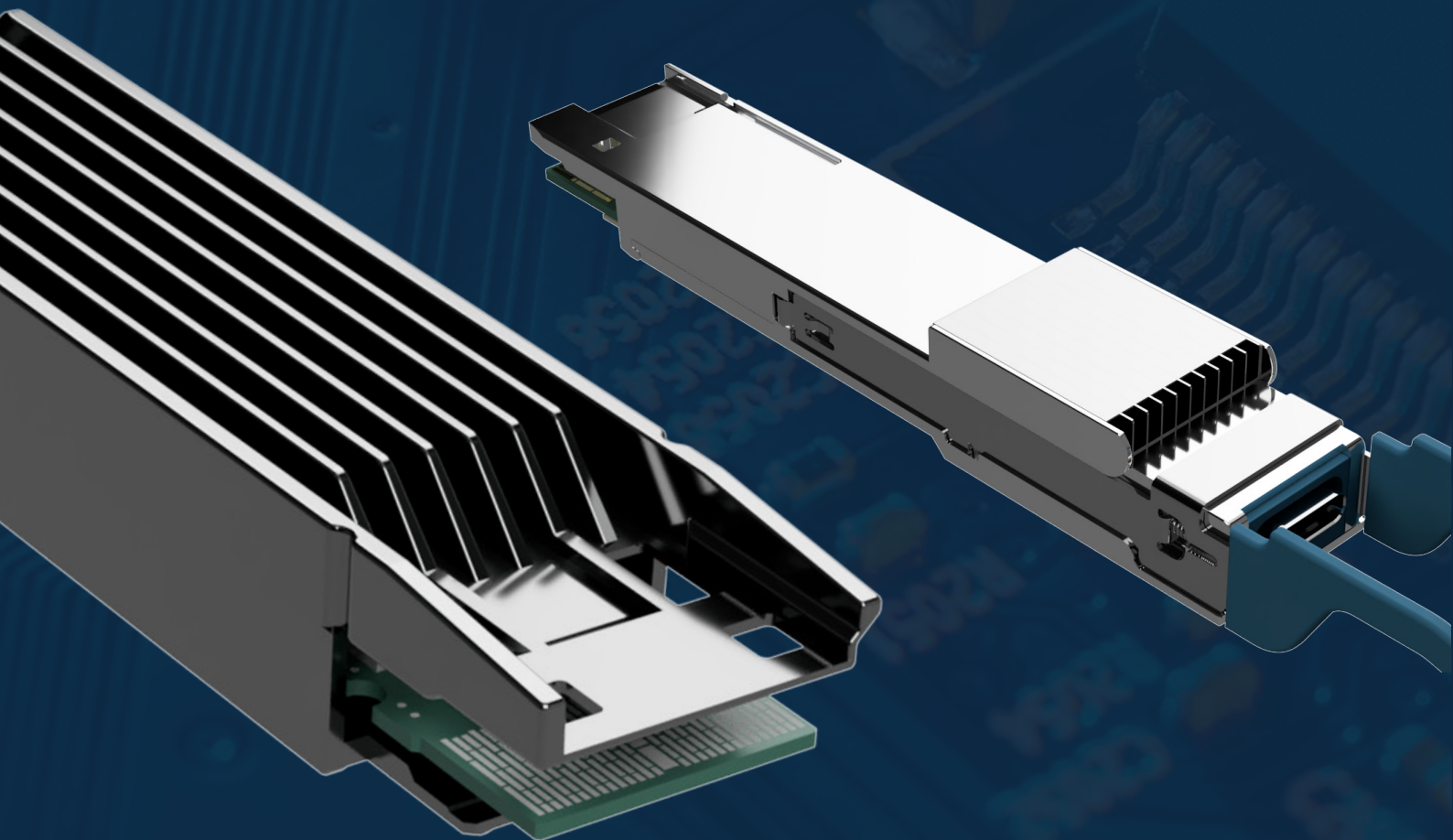
OSFP-XD

Test Fixtures

MultiLane's line of OSFP-XD Host and Module Compliance Boards (HCBs and MCBs) are ready to accelerate the industry into the Terabit generation. The ready-to-ship ML4064-XD-MCB-112-MXPM70 provides a means of testing very early OSFP-XD pluggables, while the ML4064-XD-HCB1/2-112 and its series of high-performance SI traces allow for early port characterization/testing. Both test fixtures are compliant with the CEI-56G-VSR-NRZ and IEEE 802.3ck specs.

ML4064-XD-MCB-112-MXPM70 Key Features

• MCB loss including the 3" MXPM70 cable is compliant with CEI-56G-VSR-NRZ and IEEE 802.3ck.
• CMIS GUI providing comprehensive approach to DUT interoperability, allowing users to access full CMIS implementation in modules. APIs available.
• I2C master driven from both on board microcontroller and/or external pin headers
• On-board LEDs display MSA output alarm states
• On-board buttons/jumpers for MSA input control signals
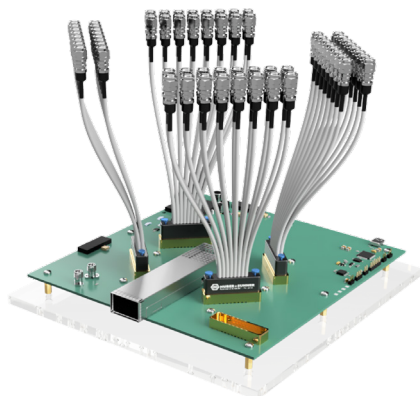
ML4064-XD-HCB1/2-112 Key Features

• Compliant with IEEE802.3ck and CEI-56G-VSR-NRZ
• Built with high performance PCB Material
• High performance signal integrity traces
• Same low Insertion Loss for all channels
• HCB1 supports 8x112G TX and RX lanes
• HCB2 supports 8x112G TX and RX lanes
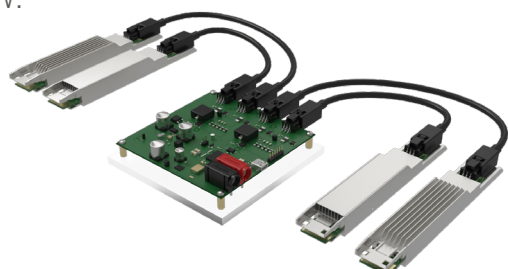• High speed signals accessible through 2.4-mm or 1.85-mm connectors

ML4064-XD-HCB1/2-112

ML4064-XD-MCB-112-MXPM70
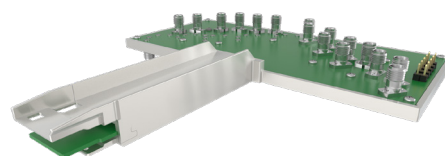
Thermal Solutions

MultiLane's Thermal Load and Controller Board – the ML4064-XD-TL and ML4064-XD-CNT – provide an early, efficient solution for testing the anticipated 45 W heat dissipation required by the 1.6T generation. Configurable power spots on the thermal load allows for a variety of internal combinations to be tested for both transceiver emulation and cooling solutions.

Up to 4 Thermal Loads can be controlled using the ML4064-XD-CNT Controller Board, allowing for multiple configurations to be tested at once for a total of 176 W.

ML4064-XD-TL Key Features

• Total heat dissipation of 44 W using 11 power spots
• 16 power spots of 4 W each for flexible thermal configurations
• 7 temperature sensors to help monitor the
• Available with 2A, 2B, 2C, or 2D heatsinks

ML4064-XD-CNT Key Features

• Tests up to 4 Thermal Loads simultaneously
• Supports 176 W of dissipation at once
• Power configuration setting through GUI
• Exportable temperature monitoring on all attached modules
• I2C R/W Tab to read/write to the TL EEPROM
• Load/Save MSA for full access to TL EEPROM

