

# MAP-200 Utility Module, MUTL-C1



The Multiple Application Platform (MAP-200) Passive Utility Module, mUTL-C1, is designed to simplify the mechanical integration of passive optical components into large automated test systems and removes the “stray” optical components that are loose and often damaged during operation or transport. It is optimized for the industry-leading Viavi Solutions MAP-200 platform.

A wide range of standard components are available:

- A range of single-mode and multimode optical couplers enabling power reference paths or tapping signals for in-line test. They are orderable with any of six types of optical connectors.
- 40G and 100G Ethernet standards have adopted WDM technology for single fibre interfaces. The mUTL-C1 provides Mux/Demux modules complying with the IEEE standards and are the ideal solution to isolate individual lanes for test access.
- A quad wavelength filter for shaping ASE spectrum or reducing ASE in the standard 1310 / 1490 / 1550 / 1625 nm test windows

A bulkhead-adapters only module is also available for mechanical mounting of user supplied components. These cassettes are supplied with mounting hardware and twelve bulkhead adapters for ease of integration of up to four 3-port devices.

Each module has user definable data fields that can be accessed by the MAP-200 chassis to assist in module identification and displayed or recalled remotely.

The MAP-200 is the first photonic layer lab and manufacturing platform that is LAN eXTensions for Instrumentation (LXI)-compliant by conforming to the required physical attributes, Ethernet connectivity, and interchangeable virtual instrument (IVI) drivers. The MAP-200 platform is optimized for density and maximum configurability.



Figure 1: MAP-200 LightDirect Family of modules

## Features and Benefits

- Mechanically robust integration of fiber optic couplers, splitters and mux/demux components into larger integrated test environments
- Compact design with 12 bulkhead connectors enables packaging of up to four 3-port couplers
- Bulkhead only versions available for mounting user supplied components
- Single-mode or multimode component options.
- Multimode components are modally transparent
- Ideal for individual lane testing of WDM signals for next generation Ethernet formats such as 100/200/400GE

## Applications

- In-line tapping of signals for power and spectrum measurements
- Power reference branches for passive component test
- Splitting signals for parallel test applications

## Compliance

- CE, CSA/UL/IEC61010-1, and LXI Class C requirements (when installed in a MAP-200 chassis)

## Specifications

Coupler Parameters	Specification					
Fiber Type	Single-mode 9/125µm				Multimode 50/125µm	
Wavelength	1310/1550 nm				850/1310 nm	
Optical Power Handling	300 mW					
Coupler Type	10% / 90%	30% / 70%	50% / 50%	1 x 8 splitter	10% / 90%	50% / 50%
Insertion Loss (IL)	10% < 11.8 dB 90% < 1.2 dB	30% < 6.5 dB 70% < 2.4 dB	< 4.1 dB	< 11.5 dB	10% < 11.8 dB 90% < 1.2 dB	< 4.1 dB
Polarization Dependent Loss	10% < 0.1 dB 90% < 0.07 dB	30% < 0.1 dB 70% < 0.07 dB	< 0.05 dB	< 0.3 dB	N / A	
Return Loss	≥ 45 dB				≥ 25 dB	
Specialty Device Parameters	Specification					
Fiber type	100GE MUX / DEMUX			Single-mode		
Center Wavelength				1295.6, 1300.1, 1304.6, 1309.1 nm		
Insertion Loss (IL)				< 2.0 dB		
Pass Bandwidth				±1.50 nm		
Ripple in Pass Bandwidth				< 0.5 dB		
Return Loss				> 45 dB		
Isolation adjacent channel				> 15 dB		
Isolation non-adjacent channel				> 15 dB		
Fiber type	40GE MUX / DEMUX			Single-mode		
Center Wavelength				1271, 1291, 1311, 1331 nm		
Insertion Loss (IL)				< 1.7 dB		
Pass Bandwidth				±6.50 nm		
Ripple in Pass Bandwidth				< 0.5 dB		
Return Loss				> 45 dB		
Isolation adjacent channel				> 30 dB		
Isolation non-adjacent channel	> 40 dB					
Fiber type	SOURCE SHAPE & ASE FILTER			Single-mode		
Wavelength				1310, 1490, 1550, 1625 nm		
Bandwidth				±6.50 nm		
Insertion Loss (IL)				< 1.5 dB		
Return Loss				> 45 dB		
Common Parameters	Specification					
Maximum Bulkhead Connectors	12					
Connector Types (one type per module)	FC/PC, FC/APC, SC/PC, SC/APC, LC/PC, LC/APC					
Slot Width	1					
Dimensions (W x H x D)	4.06 x 13.26 x 37.03 cm					
Weight	1 kg					
Operating Temperature	0 to 50°C					
Operating Humidity	15 to 80% RH, 0 to 40°C noncondensing					
Storage Temperature and Humidity	-30 to 60°C noncondensing					

