

# VIAVI

## ONT-600 Optical Network Testers

High-speed testing for high-speed optical networks

The modular design of the ONT-600 platform offers high flexibility and lets users operate multiple test modules simultaneously. The ONT-600 comes in a variety of mainframes and application modules, ranging from “single-port” point tools up to a full 19” rack-mounted multi-slot, multi-port and multi-user solution that satisfies sophisticated SVT needs.

All application modules share the same GUI and identical automation and scripting, so that they can be used throughout the product development cycles.

### Applications

- Detailed hardware level testing with unframed and protocol-based traffic.
- 25G, 50G, 100G and 400G Optical Modules validation.
- Support for OTN and FlexO, Ethernet/FlexE and eCPRI, Fibre Channel, CPRI, and SONET/SDH



### Key Features

- Supports testing of all major Optical Transport technologies and services in the range from 155 Mbps up to 400 Gbps and beyond. Comprehensive range of supported physical interfaces
- Test Applications for R&D, System Verification Test and Manufacturing include advanced error analysis, delay and service disruption tests, full overhead analysis, and skew tests for multi-lane signals
- Multiple mainframe options including rack-mount solutions and benchtop instruments with built-in display
- **OTN:** up to OTU4 / OTUC4 with ODU Muxing down to ODU0; ODUflex via OTUK, FlexO and OTLCn; ODU Multichannel
- **Ethernet:** Gigabit Ethernet up to 400 GE and FlexE fully supported with full stress/margin analysis
- **SDH/SONET:** 155 Mbps up to 40 Gbps, both native and mapped into OTN containers.
- **Fibre Channel:** 1/2/4/8/10/16/32G Fibre Channel
- **CPRI:** unframed and framed testing, CPRI line bit rate option 1 (614.40 Mbps) up to option 9 (12.165 Gbps); eCPRI
- Most accurate latency and service disruptions measurements for OTN, Ethernet, CPRI, Fibre Channel, and SONET/SDH
- Browser-oriented graphical user interface (GUI)
- Full multitasking and multi-user operation
- Full automation support via CLI or with drivers and libraries for LabWindows CVI, LabView, Python and Tcl/Tk

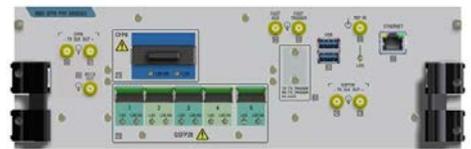
## Customer Groups

- **Equipment Manufacturers:** Support for R&D, SVT (system verification/test), and production environments covering the entire product life cycle
- **Service Providers:** Conduct product qualification and benchmark testing before deployments and bring to the field
- **Data Centers:** Fully verify data center interconnect elements and long-haul transmission elements for quality and performance and fully stress and verify pluggable optics including active optical cables.

## Available Modules for the ONT-600 Platform

### 400G CFP8 and QFlex Modules

- CFP8, QSFP-DD and OSFP-based 400GE/200GE testing
- Unframed, PCS, and Ethernet IP testing
- Static and dynamic (NRZ) skew insertion
- PAM-4 and NRZ electrical adapters
- Optional support for FlexE, FlexO and OTLcN via 4 QSFP28 ports



400G CFP8 and QFlex Module

### N-Port Module

- Four fully independent QSFP28 and SFP+ ports
- 10, 25, 40 and 100GE testing
- Full OTN testing
- FC16 und FC32



N-PORT Module

### 40/100G CFP2 Dual Port Module

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



ONT-602 with Dual Port CFP2 Module

### MTM-B Module

- Four independent SFP+/XFP ports
- 155 Mbps to 12.5G unframed
- Ethernet: 1GE, 2.5GE, 10GE
- SDH/SONET: 155 Mbps – 9.9 Gbps
- SDH/SONET LO/HO MultiChannel
- ODU MultiChannel
- OTN: OTU1, OTU2, OTU2e/f
- Fiber Channel: 1/2/4/8/10G FC
- CPRI Options 1 ... 9