Full specifications available here

Four ML4064-XD-TL thermal loads plugged into the ML4064-XD-CNT thermal controller board
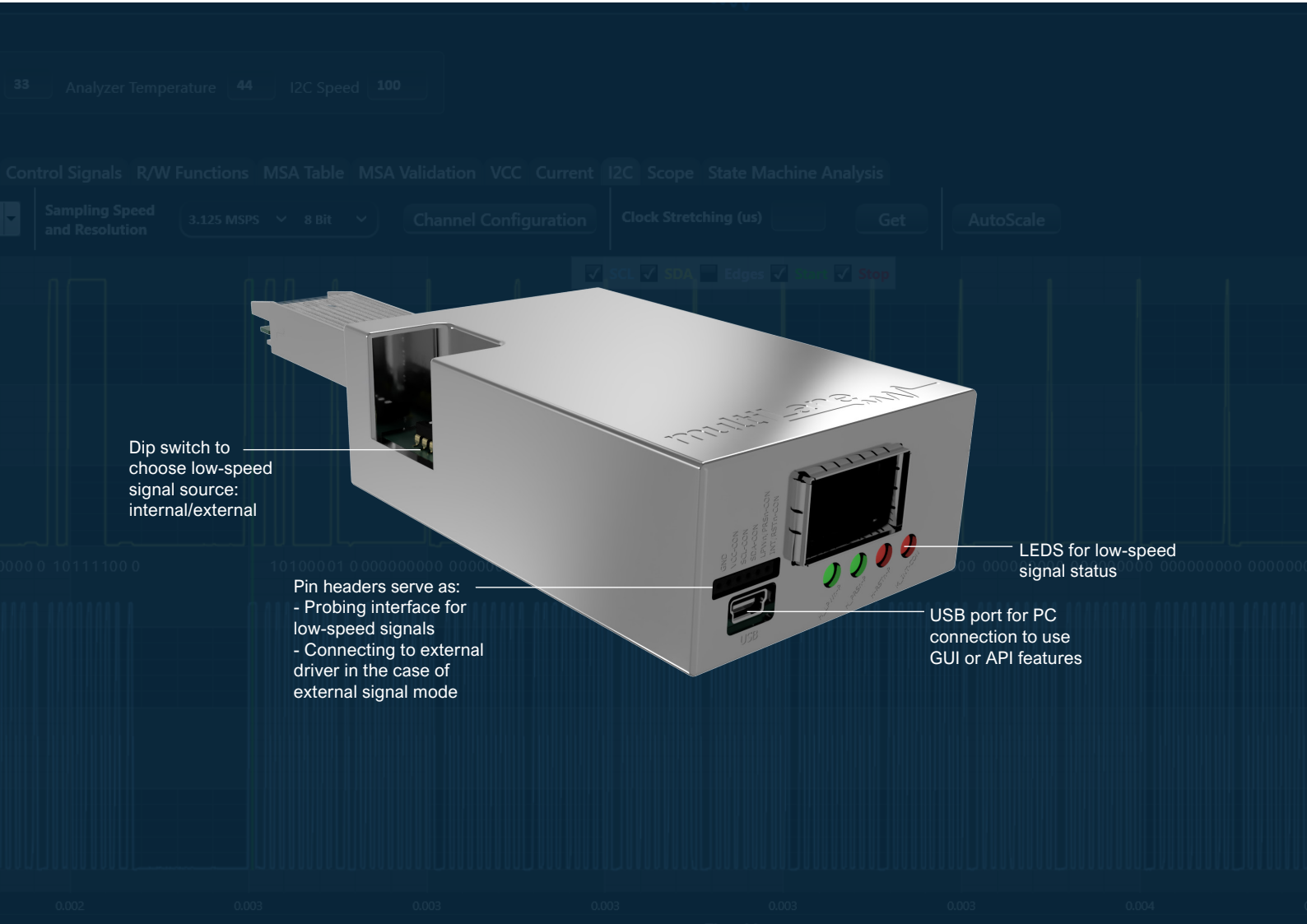
Nexus Analyzer

As new CMIS standards are developed and adopted, with a wide variety of small form factor (SFF) and CMIS specs available, CMIS testing becomes increasingly complex and time consuming. The MultiLane Nexus Analyzer is a direct response to this complexity, designed with speed and simplicity at its core. A CMIS/SFF debug tool for interoperability testing and CMIS/SFF failures, the Nexus Analyzer is equipped with a full feature sweep implemented in its GUI.

The Nexus Analyzer is used as a verification tool to validate the CMIS/SFF implementation, with a CMIS/SFF register sweep, state machine and data path state machine testing, I2C R/W commands and packet analysis, included in the product's features.

Capable of running a full system debug in minutes, with pinpoint accuracy on interoperability issues from either the module or host side, the Nexus Analyzer acts as a dramatic accelerant to CMIS adoption across the industry.

The product includes a port extender which connects low speed signals from the host to the plugged module while providing a probing interface at the same time. It also implements SI traces capable of 112G/lane, to connect the TX and RX paths from the host port to the plugged transceiver in the adapter.

Mating onto the adapter through a set of pin headers, the Analyzer gives access to the Nexus GUI with the capabilities to troubleshoot the interoperability between the system and the pluggable. Features include data path state machine testing, a full CMIS/SFF register sweep, I2C communication packets capturing and measurement of voltage and inrush current.

Dip switch to choose low-speed signal source: internal/external

Pin headers serve as:
- Probing interface for low-speed signals
- Connecting to external driver in the case of external signal mode

LEDS for low-speed signal status

USB port for PC connection to use GUI or API features

Nexus Analyzer

Adapter

800G Adapter Key Features:
- SI traces and connector support 112G rates
- Support up to 30W modules
- Current and temperature sensor
- Module power ripples and inrush current measurement
- Detection of power spikes during module state transitions
- Probing interface for Vcc and GND pins
- External I2C
- Dip switch to choose low-speed signal source: internal/external
- Available in all SFF/CMIS form factors

Analyzer

800G Analyzer Key Features:
- Voltage sensor
- ePPS signal validation
- 1 MHz I2C
- Probing interface for low-speed signals
- External control for any low-speed signal:
  - INT/RST
  - LPW/PRS
  - SDA
  - SCL
- LEDs for control/alarm signal status
- USB port for PC connection to use GUI or API features
- Available in all SFF/CMIS form factors
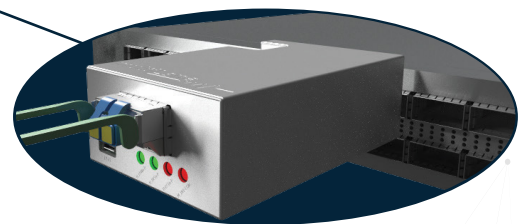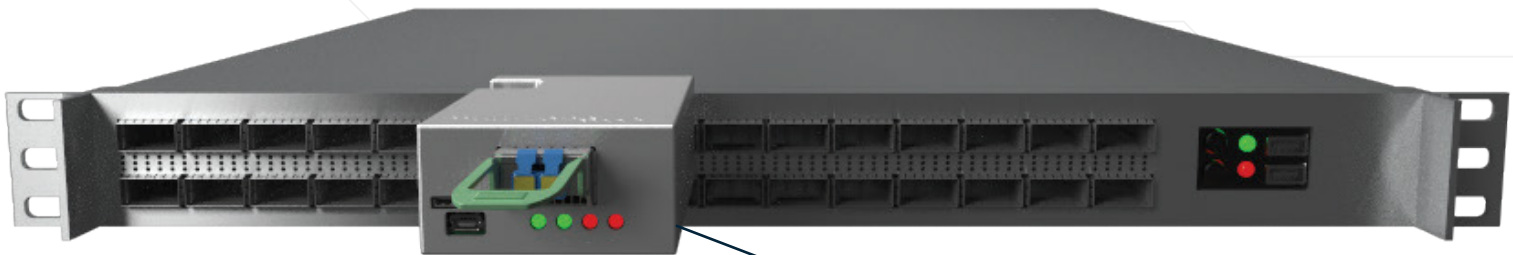
Active Loopbacks

The move to 800G brings with it a paradigm shift in loopback design. The complex characterization techniques required for host ports at 8x112Gbps necessitate the advent of a new generation of loopbacks to address these challenges. MultiLane's Active Loopbacks are DSP-based modules designed specifically to account for these complex characterization techniques, while also covering the established requirements – thermal management and CMIS interoperability – for host port testing.

