

VIAVI

General Purpose Light Source Modules(mSRC-C2)

MAP Series Fixed Wavelength Emitters

The Multiple Application Platform (MAP) General Purpose Light Sources (mSRC-C2) are a family of stabilized, fiber coupled, fixed wavelength emitters with coverage of the key telecom / datacom wavelength bands – 850, 1300, 1310, 1490, 1550, and 1625nm.



The MAP general purpose source is a high-density source used for test and measurements in lab or production environments. It is offered in a range of emitter types with specific spectral bandwidth and polarization levels. The mSRC-C2 is a hot-pluggable cassette designed for use within the MAP mainframe.

Functional Description

The many variants of the mSRC-C2 enable a broad array of applications and encompasses several different emitter types. The emitter types have a specific set of spectral properties that make them ideal for different metrology applications. They can be used for insertion loss testing and path loss calibration amongst other applications.

An intuitive graphic user interface (GUI) is optimized for use in either a laboratory or a manufacturing environment. Efficient transition between summary and detailed views allow users to operate at a system level or access the full power of a module.

1 SRC 8201		
Power	Wavelength	
0.299 dBm	1307.500 nm	
Power	Wavelength	
0.299 dBm	1484.700 nm	
Power	Wavelength	
0.299 dBm	1544.000 nm	
Power	Wavelength	
0.299 dBm	1620.900 nm	

Figure 1 – mSRC-C2 MAP-300 summary view GUI

Key Features and Benefits

- Sources at key wavelengths for all key communication windows.
- Range of emitter types with specific spectral bandwidth and polarization levels.
- Temperature and power feedback control for ultra- stable performance.
- Simplify test system integration with Individual output connectors or pre-multiplexed.
- Enables applications requiring modulation from 150 to 2000 Hz with 1Hz resolution.
- Single Mode and Multimode with IEC complaint launch conditions.
- One, two, or four independent or muxed sources available in a single cassette.

Applications

- Insertion loss testing.
- General power sensor or path loss calibration.
- Multimode loss testing with IEC launch conditions.
- Broadband sources for use with optical spectrum analyzers.
- CWDM components measurements.
- General purpose Interferometry applications.

Compliance

- The MAP series mSRC-C2 module, when installed in a MAP chassis, complies to CE, CSA/ UL/IEC61010-1, LXI Class C requirements, meets the requirements of Class 1M in standard IEC 60825-1 (2014), and complies with 21 CFR 1040.1 except deviations per Laser Notice No. 50, July 2001.

Options and Configurations

Dual and quad wavelength versions are available as either pre-multiplexed or individual outputs. These options are designed to enable flexible integration into manufacturing test environments. Where available, lasers can be controlled with internal power feedback stabilization for long term stable output power. Simple on/off modulation is available at rates from 150 and 2000Hz which can be leveraged for synchronous detection or measurement applications.

VIAMI offers three different mSRC-C2 emitter types, these emitters and their applications are listed in the table below:

mSRC-C2 Emitter Type	Available Variants	Targeted Application
Fabry Perot Lasers	<ul style="list-style-type: none">• Basic or TEC'd FP laser.• SM or MM.• Individual Output or Multiplexed Output.	<ul style="list-style-type: none">• Insertion loss testing.• General power meter or path loss calibration.• Transient loss testing stimulus.
Low Power, Depolarized MM LED's	<ul style="list-style-type: none">• MM Individual Output or Multiplexed Output.	<ul style="list-style-type: none">• Multimode loss testing with IEC launch conditions.• Path loss calibration.
Super Luminescent Diode (SLED)	<ul style="list-style-type: none">• SM Individual Output or Multiplexed Output.	<ul style="list-style-type: none">• Broadband sources for use with optical spectrum analyzers.• CWDM components measurements.• General purpose and interferometry applications.

Chassis and Modular Family

The VIAVI Multiple Application Platform (MAP) is a modular, rack mountable or benchtop, optical test and measurement platform with chassis' that can host 2, 3 or 8 application modules. 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. 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.

The mSRC is part of the LightDirect module family. Alongside the many other modules, such as optical attenuators, polarization scramblers, power meters, and spectrum analyzers, the MAP series is the ideal, modular platform for photonic system and module testing.

The mSRC-C2 is compatible with all current MAP-300 and MAP-200 chassis.



