

# VIAVI

## ONT-800 Optical Network Testers

Simplify and Accelerate High Speed Network Test in Lab and Production

The ONT-800 mainframe is a highly-configurable, multi-protocol, multi-port test platform for R&D and system verification of optical transport ICs, modules, and systems. The ONT-800 builds on its predecessor, the industry reference ONT-600, to deliver the bandwidth, power and cooling requirements for testing at 600G per lambda and beyond. The ONT family features multiple mainframe options and compatible application modules, ranging from “single-slot” point tools up to a full rack-mounted multi-slot, multi-port and multi-user solution that satisfies sophisticated R&D SVT and manufacturing needs. All application modules share the same GUI, automation and scripting, for ease of use and versatility throughout product development cycles.

### ONT-800 Use Cases

- R&D Design Testing
- System Development
- System Verification Testing
- Manufacturing Testing

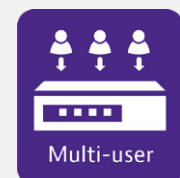


### ONT-800 Mainframe Features

- Designed to meet power & cooling for 800G optics
- Highest port density in the ONT family
- Compatible for ONT-600 modules
- One common architecture for SW Scripts on ONT family
- High accuracy clock module to synchronize modules and test ports
- ONT-804D with built in touchscreen
- Linux operating system
- Modules are hot swappable
- Rack mountable

### ONT-800 Key Benefits

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



## Available Modules for the ONT-800 Platform

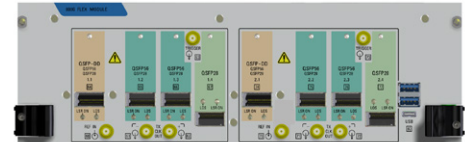
### 800G FLEX XPM Module

- 800G Transponder Test and Validation including OSFP 800G and QSFP-DD800
- 800G Unframed BERT
- 2 x 400GE, 8 x 100GE and 4 x 200GE
- Native QSFP-DD and SFP-DD
- Hardware Validation
- FEC Stress Testing



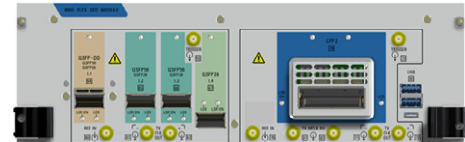
### 800G FLEX V2 Module

- Support for 2 x QSFP-DD / 6 x QSFP-56 / 8 x QSFP-28
- Unframed testing
- Ethernet 400GE and 200GE
- 4 x 100GE, 2 x 200GE and 8 x 50GE breakout
- Hardware Validation
- FEC Validation including FEC Stress Testing
- FOIC, OTUCn – OTUC1/ODUC1 to OTUC8/ODUC8
- ODUFlex with 400GE, 200GE and Bulk, ODU4 with 100GE
- OTL4.2/4.4 with ODU4 Bulk
- FlexE up to 400G via 100G or 200G PHY



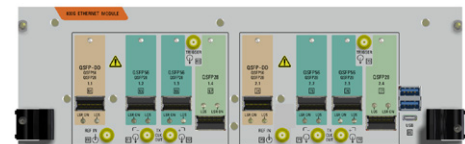
### 800G FLEX DCO Module

- Support for QSFP-DD, QSFP-56/28 and 400G CFP2-DCO
- Unframed testing
- Ethernet 400GE and 200GE, native and OTN client
- 4 x 100GE, 2 x 200GE and 8 x 50GE breakout
- Hardware Validation
- FlexE up to 400G via 100G or 200G PHY
- FlexO, FOIC, OTUCn – OTUC1/ODUC1 to OTUC4/ODUC4
- ODUFlex with 400GE, 200GE and Bulk, ODU4 with 100GE
- OTL4.2/4.4 with ODU4 Bulk



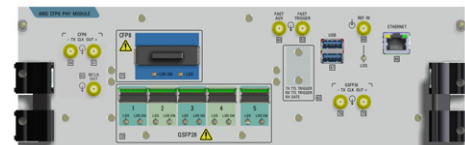
### 800G ETHERNET V2 Module

- Support for 2 x QSFP-DD / 6 x QSFP-56 / 8 x QSFP-28
- Unframed testing
- Ethernet 400GE and 200GE
- 4 x 100GE, 2 x 200GE and 8 x 50GE breakout
- Hardware Validation



### 400G CFP8 and QFLEX Modules

- CFP8-based 400GE testing
- Unframed, PCS, Ethernet IP, OTUCn, FlexE and FlexO testing up to 400G via QSFP28 or CFP8
- Static and dynamic (NRZ) skew insertion
- PAM-4 and NRZ electrical adapters
- Support for QSFP-DD and OSFP via adapters