- Thermal Emulation
- OSFP800 (ML4064-ALB2-112) QSFP-DD800 (ML4062-ALB2A/2B-112) Form Factors
- PRBS Generator
- BER/ SNR Diagnostics
- Gray Mapping supported
- FIR taps supported
- 800G DSP enables retiming and equalization of host signals
- CMIS Compatible Configuration and EEPROM
- Communication via USB-C, I2C or ethernet
- Programmable MSA memory pages and custom memory maps
- Separate daughter card for configurable power spots, dissipating up to 19W
- DSP dissipates 10W
- Two temperature sensors, voltage sensors
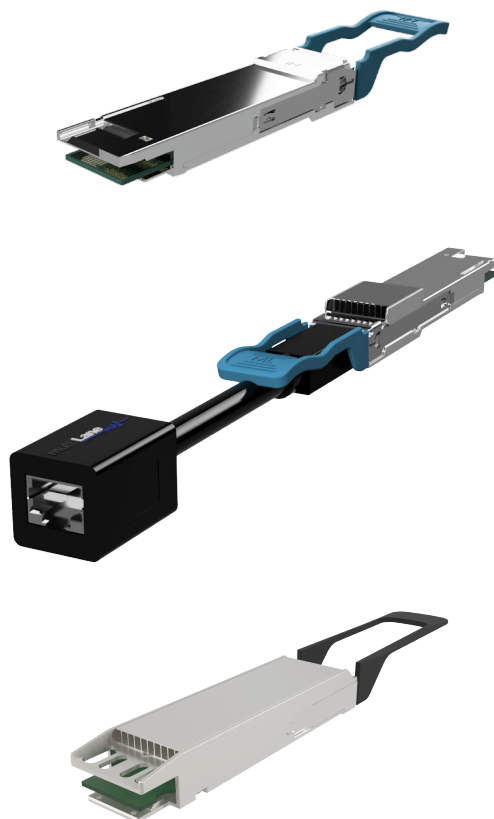
While all Active Loopbacks are CMIS 5.0 compliant, they can also be enhanced with MultiLane's signature ThunderBERT GUI, resulting in a first-of-its-kind combination of instrument and module that can take the place of a full benchtop setup for host port testing. These ThunderBERT enabled ALBs – ALB-TBs – allow for distinct, separate Tx and Rx checking, making use of the ALB's full BER/SNR diagnostics and a PRBS generator through a much faster and more detailed GUI. With instrument-grade measurements packaged in a module's casing MultiLane's ALB-TBs can serve as benchtop replacements in development, speed up testing during production, and can even act as a field debugging tool post deployment.
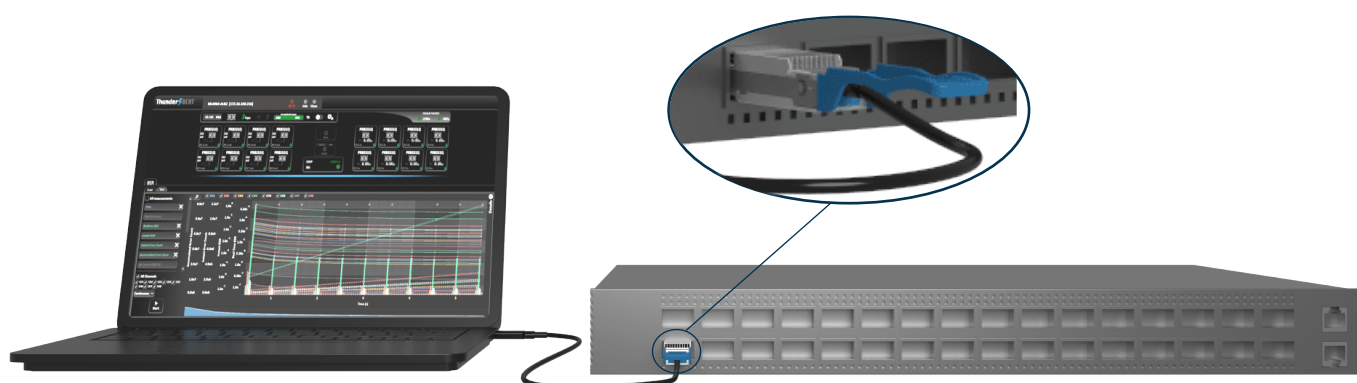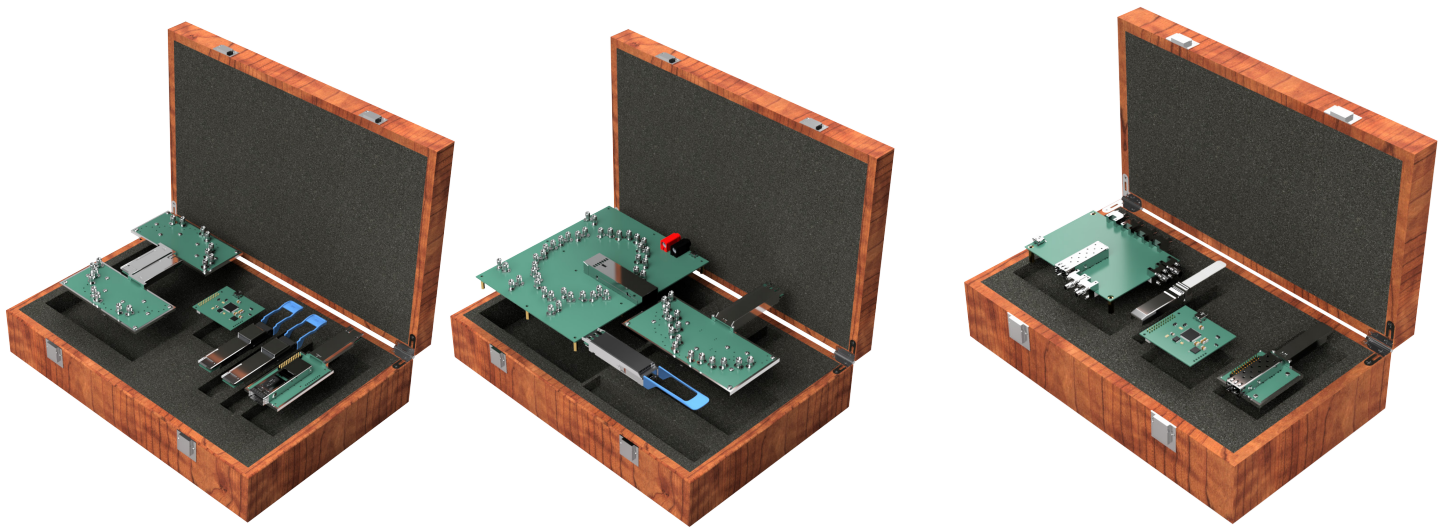
Data Center DevKits

MultiLane's Data Center DevKits provide an all-in-one solution for network testing and design. Each kit contains the appropriate module/host compliance board, loopbacks, and CMIS analyzers for Module, Host, or Compliance testing across 6 form factors supporting speeds from 50 to 800G.

Supported Form Factors:

QSFP-DD | OSFP | QSFP | DSFP | SFP-DD | SFP

Sample 800G QSFP-DD Port Testing Kit:

ML4062-MCB-112:

Module Compliance Boards test any pluggables in their respective form factor. They validate the compliance, signal transmission, and any other feature the pluggable has. They also test the thermal capability of modules and can stress test them to evaluate their output.

ML4066-QDD and ML4066-ANA-QDD:

Once the compliance of the module is validated, after making sure a clear input signal is followed by a clean output, and after confirming the I2C communication, the module vendor can take a closer look in analyzing the communication between their host, and module.

ML4062-LB-112:

A loopback will loop the TX port back to the RX port. It also emulates the thermal capability of a transceiver. Every loopback is equipped with temperature sensors, and power spots that dissipate a specific amount of power. Module vendors can use the loopback to validate their test setup and to prepare their environment before inserting in and testing their module.

Find a full rundown of the DevKits in their own dedicated catalogue here.

MEASUREMENT SOLUTIONS

LEADING INSTRUMENTS FOR A MULTITUDE OF USECASES

A core competency at MultiLane, our Measurement Solutions offer a diversity of instruments for equally diverse applications. Whether the latest stress testing capabilities of our flagship ML4079EN BERT or ML4081 wideband noise injector, to the clarity and enhanced performance of our new 3rd-Gen Oscilloscopes, to our PAM8-capable ML4100L-AWG, or the fastest passive cable testing in the industry with the ML 1105, our Measurement Solutions portfolio has you covered.

3rd-Gen Oscilloscopes – Optimized for 112G Optical/Electrical Signals

Revamped GUI | Seamless Workflow, Streamlined UI, Unrivaled Performance

Built from the ground up with continuous feedback from MultiLane partners, the latest oscilloscope GUI is tailored to the industry's most requested requirements. Designed for use with the latest lineup of 3rd-Gen MultiLane DSOs, the revamped GUI emphasizes clarity, user-friendliness, and flexibility, allowing users to take full advantage of the powerful new hardware underpinning MultiLane's most advanced scopes to date.

Key Features

- Highly configurable to a variety of user requirements
- Save/Load environments with distinct user profiles
- Streamlined experiencewithout compromising performance
- Developed with direct customer feedback
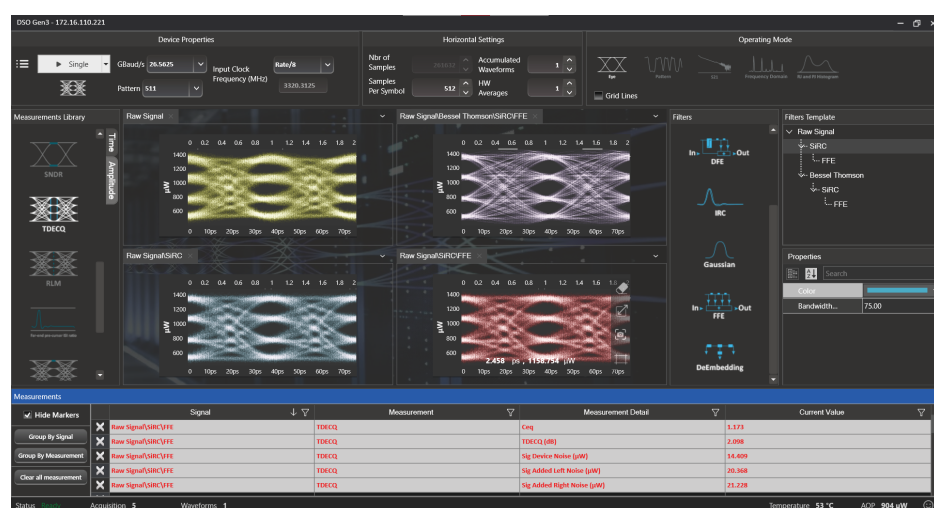
ML4015E
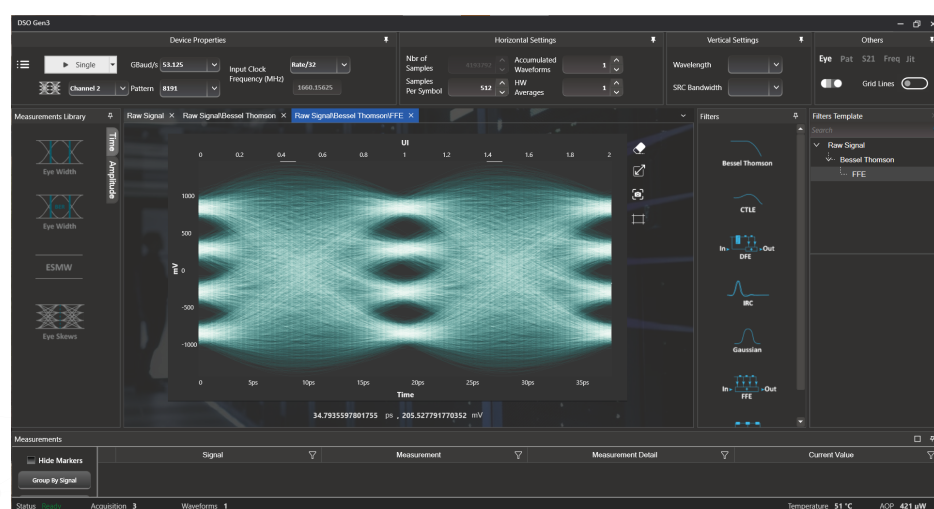
ML406B