MTM-B Module

## ONT-600 Mainframes

### ONT-603D, ONT-606D

- 3 or 6 slots for application modules
- 15" TFT touch screen
- High-end controller Linux PC and a high-accuracy clock module
- Support for VNC-based remote operation and stand-alone software like Wireshark
- Ideal for stand-alone lab use



ONT-603D

### ONT-603H, ONT-606H, ONT-612H

- 3, 6, or 12 slots for application modules
- High-end controller Linux PC and a high-accuracy clock module
- Linux PC and a high-accuracy clock module
- Support for VNC-based remote operation and stand-alone software like Wireshark
- Connectors for external keyboard, mouse, and display (XGA)
- Ideal for cost-sensitive and/or remote-controlled in SVT and manufacturing



ONT-612H

### ONT-601 MTM-B Point Solution

- 4-port SFP+/XFP-based test solution for 155 Mbps to 11.1 Gbps
- Compact 1-RU stand-alone configuration that houses one single MTM
- Remote operation from external PC via browser-based interface or CLI
- Ideal for cost-sensitive applications in SVT and manufacturing
- Rack-mountable as well as table-top stackable (ships with both options)



ONT-601 MTM-B

### ONT-602 Dual-Port CFP2 Point Solution

- 2-port CFP2-based test solution for 40/100GE and OTU3/4
- Compact 2-RU stand-alone configuration that houses one CFP2 module
- Remote operation from external PC via browser-based interface or CLI
- Ideal for cost-sensitive applications in SVT and manufacturing
- Rack-mountable as well as table-top stackable (ships with both options)



ONT-602 CFP2

## Mainframe Specifications

<b>Power supply (nominal range of use)</b>			
AC Line	ONT-603	ONT-606	ONT-612
Nominal voltage range	110 to 240 VAC		
Operating voltage range	85 to 265 VAC		
Operating frequency	50/60 Hz		
Max AC power (fully loaded mainframe)	750 VA	1300 VA	2 x 1300 VA
<b>Dimensions and weight (w/o modules)</b>			
Dimensions, including handle/bumpers (w x h x d)	360 x 435 x 170 mm (14.1 x 17.1 x 6.7 in)	360 x 435 x 260 mm (14.1 x 17.1 x 10.2 in)	n/a
Dimensions, including 19" rack mount kit	n/a	n/a	483 x 535 x 445 mm (19.0 x 21.1 x 17.5 in)
For display add depth	20 mm (0.8 in)	20 mm (0.8 in)	n/a
For handle add:			
Width	50 mm (2 in)	50 mm (2 in)	n/a
Height	up to 135 mm (5.3 in)*	up to 135 mm (5.3 in)*	
Depth	up to 105 mm (4.1 in)*	up to 60 mm (2.4 in)*	
Weight			
ONT-6xxD version	11.6 kg (25.5 lb)	14.6 kg (32.2 lb)	n/a
ONT-6xxH version	9.1 kg (20.1 lb)	12.1 kg (26.7 lb)	17.2 kg ( 37.9 lb)
19" rack mount kit	0.2 kg (0.4 lb)	0.3 kg (0.7 lb)	6.9 kg (15.2 lb)
* Depending upon handle position			
<b>Instrument operation</b>			
<p>The ONT-600 high-end controller uses the Linux operating system and supports three types of operation: Local GUI via built-in touch screen (ONT-603D and ONT-606D) and by connecting screen/mouse/keyboard (ONT-603/606/612H). Remote operation is provided via Java Web Start or VNC. Individual user programs may run on the high-end controller board, for example, Wireshark or similar tools used to analyze captured data. Scripting from another computer connected via Ethernet is supported for all controller versions.</p>			
<b>Remote control for test automation</b>			
<p>The ONT-600 can be controlled remotely via SCPI commands sent by the customer's program using Ethernet TCP/IP. Modules are addressed independently and in parallel and may be shared among multiple users. Universal driver libraries facilitate automation with specific support for individual applications. Scripting support is provided via Tcl/Tk, Python, C libraries, and LabView drivers. The interactive GUI also works in parallel with remote control making it easy to develop automated scripts.</p>			
<b>Ambient temperature</b>			
Nominal range of use	+5 to +40°C (41 to 104°F)		
Storage	-20 to +65°C (-68 to 149°F)		
Transport	-20 to +65°C (-68 to 149°F)		
<b>Local Mini LCD display</b>			
Display type	Graphic LCD display 128 x 32 pixels		
2 push buttons	Display and control: IP address and mainframe reference clock settings		
<b>Clock and synchronization</b>			
Internal master clock module accuracy	±1.0 ppm (Exceeds T1.101 stratum 3/3E accuracy)		