### Notes:

- All optical measurements, excluding connectors, taken after temperature has been stabilized for minimum of one hour, at ambient room temperature between 20 to 30°C with a variation of less than ±3°C.

## Part Numbers

Category	Splitter Type	Part Number	Description
Connectors Only	None	MUTL-C1000B-Mxx	12 bulkhead connectors For use with customer supplied components
Multimode 50/125µm Splitter Modules	10% / 90%	MUTL-C11000-M101-Mxx	Single 10/90 splitter, modally transparent
		MUTL-C12000-M101-Mxx	Two 10/90 splitter, modally transparent
		MUTL-C14000-M101-Mxx	Four 10/90 splitters, modally transparent
	50% / 50%	MUTL-C10010-M101-Mxx	Single 50/50 splitter, modally transparent
		MUTL-C10020-M101-Mxx	Two 50/40 splitters, modally transparent
		MUTL-C10040-M101-Mxx	Four 50/50 splitters, modally transparent
	Combination	MUTL-C11010-M101-Mxx	Single 10/90 splitter and single 50/50 splitters, modally transparent
		MUTL-C12020-M101-Mxx	Two 10/90 splitters and two 50/50 splitters, modally transparent
Single-mode 9/125µm Splitter Modules	10% / 90%	MUTL-C12000-M100-Mxx	Two 10/90 splitters
		MUTL-C14000-M100-Mxx	Four 10/90 splitters
	30% / 70%	MUTL-C10200-M100-Mxx	Two 30/70 splitters
		MUTL-C10400-M100-Mxx	Four 30/70 splitters
	50% / 50%	MUTL-C10020-M100-Mxx	Two 50/50 splitters
		MUTL-C10040-M100-Mxx	Four 50/50 splitters
	Combination	MUTL-C12020-M100-Mxx	Two 10/90 splitters and two 50/50 splitters
		MUTL-C10220-M100-Mxx	Two 30/70 splitters and two 50/50 splitters
		MUTL-C12200-M100-Mxx	Two 10/90 splitters and two 30/70 splitters
		MUTL-C11110-M100-Mxx	Single 10/90 splitter, single 30/70 splitter and single 50/50 splitter
	1 x 8	MUTL-C1SPL18-M100-Mxx	Single 1x8 splitter

Category	Part Number	Description
Specialty Modules	MUTL-C1040GE-M100-Mxx	40GE standard MUX / DEMUX, single-mode 9/125µm fiber
	MUTL-C1100GE-M100-Mxx	100GE standard MUX / DEMUX single-mode 9/125µm fiber
	MUTL-C1SMART-M100-MFA	Verification Artifact for mORL PCT, single mode 9/125µm fiber with FC/APC connectors
	MUTL-C1SWSRL-M100-MFA	Return Loss Artifact for mSWS, single-mode 9/125µm fiber with FC/APC connectors
	MUTL-C1OCETS-M100-MFA	Dual coupler and reflector for mOCETS, single mode 9/125µm fiber with FC/APC connectors
	MUTL-C1OCETS-M101-MFA	Dual coupler and reflector for mOCETS, multimode 50/125µm fiber with FC/APC connectors
	MUTL-C1SRCFLT-M100-MFA	Source shaping and ASE rejection filter 1310/1490/15/1625, single mode 9/125µm

### Connector Options Codes

Mxx CODE	CONNECTOR TYPE	Mxx CODE	CONNECTOR TYPE	Mxx CODE	CONNECTOR TYPE
MFA	FC/APC	MLC	LC/PC	MSC	SC/PC
MFP	FC/PC	MLU	LC/APC	MSU	SC/APC



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