# 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 100 mW 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 0.02 dB. 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

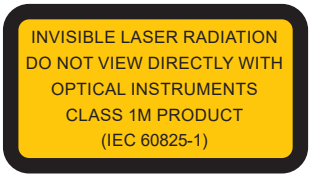
- >100 mW depolarized output power over the extended C-band and the L-band
- Power flatness < 1.8 dB
- Ultra-high power stability
- LXI-compliant interfaces and IVI drivers

## 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



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.

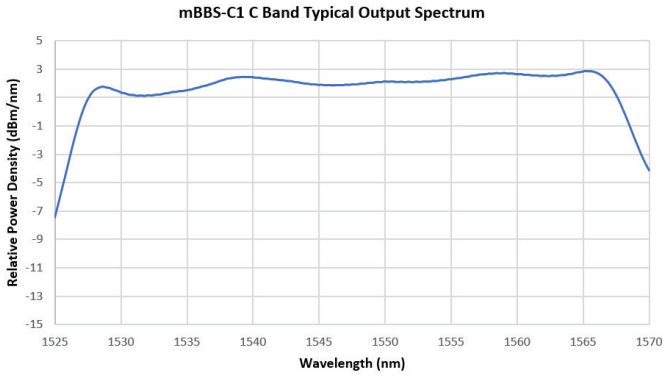



Figure 1b – C-band output spectrum

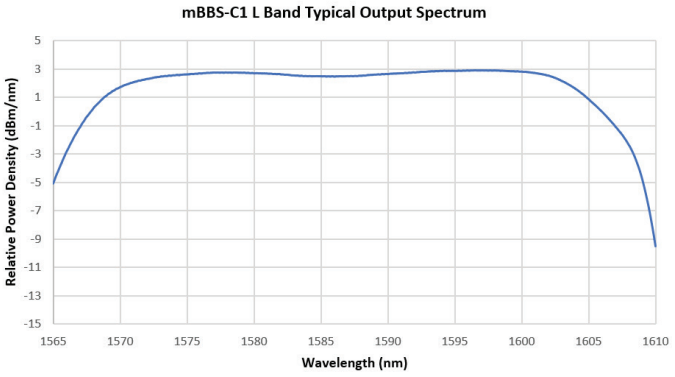



Figure 1b – L-band output spectrum

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.



Light Direct

## Specifications

| Parameter[1] | C-Band | L-Band |
|---|---|---|
| Operating Wavelength Range | 1525 nm –1568 nm | 1565 – 1610 nm |
| Saturated Power[2] | ≥ 20 dBm | |
| Spectral Gain Flatness<br>• C-band Spectral Range: 1529-1565 nm<br>• L-band Spectral Range: 1570-1603 nm | ≤ 1.8 dB | |
| Total Power Stability[3] | ≤ 0.02 dB | |
| 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) | 4.06 cm x 13.26 cm x 37.03 cm | |
| Weight | 2.3 kg | |

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 nm 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) | 4.06 cm x 13.26 cm x 37.03 cm | |
| 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.

## Ordering Information

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.

| 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 |
| MBBS-C11C5-M100-MFA | 50/50 High power dual broadband source, Extended C-band, Flattened with FC/APC |
| MBBS-C11C7-M100-MFA | 30/70 Asymmetric dual power broadband source, Extended C-band with FC/APC |

## 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 and 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. | |

A wider range of inspection tools are available at 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.

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- 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 | ✓ | ✓ | ✓ | ✓* | ✓ | ✓ | ✓ |

Contact Us: +1 844 GO VIAVI | (+1 844 468 4284). To reach the VIAVI office nearest you, visit viavisolutions.com/contact

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