Instruments

ML4015E

Serving as either an optical or electrical oscilloscope, the ML4015E is a fully-featured DSO designed for 1G to 800G network testing. With enhanced hardware options offering very low intrinsic noise and phase-based trigger to reduce intrinsic jitter to ensure minimal insertion loss, the ML4015E is particularly effective at capturing 112Gbps/lane signals, benchtop optical characterization, and sensitivity testing for optical receivers. `

Key Features

• High-throughput
• Noise floor of 5 µW at an analog bandwidth of 25 GHz, and 6-7 µW at 40 GHz bandwidth.
• Sensitivity level of -11 dBm for a 25.78 Gbps NRZ signal.
• Up to 50 - 70 MHz sampling rate.
• Less than 10 seconds TDECQ on an SSPRQ pattern.
• An extensive library of built-in DSP filters
• Comprehensive eye mask library

ML406B

The ML406B ultra-compact electrical DSO offers a fast, accurate instrument in an extremely small package for 112Gbps/lane PAM4 signaling. With jitter/noise characterization capabilities, the ML406B's enhanced hardware options offer very low intrinsic noise and phase-based trigger to reduce intrinsic jitter to ensure minimal insertion loss even with a bandwidth of up to 70 GHz. Designed with a focus on portability, the ML406B offers rapid benchtop validation in a field-deployable chassis.

Key Features

• 70GHz bandwidth
• Phase based trigger for reduced intrinsic jitter
• Enhanced hardware for low intrinsic noise
• Ultra-compact and ultra-portable
• Ideal for rough, dusty environments

ML4003BX-BTP

The ML4003BX-BTP is a combined BERT, Optical and Electrical DSO, the ML4003BX-BTP is designed for both production and R&D testing for GPON, EPON, receiver sensitivity, backplane, and data center interconnect testing. The ML4003BX-BTP is available either as a benchtop instrument or a cPCI configuration to fit into a chassis or rack.

Key Features

• Up to 32G BERT NRZ
• Real-HW filters for 1G, 2G, and 10G
• 32 GHz Optical DSO
• 32 GHz Electrical DSO with Clock Data Recovery (CDR)
• Loopback from BERT Mode
• External Clock Mode
• Built-in SFP port to directly plug in SFP transceivers
• 2.92 mm k-connectors

Stress Receiver Integrated Features

## Are Your Designs Resilient Enough?

Ensure your devices can stand up to the resilience and sensitivity requirements of the 112G/lane PAM4 ecosystem with MultiLane's new Integrated Stressed Receiver Testing solutions. A new holistic methodology, SITOL integrates ITOL, JTOL, and margin testing into a validation cycle that ensures your designs are capable of meeting and exceeding the expectations at 112G/lane. Even minor dB gains at 100-800G can offer a significant advantage to ensuring server uptime and maximizing results, making an understanding of the margins by which DUTs exceed the base requirements all the more important. With noise injection capabilities three times the standard set by the IEEE, MultiLane's award-winning suite of SITOL capabilities provide a vital edge in an ecosystem that is coming to favor more resilient designs.

MultiLane takes IEEE standard requirements to another level. With automated Jitter and Noise Solutions, we are able to accurately establish not only whether a DUT is resilient enough to operate reliably under real-world conditions, but also determine its operating margins above the spec limit.

MultiLane JTOL Performance
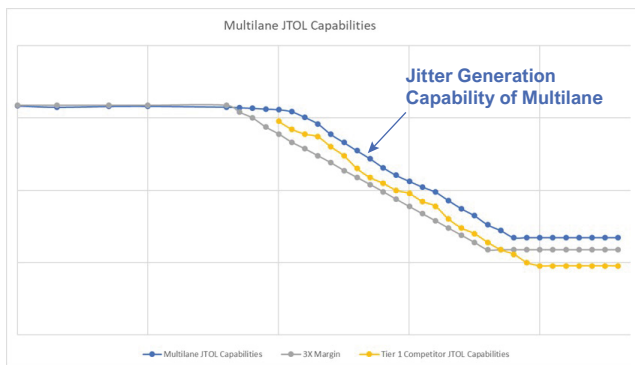
MultiLane ITOL Performance
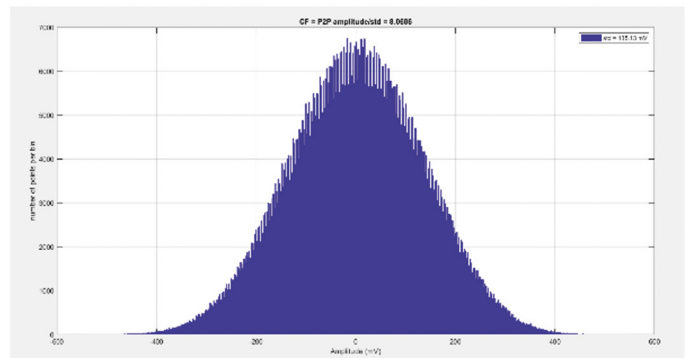
Instruments

ML4079E

The ML4079E is an 800G BERT featuring signal to noise ratio (SNR) and histogram measurements, and allows users to implement transmitter and receiver equalizers. Most importantly, it supports real hardware FEC analysis, crucial to 800G setups, providing a clear picture of DUT behavior in a real-world environment. The ML4079E can be combined with the ML407-PAM jitter clock source for jitter tolerance testing.

Key Features

• 23-29 & 46-56 GBd PAM4/NRZ
• Real Hardware FEC (KR4/KP4 Analysis)
• Dense M-SMPM connectors

ML4079EN

The ML4079EN provides the same basic setup as the ML4079E – real hardware FEC analysis – but with unique stress testing capabilities (JTOL, ITOL…), and an output of 1.5 V. An 800G BERT with signal to noise ratio (SNR) and histogram measurements, and transmitter and receiver equalizers.

Key Features

• 20-29 & 36-61 GBd PAM4/NRZ
• Real Hardware FEC (KR4/KP4 Analysis)
• Dense M-SMPM connectors
• Stress Testing Features: Manual and Automated JTOL and ITOL, Inner/Outer Eye Control
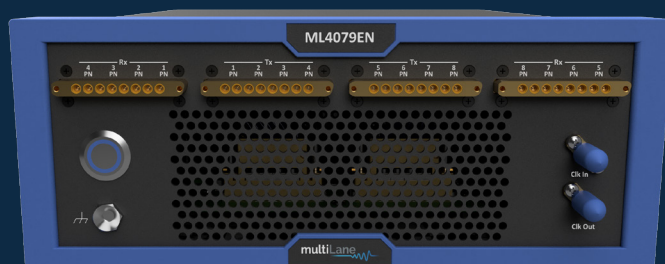
ML4054E

The ML4054E is a fully featured 800G BERT with an integrated, field-replaceable, module interface for simple plug-and-play characterization. The interface can be equipped with QSFP-DD, OSFP, and QSFP transceiver ports. The ML4054E eliminates the need for external cabling, making it ideal for product development and validation, production testing, and volume testing.

Key Features

• 20-29 & 36-61 GBd PAM4/NRZ
• Replaceable MSA-compliant interface
• Real Hardware FEC (KR4/KP4 Analysis)
• CMIS X.X implementation testing
• Manual and Automated JTOL & ITOL

Instruments

ML4081/4081-X

A dedicated AWGN injector and Pick off-Tee board, respectively, the ML4081 and ML4081-X are designed to highlight the effects of noise on both a signal's BER and eye diagram. Used in a setup with a BERT, a clean signal is passed through the ML4081-X, where the ML4081 injects random noise. The resulting lossy signal is then routed to an awaiting DSO for the eye diagram, and looped back into the BERT to check the effect on the BER. The ML4081/ML4081-X are ideal for use in BIST applications for ATE, margin testing services, or PCIe BIST test applications.

