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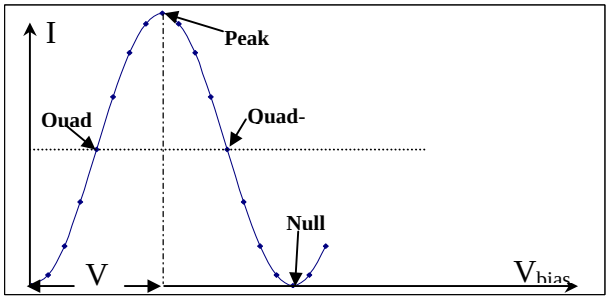
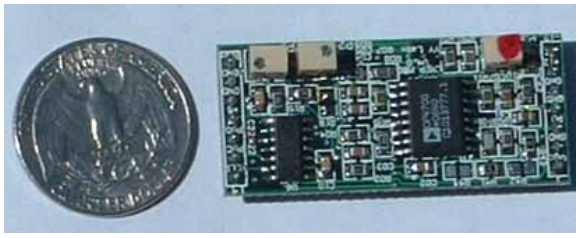
Specifications of Chip-MBC

(Last updated on 4/17/07, Rev.4.0)

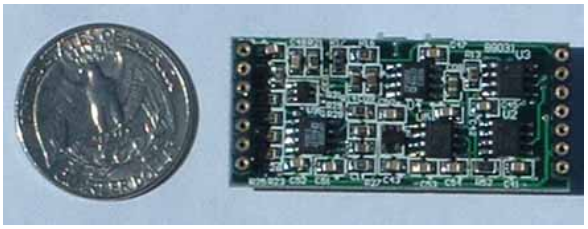
Chip-MBC is a single-function chip-size OEM version of the Modulator Bias Controller (MBC) family. It is designed especially suitable for systems used for digital applications. The small size of the board makes it easy to be integrated into the system. Chip-MBC is designed to lock the working point of the modulator at positive slope quadrature (quad+), negative slope quadrature (quad-), null or peak points of its characteristic curve respectively. The locking mode and slope has to be specified before ordering. The chip- MBC is designed to use the build-in PD of the modulator. But user may also use an external PD by soldering it to the Chip-MBC.



Transfer function of LN MZ modulator



Top View of the Chip-MBC



Bottom View of the Chip-MBC

Parameters	Min	Typ	Max	Unit
Input signal current	0.8		80	μA
Locking Accuracy		1	3	Degree
DC Bias Voltage	-10		+10	V
Dither Frequency		9.8		KHz
Dither amplitude range	0	Manually adjustable	300	mV
VC DC voltage	-10		+10	V
Positive Power Supply	10	12	+15	V
Negative Power Supply	-10	-12	-15	V
Positive supply current			20	mA
Negative supply current			20	mA
Operating temperature	0		70	C
Storage temperature	-40		80	C
Dimension	L1.8×W0.8×H0.5”			

Package

There are two single-row socket strips on left and right side of the chip-MBC, as shown in the above pictures. The distance between the two socket strips are standard as of 1700 mil, which can fit the holes of commercial available PCB breadboard. Therefore, user can either directly solder their power cords, DC bias and PD wires directly to the pins on those strips, or to plug the chip-MBC to their PCB board, or a motherboard, which could be easily built with a PCB breadboard.

How to select the configuration for your application

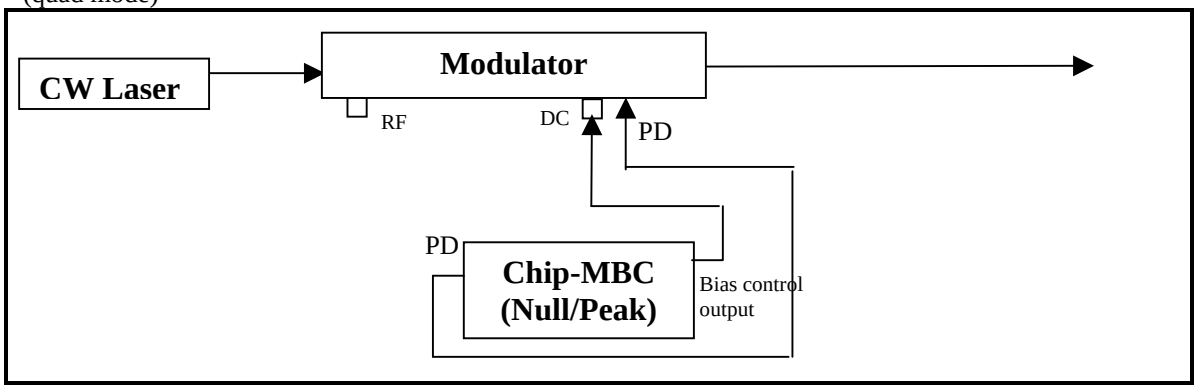
Chip-MBC is a single function unit. The right configuration has to be selected for the desired application.

Required mode in your application	Built-in PD in modulator (if in opposite phase	Built-in PD in modulator (if in the same phase)	External P.D. built-on the Chip-MBC board
Peak	Null	Peak	Peak
Null	Peak	Null	Null
Quad+	Quad-	Quad+	Quad+
Quad-	Quad+	Quad-	Quad-

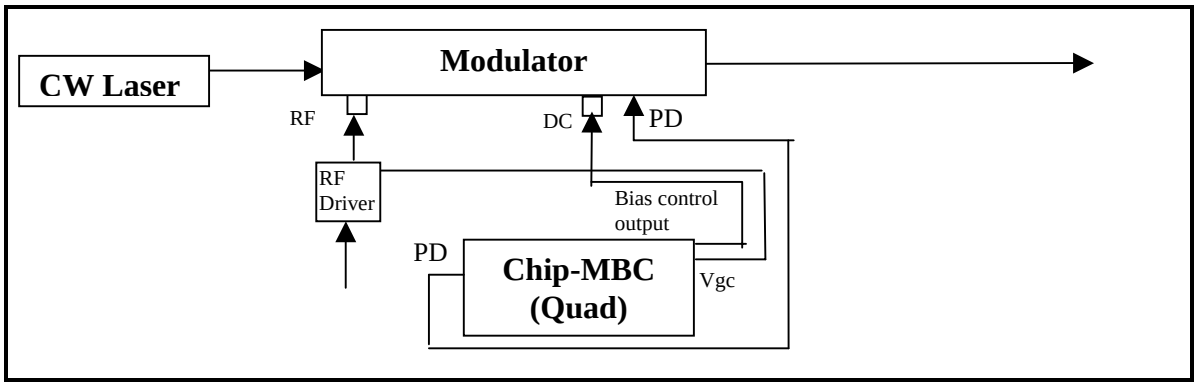
Please specify the configuration according to the PD to be used in your applications.

Major Application

Typical Analog Applications: Optical switching (Null/Peak mode), Electrical –optical conversion (quad mode)



Configuration of Chip-MBC for Null/Peak Applications.



Configuration of Chip-MBC for Quad Applications.