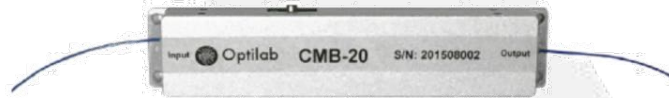




# CMB-20



DEVICE

## 20 GHz Compact Modulator with Bias Control

OVERVIEW

The Optilab CMB-20 is a Compact Modulator Board designed for analog photonics applications from DC to 20 GHz. This unit includes a compact optical intensity modulator and an Automatic Bias Control (ABC) board. The external laser source of CMB modules are typically DFB lasers. CMB series is an ideal solution for high density RFoF sub-system integration. Contact Optilab for more information.

FEATURES

- 20 GHz operational bandwidth
- Compact and low power consumption
- 1520 nm to 1610 nm wavelength range
- Accepts external laser source via input
- Automatic Bias Control
- Customizable Options:
  - PM Output
  - Temp. Qualified (-55°C to +75°C)

USE IN

- Optical communications to 25 Gb/s
- 20 GHz RFoF transmission
- Multi-channel RFoF system
- Analog photonics
- RF/IF signal distribution
- Satellite communication

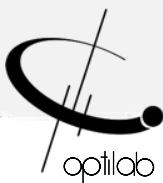
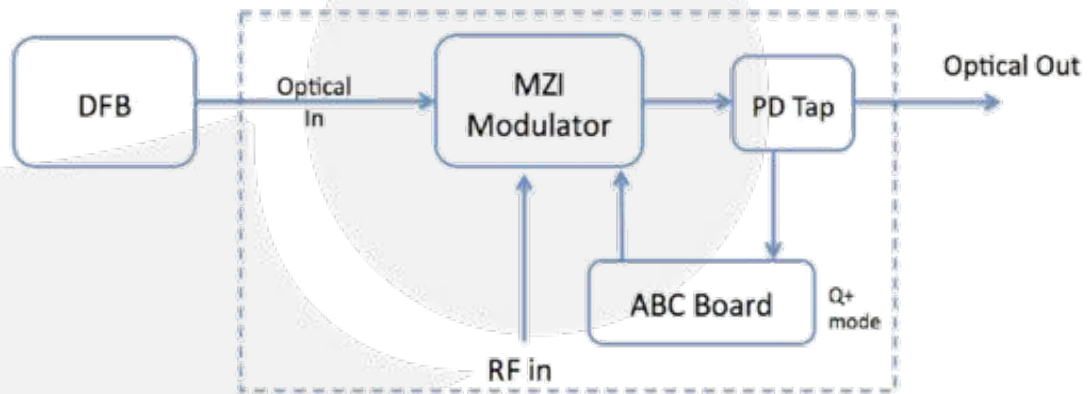
ORDERING OPTIONS

### CMB-20-XX-YY

**XX** PM: Polarization Maintaining

**YY** TQ: Temperature Qualified

FUNCTIONAL DIAGRAM





# CMB-20

## SPECIFICATIONS

Operating Wavelength	1520 nm to 1610 nm
Laser Source	User's External Input
Optical Input Level	+ 18 dBm max.
RF Return Loss	> 15 dB @ 10 GHz; > 10 dB @ 20 GHz
Impedance	50 Ω
Operating Frequency Range	DC to 20 GHz
Input RF Voltage	26 dBm max.
Optical Output Level	7 dBm @ +14 dBm input typ.
S21 Bandwidth	3 dB, 17 GHz typ.
Modulator Bias Mode	Q+ for linear operation
Extinction Ratio	25 dB typ.
Modulator Voltage V <sub>PI</sub>	6.7 V typ. @ 10 GHz

## GENERAL

## ANALOG LINK PERFORMANCE

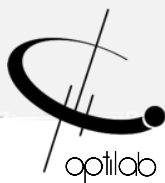
Extinction Ratio	29 dBm typ.
Modulator Voltage V <sub>PI</sub>	14.5 dBm typ.

## MECHANICAL

Operating Temperature (standard)	-30°C to +60°C
Operating Temperature (TQ version)	-55°C to +75°C
Storage Temperature	-60°C to +90°C
Power Supply Requirements	5 V, 500 mA max.
Optical Connectors	FC/APC
Fiber Type	> 1 m, PANDA input, SMF-28 output; PANDA input/output (PM version)
RF Input Connector	GPO; GPO to SMA adaptor available
Electrical Connector	6 Pin, 5 volt supply and RS485
Remote Control	Software command via RS485
Alarm	LED bias mode status
Dimensions	140 mm x 28 mm x 20 mm

## ELECTRICAL CONNECTOR PIN OUT

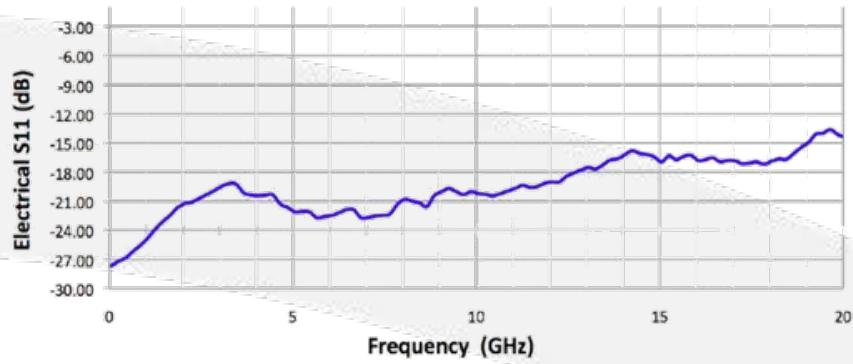
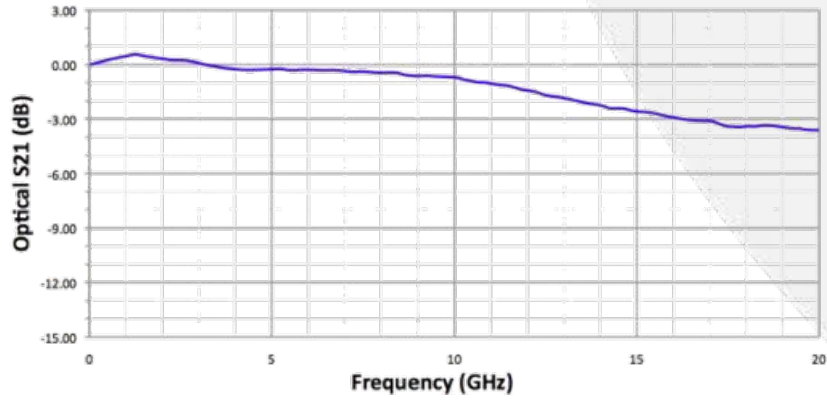
Pin	Description
1	GND
2	NC
3	D- for RS485
4	D+ for RS485
5	GND
6	+ 5 V power supply





# CMB-20

TYPICAL S21 AND S11 BANDWIDTH



MECHANICAL DRAWING

