



NIC®
Network Information Computer®



Software Defined Testing™

56 Kbps-139 Mbps ■ 1-2.5 Gbps ■ 10-11.3 Gbps ■ 40-43 Gbps ■ 100-112 Gbps

OTN Testing

- All G.709 OTN rates up to 112G with FEC generation and analysis**
- OTU4, OTU3, OTU3e1/OTU3e2, OTU2f/OTU1f, OTU2e/OTU1e, OTU2, and OTU1
 - OTL layer testing at 40/100G rates; unframed BERT testing for all rates
 - ODU multiplexing with simultaneous generation and analysis at all levels; ODUO and ODUFlex (support is line rate dependent)
 - GFP-T/GFP-F/Ethernet, Fibre Channel, SONET/SDH, PRBS and Null Client mappings (support is line rate dependent)
 - Multi-Channel generation and analysis for OTU1 and OTU2
 - Complete OTN overhead manipulation and analysis with byte capture, including trace and MSI bytes
 - Intrusive and non-intrusive Pass Thru mode with byte and error/alarm overwrite
 - Error/alarm generation with periodic burst insert and analysis
 - OPU/client justification offset generation and analysis at all layers
 - Service Disruption and Round Trip Delay measurements at any ODTU level

PDH/T-Carrier Testing

- 1.5M/2M/34M/45M/139M - DS1/E1/E3/DS3/E4
- Bulk and multiplexed mapping structures; Fractional E1 and 56K/64K Fractional DS1 testing
- Drop and insert from SONET/SDH
- External Add/Drop line interface modes
- Performance monitoring per G.821, G.826, and M.2100
- Signal level and line frequency generation and analysis
- Service Disruption and Round Trip Delay measurements
- Simultaneous and independent interface testing; dual DS1/E1

Fibre Channel Testing

- All Fibre Channel rates up to 11.3G**
- OTU1f/OTU2f and 1/2/4/8/10G
 - Unframed BERT testing for OTU1f/OTU2f, 8G, 10G
 - Switch Fabric and Name Server login
 - Test stream with user defined addressing, frame parameters, frame size, pattern and rate
 - Error and alarm generation and analysis
 - Primitive sequence generation
 - RFC 2544 like Throughput/Latency/Frame Loss/Performance test
 - Buffer-to-buffer credit / flow control analysis
 - Per-port and per-stream results include: port utilization, counts, and per-stream latency statistics
 - Service Disruption measurement for OTU1f/OTU2f, 10G

Jitter/Wander Generation and Analysis

- OTU1 (NIC⁺)
- 2.5G-155M SONET/SDH (NIC⁺)
- PDH/T-Carrier (NIC and NIC⁺)

Serial Interface Testing

- RS-530/RS-232 testing with synchronous and asynchronous operation
- DCE and DTE emulation
- 25-pin D-type connector

Ethernet/IP Testing

- All Ethernet rates up to 103G**
- 100G, 40G, OTU2e/OTU1e, 10G LAN, 10G WAN, 1G, 100M, and 10/100/1000BASE-T
 - PCS layer testing at 40/100G rates; unframed BERT testing
 - 32 IPv4/IPv6 test streams with independent addressing, traffic parameters, frame size (up to 16k), pattern, and rate mode (40/100G IPv4 only)
 - Y:1564; RFC 2544 Throughput/Latency/Frame Loss/Back to Back Burst Performance test
 - VLAN and MPLS tags up to 4 levels with QoS statistics (40/100G VLAN only)
 - Per-port and per-stream results include: port utilization, counts, packet size distribution, and per stream latency and jitter statistics
 - Service Disruption Measurement

