Optical Power Meter (mOPM-C2B)

MAP Series High Density InGaAs Optical Power meter

The mOPM-C2B optical power meter module is a precision optical power meter that brings ultra-high density InGaAs optical detectors to the MAP-300 family

The VIAVI mOPM-C2B represents the latest innovation in modular Optical Power Meters, designed to meet the growing need for high channel count testing for modern optical components, modules and systems. Engineered for precision and versatility, the mOPM-C2B excels in applications such as co-package optical technologies, M x N optical circuit switches, and ultra high-density optical cables. With its advanced features and robust specifications, the mOPM-C2B sets a new standard for performance and reliability in optical power measurement.

The mOPM-C2B offers flexible port configurations with options for 8, 16, and 24 ports, and can support up to 192 ports in a 3U 8-slot mainframe. It operates across a wide wavelength range of 1260 to 1640 nm and measures optical power from +10 to -70 dBm with a high resolution of 0.001 nm. Each channel includes a 250k point buffer memory and supports fast 1µS sampling for high-speed measurements. The mOPM-C2B is also compatible with LC/PC or APC connectors and offers triggered operation for synchronized measurements.



Key Features and Benefits

- 8/16/24 ports power meter (192 ports in 8-slot mainframe)
- LC/PC or LC/APC
- 1260 to 1640 nm wavelength range
- Dynamic range: +10 to -70 dBm
- 0.001 dB resolution
- 250k point buffer memory per channel
- 1µS sampling
- Triggered operation

Applications

- OXC/OCS manufacturing
- DR4 and DR Client Optics
- Co-package optics testing
- High fiber count

Compliance

- CE, CSA/UL/IEC61010-1, and LXI Class C requirements (when installed in a MAP chassis)



Functional Description

Within the MAP-300, the mOPM-C2B accommodates up to 24 independent channels, leveraging innovative analog designs and an easy to work with user interface. This high-density design significantly enhances throughput and operational efficiency, particularly in environments with extensive multi-device and multiport testing requirements. The user interface offers both tabular and visual views, allowing users to update settings such as wavelength and averaging time either individually or in bulk. Additionally, block data structures enable fast and efficient downloading of buffer-captured data.

The mOPM-C2B also supports SCPI automation, offering low latency and a common command structure to existing MAP optical power meters for seamless integration into automated test environments. A key advantage of the mOPM-C2B is its ability to accommodate multiple users per module, with each channel supporting a separate independent thread or user.

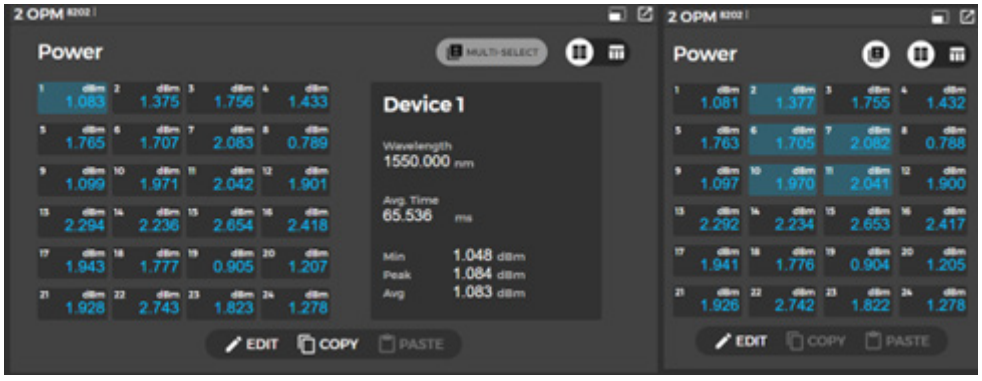


Figure 1 – a) mOPM-C2B large view webGUI | b) mOPM-C2B small view webGUI

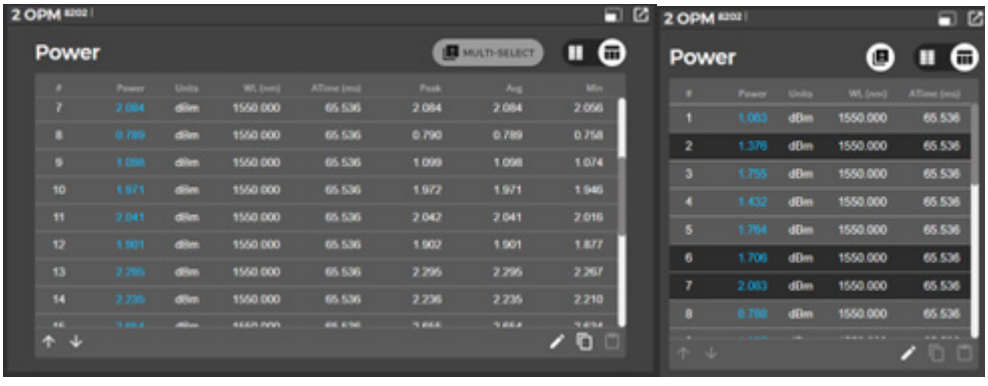


Figure 2 – a) mOPM-C2B multi-select management webGUI in large view
b) mOPM-C2B multi-select webGUI in small view

