JDSU ONT-600
Optical Network Testers

Key Benefits

- **Multiple technologies in one platform minimizes CapEx and reduces the costs of automation with testing for Ethernet, OTN, jitter/wander, SDH/SONET, VCat, GFP, FC, and 40/100 G CFP**

- **Gain unprecedented efficiency with the ability for multiple users to run tests on multiple ports simultaneously and independently**

- **Optimize your testing processes through automation—the ONT provides automation support via Tcl/Tk, C-, and LabView driver libraries with Ethernet connectivity**

- **Perform stress tests to find issues and to discover the testing limitations of the device under test**

- **The multichannel test can check SDH/SONET or OTN channels simultaneously**

- **Offers 40/100 GE and OTU3/OTU4 structured and unframed testing (CFP-based)**

- **Offers 40/43 G SDH/SONET/OTN and unframed testing (serial)**

- **Provides jitter/wander testing at SDH, OTN, and Ethernet rates up to 43 G (including 10 G OTL rates)**

- **Provides jitter/wander testing for synchronous Ethernet**

- **Module-E covers SDH/OTN/Ethernet/FC rates from 155 M to 11.32 G**

Key Features

- Interchangeable plug-in modules within ONT-600 family provide flexibility

- Linux operating system on optional controller board

- Optional versions without display/ Linux controller for cost-sensitive applications

- Easy test automation with full-featured driver support

- All modules, except jitter, are hot swappable

Testing design and conformance of optical transport networks, network elements, and subassemblies

The JDSU Optical Network Tester (ONT) platform is a multifunctional, multiport, and multi-user solution for fast, flexible testing of optical transport network environments.

All ONT models address the optical and digital testing needs in research and development (R&D), system verification testing (SVT), production, and troubleshooting. JDSU offers a range of plug-in instrument modules for packet-based services like Ethernet and Fibre Channel (FC) as well as for transport services like OTN and SDH/SONET and most services also in combination with jitter/wander. Designed to keep pace with the high-speed evolution of today's communications technology, the ONT is the essential test tool for manufacturers, early technology installers, network operator verification labs, and tier-3 support of optical networks.

'Plug-in' modules let users easily perform upgrades in the field as well as exchange application modules among ONT-600 mainframes. All modules use the same software concept that enables the use of developed scripts and minimizes user training time. Software scripts are fully compatible between ONT-500 and ONT-600 modules.

Available modules for the ONT-600 platform

100/40 GE Module

- CFP-based 40 GE, 100 GE, and OTU3/4 testing
- Static and dynamic skew
- Unframed, PCS, and Ethernet/IP testing
- Optional support for: OTU3, OTU3e1, OTU3e2, OTU4, and ODU multiplexing

40/43 G Module

- Optional support for SDH/SONET and OTN
- Unframed testing
- 40/43 G NRZ and 43 G DPSK
- Optional support for OTU3e1 and OTU3e2
- Optional support for OTN multiplexing

40/43 G Jitter/Wander Module for use with 40/43 G Module

- Optional support for SDH/SONET and OTN
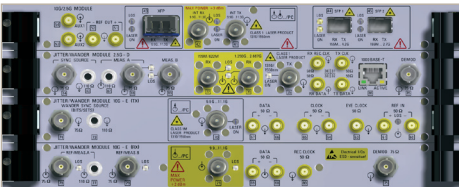- Highly accurate jitter evaluation according to O.172 Appendixes VII and VIII

Module-E 10 G and Module-E 10/2.5 G

- 9.9 to 11.3 G unframed
- Optional support for 10 G LAN/WAN/FC/SDH/SONET, OTN, and overclocked
- Optional support for 10 G electrical interfaces
- Module-E 10/2.5 G adds testing capability for Gigabit Ethernet and SDH/SONET/OTN up to 2.7 G

10 G Jitter/Wander Module for use with Module-E

- Adds jitter testing to Module-E 10 G
- Adds SDH/SONET, 10 GE, and more 10 G jitter testing
- Jitter at 9.953 G and optional support for 10.313 (10 GE)/10.518/10.709/10.755/11.049/11.095/11.181 G
- Highly-accurate jitter evaluation according to O.172 Appendixes VII and VIII
- Support of 1550 nm or 1550/1310 nm