Key Features

ML4081: AWGN Generator
- IEEE Interference
- Crest Factor >5
- 4 differential or 8 single ended channels
- Programmable Bandwidth 1-30 GHz
- Amplitude -30 dBm to -2 dBm
- Programmable Spectral Shaping
- Calibrated Amplitude accuracy 2 %
- Amplitude noise resolution 0.3 Db
- 2.4 dB Noise flatness to 30 GHz

ML4081-X: Pick Off-Tee Board
- 8 or 16 differential Lanes
- Routing for both clean and Noisy Signals
- Creates a defined stress source for receivers under test
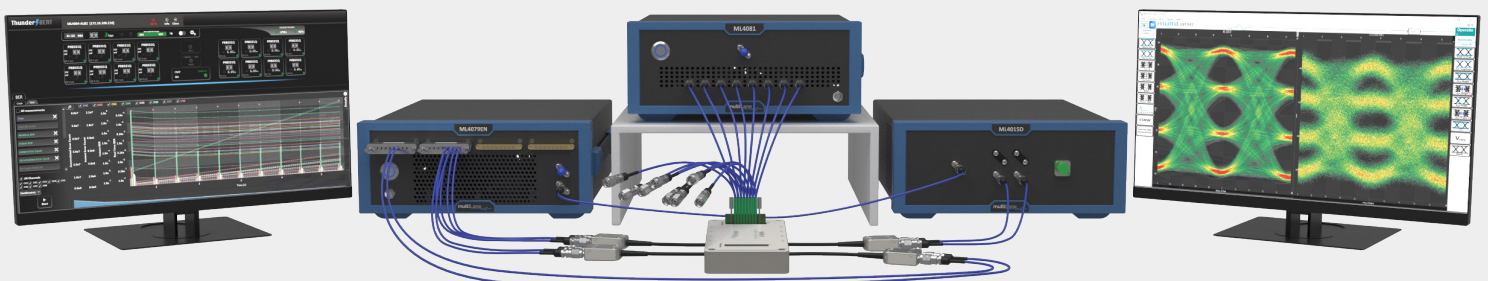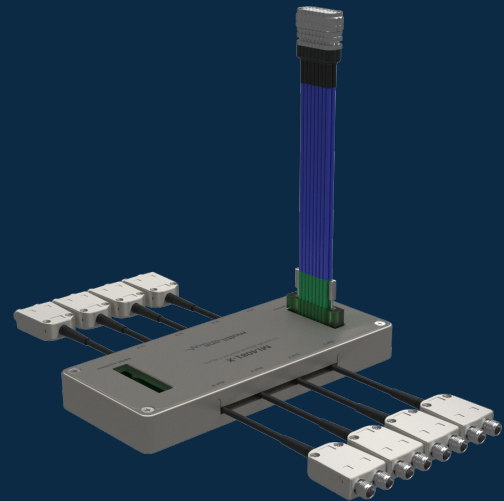
Full ML4081/4081-X Setup

Instruments

AWG 4100L-AWG

The MultiLane ML4100L-AWG – the company's most advanced AWG to date – offers high-speed SerDes transceiver and amplifier validation, with Rx jitter tolerance testing. A versatile instrument, the ML4100L supports compliance PHY and protocol stress testing of MIPI C/D-PHY, MIPI M-PHY, PCIe5, USB4, and more. The ML4100L is also designed for 400G ZR Coherent module development and validation with BER and FER testing capabilities.

Key Features

- 4-channel Differential AWG (0.1-64 GB) and User Defined Modulation
- Programmable RJ and SJ (dual tones) Jitter injection in AWG mode
- Cross talk emulation by BUJ jitter injection
- ISI emulation (LPF) and de-emphasis in AWG mode

- 2 Dual-Channel (I/Q) Differential PPG (25-64 GB) with NRZ/PAM4 modulation
- Coherent signals generation for QAM modulation
- Built-in 7-tap or 60-tap FFE in PPG mode
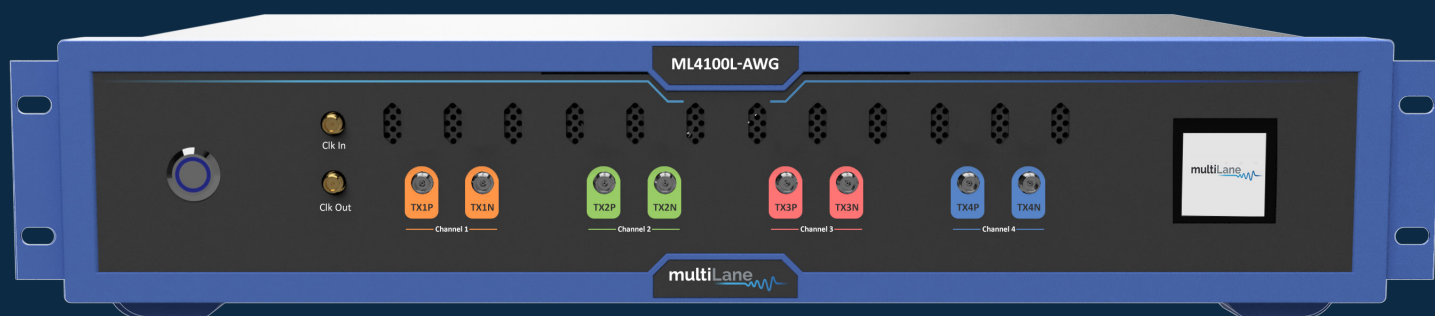
ML4035

The MultiLane ML4035 3-in-1 400G BERT, TDR, and DSO offers a full range of testing capabilities from 400G BER measurements, to NRZ and PAM4 eye diagram characterization, and TDR and S-parameter evaluation, all in one compact package

Key Features

- 4-lane sampling scope
- 4-lane 53 GBd PPG
- 4-lane true-differential TDR/TDT
- 400G BERT
- Automation SW for Cable Testing
- High Throughput

MultiLane Cable Testing Solutions

Multiport Cable Testers

MultiLane cable testers are the fastest on the market, capturing S-parameter measurements on 16 differential lanes in seconds while providing the industry's simplest calibration procedure. Optimized for high-volume manufacturing, incoming inspection, RMA, and high-density backplane cables, our multiport cable testing solutions are scalable to over 64 ports. Making full use of our 3 in 1 BERT, TDR, and DSO the ML4035, the user-friendly setup can be fully automated to generate a pass/fail report based on time and frequency domain measurements including insertion loss, return loss, crosstalk, and TDR.

Active Copper Testers

MultiLane covers the full range of active copper testing, with redriver and retimer solutions for Active Copper Cables (ACC) and Active Electrical Cables (AEC) respectively. Our AEC testing is fully HiWire compliant, using our ML4054E 800G BERTs for real hardware pre- and post-FEC measurements and CMIS validation. Our ACC solution – which uses our ML4035 3 in 1 BERT, TDR, and DSO – is the fastest on the market, capturing S-parameter measurements on 16 differential lanes in seconds, while providing the industry's simplest calibration procedure. All our active cable solutions include fully automated pass/fail report generation, BER, eye diagram, and S-parameter/crosstalk testing, making them ideal for R&D, manufacturing, and RMA.

Automated Test Equipment

A New Class of Instrument for Wafer Level Testing

MultiLane has partnered with leading ATE providers to codesign turnkey solutions for an industry that stands to benefit from a new class of high-speed external instruments at wafer probe. MultiLane has demonstrated the viability of production level wafer testing with successful measurements taken at 28 GBd and 56 GBd PAM4. Our ATE solutions bring our same benchtop signature eye for accurate, scalable solutions, reconfigured to fit into the popular industry SOC tester platforms.

