Specification

Passive Optical Bypass Module

P O B M – C 1 C X 4 – P 0 A

Features

- ➢ **Reliable Passive Fiber Bypass(Non-latching)**
- ➢ **Low Bypass Loss and Return Loss**
- ➢ **Available in 50/125μm Multimode Fiber**
- ➢ **PCB Mountable Type**
- ➢ **Compliant with IEEE 802.3z**
- ➢ **Controlled by NIC's CPLD to Perform Programmable Normal and Bypass Modes at Powerless, System Hangs, and Software Request**
- ➢ **Four Dual LC OM3 Adapter**
- ➢ **Compact Format and ROHS Compliant**

Product Overview

FormericaOE'sHigh Density Passive Optical Bypass Module is a compact box that contains 1 optical bypass switchwhich can becontrolled by the controller of In-Line equipment to perform the "Fail-to-Wire" optical bypass function. The FormericaOE'sPassive Optical Bypass Module (POBM) is targeted to In-Line network system (e.g. IPS: Intrusion Prevention System, IES: Industrial Ethernet Switching, WAN Optimization System, and Application Switch, etc.) with high availabilityin maintaining network connectivity when power failure or system failure.

This POBM supports Normal and Bypass modes.In Normal mode, each port is an independent interface directly linked to optical transceiver on In-Line equipment by optical patch cord. In Bypass mode, all packets received from one port are transmitted to the adjacent portin POBM. Thus, This POBM can bypass its Ethernet ports when thereis host-system failure, power off, or upon software request. This POBM can also be mounted and integrated with any kind of NIC by a simple signal connector.

FormericaOE'sPassive Optical Bypass Module is suitable for connecting with In-Line equipment inmeeting the requirement of Fail-Over systems. When the In-Line unit is not on or is in Bypass Mode, the relays within the Passive Optical Bypass Module are set to bridge the optical signals directly through the switch, completely bypassing the In-Line equipment. If the In-Line equipment is on and is operating normally, it supplies power to the switch through a connector PIN.
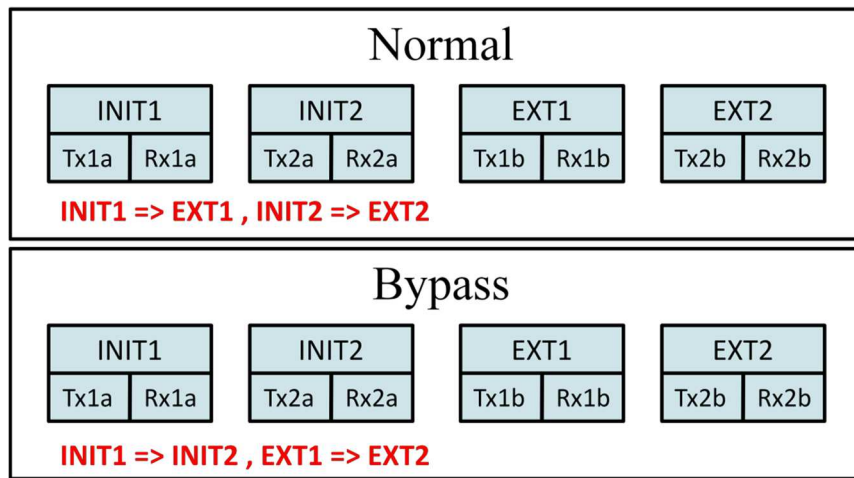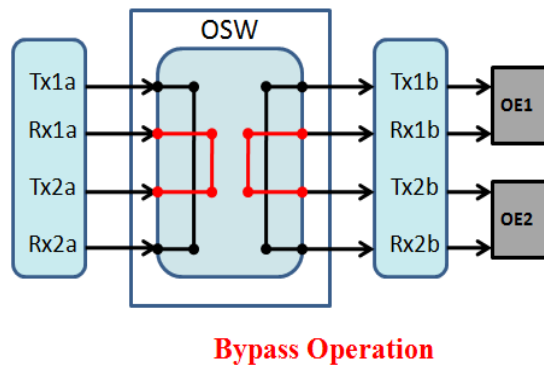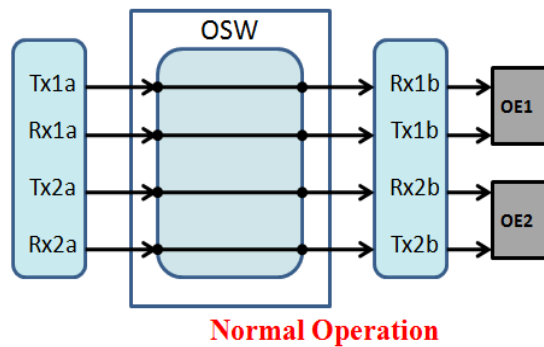
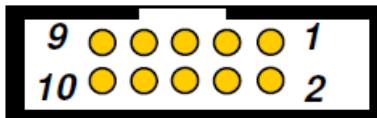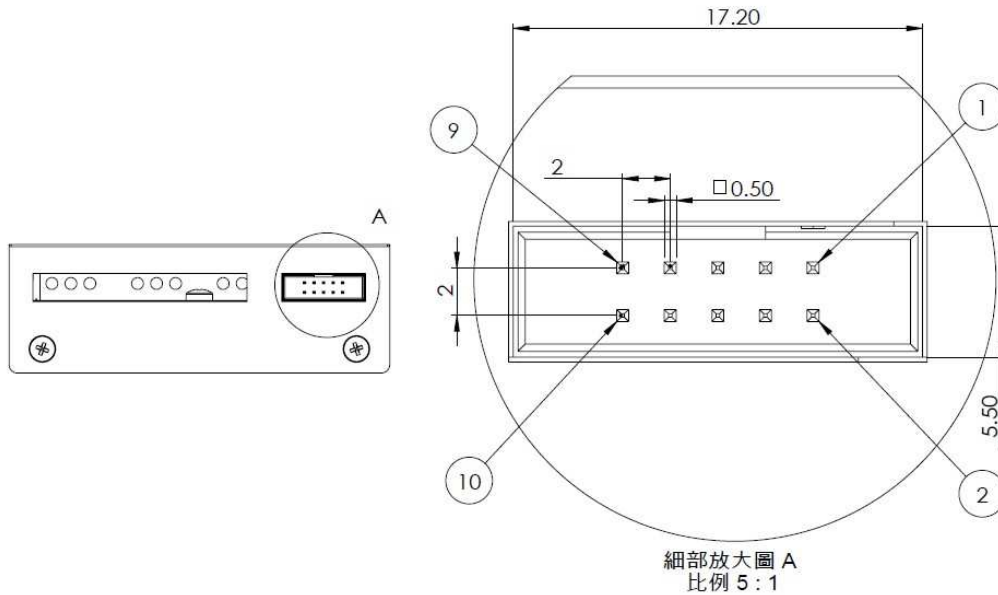This compact module provides network users excellent and cost effective protection for your network.