<b>External synchronization</b>	
Clock and time of day synchronization	NTP, PTP, external GPS
Connector, unbalanced	75 $\Omega$ , BNC jack
Clock source	DS1, E1, 1544, 2048 kHz, 1, 5, 10 MHz, 64, 6312 kHz
Connector, balanced	110 $\Omega$ , Bantam jack
Clock source	DS1, E1; 64, 1544, 2048 kHz, 1 MHz
<b>Clock output</b>	
Connector, unbalanced	75 $\Omega$ , BNC jack
Connector, balanced	110 $\Omega$ , Bantam jack
<b>Clock frequencies</b>	
E1, DS1, 64 kHz, 2048 kHz, 1544 MHz	
<b>Addressing scheme</b>	
ONT-6xxD or H	1 IP address needed per complete mainframe
Remote operation via LAN	
<b>Touch screen display (ONT-603D and ONT-606D)</b>	
Large color TFT	15 inches
Resolution	1024 x 768 (XGA)
<b>Interfaces, storage, data transfer</b>	
The ONT-600 uses an internal controller PC allowing to run LINUX-based customer applications	
Interfaces	Ethernet (RJ45), 3 x USB, External keyboard, mouse, VGA, DisplayPort
Processor	Intel 2GB RAM
Hard drive for data/setup storage	$\geq$ 160GB

## Available ONT-600 Modules and their Capabilities

This table provides a portfolio overview to help you making the right module selection. Additional applications may be added over time, especially for the N-Port and 400G Modules.

	MTM-B	CFP2	N-Port	400G CFP8
Transponder Validation	Yes	Yes	Yes	Yes
PHY - Advanced Error Analysis		Yes		Yes
400GigE				Yes
200GigE				Yes
100GigE		Yes	Yes	
50GigE		Yes		
40GigE		Yes	Yes	
25GigE		Yes	Yes	
10GigE	Yes		Yes	
1GigE, 2.5GigE	Yes			
FlexE				Yes
1588 PTP/SyncE	Yes	Yes		
FlexO				Yes
OTU 1/2	Yes			
OTU 3/4		Yes	Yes	
MultiChannel OTN	Yes	Yes		
OTLCn				Yes

	MTM-B	CFP2	N-Port	400G CFP8
Fibre Channel up to 10G	Yes			
Fibre Channel 16G			Yes	
Fibre Channel 32G			Yes	
CPRI	Yes			
SONET/SDH	Yes	Yes	Yes (Service in OTN)	
eCPRI			Yes	
Number of ports	4	2	4	1
MultiChannel SDH/SONET	Yes			
StrataSync enabled			Yes	

### ONT-600 Mainframes

Ordering No.	Type	# of Slots	Specifics
3076/01	ONT-603D	3	With display and high-end controller
3076/02	ONT-603H	3	With high-end controller
3076/04	ONT-606D	6	With display and high-end controller
3076/05	ONT-606H	6	With high-end controller
3076/07	ONT-612H	12	With high-end controller



Contact Us **+1 844 GO VIAVI**  
(+1 844 468 4284)

To reach the VIAVI office nearest you,  
visit [viavisolutions.com/contact](https://www.viavisolutions.com/contact).

© 2019 VIAVI Solutions Inc.  
Product specifications and descriptions in this  
document are subject to change without notice.  
ont-600-ds-opt-tm-ae  
30173081 904 0119