A Full Family of Optical Power Meters

VIAVI offers a range of modular optical power meters, including the existing mOPM-C1 variants. The high density mOPM-C2B operates within a wavelength range of 1260 to 1640 nm, measures optical power from +10 to -70 dBm, and features a fast 1µS sampling rate and 250K point buffer memory per channel. In contrast, the mOPM-C1 supports single, dual, or quad-channel configurations only but operates over a broader wavelength range of 750 nm to 1700 nm (InGaAs) and 800 nm to 1000 nm (Si). It offers a wider power range of -110 to +27 dBm, depending on the detector type, and a sampling rate of 250 kHz with up to 100k data points per channel.

The mOPM-C1 uses free air launch and removable adapters, making it ideal for applications requiring different connectors and numerous physical connections. In contrast, the mOPM-C2B features a large core fiber-coupled design with fixed connectors, enabling higher density but offering less connector flexibility. Both models integrate with OPMScope super application for detailed analysis, but the mOPM-C2B's advanced features like block data read and higher port density make it particularly suited for high-throughput testing environments.



Figure 3 – VIAVI MAP Optical Power Meter Family

Super Application: OPMscope

The OPMscope is a super application designed for use with the mOPM-C2B line of power meters on the MAP-300 platform, providing an intuitive tool for designers to graphically represent optical signals, much like a digital sampling scope, but in the optical domain. This application supports triggering on rising or falling edges, includes pre-trigger data points for historical analysis, and enables users to pan and zoom for detailed transient monitoring. It can export up to 100,000 captured data points for extended analysis for each power meter head added to the measurement simultaneously. The MAP-300 platform enhances the OPMscope experience by supporting traces on up to 8 mainframes with a maximum capacity of 256 devices, offering improved markers and advanced data export capabilities.

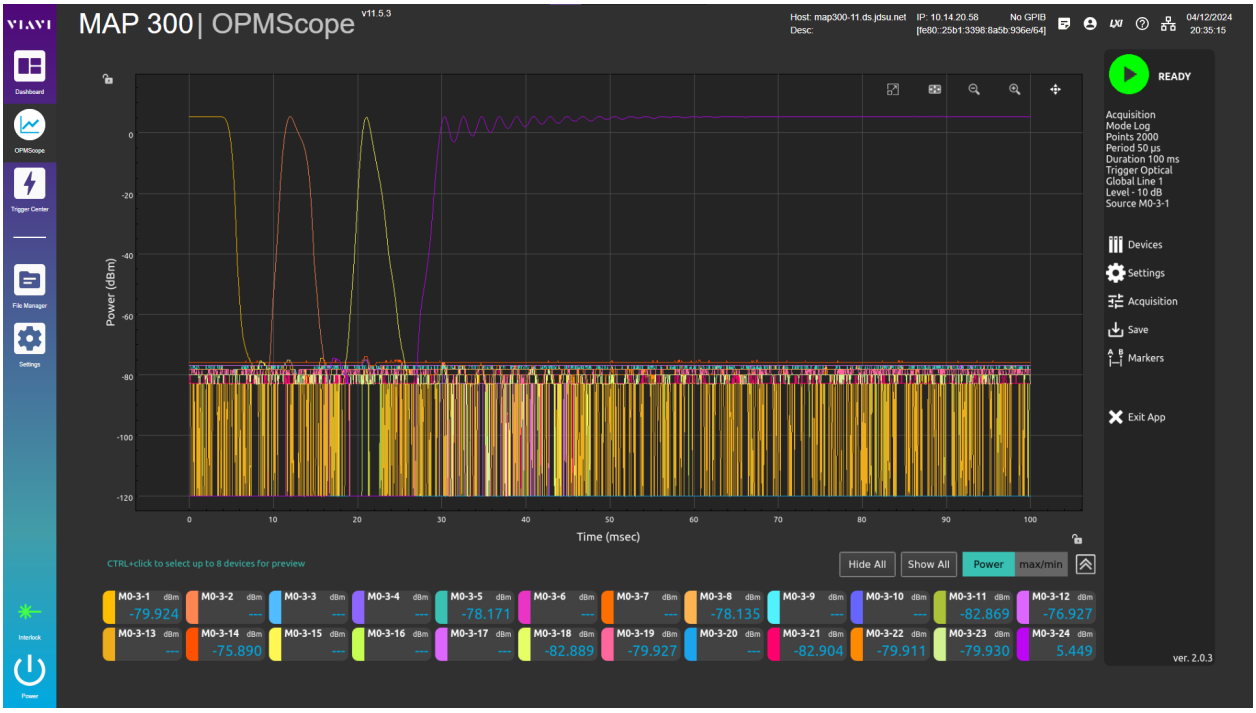


Figure 4 – OPMscope main user interface on the MAP-300 GUI

Chassis and Modular Family

As part of the MAP-300 LightDirect family, the mOPM-C2B benefits from seamless integration with other LightDirect modules, providing a comprehensive and scalable solution for optical testing. The LightDirect family of modules are characterized by their simple control and single function nature. Individually or together, they form the foundation of a diverse array of optical test applications. The web enabled multiuser interface is simple and intuitive.

