



Reduce truck rolls + prevent revenue-affecting outages...

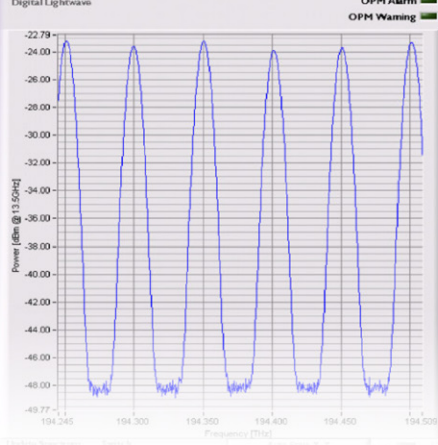


Optical Wavelength Manager (OWM) Series 2™

Real-Time Optical Monitoring System for DWDM

Optical Wavelength Manager

OWM Monitor



Port	Ch.	Freq. Status	Power Status	OSNR Status	Freq. [THz]	Power [dBm]	FWHM [GHz]	OSNR [dB]
1	1	OK	OK	OK	193.999	-24.88	10.0	24.24
1	2	OK	OK	OK	194.050	-24.88	9.9	24.12
1	3	OK	OK	OK	194.100	-24.39	9.9	24.47
1	4	OK	OK	OK	194.150	-24.48	9.9	23.99
1	5	OK	OK	OK	194.251	-24.24	10.0	24.34
1	6	OK	OK	OK	194.301	-24.48	9.9	23.99
1	7	OK	OK	OK	194.401	-24.00	9.9	23.99
1	8	OK	OK	OK	194.501	-24.34	9.9	23.99
1	9	OK	OK	OK	194.551	-24.48	9.9	23.99
1	10	OK	OK	OK	194.651	-24.00	10.0	23.47
1	11	OK	OK	OK	194.701	-24.46	0.0	24.11
1	12	OK	OK	OK	194.751	-24.46	0.0	24.11
1	13	OK	OK	OK	194.801	-24.46	0.0	24.11
1	14	OK	OK	OK	194.851	-24.46	0.0	24.11
1	15	OK	OK	OK	194.901	-24.46	0.0	24.11
1	16	OK	OK	OK	194.951	-24.46	0.0	24.11
1	17	OK	OK	OK	194.951	-24.46	0.0	24.11
1	18	OK	OK	OK	194.951	-24.46	0.0	24.11
1	19	OK	OK	OK	194.951	-24.46	0.0	24.11
1	20	OK	OK	OK	194.951	-24.46	0.0	24.11

With 100 μ s Scan Time, 0.375GHz Resolution BW, Better than 20pm Accuracy and 14,000 Datapoints/Scan, You can Capture Transient Events, Show Trends & Avoid Revenue Impacting Outages



KEY FEATURES

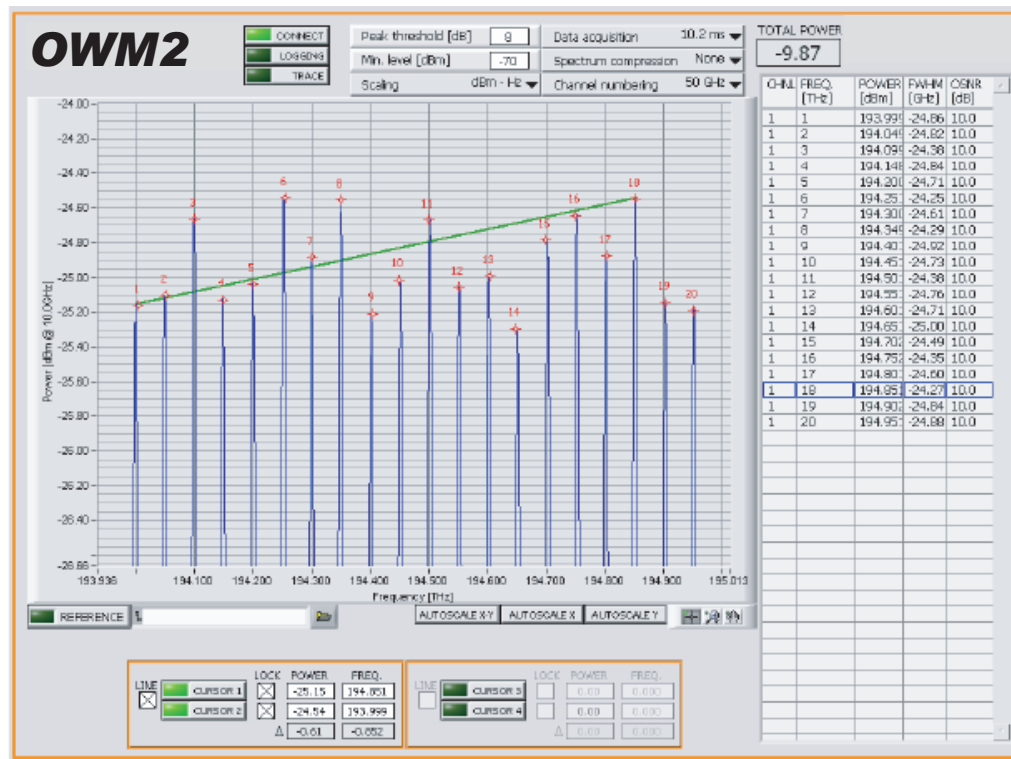
- Non-intrusive, In-Fiber signal monitoring
- Fast scan of entire DWDM spectrum in real-time
- Excellent power and wavelength accuracy
- Integrated optical switch for multiple fiber monitoring
- Full-featured API for effective integration of applications
- SNMP for effective network management integration
- Highly adaptable, modular SW platform
- Robust assembly with no moving parts for reliability
- Numerous customization alternatives for high interoperability