SONET/SDH Testing

- All SONET/SDH rates up to 40G**
- STM-256/STM-64/STM-16/STM-4/STM-1/STM-0/STM-1e/STM-0e; OC-768/OC-192/OC-48/OC-12/OC-3/OC-1/EC-3/EC-1
 - Serial and multi-lane 40G interfaces; STL-256.4 multi-lane logical layer testing
 - SONET mappings: STS-768c, STS-192c, STS-48c, STS-12c, STS-3c, STS-1, VT-6, VT-2 and VT-1.5 (support is line rate dependent)
 - SDH mappings: AU-4-256c, AU-4-64c, AU-4-16c, AU-4-4c, AU-4/C-4 and AU-4/AU-3 C-3/C-2/C-12/C-1; VCAT/LCAS (support is line rate dependent)
 - PRBS, PDH/T-Carrier, and GFP-T/GFP-F/Ethernet clients; unframed BERT testing for all rates (support is line rate dependent)
 - All Path Testing™ (APT) 10G and below – simultaneous testing of all HP/STS containers/SPEs
 - Complete SONET/SDH Overhead and trace manipulation/analysis with byte capture
 - Intrusive and non-intrusive Pass Thru mode with byte and error/alarm overwrite
 - Line frequency offset generation and analysis
 - Service Disruption, Round Trip Delay measurements, and APS Testing
 - Performance monitoring statistics

Optical Spectrum Analyzer

- Wavelength Range: C-band 1528.77 to 1562.23 nm, L-band 1568.77 to 1604.03 nm
- 50 GHz Absolute Channel Spacing: 85 C-band/L-band channels
- Maximum Input Power (all channels): 23 dBm, Single Channel: C-Band: -10 to -40 dBm/L-band: -10 to -35dBm
- Absolute Channel Power Accuracy (include PDL): ±0.7db
- Power Measurement Repeatability (for fixed polarization): ±0.1 dB
- Polarization Dependent Loss: <0.3 dB
- Absolute Wavelength Accuracy: ±60 pm
- OSNR Measurement Range: 10-25 dB (dependent on channel input power, noise floor, and filter isolation)
- OSNR Accuracy: ±1.5 dB (noise level ≥ -50 dBm, L-band noise level ≥ -45 dBm)
- Noise Floor: -60 dBm
- Power Measurement Resolution: 0.1 dB

NIC Platform Specifications

Chassis	<ul style="list-style-type: none"> NIC 2-Slot Chassis and NIC⁺ 5-Slot Chassis NIC 2-Slot Chassis battery powered option 	EMI	<ul style="list-style-type: none"> Conducted Emissions EN 55022 Class B Radiated Emissions EN 55022 Class B 								
Power Supply	<ul style="list-style-type: none"> Input voltage nominal 90-264VAC, 50-60 Hz Power Dissipation 150 W (NIC) and 350 W (NIC⁺) 	Other Features	<ul style="list-style-type: none"> Internal Stratum 3 clock reference, BITS/SETS/2.048MHZ Bantam/BNC clock in and clock out 3x USB ports, SD/SDHC slot, external VGA display port (DE-15), trigger in/out, optional 802.11 wireless support via USB 10/100/1000BASE-T network interface Automation support over SCPI 10.4 in (NIC), 12.1 in (NIC⁺) high resolution, anti-glare, color touch screen Remote GUI client and VNC Removable industrial grade compact flash module for OS Soft carrying case or optional water resistant hard case USB FibreVu™ probe video fiber inspection option 								
Physical Dimensions	<table border="0"> <tr> <td>NIC</td> <td>NIC⁺</td> </tr> <tr> <td>Height 257 mm (10.1 in)</td> <td>Height 348 mm (13.7 in)</td> </tr> <tr> <td>Width 312 mm (12.3 in)</td> <td>Width 330 mm (13.0 in)</td> </tr> <tr> <td>Depth 120 mm (4.7 in)</td> <td>Depth 201 mm (7.9 in)</td> </tr> </table>	NIC	NIC⁺	Height 257 mm (10.1 in)	Height 348 mm (13.7 in)	Width 312 mm (12.3 in)	Width 330 mm (13.0 in)	Depth 120 mm (4.7 in)	Depth 201 mm (7.9 in)		
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Weight	<ul style="list-style-type: none"> NIC 5.0-5.6 kg (11-12.5 lbs) depending on configuration NIC⁺ 6.5-11.34 kg (14.5-25 lbs) depending on configuration 										
Environmental	<ul style="list-style-type: none"> Operating Temperature 0° C to +40° C Storage Temperature -40° C to +85° C Humidity +5% to +95%, non-condensing 										

For more information or a sales quote, visit www.lightwave.com/contact or email sales@lightwave.com

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