VIAVI Solutions

VIAVI
ONE LabPro

ONE-1600 2-port OSFP 1600G Test Module

The industry's first fully-integrated testing solution for pluggable 1600G Transceivers on 224G Electrical Lane Speed with insightful Physical Layer, FEC and MAC/IP, and Ethernet network performance testing

The VIAVI ONE LabPro™ ONE-1600 is for NEMs, IC designers and module vendors working on high-speed 1600G Ethernet projects.

The ONE-1600 2-port test module is a performance validation and debugging test system for R&D, system verification and production. It accelerates development projects by providing insights into lower layers including PHY, PCS, FEC stability and Ethernet performance.

Unlike other Test and Measurement products, the ONE LabPro ONE-1600, 2-port Test Module provides unique functionality to generate alarms and errors, stress FEC logic and power integrity.

- **Ensures eco-system interoperability**
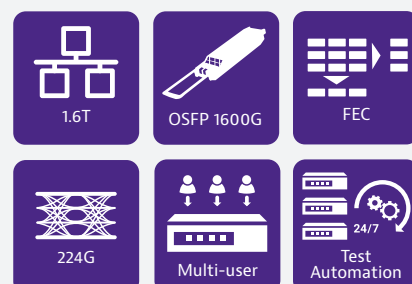- **Enables reliable performance**
- **Accelerates product validation**

Features

- ONE-1600 Module 2 x OSFP 1600G in 1.5U
- ONE Controller C1 in 1U – scales up to 16 x ONE LabPro HSE-800 or ONE-1600 test modules
- 1600G Unframed BERT, 4 x 400GE, 2 x 800GE framed Ethernet
- Hardware Validation
- Transponder Control Environment
- FEC Stress Testing
- Test Automation

Applications

- IC development and validation test
- 1600G Transceiver testing and validation
- System Verification Testing (SVT)
- Manufacturing testing

Figure 1. ONE-1600 2-port Module and ONE Controller C1

1.6T   OSFP 1600G   FEC

224G   Multi-user   Test Automation 24/7

Hardware Configuration

The VIAVI ONE LabPro ONE-1600 Test Module provides 2 x OSFP 1600G ports covering multi-rate 1600GE testing. The Test Module is connected and controlled through the ONE Controller C1. The Controller provides timing reference and can be augmented with the optional ultra-high accuracy GNSS Rb Clock.

Figure 2. ONE Controller C1 (top) and ONE-1600 OSFP 1600G 2-port Module (bottom)

Scalable Solution – Hardware and Licensing

Each ONE Controller C1 can orchestrate up to 16 x ONE LabPro Test Modules. ONE Controller C1 based licensing allows application initiated dynamic allocation of features to any connected test module and port.
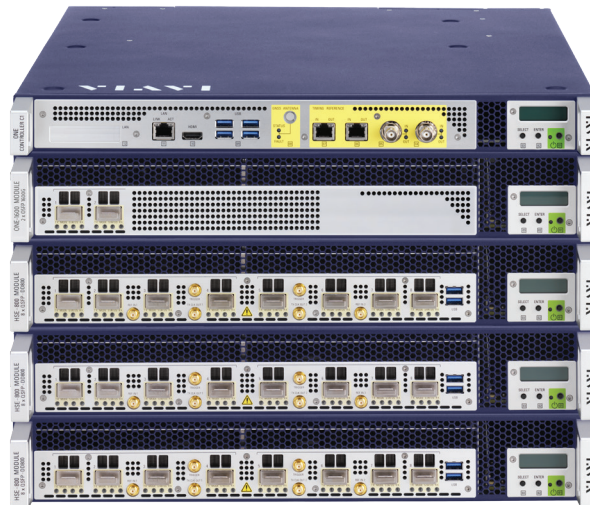

Figure 3. ONE Controller C1 can serve a mixed scenario of HSE-800 and ONE-1600 Test Modules.

