



## SUPER MODULATOR BIAS CONTROLLER (GENERAL BIAS CONTROLLER WITH PULSE MODE APPLICATIONS)

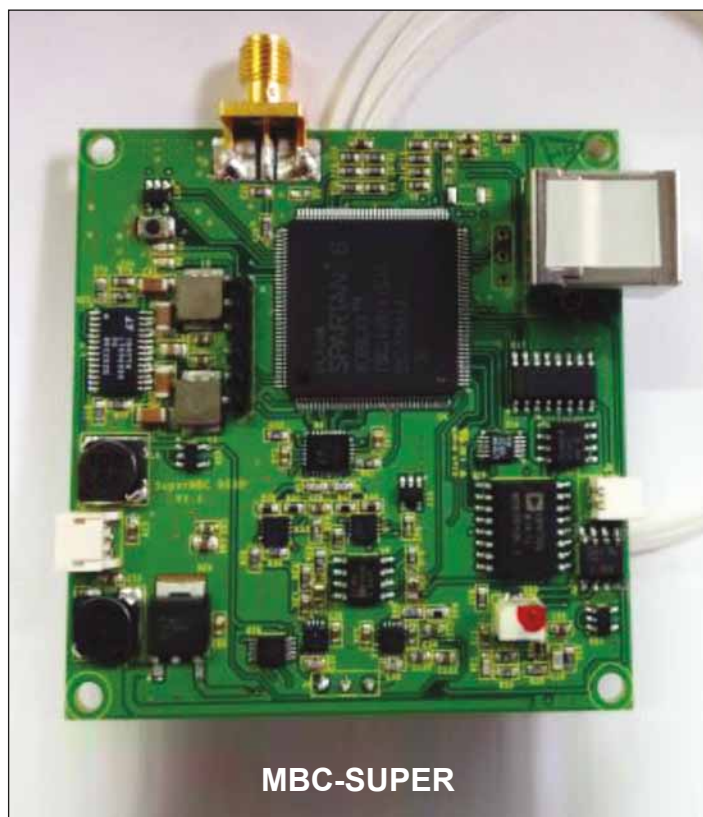
**PRELIMINARY**

### Features

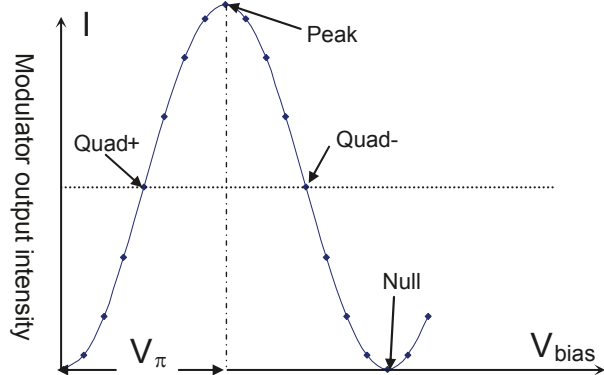
- User selectable locking mode (Quad+/Quad- ↔ Null/Peak)
- Two operation modes: calibration mode and locking mode
- Calibration off mode for quick system setup in locking mode
- Small size (2.53" x 2.57" x 0.65")
- Access for external photo-detector
- GUI computer interface
- Pulse mode for more accurate null locking
- Fine tuning pilot tone parameters through the GUI
- Pulse mode for Null locking in dense pulse applications
- GUI is provided
- RS232 interface provided
- User may stop pilot tone, enter manual mode

### Product Description

This compact super Modulator Bias Controller is a full-function miniature OEM version of the Modulator Bias Controller (MBC) family. With added feature for dense pulse applications, the Modulator Bias Controller can be used to lock the working point of the modulator at the positive slope quadrature (quad+), negative slope quadrature (quad-), null or peak points of its characteristic curve. The locking modes and slopes are selectable through the GUI. A pigtailed photo-detector is included. An external photo-detector may also be used. The digital technique reduces noise and pilot tone amplitude, while improving the performance. With the pulse mode, the Null locking accuracy has been increased.



