



Digital
Lightwave®

Technology to reach inside the cloud®

Intelligent Network Test Solutions™

Product Description



MPA™
Multi-Protocol Analyzer™

Anytime, Anywhere, Any Bit™



Highlights and Benefits

- Multi-protocol testing in a compact form factor system (1U x 19 in chassis)
- Field upgradeable, rack-mounted platform with up to five test modules
- All ports can be configured independently and operated simultaneously
- Each port supports 21 rates and protocols
- Multi-Protocol Module (MPM) supports OTN, SONET/SDH, Ethernet and Fibre Channel
- Intuitive interface with a simple, consistent setup and workflow across all test modules
- Every test feature accessible by remote GUI and automation scripting
- Supports 20 simultaneous users
- Industry proven platform provides efficient and cost effective support and service
- Cloud-based management option for each module
- Most cost-effective compact solution for multi-protocol testing
- Significantly reduces the amount of testing equipment, required footprint, and test time
- One single platform for multi-protocol testing requirements which will grow as needs change and expand, allowing modules to be easily added on-site and new capabilities to be downloaded
- 110/240VAC or -48VDC input power options

Multi-Protocol Module (MPM-10G) (AMC Mid-Size)

OTN Testing

All G.709 OTN rates up to 11.3G with FEC generation and analysis

- OTU2f/OTU1f, OTU2e/OTU1e, OTU2 and OTU1
- Unframed BERT testing for all rates
- ODU multiplexing with simultaneous generation and analysis at all levels; ODU0 and ODUflex
- GFP-T/GFP-F/Ethernet, Fibre Channel, SONET/SDH, PRBS and Null client mappings
- 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
- Line frequency offset generation and analysis
- Service Disruption and Round Trip delay measurements at any ODTU level

Ethernet/IP Testing

All Ethernet rates up to 11.1G

- OTU2e/OTU1e, 10G LAN, 10G WAN, 1G, 100M, and 10/100/1000BASE-T
- Unframed BERT testing
- Support up to 10G for up to 32 IPv4/IPv6 test streams with independent addressing, traffic parameters, frame size, pattern, and rate mode
- 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
- Per-port and per-stream results include: port utilization, counts, packet size distribution, and per stream latency and jitter statistics
- Line frequency offset generation and analysis
- Service Disruption measurement

SONET/SDH Testing

All SONET/SDH rates up to 10G

- STM-64/STM-16/STM-4/STM-1/STM-0; OC-192/OC-48/OC-12/OC-3/OC-1
- SONET mappings: STS-192c, STS-48c, STS-12c, STS-3c, STS-1, VT-6, VT-2 and VT-1.5
- SDH mappings: 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-11
- PRBS and GFP-T/GFP-F/Ethernet clients; unframed BERT testing for all rates
- 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

Fibre Channel Testing

All Fibre Channel rates up to 11.3G

- OTU1f/OTU2f and 1/2/4/8/10G
- Unframed BERT testing
- 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
- Line frequency offset generation and analysis
- Service Disruption measurement for OTU1f/OTU2f and 10G

MPA Platform Specifications

Hardware Platform	<ul style="list-style-type: none"> ▪ Compliant to PICMG µTCA Base specification ▪ Shielded steel case with 19" rack mounting brackets ▪ Intelligent Platform Management Interface (IPMI) 	Product Provides	µTCA Carrier Hub (MCH)	µProcessor	Other Features
Power Supply	<ul style="list-style-type: none"> ▪ Input voltage nominal 90-264VAC, 50-60 Hz or optional -48VDC ▪ Power Dissipation 400 W max. 	<ul style="list-style-type: none"> ▪ 5x Advanced Mezzanine Card (AMC) single mid-size slots for plug-in test modules ▪ 1x µTCA Carrier Hub slot (single full-size) ▪ Active cooling ▪ Hot-swappable cooling unit 	<ul style="list-style-type: none"> ▪ Serial Craft Interface over USB ▪ Module and System Status LEDs ▪ Synchronization Inputs ▪ (2x) 10/100/1000 BASE-T ports 	<ul style="list-style-type: none"> ▪ Quad Core i7 ▪ (2x) 10/100/1000 BASE-T ports ▪ Status LEDs ▪ Display port ▪ Linux Operating System ▪ Onboard SSD 	<ul style="list-style-type: none"> ▪ Simultaneous and independent operation of each module and port ▪ µTCA architecture ▪ Side to side cooling ▪ Built-in mounting options ▪ SFP / SFP+ pluggable optics
Physical Dimensions	<ul style="list-style-type: none"> ▪ Height 43.60 mm (1.72 in) (1U) ▪ Width (with brackets) 482.60 mm (19.0 in) ▪ Depth 301 mm (11.85 in) 				
Weight	<ul style="list-style-type: none"> ▪ 5.9 kg (13 lbs) completely assembled with 5 test modules, MCH, and µProcessor 				
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 				
EMI	<ul style="list-style-type: none"> ▪ Conducted Emissions EN 55022 Class B ▪ Radiated Emissions EN 55022 Class B 				

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