Highspeed Multi-port Datacom Test

• 400/800 Gigabit Ethernet
• PCIe Gen4/5/6
• USB4

Leading Performance

• Up to 112 Gbps/lane
• NRZ/PAM4
• Multisite
• PRBS waveforms
• User-defined waveforms

Field Deployed

• KGD wafer and packaged parts
• USA OSATs
• Asia OSATs

Semiconductor ATE Compatible

• Hardware
• Software
• Mechanical
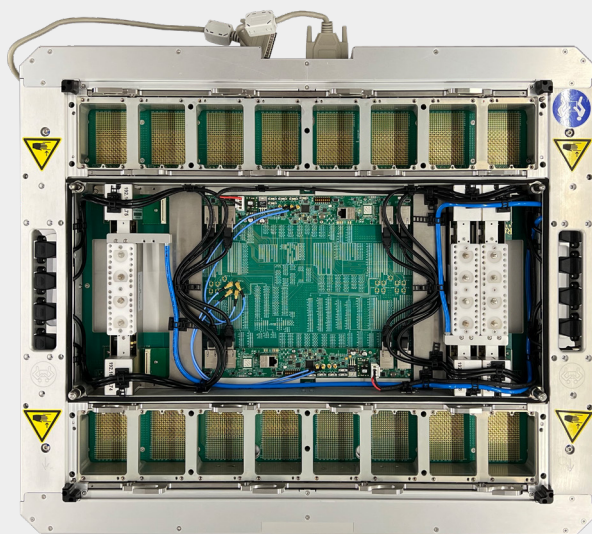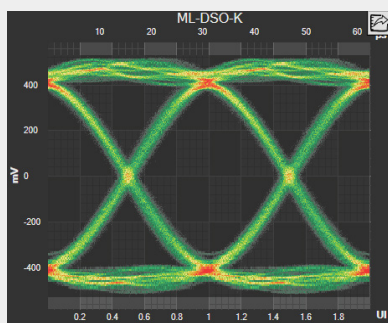
| 32G NRZ PCIe Gen 5 | 32G PAM4 PCIe Gen 6 | With Jitter Injection |
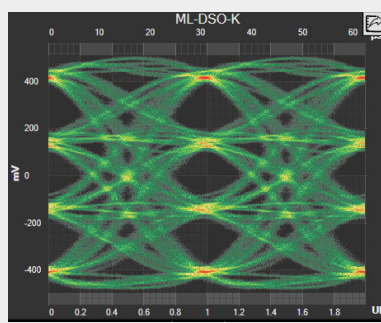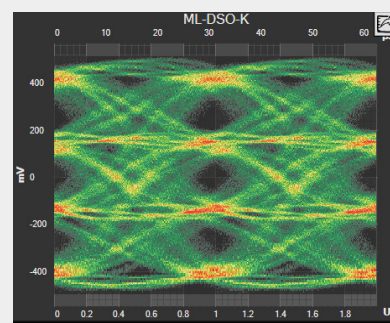
AT4080

• 4-Lane Arbitrary Waveform Generator
• 1-64 GBd selectable Baud Rate
• User defined modulation
• NRZ/PAM4 modulation
• Independent 7-tap FFE on each transmitter
• Generate coherent signals for QAM modulation
• Independent control of inner eye levels
• Tune the bit rate in very fine steps

Read full specifications here

ENGINEERING TEST SERVICES

TESTING AS A SERVICE

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. Our Engineering Test Services provide customised requests either in the form of a plan to validate or test your products at one of MultiLane's labs, team augmentation, or custom engineering solutions.

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.

Compliance Testing

Multilane's compliance testing service encompasses the entire spectrum of 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.

Available Tests:

Our multi-corner environment test allows for a fully customisable approach to seeing how your devices perform in a variety of situations, with any combination of the following factors:
• High, low, or nominal temperature
• High, low, or nominal voltage
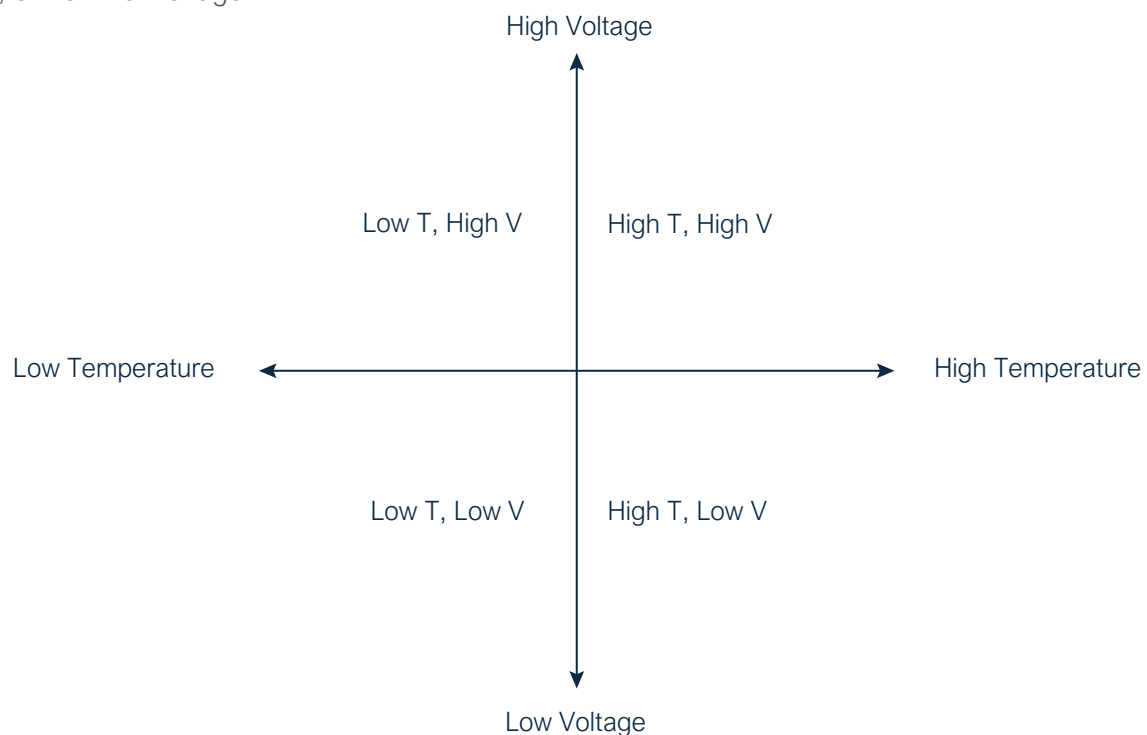
Interoperability Testing

MultiLane's interoperability services offer a range of custom testing approaches for a number of different parameters for host and module interoperability including:
• Switch BER
• Pre/Post-FEC Link Testing
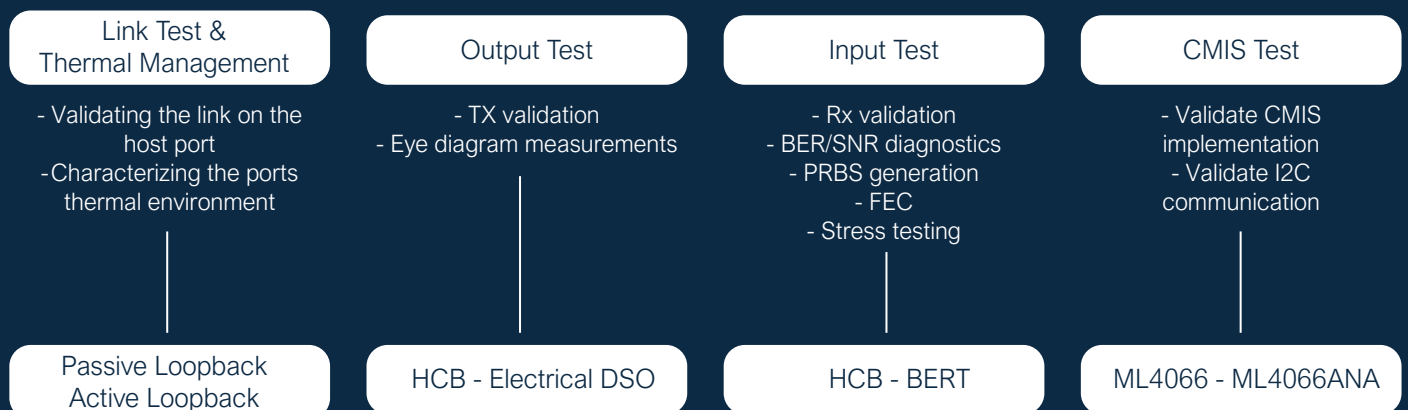• CMIS Testing
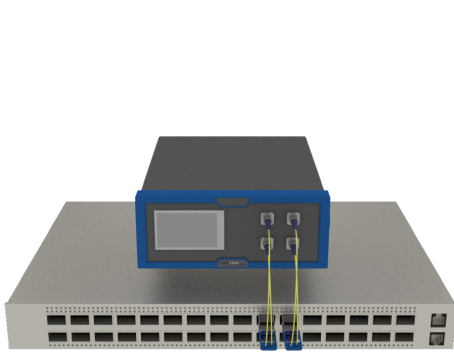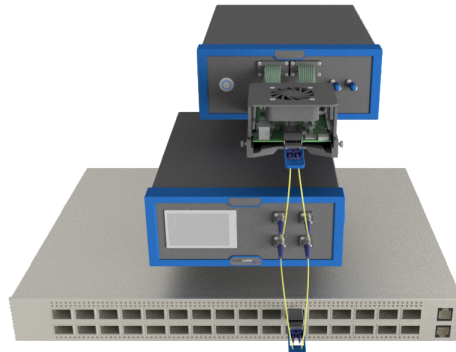
Switch BER   Pre/Post-FEC Link Testing   CMIS Testing

Physical Layer Testing

We are experts in HSDIO using our extensive suite of home-grown testing tools to provide a variety of detailed physical layer testing options.