### N-PORT Module

- Native support for 4 x SFP28 / 4 x QSFP28
- Ethernet including 10GE, 25GE, 40GE, 50GE and 100GE
- eCPRI over 10GE, 25GE, 40GE, 50GE and 100GE
- OTN OTU-4, OTU-3, OTLC1, ODU Multi Channel
- Fibre Channel 16G and 32G



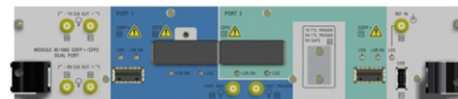
## N-PORT ETHERNET Module

- Native support for 4 x SFP28 / 4 x QSFP28
- Ethernet including 10GE, 25GE, 40GE, 50GE and 100GE
- eCPRI over 10GE, 25GE, 40GE, 50GE and 100GE



## 40/100G CFP2 Dual Port Module

- CFP2-based 40GE, 50GE, 100GE, and OTU3/4 testing
- Static and dynamic skew insertion
- Unframed, PCS, and Ethernet/IP testing
- Optional support for: OTU3, OTU3e1, OTU3e2, OTU4, and ODU multiplexing
- Support for CFP2, 100G CFP2 DCO, QSFP28, SFP28 and CFP4
- Access to electrical NRZ signals via adapters



## MTM-B Module

- Four fully independent SFP+/XFP ports
- 155 Mbps to 12.5Gbps unframed
- Ethernet: 10GE, 10GE WAN, 2.5GE, 1GE
- SDH/SONET: 155 Mbps – 9.9 Gbps
- SDH/SONET Multi-Channel
- OTN: OTU1, OTU2e/f and ODU Multi-Channel
- Fiber Channel: 1/2/4/8/10G FC
- CPRI Options 1 ... 9



## Mainframe Controller and Clock Module

- HDMI for external monitor connection
- 4 x USB for external keyboard/mouse and data transfer
- BNC, Bantam and Time of Day (ToD) inputs for external synchronization
- Optional Rb and GNSS synchronization



## ONT-800 Mainframes

### ONT-804D

- 4 slots for application modules
- 15" TFT touch screen
- LINUX OS with support for VNC-based remote operation
- Runs stand-alone software like Wireshark
- Ideal for stand-alone lab use



### ONT-804, ONT-812 and ONT-812A

- 4 or 12 slots for application modules
- LINUX OS with support for VNC-based remote operation
- Runs stand-alone software like Wireshark
- Connectors for external keyboard, mouse, and display
- Ideal for cost-sensitive and scripted applications in SVT and manufacturing



## Mainframe Specifications

<b>Power supply (nominal range of use)</b>				
AC Line	ONT-804	ONT-804D	ONT-812	ONT-812A
Nominal voltage range	100 to 240 V		200 to 240 V	100 to 240 V
Operating voltage range	85 to 265 V		170 to 265 V	85 to 265 V
Operating frequency	50/60 Hz			
Max AC power (fully loaded mainframe)	1600 VA	1600 VA	4400 VA (2 x 2200 VA)	3200 VA (2 x 1600 VA)
Max DC Power to Application Modules	1200 W	1200 W	3600 W	2400 W
<b>Dimensions and weight (w/o modules)</b>				
Dimensions, including handle/bumpers (w x h x d)	400 x 200 x 495 mm	400 x 495 x 215 mm	483 x 666 x 460 mm	483 x 666 x 460 mm
Weight	11.7 kg	14.2 kg	24 kg	24 kg
<b>Touch screen display (ONT-804D only)</b>				
Color TFT	15 inches			
Resolution	1024 x 768 (XGA)			
<b>Interfaces, storage, data transfer</b>				
Interfaces	Ethernet (RJ45), 4 x USB, external keyboard, mouse, HDMI			
Processor	Intel, 16GB RAM			
Hard drive for data/setup storage	≥ 64 GB			
<b>Instrument operation</b>				
The ONT-800 uses the Linux operating system Local GUI via built-in touch screen and by connecting screen/mouse/keyboard. Remote operation is provided via Java Web Start or VNC. Individual user programs may run on the controller board, for example Wireshark or similar tools used to analyze captured data.				
<b>Remote control for test automation</b>				
The ONT-800 can be controlled remotely via SCPI commands sent by the customer's program using the LAN port. Modules are addressed independently and in parallel and may be shared among multiple users and across multiple mainframes network-wide. Universal driver libraries facilitate automation with specific support for individual applications. Scripting support is provided for Tcl/Tk, Python, C libraries, and LabView. The interactive GUI also works in parallel with remote control making it easy to develop automated scripts.				
<b>Ambient temperature</b>				
Nominal range of use	+5 to +35°C			
Storage	-20 to +65°C			
Transport	-20 to +65°C			
<b>Local Mini LCD display</b>				
Display type	Graphic LCD display 128 x 32 pixels			
2 push buttons	Display and control: IP address, mainframe reference clock settings and module connectivity check			
<b>Clock and synchronization</b>				
Internal master clock module accuracy	±1.0 ppm (Exceeds T1.101 stratum 3/3E accuracy)			
<b>External synchronization input / output</b>				
Clock and time of day synchronization	NTP, PTP, external GPS, 1PPS, Time of Day			
Connector, unbalanced	50 Ω, BNC jack			
<b>Clock source</b>				
Connector, balanced	110 Ω, Bantam jack			
<b>Clock source</b>				
	DS1, E1; 1544, 2048 kHz, 1 MHz			

