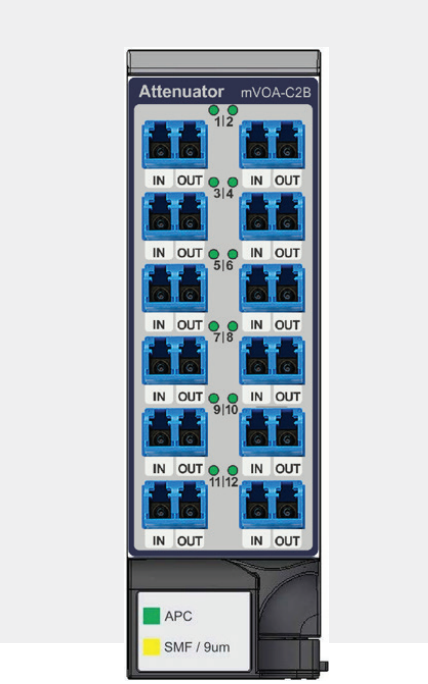
MAP Series High Density Variable Optical Attenuators (mVOA-C2B)

The mVOA-C2B variable optical attenuator module is a precision MEMS-based attenuator that delivers metrology-grade programmable attenuation performance at market-leading ultra-high density and speed, inside of the robust and trusted MAP-300 family.

With more than 30 years of leadership in high-performance attenuators for lab and manufacturing applications, the mVOA-C2B fulfills the modern need for ultra-dense metrology solutions. The mVOA-C2B builds on the long legacy of the mVOA-C1, where the lab and production expertise has been leveraged to create the most dense test and measurement grade attenuator on the market. It offers a high resolution and wide wavelength-range which serves uses in client optic testing, next generation coherent interfaces, long haul network stress testing, and silicon photonics development. The attenuator is built on the latest evolution of industry technology.

The module supports singlemode fiber connectors, in the dense form factor of LC connectors, both APC and PC. It is a single slot module, which enables users to place up to eight in a single MAP-300 mainframe. Up to 96 independently controlled attenuators can be supported in the 3U mainframe form factor, with each module supporting either 4, 8 or 12 devices each. The module is hot-pluggable and design for use with all MAP-300 generation mainframes.



Functional Description

Within the trusted and robust MAP-300 mainframe, the mVOA-C2B has three key operating modes.

1. **Attenuator Mode:** This control mode allows both the no-monitor and in/out monitor variants to control the output attenuation directly. Users enter, either through the UI or remote SCPI command, the desired attenuation and the mVOA sets the attenuation.

2. **Constant Power Mode:** The in/out monitor variant supports a mode where the monitors actively control the attenuator, to maintain a desired output power even as the input power to the attenuator moves.

3. **IL Mode:** The in/out monitor variant includes calibration by VIAVI that allows users to set the insertion loss across the input to output ports, easily from the UI or remote SCPI commands. Users can then go a step beyond traditional VOA usage where the 0 dB loss is otherwise unknown.

The mVOA-C2B variant with and without in/out monitors can be visualized as the following:

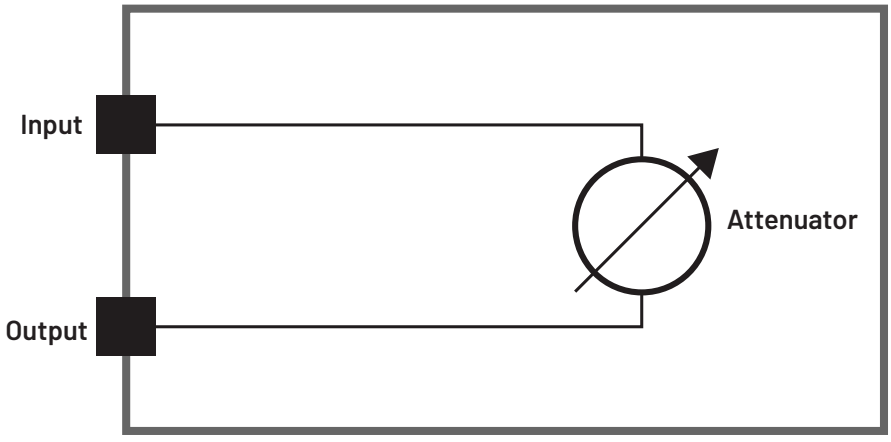


Figure 1: mVOA-C2B Device with no monitor

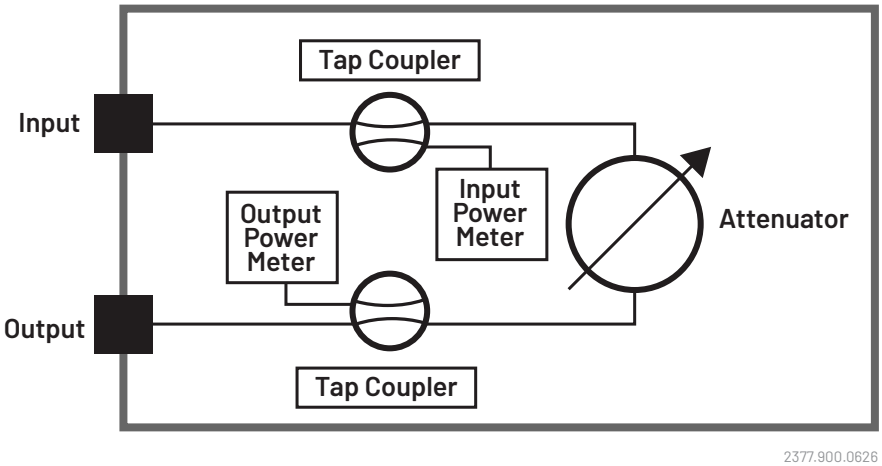


Figure 2: mVOA-C2B Device with in/out monitor

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 out the VIAVI office nearest you, visit viavisolutions.com/contacts.

Configuration	Input and Output Monitor	No Monitor
Number of Channels	4, 8, 12	
Connector	LC/PC and LC/APC	
Optical		
Wavelength Range	1260 to 1640 nm	
Insertion Loss	<=2.2 dB	<=1.6 dB
Attenuation Range	> 40 dB	
Return Loss	40 dB min/55 dB typ	
Shutter Isolation	> 45 dB	
Maximum Optical Input Power	23 dBm	27 dBm
Optical – Power Mode	**(Output Monitor Control)**	
Power Setting Range	-40 dBm to 23 dBm	-
Power Setting Resolution	0.001 dB	-
Repeatability	±0.10 dB	-
Power Linearity	±0.02 dB	-
PDL	<0.1 dB	-
Optical – IL Mode	**(Input/Output Closed Loop Control)**	
Input Power Range for Full Attenuation	-40 dBm to 23 dBm	-
Attenuation Setting Range	0 dB to 40 dB	-
Repeatability	±0.10 dB	-
Relative Attenuation Accuracy	±0.10 dB	-
PDL	<0.1 dB	-
Optical – Attenuation Mode	**(Open Loop or No Power Monitor)**	
Repeatability	-	±0.05 dB (typ.), 0 dB to 30 dB
		±0.10 dB (typ.), 30 dB to 40 dB
Relative Attenuation Accuracy	-	±0.15 dB (typ.), 0 dB to 10 dB
		±0.15 dB (typ.), 10 dB to 20 dB
		±0.20 dB (typ.), 10 dB to 20 dB
PDL	-	< 0.15 dB, at 0 dB
		< 0.30 dB, 0 dB to 10 dB
		< 0.50 dB, 10 dB to 20 dB

Specifications continued

Configuration	Input and Output Monitor	No Monitor
Speed and Timing		
Settling Time	<500 microsec	-
Attenuation Speed	0.1 dB/s to 1000 dB/s	
MAP Command Latency	< 1 ms	
Activation Latency	< 500 µs	
Trigger Latency	< 10 µs	
Physical		
Warm-up Time	30 min	
Slot Width	1 standard module	
Calibration Period	1 Year	
Operating Temperature	10 °C to 40 °C (Requirement)	
Storage Temperature	-30°C to 60°C	

1. All optical measurements were taken after minimum 30-minute warm up; measured at constant temperature of 23 ±5°C.

Ordering Information

Power Type	Part Number	Description
Standard (No Monitors)	MVOA-C2B04-SB0-M100-MLC	MAP Series VOA B-type 4 devices no option SMF LC/PC
	MVOA-C2B04-SB0-M100-MLU	MAP Series VOA B-type 4 devices no option SMF LC/APC
	MVOA-C2B08-SB0-M100-MLC	MAP Series VOA B-type 8 devices no option SMF LC/PC
	MVOA-C2B08-SB0-M100-MLU	MAP Series VOA B-type 8 devices no option SMF LC/APC
	MVOA-C2B12-SB0-M100-MLC	MAP Series VOA B-type 12 devices no option SMF LC/PC
	MVOA-C2B12-SB0-M100-MLU	MAP Series VOA B-type 12 devices no option SMF LC/APC
In/Out Monitors	MVOA-C2B04-SB1-M100-MLC	MAP Series VOA B-type 4 devices In/out power monitors SMF LC/PC
	MVOA-C2B04-SB1-M100-MLU	MAP Series VOA B-type 4 devices In/out power monitors SMF LC/APC
	MVOA-C2B08-SB1-M100-MLC	MAP Series VOA B-type 8 devices In/out power monitors SMF LC/PC
	MVOA-C2B08-SB1-M100-MLU	MAP Series VOA B-type 8 devices In/out power monitors SMF LC/APC
	MVOA-C2B12-SB1-M100-MLC	MAP Series VOA B-type 12 devices In/out power monitors SMF LC/PC
	MVOA-C2B12-SB1-M100-MLU	MAP Series VOA B-type 12 devices In/out power monitors SMF LC/APC

Accessories

Accessories (Optional)	Product and Description	
Inspection and cleaning tools	CleanBlastPRO	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.

A wider range of inspection tools are available from VIAVI. More information about the products and accessories can be accessed through our website at www.viavisolutions.com. For further assistant 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.

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

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	✓	✓	✓	✓*	✓		

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