Optical Wavelength Manager (OWM) Series 2™

Real-Time Optical Monitoring System for DWDM

USER
INTERFACE



OPTICAL-LAYER MONITORING SYSTEM

The Digital Lightwave OWM Series 2 is a high-performance optical layer monitoring system, combining the features of an optical spectrum analyzer and a fast optical channel monitor. It is ideal for both DWDM long haul and metropolitan area network applications.

The OWM Series 2 combines optical channel monitoring (OCM) and optical performance monitoring (OPM) into a real-time optical layer monitoring (OLM) capability. This enables proactive optical signal surveillance in the all-optical domain. Due to OWM Series 2's high optical resolution, dense DWDM channel spacing can be managed over the full spectrum. Improved tuning and detection schemes involving precision scanning techniques ensure high measurement accuracy and reliability.

The OWM Series 2 monitors the spectral characteristics over the C Band or L Band including central wavelength, power level, Optical Signal to Noise Ratio (OSNR) and Spectral Width, measured as Full Wavelength Half Maximum (FWHM). Any channel deviating from normal conditions is reported within milliseconds. Long term drift of these parameters can be tracked and analyzed, thus providing input for network tuning and resource allocation. The OWM Series 2 enables service providers 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 (SLA). The unique measurement performance of OWM Series 2 also enables diversified billing models and SLA supervision.

Optical Wavelength Manager (OWM) Series 2™

Real-Time Optical Monitoring System for DWDM

OWM SERIES 2 SPECIFICATIONS

Wavelength Range	C- or L-band
Channel Power Input Range	-10 to -40 dBm
Min. Channel Spacing	50 GHz
Monitored Channels	128 per fiber
Scan Timer	<100 µs
Sample Resolution	0.375 GHz
Scanning Filter	5 GHz
Bandwidth (FWHM) Return Loss	-40 dB

OPTICAL PERFORMANCE MONITORING (OPM)

OPM analysis	Power, Wavelength, OSNR and FWHM per channel: Yes
OPM alerts Levels per channel	Power(4), Wavelength(4), OSNR(2)
Power Accuracy	±0.5 dB (worst case)
Wavelength Accuracy	±20 pm (worst case)
OSNR Accuracy	±0.5 dB (worst case)
OSNR Dynamic Range @ 50 GHz	30 dB
Response Time (typ.)	50 ms

OPTICAL CHANNEL MONITORING (OCM)

OCM alerts: Pc	4 levels per channel
Response time (typ.)	1 ms

OPTICAL INTERFACE

Optical connectors	SC or FC, with APC option
Number of inputs	8 (custom configurations available with 1, 2 or 4 inputs)

COMMUNICATION INTERFACES

Serial interface	RS-232
Network interface	Ethernet 100base-T

SUPPORTED PROTOCOLS AND APPLICATIONS

SNMP	Yes
API over TCP/IP	Yes
Telnet	Yes
Serial port	Yes
Software and Firmware Upgrade Via TCP/IP	Yes

ENVIRONMENTAL

Qualification	NEBS Level 3 Compliant
Operating temperature	-5 to +60 °C
Operating humidity (non condensing)	5 to 85 %

Storage temperature	-40 to +70 °C
Storage humidity	0 to 95 %
EMC	FCC Class A Compliant

