

# BCB-4



## DEVICE

# Modulator Bias Control Board, Five Bias Mode

## OVERVIEW

The Optilab BCB-4 is a compact bias control board designed to maintain the linear operating point of optical intensity modulators. Featuring a compact miniature design for OEM integration, the BCB-4 allows for a stable Q+, Q-, Min, Max, and Manual operation over long periods of time. With a single +5V DC power and RS485 multi-addressing control and monitor interface, the BCB-4 unit is the ideal choice for industrial and OEM applications when paired with any of Optilab's wide variety of optical modulators, contact Optilab for more information.

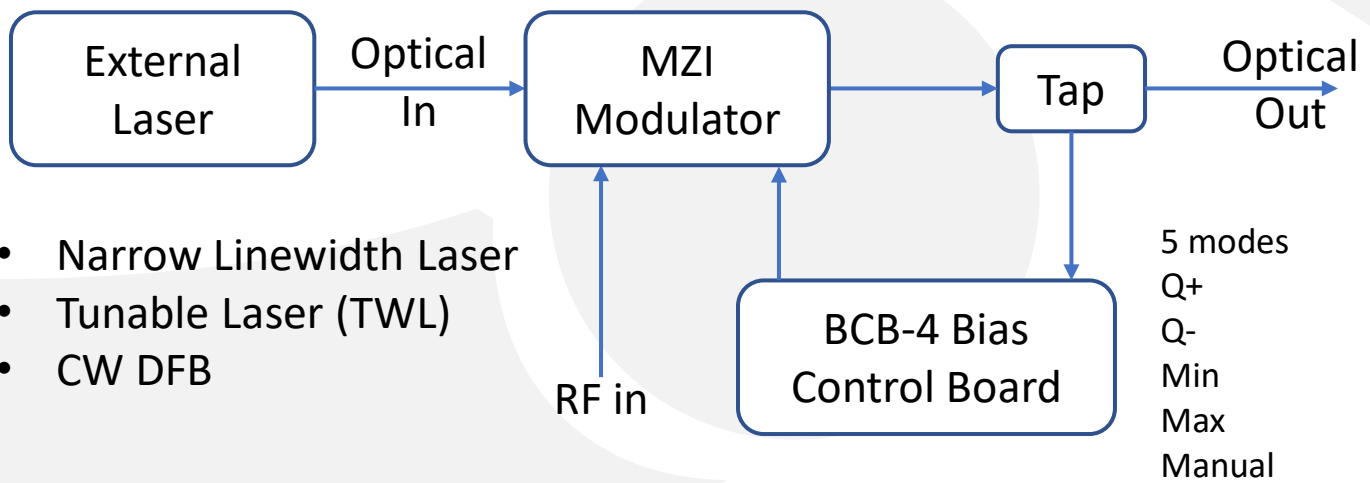
## FEATURES

- On-Board Photodiode
- InGaAs based PD (1000-1610 nm)
- Silicon based PD (500-1000 nm)
- RS-485 Control
- Single +5V DC Power
- Q+, Q-, Min., Max., Manual bias setting modes

## USE IN

- RF/IF Signal Distribution
- Satellite Communication
- Optical Communications
- Bandwidth RFoF Transmission
- Picosecond Pulse Generation
- High Bandwidth RFoF Transmission
- Pulse picking/gating