Light Direct

Specifications

Singlemode Sources

Singlemode Source mSRC-C2 ¹	Basic FP Sources (mSRC-C23yyyFB or mSRC-C23yyyFBX)			TEC'd FP Sources (mSRC-C23yyyFP or mSRC-C23yyyFPX)					
	1310 nm	1550 nm	1310 / 1550 nm mux	1310 nm	1490 nm	1550 nm	1625 nm	1310/1550 nm mux ⁷	1310/1490/1550/1625 nm mux ⁷
Peak Wavelength ²	1310 nm	1550 nm	1310 / 1550 nm mux	1310 nm	1490 nm	1550 nm	1625 nm	1310/1550 nm mux ⁷	1310/1490/1550/1625 nm mux ⁷
Spectral Width (FWHM)	< 5 nm		As per individual specifications	< 5 nm			As per individual specifications		
Output Optical Power ^{3, 8}	≥ 0 dbm		≥ -4 dbm	≥ 0 dbm			≥ -4 dbm	≥ -8 dbm	
Optical Power Stability for 15 min ³	±0.1 dB		±0.15 dB	±0.005 dB			±0.01 dB		
Spectral Ripple (RB = 0.1nm)	N/A								
TEC Stabilized	No			Yes					
Wavelength Tolerance	±20 nm								
Optical Power Tuning Range ⁴	≥ 10 dB								
Power Control Mode	Constant Current or Constant Power								
Modulation ⁵	0.15 to 2.0 kHz								
Modulation Setting Resolution	1 Hz								
Modulation Accuracy	±0.5 Hz								
Fiber Type ⁶	Single Mode Fiber								
Connector Type	FC/APC								

Singlemode Source mSRC-C21	SLED Sources (mSRC-C2yyyySL or mSRC-C2yyyySLX)								
	1310 nm	1490 nm	1550 nm	1625 nm	1310/1550 nm mux ⁷		1310/1490/1550/1625 nm mux ⁷		
Peak Wavelength ²	1310 nm	1490 nm	1550 nm	1625 nm	1310/1550 nm mux ⁷		1310/1490/1550/1625 nm mux ⁷		
Spectral Width (FWHM)	> 20 nm	> 30 nm			As per individual specifications				
Output Optical Power ^{3, 8}	≥ 0 dbm				≥ -4 dbm		≥ -8 dbm		
Optical Power Stability for 15 min ³	±0.005 dB				±0.01 dB				
Optical Power Stability for 3 hours ³	±0.005 dB				±0.01 dB				
Spectral Ripple (RB = 0.1nm)	0.2 dB								
TEC Stabilized	Yes								
Wavelength Tolerance	±20 nm								
Optical Power Tuning Range ⁴	≥ 10 dB								
Power Control Mode	Constant Current or Constant Power								
Modulation ⁵	0.15 to 2.0 kHz								
Modulation Setting Resolution	1 Hz								
Modulation Accuracy	±0.5 Hz								
Fiber Type ⁶	Single Mode Fiber								
Connector Type	FC/APC								

1. All optical measurements were done after minimum 30 minutes warming up
2. Peak wavelength was defined as per IEC 61280-1-3 2010 clause 3.1.3. Measured at 23°C
3. Measured at full power at controlled environment of 23±1°C, constant current mode with APC connector (SM) direct to power meter
4. From maximum power down

5. Modulation duty cycle is fixed at 50%. Modulation depth is fixed at 100%
6. For IEC 60793-2-50 Type B1.3/ ISO 11801 OS2 compliant single mode fiber, or IEC 60793-2-10, Type A1a MM / ISO 11801 OM2 compliant multi mode fiber
7. Combined output power. Power measured with any 1 laser on full power at a time
8. Guarantee of 0dbm excluding connector losses for non-mux version

