Manufacturer:
VIAVI

Product Name:
Broadband source C-band Flattened FC/APC

Manufacturer Part Number:
MBBS-C11CA-M100-MFA-MO

Data Sheet

VIAVI

Broadband Light Source (mBBS-C1)

MAP Series 100 mW of Amplified Emission Source

The Multiple Application Platform (MAP) Broadband light source (mBBS-C1) delivers 100 mW of amplified spontaneous emission (ASE) across the extended C-band and L-band.

The Multiple Application Platform (MAP) Broadband Source (mBBS-C1) is a third-generation erbium doped fiber-based design. The mBBS module is used for optical component measurement and telecommunications transmission testing:

- Spectral measurements of couplers, WDMs, isolators, and other optical components.
- Noise loading in system experiments.
- Polarization mode dispersion (PMD) measurements.

Functional Description

The mBBS-C1 delivers 100mW of amplified spontaneous emission (ASE) across the extended C-band and the L-band. The optical output of the mBBS is ultra-stable, depolarized and spectrally flat to within 1.8 dB (figures 1a and 1b) and shows power stability better than 0.02dB. These characteristics make it ideal for several applications including noise loading during OSNR compliance test, power loading of optical amplifiers during gain, and noise figure measurements or passive component characterization. Due to extreme power stability, this source is often used for optical calibration of power meters and variable attenuators.

Features and Benefits

- >100mW depolarized output power over the extended C-band and the L-band
- Power flatness < 1.8dB
- Ultra-high power stability
- LXI-compliant interfaces and IVI drivers

Applications

- Source for optical component spectral tests
- OSNR noise loading for receiver and systems compliance tests
- Power loading for optical amplifier testing
- Ultra-stable source for optical calibration systems

Compliance and Safety information

- The MAP Series mBBS-C1 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, June 24, 2007

INVISIBLE LASER RADIATION
DO NOT VIEW DIRECTLY WITH OPTICAL INSTRUMENTS
CLASS 1M PRODUCT
(IEC 60825-1)

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The optics of the mBBS Module consist of an erbium-based gain block with supporting optical components specifically designed to achieve maximum output power at the bulkhead-mounted optical connector while minimizing input/output isolation.

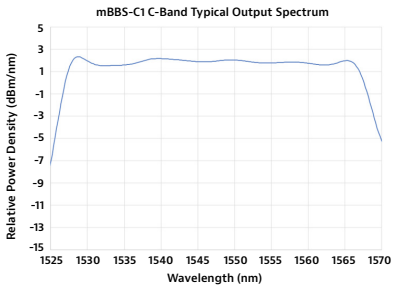

Figure 1b – C-band output spectrum

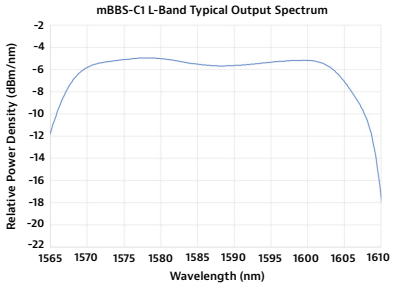

Figure 1b – L-band output spectrum

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 (figure 2) allow users to operate at a system level or access the full power of a module.

Figure 2 - mBBS MAP-300 summary view GUI

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

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

LightDirect

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Specifications

Parameter[1]	C-Band	L-Band
Operating Wavelength Range	1525nm –1568nm	1565 – 1610nm
Saturated Power[2]	≥ 20dBm	
Spectral Gain Flatness · C-band spectral range: 1529-1565nm · L-band spectral range: 1570-1603nm	≤ 1.8dB	
Total Power Stability[3]	≤ 0.02dB	
Laser Safety Class[4]	1M	
Fiber Type[5]	Single Mode Fiber	
Connector Type	FC/APC	
Operation Temperature	0 – 40°C	
Operation Humidity	Maximum 95% RH, 0 to 40°C non condensing	
Storage Temperature	-30 to 60°C	
Dimensions (W x H x D)	4.06cm x 13.26cm x 37.03cm	
Weight	2.3kg	

1. All optical measurements were done after minimum 30 minutes warming up measured at constant temperature of 23±3°C
2. Measured with OPM set at wavelength of 1550nm for C-band; 1590nm for L-band
3. Measured as peak to peak variation within 30 minutes
4. Classified as per standard IEC60825-1:2014
5. For IEC60793-2-50 Type B1.3/ ISO 11801 OS2 compliant fiber, *i.e.* Corning SMF-28e

Parameter[1]	High Power Dual Broadband Source (50/50)	Asymmetric Dual Power Broadband Source (30/70)
Operating Wavelength Range (C-band)	1525 to 1568 nm	
Saturated Power[2]		
Port 1	≥ 18.5 dBm	≥ 17.5 dBm
Port 2		≥ 13.2 dBm
Spectral Gain Flatness		
C-band Spectral Range: 1529 to 1565 nm	≤ 3.5 dB	≤ 2.0 dB
Total Power Stability[3]	≤ 0.02 dB	
Laser Safety Class[4]	1M	
Fiber Type[5]	Singlemode Fiber	
Connector Type	FC/APC	
Operation temperature	0 to 40°C	
Operation humidity	Maximum 95% RH, 0 to 40°C non condensing	
Storage temperature	- 30 to 60°C	
Dimensions (W x H x D)	4.06cm x 13.26cm x 37.03cm	
Weight	2.3 kg	

1. All optical measurements were taken after minimum 30 minute warm up, measured at constant temperature of 23 ±3°C.
2. Measured with OPM wavelength set 1550 nm.
3. Measured as peak-to-peak variation within 30 minutes.
4. Classified as per standard IEC60825-1:2014.
5. For IEC60793-2-50 Type B13/ ISO 11801 OS2 compliant fiber, i.e., Corning SMF-28e.

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Ordering Information

Part Number	
MBBS-C11CA-M100-MFA	Broadband source, Extended C-band, Flattened with FC/APC connectors
MBBS-C11LA-M100-MFA	Broadband source, L-band, Flattened with FC/APC connectors

Accessories

Accessories (Optional)	Product and description	
Inspection and cleaning tool	CleanBlast	The patented VIAVI Solutions® CleanBlast fiber end-face cleaning system provides a fast, effective, and cost-efficient solution for removing dirt and debris from connectors in most common applications. It is available in a benchtop and portable version
	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 & Analysis Probe provides PASS/FAIL capability to PC, laptops, mobile devices and VIAVI test solutions.
Replacement Parts	Mating sleeves	AC500;FC/PC-FC/PC Universal Connector Adapter
		AC501;FC/PC-SC/PC Universal Connector Adapter
		AC502;FC/APC-FC/APC Universal Connector Adapter
		AC503;FC/APC-SC/APC Universal Connector Adapter
Detector adaptor	A complete range of single ferrule, duplex, and bare fiber power meter adaptor are available at VIAVI. Refer to the AC adaptor selection guide for more information.	