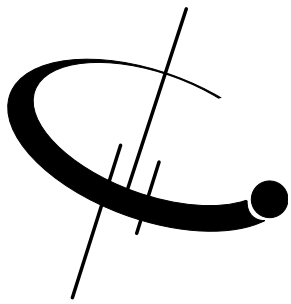
## FUNCTIONAL DIAGRAM



- Narrow Linewidth Laser
- Tunable Laser (TWL)
- CW DFB

5 modes  
 Q+  
 Q-  
 Min  
 Max  
 Manual





# BCB-4

## SPECIFICATIONS

## GENERAL

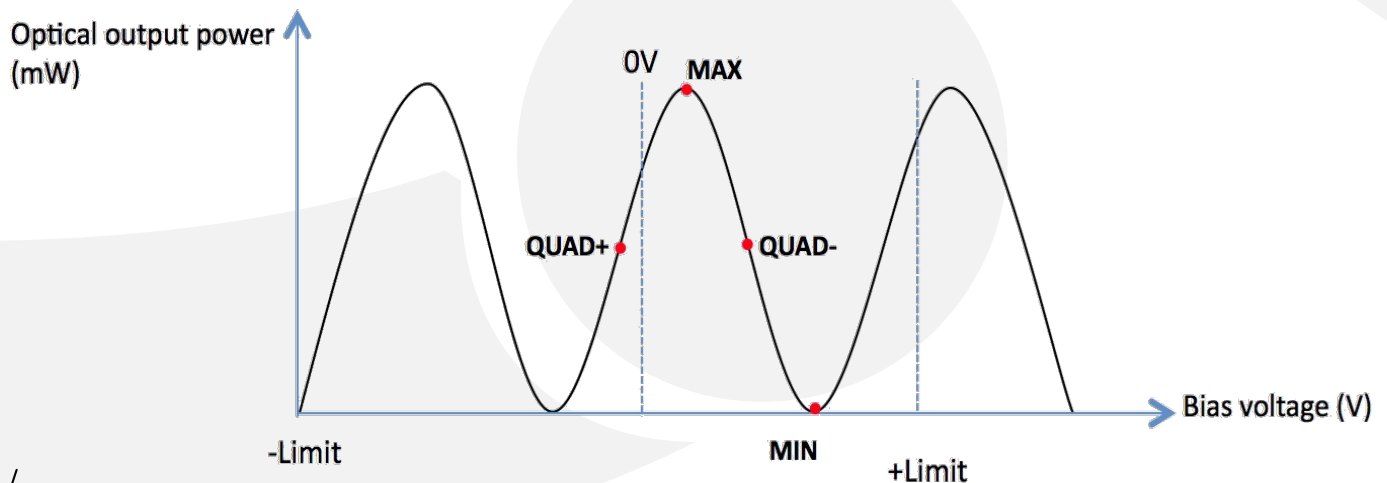
Modulator Type	Mach Zehnder Interferometer
Bias Control Principle	Small Signal Dithering/Phase lock loop
Dither Frequency	1 kHz
Dither Amplitude	20 to 450 mVpp adjustable
Feedback Optical Power @ MAX	-20 to -10 dBm
Applicable Modulator Bias $V_{PI}$	1.5 - 8 V
Bias Output Voltage Range	$\pm 11$ V or $\pm 15$ V
Bias Voltage Tuning Step	1.3 mV ( $\pm 11$ V option) or 1.8 mV ( $\pm 15$ V option)

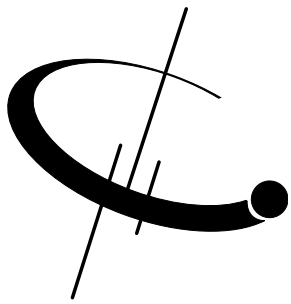
## MECHANICAL

Operating Temperature	-10°C to +60°C
Storage Temperature	-60°C to +90°C
Power Supply Requirements	5 V, 100 mA typ.
Control Interface	RS-485
Alarm	LED DC Power status
Dimensions	85 mm x 27.5 mm x 17 mm

## BIAS CONTROL MODE

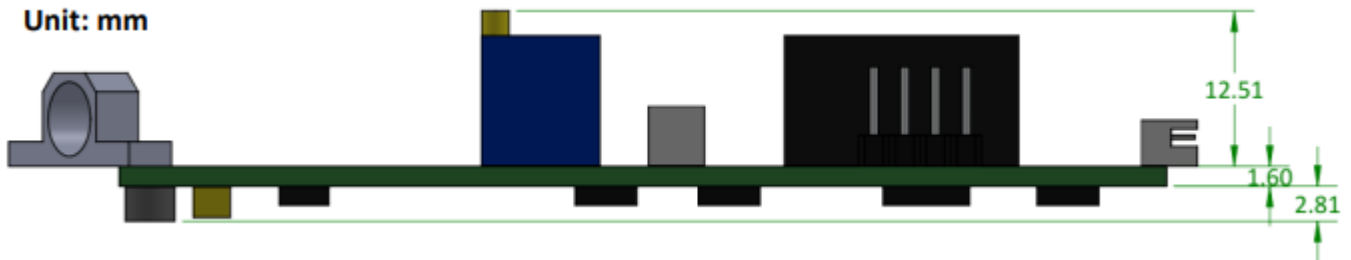
Mode	Operation Conditions	Modulation Format
Q+	Set to quadrature point of positive slope	Analog, NRZ
Q-	Set to quadrature point of negative slope	Analog, NRZ
Min.	Set to min. point of modulator curve	Pulse, RZ, BPSK
Max.	Set to max. point of modulator curve	Pulse, RZ
Manual	DC voltage	



