



## ONT-503/506/512 In A Nutshell

Testing Design,  
Conformance, and  
Integration of Next  
Generation Transport  
Networks

Multi-Application  
Multi-User  
Multi-Port  
Multi-Channel

SONET  
SDH  
DSn/PDH  
NewGen  
Ethernet  
OTN  
Jitter  
Wander  
Remote  
TCP/IP  
LWdriver  
Tcl/Tk

### ONT-5xx platform strengths

- **Multi-Application**  
Capable of supporting standard SONET/SDH/DSn/PDH BERT testing as well as OTN, Jitter/Wander, NextGen SONET (GFP, VCat, LCAS), DWDM Optical Spectrum Analysis, and Ethernet. No other vendor provides this range of technologies in a single platform.
- **Multi-User**  
User ID and password-based system allows multiple users (various groups) to access test cards simultaneously and independently.
- **Multi-Port**  
**3, 6 or 12 slots** available in "Screen and Handle" or rack mount form factors. Cards are swappable between mainframes and mainframes can be daisy-chained to provide a seamless interface to all modules.
- Utilizes the **Linux** operating system for superior networking and security.
- Measurement results of all ports have a **common time base**.
- **Parallel remote GUI** and remote command line access eases test script development.
- **Browser** and TCP/IP technology support international testing groups.
- Highly developed **Tcl libraries** and **C** respectively **LW CVI drivers** speed development of automated test scripts.





## Multi-channel testing strengths

- Allows parallel processing of full **2.5G bandwidth** with mixed mappings down to the VT1.5/VC-11 level.
- Works in conjunction with **any ONT optical interface card** at OC-3/12/48/192 and STM-1/4/16/64.
- **Industry-leading service disruption** measurement on all channels simultaneously, with user-defined pass/fail threshold and event separation time with full frame resolution.
- Unique **event list**, with time stamps, shows all errors, alarms and service disruptions of all channels that can be sorted with multiple criteria.
- Detailed error and alarm insertion (**single, rate, burst, rate burst**) on user-selectable paths.
- Overhead manipulation supported at section, line and path layers. Two-byte **overhead capture** allows K1/K2 logging.
- **Auto-configure** Rx detects all mappings, payloads, and traces at the press of a button.
- **Through mode on path level** allows monitoring of signal details plus alarm and error insertion.
- **Automated connectivity check** quickly identifies changes in cross-connected paths.

## NextGen SONET/SDH testing strengths

- Supports **full LCAS emulation** on 10Gb/s and 2.5 Gb/s interfaces with both high-order and low-order virtual concatenation.
- **LCAS state tracer** records all message changes of the LCAS protocol to verify correct implementation.
- Supports **differential delay** insertion and analysis on each individual VCG member. An **automatic stress test** verifies the maximum delay tolerance of the DUT for each delay combination.

- Supported payloads include **Ethernet** via **framed GFP** and PRBS in a D+K pattern to mimic fibre channel signals via **transparent GFP**.
- NextGen SONET/SDH and Ethernet interfaces running in parallel on one mainframe allow **interworking testing** including lost packet count, single-direction latency measurements, and asymmetrical traffic generation.
- **Automatic scanner** supports easy channel structure detection and configuration setting for high number low order groups.
- **Ethernet interfaces** featuring a comprehensive set of dynamic error and alarm insertion capabilities on the physical and MAC Layer.

## OTN testing strengths

- Supports testing at **10.7G and 2.7G** according to ITU-T G.709 with SONET, SDH, and bulk PRBS payloads.
- Detailed insertion and analysis of FEC errors including correctable, uncorrectable, and user-definable errors. One-button **FEC stress test** provides 100% FEC algorithm verification in less than two seconds.
- Full **OTN overhead support** including frame alignment signal, SM and PM trail trace identifier, and backward defect indicator.
- **Full tandem connection monitoring** support for TCM1 to TCM6 including trail trace identifiers, BIP, BEI, and BDI indications.
- **Wrapper/De-wrapper** mode allows verification of client integrity through OTN mappers and FEC encoders.
- Full featured **OSA with drop** enables the simultaneous testing of the DWDM optical layer and OTN/FEC layer, and provides access to FEC channels at the regeneration interface.

## Jitter/Wander testing strengths

- Supports jitter/wander testing at both **electrical and optical** interfaces for 155M up to 10.7G.
- Jitter receiver **accuracy of 15 mUI** is the highest accuracy available on the market.
- Fully compliant with the **ITU O.172 Appendix VII and Appendix VIII**.
- Single-ended differential input/output converter allows integrated **jitter testing of XFP/SFP** modules.
- Specialized filter for testing OTN wrapping/de-wrapping jitter allows accurate measurements of large amplitude low-frequency jitter caused by “stuffing” of client into 10.7G carrier.
- Wander measurements up to **1000 samples/s** allow testing of phase transients as required by ITU-T G.812.



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