Link Test & Thermal Management	Output Test	Input Test	CMIS Test
- Validating the link on the host port -Characterizing the ports thermal environment	- TX validation - Eye diagram measurements	- Rx validation - BER/SNR diagnostics - PRBS generation - FEC - Stress testing	- Validate CMIS implementation - Validate I2C communication
Passive Loopback Active Loopback	HCB - Electrical DSO	HCB - BERT	ML4066 - ML4066ANA

Team Augmentation

MultiLane's extensive network of experienced engineers stand ready to enhance your team. Our team augmentation can be as small as a single engineer providing support to an existing group, or as large as a full team ready to take on a specific project.

Core Competencies:

• High-speed testing
• PCB layout design
• Mechanical design
• Signal Integrity
• 3D modelling
• Hardware capabilities

Custom Engineering Solutions

Need a specialized product for HSIO Test and Measurement? Our team has you covered. Whether for box building or protoboards for SOCs, MultiLane handles the supply chain management from idea to production across the product's full lifecycle. With direct access to all of MultiLane's Business Units, we can pull resources from our core competencies to offer specialised test solutions made to your exact specifications.

Share your thoughts with us and let's see what we can build together at
services@multilaneinc.com

INTERCONNECT PORTFOLIO

DEPLOY YOUR INSTRUMENTS WITH OUR INNOVATIVE INTERCONNECTS

5G Networking, HPC/AI and Automotive 2.0 are driving unprecedented industry growth even beyond the substantial increases transmission speeds, frequencies, and channel densities. MultiLane's new Interconnects are a means of ensuring we are capable of maintaining our standards of quality in all our instrumentation by directly creating our own building blocks. Utilizing the most advanced manufacturing technology available, we have devised a suite of solutions emphasizing high density & repeatability for single ended & differential cable assemblies, test boards, precision adaptors, terminators, coaxial adapters, and RF cable assemblies in high volume. All products are designed and assembled with industry-leading quality in our USA branch and Lebanon headquarters.

Higher Density
Responding to increased channel count

Higher Performance
Higher Performance Accommodating higher frequency & higher data rates

Cost Effectiveness & Global Supply

High Density
Ganged Solutions
DC – 110 GHz

Multiport SMPM
DC – 65 GHz

Coaxial RF Jumpers
DC-67 GHz

RF Adapters
& Terminators
DC-67 GHz

Precision RF Connectors
DC-110 GHz

Multiport SMPS
DC – 110 GHz
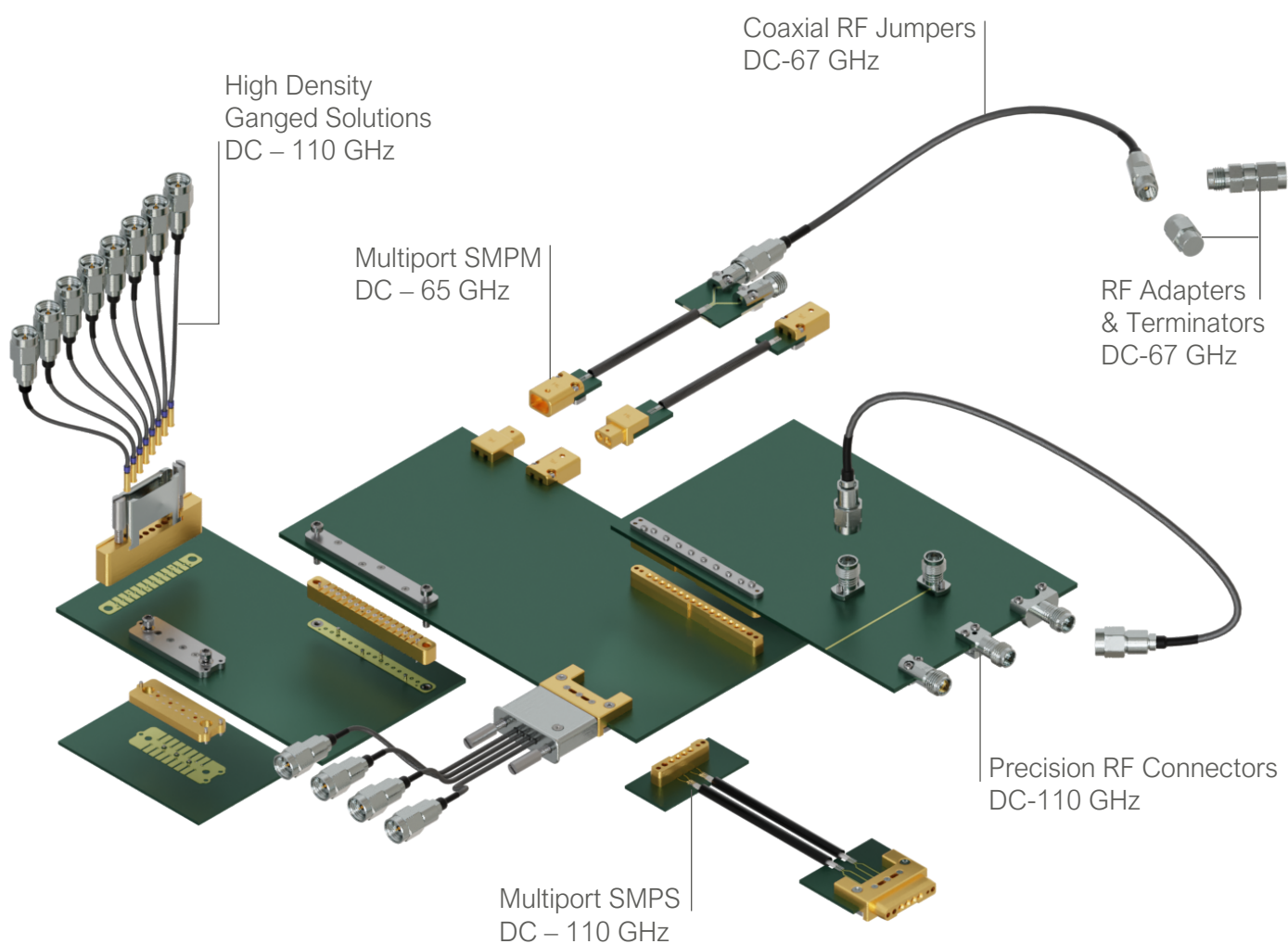
HIGH DENSITY SOLUTIONS
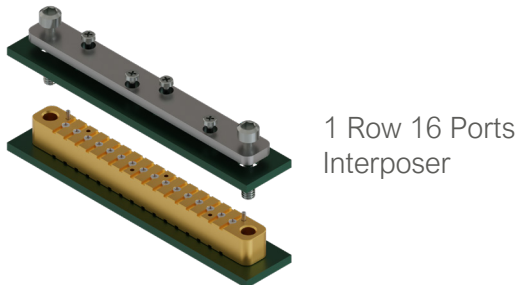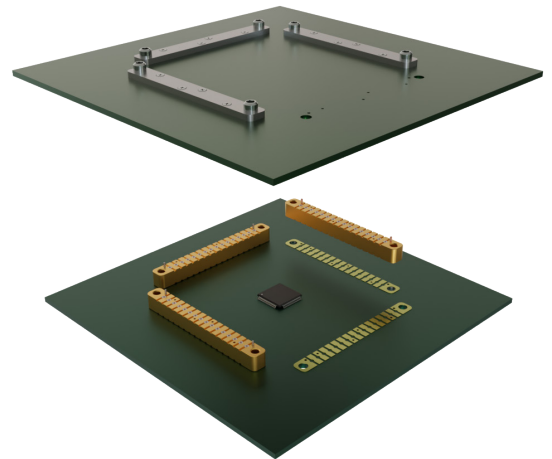## Where design real estate matters

Ganged RF Solutions

Cable To Board | DC-110GHz
- Single row: 2 ports, 4 ports 8 ports & 16 ports per row
- Double row: 2 ports, 4 ports 8 ports & 16 ports per row
- 2.54 mm pitch
- Customization offered

1 Row 8 Ports
Ganged RF Cable
Assembly

2 Rows 8 Ports
Ganged RF Cable
Assembly

Board To Board | DC-110GHz
- Single row: 2 ports, 4 ports 8 ports & 16 ports per row
- Double row: 2 ports, 4 ports 8 ports & 16 ports per row
- 2.54 mm pitch
- Customization offered