<b>Clock output</b>	
Connector, unbalanced	50 $\Omega$ , BNC jack
Connector, balanced	110 $\Omega$ , Bantam jack
<b>Clock frequencies</b>	
E1, DS1, 2048 kHz, 1544 MHz	
RJ45 Clock in/out 1 pps and time of day, ITU and YD/T 2375-2011, cascade	

## GNSS synchronization and Rubidium oscillator (optional)

<b>GNSS synchronization</b>	
Antenna input [10]	Connector type: SMA 1.6/5.6, 50 $\Omega$ RF input power max. +10 dBm 3.0 V / 50 mA max
Supported satellite systems	GPS, Glonass, Beidou, Galileo
Time to first fix	< 30 s
Warm up time Rb oscillator	< 8 min to reach frequency accuracy better than $\pm 1E-9$ at ambient temperature 25°C
Overall synchronization time	typical: < 30 min depends on satellite constellation and received signal quality
Time accuracy	< $\pm 2$ ns (clear sky, good signal quality)
Frequency accuracy	< $\pm 1E-10$ without receiving satellites (Rb oscillator) < $\pm 2E-8$ during synchronization synchronized: long time stability of satellite system

## Available ONT-800 Modules and their Capabilities

This table provides a portfolio overview to help you making the right module selection. Additional applications will be added over time, especially for the N-PORT and 800G FLEX Modules.

	<b>MTM-B</b>	<b>CFP2</b>	<b>N-PORT</b>	<b>400G CFP8</b>	<b>800G FLEX</b>
Transponder Validation	Yes	Yes	Yes	Yes	Yes
PHY – Advanced Error Analysis		Yes		Yes	Yes
Dynamic Skew Insertion		Yes		Yes	Yes
Electrical Adapter		Yes		Yes	Yes
400GE				Yes	Yes
200GE				Yes	Yes
100GE		Yes	Yes		Breakout 100GE
100GE - 802.3cd (NRZ)			Yes		
50GE		Yes	Yes		Breakout 50GE
40GE		Yes	Yes		
25GE		Yes	Yes		
10GE	Yes		Yes		
1GE, 2.5GE	Yes				
2 x 200GE, 4 x 100GE, 8 x 50GE breakout 8 x 100GE, 4 x 200GE, 2 x 400GE breakout					Yes
1588 PTP/SyncE	Yes	Yes			
FlexE				Yes	Yes
FOIC-OTUCn				Yes	Yes
OTN OTU 1/2	Yes				
OTN OTU 3/4		Yes	Yes		
MultiChannel OTN	Yes	Yes	Yes		

	MTM-B	CFP2	N-PORT	400G CFP8	800G FLEX
Fibre Channel up to 10G	Yes				
Fibre Channel 16G / 32G			Yes		
CPRI	Yes				
eCPRI			Yes		
SONET/SDH	Yes	Yes	Yes, embedded in OTN		
SONET/SDH Multi-Channel	Yes				
<b>Configuration Details</b>					
Number of ports	4	2	4	1 - 4	2 - 8
Number of slots occupied in mainframe	1	2	1	3	3
DC Power Consumption (max)	110 W	220 W	250 W	450 W	700 W

## ONT-800 Mainframes and Accessories

3078/04 ONT-804D	Mainframe with touchscreen display
3078/05 ONT-804	Mainframe without display, 19" / 21" rack mount included
3078/07 ONT-812	Mainframe 12 slot rack mount version
3078/08 ONT-812A	Mainframe 12 slot rack mount version for 110V AC with reduced power profile
3078/92.05	Rack Mount Kit 19" and 21" for ONT-804D
3078/92.02	ONT-800 Ultra High Accuracy GNSS Rb Clock. Hardware option, can only be fitted in the factory

### Power Cables (1 for ONT-804, 2 for ONT-812 included)

K 810	European IEC C19 Schuko 250 V 16 A
K 811	UK C19 250 V 13 A
K 812	Australia 250 V 15 A
K 814	US NEMA 5-20 125 V 20 A
K 815	US NEMA 6L-20 250 V 20 A

## 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.

Contact your local representative for more information on VIAVI Care Support Plan options or visit:

[viasolutions.com/viavicareplan](https://viasolutions.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	✓	✓	✓	✓*	✓	✓	✓



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