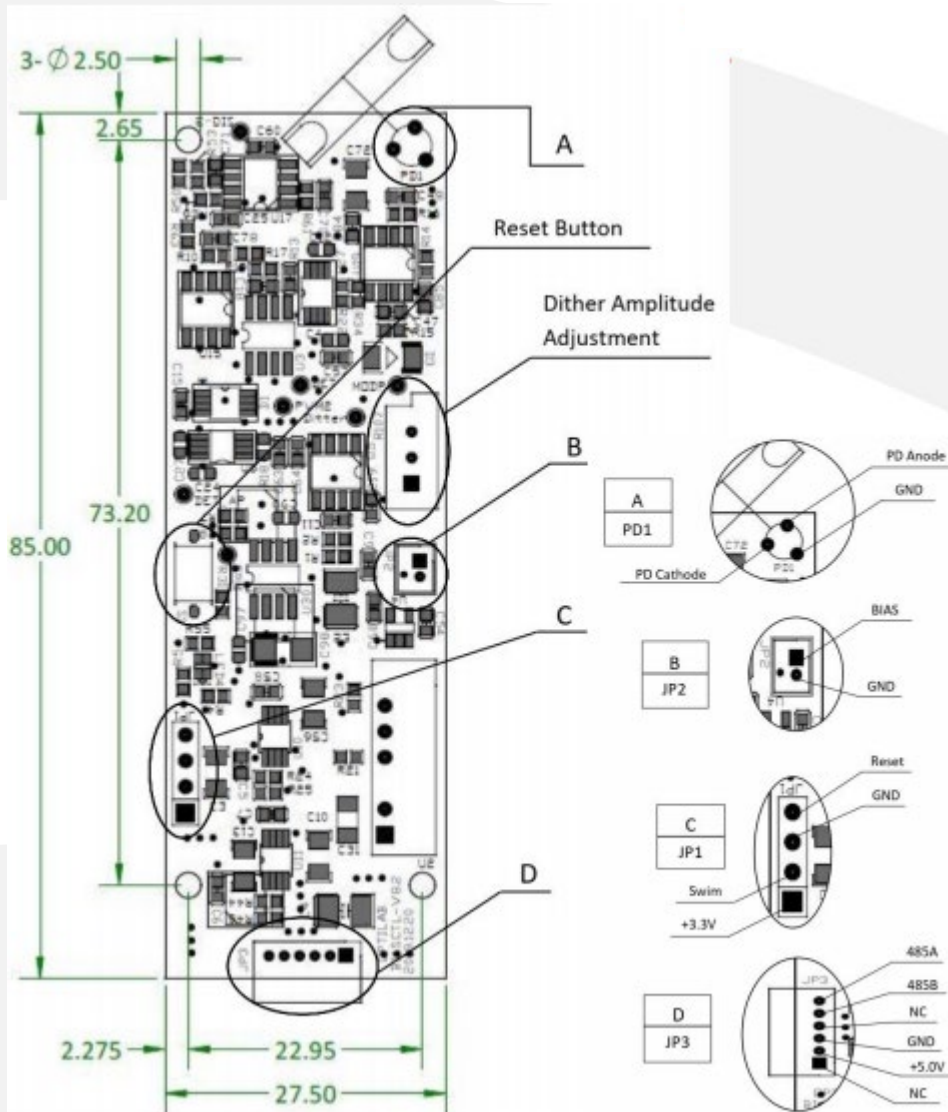


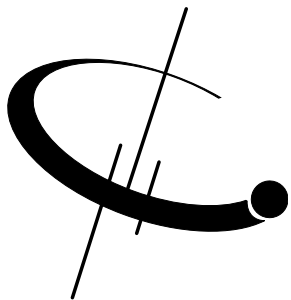
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## MECHANICAL DRAWING



## CONTROL AND PINOUT





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## ORDERING OPTIONS

### **BCB-4-XX-YY**

**XX** Voltage Range Option: 11 ( $\pm 11V$ , default), 15 ( $\pm 15V$ )

**YY** Onboard PD Option: 00 (None), IG (InGaAs PD 1000-1610 nm default), SI (Silicon PD 500-1000 nm)