1 Row 16 Ports
Interposer

2 Rows 16 Ports
Interposer
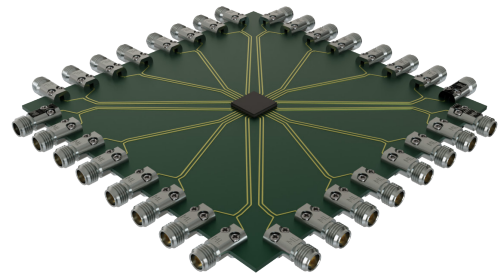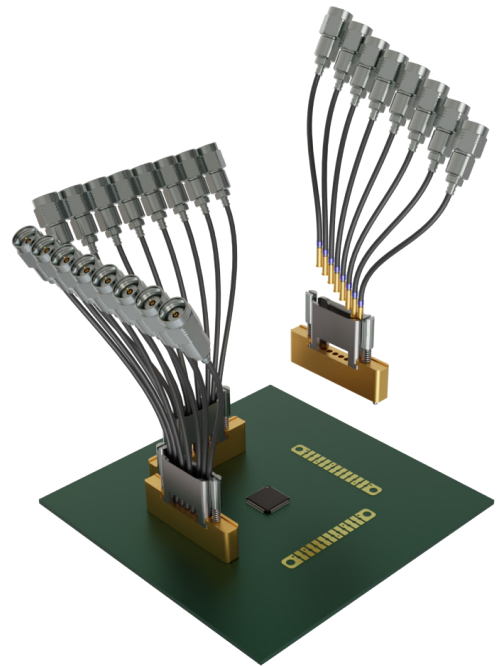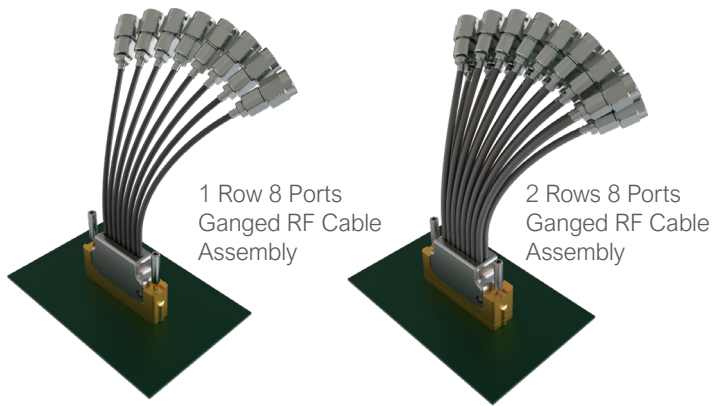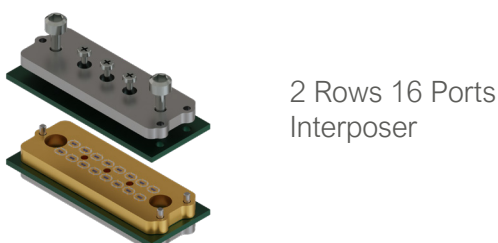
MultiLane's Proprietary Footprint
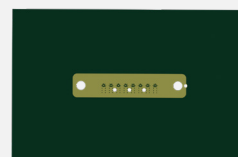
Footprint Customizable and Configurable to PCB Stack Up

HIGH DENSITY SOLUTIONS
Where design real estate matters
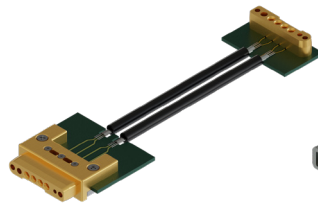
Connectors & Cable Assemblies

SMPS | DC-110GHz
- Single Row with 2 ports, 4 ports 8 ports & 16 ports
- Solderless Board Mount connectors: Vertical Launch & Edge Launch
- Coaxial & Twinax Cable Assemblies
- 2.54 mm pitch
- Configurable footprint to stack up
- Customization offered
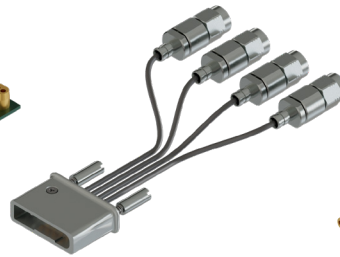- Compatible with both Coplanar Waveguide and Stripline transmission lines
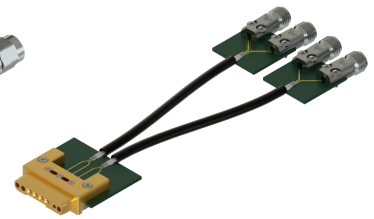
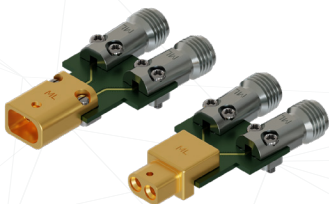Multiple Configurations Offered
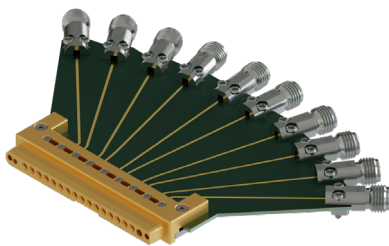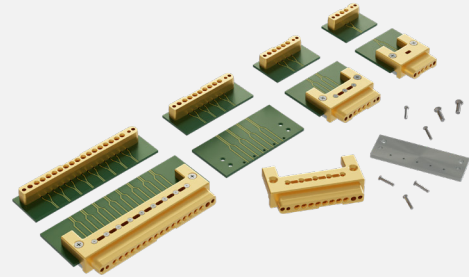
Test Boards Available

SMPS to SMPS

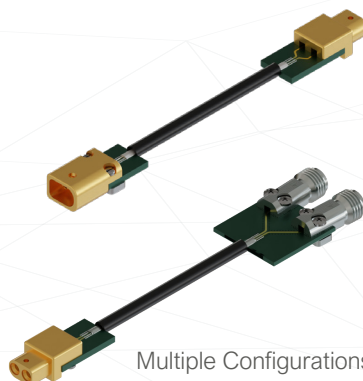SMPS to Precision RF Coax Cable Assembly

SMPS to Precision RF

SMPM | DC- 67GHz
- Male & Female solderless edge launch connectors
- 2 ports configuration with 3.5 mm pitch
- Twinax Cable assemblies
- Configurable footprint to stack up
- Customization offered
- Compatible with both Coplanar Waveguide and Stripline transmission lines

Test Board Adapters Available

Multiple Configurations Offered

SMPM Edge Launch Connectors

Female

Male

INDUSTRY'S MOST REQUESTED
## An interconnect for every instrument

Solderless Board Mount Precision RF Connectors | DC-110GHz

• Vertical Launch: Coplanar Waveguide and Stripline
transmission lines compatible
• Edge Launch: EMI, Wide Body, Narrow Body both
  Coplanar Waveguide and Stripline transmission lines compatible
• 1.00 mm, 1.35 mm, 1.85 mm, 2.40 mm, 2.92 mm
• Configurable footprint to stack up
• Test boards available
• Customization offered
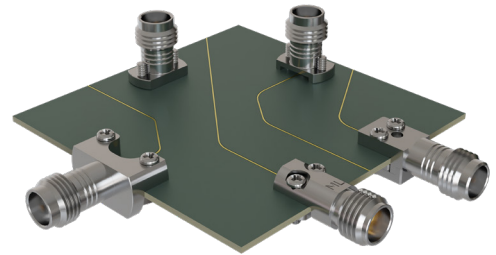
Rf Jumpers | DC-67GHz

• Ø.047 Coax Cables with 1.00mm, 1.35 mm, 1.85 mm,
  2.40 mm & 2.92 mm precision connector interfaces
• Ø.086 Coax Cables with 1.85 mm, 2.40 mm & 2.92 mm
  precision connector interfaces
• Phase stable assemblies sold individually and in pairs
  matched to 2 picoseconds
• 12 in, 24 in, 32 in, 39 in & custom length available
• 50-ohm cable assemblies
• Customization offered
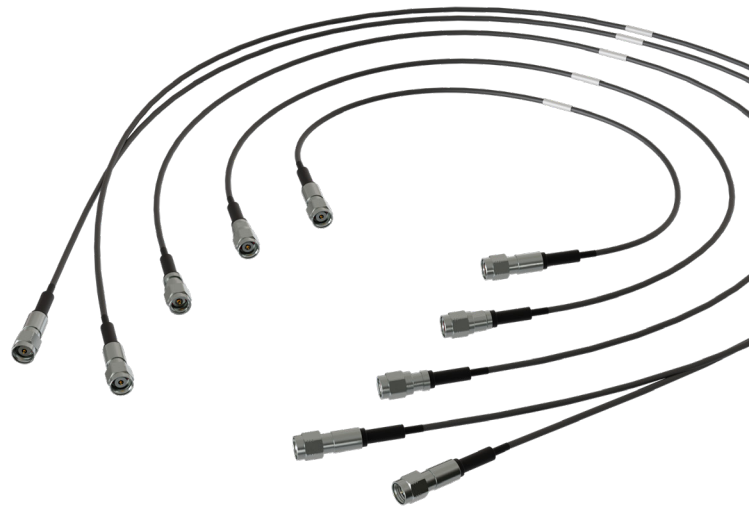
Adapters | DC-67GHz

• 1.85mm, 2.40 mm & 2.92 mm
• Between Series & Within Series
• Straight configuration
• 50 ohms coaxial adapters
• Rated to 500 mating cycles typical

Terminators | DC-67GHz

• 1.85mm, 2.40 mm & 2.92 mm
• Male & Female straight
  configuration
• 50 ohms coaxial terminators
• Rated to 500 mating cycles typical

multiLane

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