Note:

a. Latching POBM is also available. Delay Timer and System Enabled PIN canbe embedded into the Non-latching module at customer's request.

b. 62.5/125μm fiber type (OM1) is also available.

c. Module can be customized to pluggable type.

BLOCK DIAGRAM and OPTICAL PATHS:

Normal Operation

Bypass Operation

Normal

INIT1		INIT2		EXT1		EXT2	
Tx1a	Rx1a	Tx2a	Rx2a	Tx1b	Rx1b	Tx2b	Rx2b

INIT1 => EXT1 , INIT2 => EXT2

Bypass

INIT1		INIT2		EXT1		EXT2	
Tx1a	Rx1a	Tx2a	Rx2a	Tx1b	Rx1b	Tx2b	Rx2b

INIT1 => INIT2 , EXT1 => EXT2

PIN Assignment

PIN No.	Name	I/O	Description
1	Vcc_1	I	3.3V Power Supply (OSW1Power and High=Normal Mode, Low=Bypass Mode)
2	Ground		
3	OSW1Bypass	I	High= NormalMode, Low= BypassMode for
4	OSW1State Output	O	High=Normal Mode, Low=Bypass Mode for
5	Ground		
6	On-Line		0 Ohm to Ground
7	Reserve		
8	Reserve		
9	Reserve		
10	Reserve		

POBM CHARACTERISTICS:

Characteristics	Multimode@850nm		Unit	Remarks
Relay Type	Two Coil Latching			Single Coil for Non-latching one is Available
Fiber Type	50/125		µm	SMF-28e is also Available
OpticalWavelength	850±40/1300±40		nm	
Cable Type	250		µm	Customized by Request
Adapter Type	Dual LC		pc	Customized by Request
Insertion Loss	Typical	Maximum	dB	With Connectors and Adapters, same as Bypass Loss
	1.5	2.0		
Return Loss	Typical	Maximum	dB	With Connectors
		30		
Cross-talk	≦-35		dB	With Connectors
Switching Time	≦10		ms	With Connectors
Repeatability	±0.05		dB	Peak to Peak (100 cycles)
Optical Input Power	300		mW	
Operating Temperature	0~70		℃	For -40~85 ℃ Industrial Type, Bare Fiber is needed to be routed in the module
Storage Temperature	-40~80		℃	
Package Dimensions	80(W)x55(D)x27(H)		mm	Customized by Request

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
+3.3V Supply Voltage	V_{cc}	3.10		3.50	V
OSWBypass Control-High	V_{BCH}	2		V_{cc}+0.3	V
OSWBypass Control-Low	V_{BCL}	0		0.8	V
OSWState Output -High	V_{STH}	2.4		V_{cc}	V
OSWState Output -Low	V_{STL}	0		0.5	V
Typical Current	I_{cc}			75	mA

Mechanical Dimension
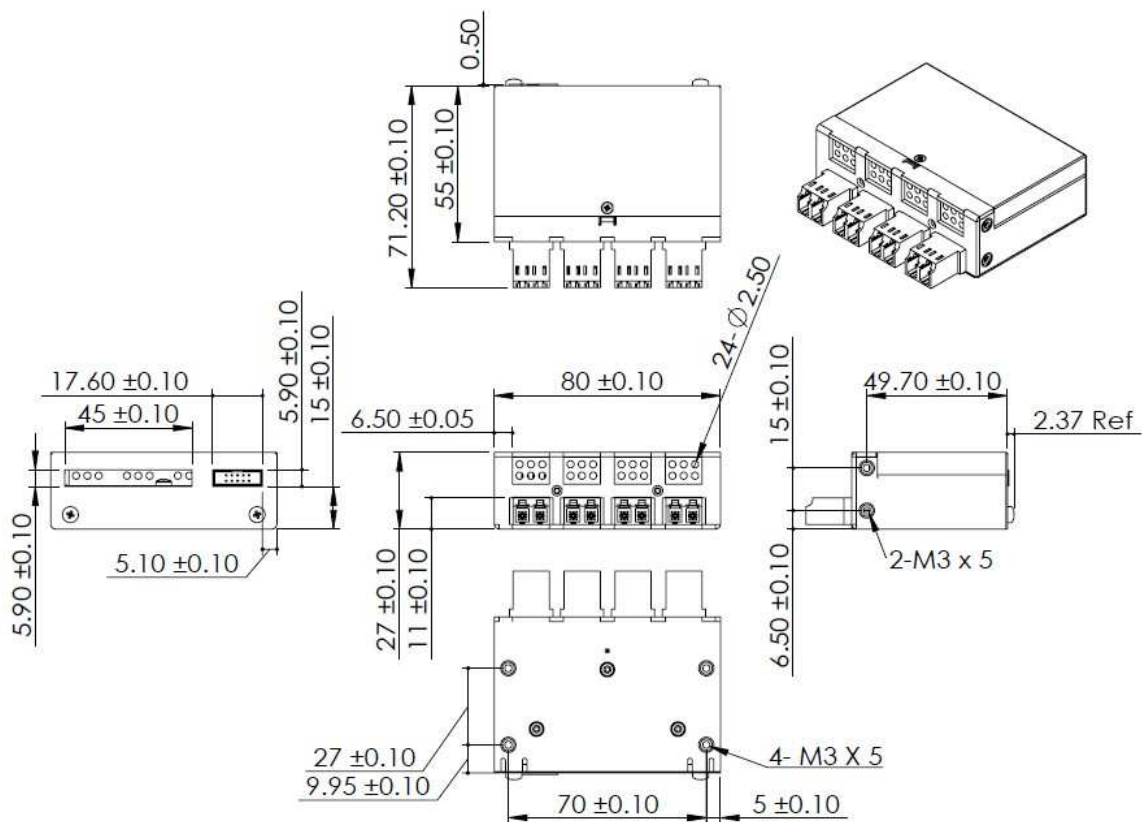
ESD

Normal ESD precautions are required during the handling of this module. This transceiver is shipped in ESD protective packaging. It should be removed from the packaging and handled only in an ESD protected environment.

Contact Information

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Revision History

Date	Version	Description of Changes
03/04/2019	6.2	1. Footer style change. 2. Contact information has been added on the last page.
03/18/2019	6.3	Product photo change.