Proximion

WISTOM OLM

Non-intrusive optical layer monitor

WISTOM is a non-intrusive optical layer monitor for real-time monitoring of power, wavelength and OSNR for DWDM systems, monitoring up to sixteen fibers simultaneously. WISTOM combines the features of an optical spectrum analyzer and a fast optical channel monitor, aimed at long haul and metropolitan DWDM network supervision.

WISTOM combines optical channel monitoring (OCM) and optical performance monitoring (OPM) creating a real-time optical layer monitoring (OLM) capability. This enables proactive optical signal surveillance in the all-optical domain. Due to WISTOM's high optical resolution, DWDM channel spacing down to 12.5 GHz can be managed over the full spectrum, while ensuring high measurement accuracy and reliability. WISTOM monitors the spectral characteristics over the entire C-band.

Any channel deviating from normal conditions is reported within milliseconds. Spectral characteristics, such as central wavelength and OSNR of each channel are monitored and reported. The long term drift of these parameters can be tracked and analyzed, thus providing input for network tuning and resource allocations. WISTOM gives service providers the opportunity to resolve channel specific problems, in some cases even before a degrading channel suffers critical data loss. This translates into less costly network downtime and the ability to avoid violation of service level agreements (SLAs). The unique measurement performance of WISTOM also enables diversified billing models and intricate SLA supervision.

Key Features

- Non-intrusive
- Fast scanning
- Excellent accuracy
- Multi-fiber monitoring
- Full-featured API
- SNMP
- SW platform
- Robust
- High interoperability

Applications

- Optical layer monitoring for the entire network
- Key values and customized reports verifies Quality of Service and SLAs
- Long-term trend analysis
- Effective fault localization
- Proactive instead of reactive fault management

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Datasheet

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General	
Wavelength range	C-band
Number of inputs	1, 2, 4, 8, 16
Channel power input range	–10 to –40 dBm
Channel spacing	25 GHz
Monitored channels	2048
Scan time	40 µs
Sample points	14336
Scanning filter bandwidth (FWHM)	3 GHz
Return loss	–40 dB

Optical interface	
Optical connectors option	SC, FC, LC, PC/APC
Number of inputs	1, 2, 4, 8, 16

Communications Interface	
Serial interface	RS-232
Network interface	Ethernet 1000base-T

Power Supply	
Power requirements	AC: 47-63 Hz DC: 80–264 V / 36-60 V
Power consumption	16 W

Physical	
Dimensions (19” x 1 U)	420 x 253 x 44 mm

Optical Performance Monitoring (OPM)	
OPM analysis:	P_c λ_c $OSNR_c$ $FWHM_c$
OPM alerts:	P_c = 4 levels/ch λ_c = 4 levels/ch $OSNR_c$ = 2 levels/ch
Power accuracy	±0.5 dB
Wavelength accuracy	±20 pm
OSNR accuracy	±0.5 dB
OSNR dynamic range @ 50 GHz	30 dB
Response time (typ.)	50 ms

Protocol and Application	
SNMP	Yes
API over TCP/IP	Yes
MMI via Telnet + SSH	Yes
MMI via Serial port	Yes
Other protocols and applications available as customizations.	

Environmental	
Qualification	NEBS Level 3
Operating temperature	−5 to +60 °C
Operating humidity (non cond.)	5 to 85 %
Storage temperature	−40 to +70 °C
Storage humidity	0 to 95 %
EMC	FCC Class A

WISTOM benefits at a glance:

- Replaces both OCM and OPM units.
- Is grid-transparent. Thus, DWDM schemes with different channel spacing and various modulation rates can easily be addressed.
- Due to fast channel alert functionality, WISTOM is suitable for protection switching applications.
- The integrated optical switch reduces the supervision cost per fiber.
- Allows for versatile hosting and deployment options.
- All-optical layer performance monitoring significantly reduces the need for expensive OEO conversion.
- Concurrent monitoring of all channels in full spectrum reduces the channel specific monitoring cost.
- Non-intrusive monitoring minimizes signal interference.
- Network performance optimization and channel allocation decisions are improved by using WISTOM’s multi channel OLM data.
- Dynamic channel power equalization in add/drop network nodes is facilitated due to WISTOM’s high-performance channel power measurements.
- Simple installation procedures facilitate quick system deployment.
- Re-configuration and upgrade can be made remotely and ”on-the-fly” due to an adaptable, embedded modular SW platform.
- Redundant AC/DC supply.

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