The MAP-300 platform is renowned for its modularity, flexibility, and ease of use, the VIAVI Multiple Application Platform (MAP) is a modular, rack mountable or benchtop, optical test and measurement platform with chassis' that can host 3 or 8 application modules. LXI compliant with a full suite of SCPI based automation drivers and PC based management tools, the VIAVI MAP is optimized for both the lab to manufacturing environments.



LightDirect

Specifications

For more information on this or other products and their availability, please contact your local VIAVI account manager or VIAVI directly at 1-844-GO-VIAVI (1-844-468-4284) or to reach the VIAVI office nearest you, visit viavisolutions.com/contacts.

Parameter	Specification
Number of Channels	8, 16 and 24
Wavelength Range	1260 to 1640 nm
Detector Type	InGaAs
Dynamic Range	+10 dBm to -70 dBm
Uncertainty at Reference Condition[1]	±6%
Total Uncertainty[2]	±8%
Linearity[3]	±0.0 2dB ±10 (pW)
Uncertainty due to Polarization[4]	< 0.1 dB
Averaging Time	1 to 1 million
Return Loss[5]	> 40 dB
Noise (3 sigma)[6]	10 pW
Display Resolution	0.001 dB
Connector Type	LC/PC and LC/APC
Fiber Type[7]	Single mode
Warm-up time	30 min
Warranty	1 Year
Calibration period	1 Year
Operating temperature	10 to 40°C (50 to 104°F)
Storage temperature	-30 to 60°C (-22 to 140°F)
Operating Humidity	Maximum 80% relative humidity non-condensing
Dimensions (W x H x D)	4.06 x 13.26 x 37.03 cm (1.6 x 5.22 x 14.58 in)
Weight[8]	1.15 kg (3.3 lb)

[1] Temperature constant and between T= 23 ±5°C, spectral width of source <6 nm, optical power on detector -20 dBm
[2] For wavelength range 1260 to 1610 nm, with LC/PC connector. Add 1% typical for LC/APC connector
[3] T = 23±5°C
[4] All states of polarization, constant power. Constant power, T = 23 ±5°C
[5] At 1310 nm and 1550 nm
[6] Observed at -70 dBm, 100 ms averaging time for 1 minute
[7] SMF 28 compatible
[8] 24-channel OPM-C2B

Ordering Information

Description	Part Number
MAP Series OPM B-type 8 channel fiber coupled SMF LC/PC	MOPM-C2B08-SB0-M100-MLC
MAP Series OPM B-type 8 channel fiber coupled SMF LC/APC	MOPM-C2B08-SB0-M100-MLU
MAP Series OPM B-type 16 channel fiber coupled SMF LC/PC	MOPM-C2B16-SB0-M100-MLC
MAP Series OPM B-type 16 channel fiber coupled SMF LC/APC	MOPM-C2B16-SB0-M100-MLU
MAP Series OPM B-type 24 channel fiber coupled SMF LC/PC	MOPM-C2B24-SB0-M100-MLC
MAP Series OPM B-type 24 channel fiber coupled SMF LC/APC	MOPM-C2B24-SB0-M100-MLU

Accessories

Accessories (Optional)	Product and description	
Inspection and cleaning tool	CleanBlast Pro	The patented VIAVI Solutions® CleanBlastPRO fiber end-face cleaning system provides a fast, effective, and cost-efficient solution for removing dirt and debris from connectors in most common applications.
	FiberChek probe microscope	One-button FiberChek Probe delivers a reliable, fully autonomous, handheld inspection solution for every fiber technician.
	P5000i fiber microscope	Automated Fiber Inspection and Analysis Probe provides PASS/FAIL capability to PC, laptops, mobile devices and VIAVI test solutions.

VIAVI Care Support Plans

Increase your productivity for up to 5 years with optional VIAVI Care Support Plans:

- Maximize your time with on-demand training, priority technical application support and rapid service.
- Maintain your equipment for peak performance at a low, predictable cost.

Plan availability depends on product and region. Not all plans are available for each product or in every region. To find out which VIAVI Care Support Plan options are available for this product in your region, contact your local representative or visit: viavisolutions.com/viavicareplan

Features

*5-year plans only

Plan	Objective	Technical Assistance	Factory Repair	Priority Service	Self-paced Training	5 Year Battery and Bag Coverage	Factory Calibration	Accessory Coverage	Express Loaner
BronzeCare	Technician Efficiency	Premium	✓	✓	✓				
SilverCare	Maintenance & Measurement Accuracy	Premium	✓	✓	✓	✓*	✓		
MaxCare	High Availability	Premium	✓	✓	✓	✓*	✓	✓	✓

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