Applications

The ONE LabPro ONE-1600 provides Framed Ethernet 2x800GE and 4x400GE and Unframed BERT testing. Unique Physical Layer Testing includes:

Feature	Description
Unframed BERT	Unframed BERT includes test patterns including PRBS31Q, PRBS13Q and inverted; Square Wave Q, SSPRQ
Hardware Validation	Hardware Validation is a toolkit including I²C Dump, Transponder Debugging, Power Supply Settings, Frequency Variation Sequences
Advanced Error Analysis	Detailed analysis to fingerprint error nature and accelerate BER test times, quickly identify system photonic and DSP issues
Services Disruption Test	The Service Disruption Tet measure the disruption time of the Ethernet signal that may be caused by overload situations, dropped frames, temporary routing faults or events that cause an automatic protection switching (APS)
BER Estimation	BER Estimation tests against a targeted BER with a required Confidence Level
Transceiver Stress Test	Test includes sequencing through different test patterns, Frequency Pull-in, Frequency Offset Variation and Frequency Offset Sequence in Unframed BERT and Ethernet modes. Dynamic Skew Variation Mode can be included in test sequence in Dynamic Skew option.

Ordering Information

The ONE LabPro, ONE-1600 will be orderable soon. Contact your VIAVI Sales representative for details.
All statements in this document are preliminary and subject to change.

Hardware

Part Number	Description
411-004.03	ONE-1600 OSFP 1600G 2-port Module
490-001.01	ONE Controller C1
Hardware Factory Options for ONE Controller C1	
490-040.01	Ultra high Accuracy GNSS Rb Clock
Required Configuration Choice for ONE Controller C1	
495-052.02	Power cable - Y - BS1363 - UK - 230VAC - 13A
495-053.02	Power cable - Y - CEE7-7 - EU - 230VAC - 16A
495-054.02	Power cable - Y - GB15934-2008 - China - 220VAC - 16A
495-055.02	Power cable - Y - IS1293 - India - 230VAC - 16A
495-057.02	Power cable - Y - NEMA-L6-20P – US/CAD - 250VAC - 20A
495-058.02	Power cable - Y - SI32 - Israel - 230VAC - 16A
495-052.01	Power cable - BS1363 - UK - 230VAC - 13A
495-053.01	Power cable - CEE7-7 - EU - 230VAC - 16A
495-054.01	Power cable - GB15934-2008 - China - 220VAC - 16A
495-055.01	Power cable - IS1293 - India - 230VAC - 16A
495-057.01	Power cable - NEMA-5-15P – US/CAD/Japan - 120VAC - 15A
495-058.01	Power cable - SI32 - Israel - 230VAC - 16A

Hardware continued

Part Number	Description
Optional Configuration Options	
495-082.01	Rackmount Kit 19 and 21 inch for Module 1.5U
495.082.03	Rackmount Kit 19 and 21 inch for Controller 1U
495-084.01	Controller and Module Assembly Clamp 2.5U
495-081.01	Ethernet Cable RJ45 CAT5E – 0.5m or 1.5 ft
495-081.03	Ethernet Cable RJ45 CAT5E – 2m or 6.5ft
495-088.01	ONE LabPro Travel Case

Software Options

Application feature licensing is assigned to the ONE Controller C1 as Dynamic License with per port granularity. Licenses are automatically assigned to ports and modules based on the application scenario selected by the user. Licenses are automatically revoked upon test completion

Example: A 2 port license means the application is available on 2 ports concurrently.

Part Number	Description	Included Functionality	Item # Per Port
411-234.58	2x800GE – 2 port	2x800GE – 224G SERDES	411-234.59
411-234.59	2x800GE – 1 port		
411-244.58	4x400GE – 2 port	4x400GE – 224G SERDES	411-244.59
411-244.59	4x400GE – 1 port		
411-610.58	Unframed BERT and Error Analysis – 2 port	Unframed BERT and Error Analysis	411-610.59
411-610.59	Unframed BERT and Error Analysis – 1 port		
411-614.58	Transceiver Stress Test – 2 port	Transceiver Stress Test	
411-614.59	Transceiver Stress Test – 1 port		
411-616.58	Coherent Transceiver Performance Monitoring – 2 port	Coherent Transceiver Performance Monitoring	411-616.59
411-616.59	Coherent Transceiver Performance Monitoring – 1 port		
411-618.58	Transceiver Control Environment – 2 port	Transceiver Control Environment	411-618.59
411-618.59	Transceiver Control Environment – 1 port		
411-672.58	Ethernet FEC Validation – 800GE – 2 port	FEC Validation 2x800GE	411-672.59
411-672.59	Ethernet FEC Validation – 800GE – 1 port		
411-675.58	Ethernet FEC Validation – up to 400GE – 2 port	FEC Validation 4x400GE	411-675.59
411-675.59	Ethernet FEC Validation – up to 400GE – 1 port		