3 General Purpose Light Sources, mSRC-C2

50 um Multimode (OM3) Sources

50um (OM3) Multimode Sources mSRC-C2 ¹	LED Sources (mSRC-C21yyyLP or mSRC-C21yyyLPX)			FP Sources (mSRC-C21yyyFP or mSRC-C21yyyFPX)		
	850 nm	1300 nm	850/1300 nm mux ⁷	850 nm	1310 nm	850/1310 nm mux ⁷
Peak Wavelength ²	850 nm	1300 nm	850/1300 nm mux ⁷	850 nm	1310 nm	850/1310 nm mux ⁷
Wavelength Tolerance	±20 nm					
Spectral Width (FWHM)	>40 nm			<5 nm		
Spectral Ripple (RB = 0.1nm)	N/A					
Output Launch Conditions	IEC 62614 ED1.0 July 2010					
Output Optical Power ³	≥ -20 dBm	≥ -25 dBm	≥ -6.5 dBm	≥ -3.5 dBm	≥ -11 dBm (850nm) ≥ -8 dBm (1310nm)	
Optical Power Stability for 15 min ³	±0.05 dB	±0.1 dB	±0.20 dB		±0.30 dB	
Optical Power Tuning Range	Fixed Output Power					
Power Control Mode	Constant Current					
TEC Stabilized	No					
Modulation ⁵	0.15 to 2.0 kHz					
Modulation Setting Resolution	1 Hz					
Modulation Accuracy	±0.5 Hz					
Fiber Type ⁶	OM3 Multimode Fiber					
Connector Type	FC/PC					

1. All optical measurements were done after minimum 30 minutes warming up

2. Peak wavelength was defined as per IEC 61280-1-3 2010 clause 3.1.3. Measured at 23°C

3. Measured at full power at controlled environment of 23±1°C, constant current mode with PC connector (MM) direct to power meter

5. Modulation duty cycle is fixed at 50%. Modulation depth is fixed at 100%

6. For IEC 60793-2-50 Type B1.3/ ISO 11801 OS2 compliant single mode fiber, or IEC 60793-2-10, Type A1a MM / ISO 11801 OM2 compliant multi mode fiber

7. Combined output power. Power measured with any 1 laser on full power at a time

Common Specs	
Operation temperature	10 to 40° C
Operation humidity	Max 85% RH, non-condensing from 10 to 40° C
Storage temperature	-30 to 60° C
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	1.3 kg

Part Numbers

Part Number	Singlemode Sources		
MSRC-C23500FB-M100-MFA	Basic FP Laser	Individual Output	1310/1550nm Basic FP laser SMF FC/APC Connectors
MSRC-C23500FBX-M100-MFA		Single Output (Mux'd)	1310/1550nm Basic FP Laser Single output SMF FC/APC connectors
MSRC-C23500FP-M100-MFA	TEC'd FP Laser	Individual Output	1310/1550nm Standard FP laser SMF FC/APC Connectors
MSRC-C23456FP-M100-MFA			1310/1490/1550/1625nm Standard FP laser SMF FC/APC Connectors
MSRC-C23500FPX-M100-MFA		Single Output (Mux'd)	1310/1550nm Standard FP laser SMF Single output FC/APC Connectors
MSRC-C23456FPX-M100-MFA			1310/1490/1550/1625nm Standard FP laser SMF Single output FC/APC Connectors
MSRC-C23000SL-M100-MFA	SLED	Individual Output	1310nm SLED source SMF FC/APC Connectors
MSRC-C25000SL-M100-MFA			1550nm SLED source SMF FC/APC Connectors
MSRC-C23500SL-M100-MFA			1310/1550nm SLED source SMF FC/APC Connectors
MSRC-C23456SL-M100-MFA			1310/1490/1550/1625nm SLED source FC/APC Connectors
MSRC-C23500SLX-M100-MFA		Single Output (Mux'd)	1310/1550nm SLED source SMF Single output FC/APC Connectors
MSRC-C23456SLX-M100-MFA			1310/1490/1550/1625nm SLED source Single output FC/APC Connectors

Part Number	50um (OM3) Multimode Sources		
MSRC-C21308LP-M101-MFP	Low power LED	Individual Output	850/1300nm Low power LED 50um MMF EF compliant FC/PC Connectors
MSRC-C21308LPX-M101-MFP		Single Output	850/1300nm Low power LED 50um MMF EF compliant single output FC/PC Connectors
MSRC-C21308FP-M101-MFP	FP Laser	Individual Output	850/1310nm Standard FP Laser 50um MMF EF compliant FC/PC Connectors
MSRC-C21308FPX-M101-MFP		Single Output (Mux'd)	850/1310nm Standard FP Laser Single output 50um MMF EF compliant FC/PC Connectors



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