POWER

Power Requirements	90-240 VAC / -48 VDC Dual/simultaneous power
Power Consumption	15 W

PHYSICAL

Dimensions OWM2	16.5 x 10 x 1.75 Inches
Shelf (19" x 1 U)	420 x 254 x 44 mm

NETWORK MANAGEMENT SYSTEM SPECIFICATIONS

OPTICAL LAYER MONITORING

Number of OWM units	1 – 50+
Monitoring capacity	1-8 fibers per unit, 1024 channels per unit
Surveillance (alarms)	Power, frequency, OSNR, lost/new channel
Measured channel parameters	Power, frequency, OSNR, FWHM
Other parameters	Total power in spectrum
Detection time	10ms (typical)
Alarm latency	50ms (typical)

FUNCTIONS

Network map	User editable and with alarm status
Alarm overview and summary	Yes
Alarm actions	Indicators, spectrum log, email, SMS
User-defined naming of entities	OWM units, ports and channels have individual names
Detailed alarm information for each node	Time-stamped alarms, alarm information, acknowledgments, history
Alarm acknowledgment procedures	Time stamps and user IDs track processing
Access to detailed information	Real-time spectrum and channel data for each node
Data storage	Alarms, channel power, frequency and OSNR, total power, spectrum graph
Log/storage interval	10 millisecond to 1000 hours
Time stamp resolution	1 millisecond
Automatic connection and reconnection to OWM Series 2 units	Yes
Log analysis	Filtered alarm logs, channel data plots, spectrum browser, total power graphs

PLATFORM

OWM NMS client platform	Windows 2000/XP
Communications protocol	TCP/IP
Data storage	Tab separated ASCII

Note: The general specifications are presented as a baseline. Performance parameters can be optimized to match customer requirements.

Optical Wavelength Manager (OWM) Series 2™

Real-Time Optical Monitoring System for DWDM

BENEFITS AT A GLANCE

- OWM Series 2 serves the functions of Optical Channel Monitor (OCM) and Optical Performance Monitor (OPM) units.
- OWM Series 2 is grid-transparent. Thus, DWDM schemes with different channel spacing and various modulation rates can be accommodated.
- Due to fast channel alert functionality, OWM Series 2 is suitable for protection switch measurement applications.
- The integrated optical switch reduces cost per fiber.
- OWM Series 2's adaptable product platform allows for versatile hosting and deployment options.
- All-optical layer performance monitoring significantly reduces the need for O-E-O conversion.
- Concurrent monitoring of all channels in full spectrum lowers the added cost per optical channel.
- Non-intrusive monitoring minimizes signal interference.
- Network performance optimization and channel allocation decisions are improved by using OWM Series 2's multi-channel OLM data.
- Dynamic channel power equalization in add/drop networks nodes is facilitated due to OWM Series 2's high performance channel power measurements.
- Simple installation procedures facilitate a quick deployment at site.
- Embedded modular SW platform enables remote re-configuration and upgrade on-the-fly
- Power connections for AC and DC for redundancy

ORDERING INFORMATION

OWM2C-1 - OWM Series 2 C-Band w/1 Optical Port, Connector type optional

OWM2C-4 - OWM Series 2 C-Band w/4 Optical Ports, Connector type optional

OWM2C-8 - OWM Series 2 C-Band w/8 Optical Ports, Connector type optional

OWM2L-1 - OWM Series 2 L-Band w/1 Optical Port, Connector type optional

OWM2L-4 - OWM Series 2 L-Band w/4 Optical Ports, Connector type optional

OWM2L-8 - OWM Series 2 L-Band w/8 Optical Ports, Connector type optional

OWM2-FC - FC-PC connector option for OWM Series 2

OWM2-SC - SC-PC connector option for OWM Series 2

OWM2-RA - 19" to 23" rack adapter (1U) for OWM Series 2

OWM2-OSA - OSA Software

OWM2-NMS - OWM Series 2 NMS (Network Monitoring System)

For more information or a sales quote, contact any Digital Lightwave location or email dlisales@lightwave.com



Corporate Headquarters
5775 Rio Vista Drive
Clearwater, FL 33760, USA
Toll free: +1.877.442.DIGL
T: +1.727.442.6677
F: +1.727.536.3541

International Headquarters
Jebel Ali Free Zone
P.O. Box 261126
Dubai, U.A.E.
T: +971.4.3606013
F: +971.4.3606014

Latin American Headquarters
Capulin #1, Tabla Honda
Tlalnepantla C.P. 54126
Mexico
T: +52.55.2207-1500
F: +1.727.442.5660