2.5 G Jitter/Wander Module for use with Module-E

- Adds jitter testing to Module-E 10/2.5 G
- Adds 1.25 G (1 GE) and 2.5/2.7 G SDH/SONET/OTN jitter testing
- Highly-accurate jitter evaluation according to O.172 Appendixes VII and VIII
- Support of 1550 nm or 1550/1310 nm

ONT-600 Mainframes

ONT-603D, ONT-606D

- 3 or 6 slots for application modules
- 15-inch touch screen TFT with XGA resolution
- 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 and for jitter/wander applications
- Needs just one IP address per mainframe

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 jitter/wander applications in SVT and manufacturing
- Needs just one IP address per mainframe

ONT-603B, ONT-606B, ONT-612B

- 3, 6, or 12 slots for application modules
- Basic controller for fan and temperature control, IP switch
- Remote operation from external PC via browser-based interface or CLI
- Ideal for cost-sensitive applications in SVT and manufacturing
- Standard clock module (not suitable for jitter/wander applications)
- Each built-in application module has its own IP address

ONT-601 Multi-Port Test Module (MTM)

- Compact 1-RU stand-alone configuration that houses one single MTM
- LCD conveniently displays IP settings
- Remote operation from external PC via browser-based interface or CLI
- Ideal for cost-sensitive applications in SVT and manufacturing
- Rackmountable as well as table-top stackable (ships with both options)

Specifications

Power supply (nominal range of use)

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	
AC line fuse	2 x T 10 A L 250 V	2 x T 15 A L 250 V	2 x T 10 A L 250 V
	5 x 20 mm	5 x 20 mm	5 x 20 mm
Max AC power (fully loaded mainframe)	750 VA	1300 VA	2 x 1300 VA

Dimensions and weight

Dimensions, including handle/bumpers	360 x 435 x 170 mm	360 x 435 x 260 mm	tbd
(w x h x d)	(14.1 x 17.1 x 6.7 in)	(14.1 x 17.1 x 10.2 in)	tbd
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)	tbd
ONT-6xxB version	8.7 kg (19.2 lb)	11.7 kg (25.7 lb)	tbd

* Depending upon handle position

Instrument operation

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 of VNC. Individual user programs may run on the high-end controller board, for example, Wireshark or similar tools used to analyze captured data.
- ONT-600B (basic controller) versions do not have a built-in PC; therefore, remote operation can only be carried out via Java Web Start from any PC connected via the Ethernet. VNC, Wireshark, and similar applications are not supported on the basic controller board.
- Scripts or programs from another computer connected via the Ethernet are supported for all controller versions.

Remote control for test automation

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 and C libraries and LabView drivers. The interactive GUI also works in parallel with remote control making it easy to develop automated scripts.

Ambient temperature

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)

Local Mini LCD display

Display type	Graphic LCD display 128 x 32 pixels
2 push buttons	Display and control: IP address and mainframe reference clock settings

Clock and synchronization

Internal master clock accuracy (high-end controller)	±1.0 ppm
	(exceeds T1.101 stratum 3/3E accuracy)
Internal master clock accuracy (basic controller)	±4.6 ppm
	(stratum 3/3E)

External synchronization (high-end controller only)

Connector, unbalanced	75 Ω, BNC jack
Clock source	DS1, E1, 1544, 2048 kHz,
	1, 5, 10 MHz
	64, 6312 kHz
Connector, balanced	110 Ω, Bantam jack
Clock source	DS1, E1; 64, 1544, 2048 kHz,
	1 MHz

Clock output (high-end controller only)

Connector, unbalanced	75 Ω, BNC jack
Connector, balanced	110 Ω, Bantam jack

Clock frequencies

E1, DS1, 64 kHz, 2048 kHz, 1544 MHz

Addressing scheme

ONT-6xxB	1 IP address needed per application module
ONT-6xxD or H	1 IP address needed per mainframe
Remote operation via LAN	

Touch screen display (ONT-603D and ONT-606D)

Large color TFT	15 inches
Resolution	1024 x 768 (XGA)

Interfaces, storage, data transfer

The ONT-600 (high-end controller versions D and H) uses a Kontron ETXe PC as the internal controller allowing it to run Linux applications as well.

Interfaces	Ethernet (RJ45), 3 x USB,
	External keyboard, mouse, VGA, DisplayPort
Processor	Intel 2 GB RAM
Hard drive for data/setup storage	≥ 160 GB

For specifications for the ONT-601, please refer to the ONT-600 MTM data sheet.

Test & Measurement Regional Sales

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