**MBC-SUPER**



**Figure 1. MZ modulator working function**

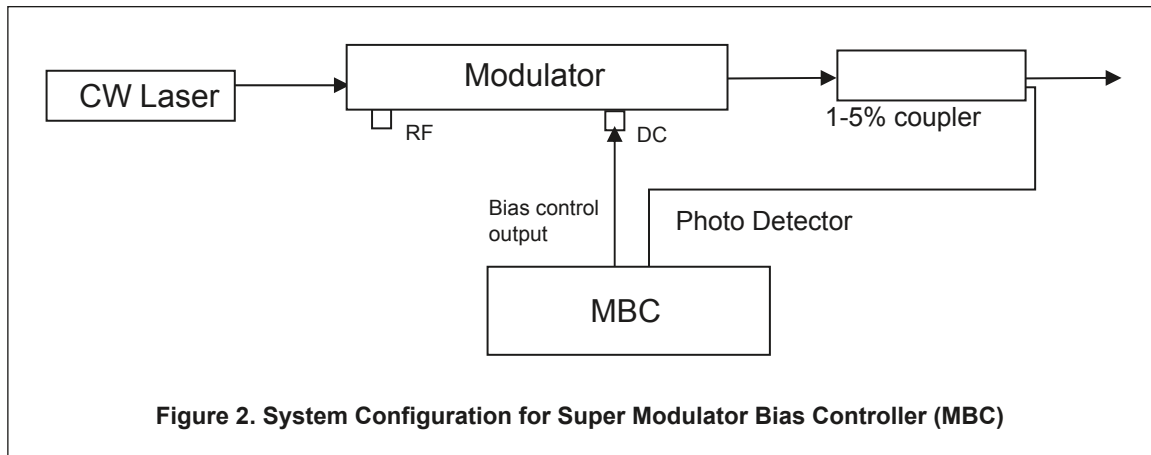


Figure 2. System Configuration for Super Modulator Bias Controller (MBC)

### Specification Table

Parameters	Min	Typ	Max
<b>Optical Performance</b>			
Detector Input Power <sup>1</sup> (dBm)	-25		-10
Optical Wavelength <sup>2</sup> (nm)	1000–1650		
<b>Electrical Performance</b>			
Bias Voltage (single ended) (V)	-12		12
Null Mode Extinction Ratio <sup>3</sup> (dB)		36	40
Locking Slope	Positive or Negative		
Locking Mode	Null, Peak, +Quad, -Quad		
<b>Pilot Tone</b>			
Modulation Depth <sup>1</sup> (Null) %	Adjustable		
Pilot Tone Amplitude <sup>1</sup> (mV) Vpp	0–250		
Pilot Tone Frequency (kHz)	1, 5, 10, 40		
<b>Power Supplies</b>			
DC Positive Power Voltage (V)	14.5	15	15.5
DC Negative Power Voltage (V)	-15.5	-15	-14.5
DC Positive Power Current (mA)		145	
DC Negative Power Current (mA)		80	
<b>General</b>			
Operating Temperature (°C)	0–40		
Storage Temperature (°C)	-40–85		
Dimension (inch)	2.53 x 2.57 x 0.65		
Weight (lb)	0.2		

<sup>1</sup> Modulation Depth (Null) and Pilot Tone Amplitude are adjustable through the GUI.

<sup>2</sup> With PD of other wavelength, the Range of the wavelength can be expanded.

<sup>3</sup> Limited by modulator extinction ratio.

### Part Number

## ***MBC-SUPER-PP-X***

**PP** = Pigtailed Photodiode code:  
 PD = Pigtailed photodiode included  
 00 = Pigtailed photodiode not included  
 Leave connector code blank

**X** = Connector code:  
 3 = NTT-FC/PC  
 3A=Angled NTT-FC/PC  
 SC=SC  
 SCA=Angled SC  
 LC=LC  
 LCA=Angled LC  
 Blank = No built-in photodiode