

10Gb/s Multirate DDMI XFP (XFP ER)

1550nm cooled EML with PIN Receiver

40km transmission distance

065-10GERXFP

FEATURE

- XFP MSA Rev 4.5 compliant
- Supports 9.95 & 10.31Gb/s
- XFI High Speed Electrical Interface
- Digital Diagnostics Monitor
- Cooled EML with isolator
- PIN Receiver
- 40km Reach
- RoHS Compliant
- Power dissipation <3.5W
- 0 to 70 C temperature range
- Class 1 Laser, 21CFR 1040.10/1040.11
- EN 60825-1/A1:2002 Compliant
- Bail Latch Color: WHITE

APPLICATION

- 10GBASE-ER at 10.3125Gbps
- 10GBASE-EW at 9.953Gbps



ABSOLUTE MAXIMUM RATING

PARAMETER	SYMBOL	MIN	TYPICAL	MAX	UNIT
Maximum Supply Voltage (3.3V)	V _{cc3}	-0.5	–	4.0	V
Maximum Supply Voltage (5.0V)	V _{cc5}	-0.5	–	6.0	V
Storage Temperature	T _{st}	-40	–	85	°C

GENERAL OPERATIONS

PARAMETER	SYMBOL	MIN	TYPICAL	MAX	UNIT
Operating Temperature (case)	T _{op}	0	–	70	°C
Supply Voltage (3.3V)	V _{cc3}	3.13	3.3	3.47	V
Supply Voltage (5V)	V _{cc5}	4.75	5	5.25	V
Power Supply Current (3.3V)	I _{cc3}	–	–	750	mA
Power Supply Current (5V)	I _{cc5}	–	–	200	mA
Power Dissipation	P _d	–	–	3.5	W
Data Rate	–	–	9.953/10.3125	–	Gb/s

OPTICAL CHARACTERISTICS

PARAMETER	SYMBOL	MIN	TYPICAL	MAX	UNIT
Transmitter					
Operating Data Rate	–	–	9.953/10.3125	–	Gb/s
Output Power	P_O	-4.7	–	4	dBm
Optical Modulation Amplitude	OMA	-2.1	–	–	dBm
Extinction Ratio	ER	6	8	–	dB
Eye Mask Compliant with ITU-T G.691 and GR-253-CORE					
Side Mode Suppression Ratio	SMSR	30	–	–	dB
Center Wavelength	λ	1530	–	1565	nm
Spectral Width	$\Delta\lambda$	–	–	1	nm
Dispersion Penalty at specified distance	DP	–	–	3	dB
Receiver					
Operating Data Rate	–	–	9.953/10.3125	–	Gb/s
Sensitivity (10.3125Gb/s)	$R_{X_{IN}}$	–	–	-15.8	dBm
Overload (10.3125Gb/s)	$R_{X_{OL}}$	-1	–	–	dBm
Wavelength	λ	1530	–	1565	nm
LOS Assert	LOS_A	-25	–	–	dBm
LOS De-assert	LOS_D	–	–	-16	dBm
LOS Hysteresis	–	1	–	4	dB
Receiver Reflectance	–	–	–	-26	dB

ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	MIN	TYPICAL	MAX	UNIT
High-speed Signal (CML) Interface Specification					
Input Data Rate	–	–	9.953/10.3125	–	Gb/s
Differential Data Input Amplitude	–	120	–	1000	–
Input Differential Impedance	–	–	100	–	Ω
Output Data Rate	–	–	9.953/10.3125	–	Gb/s
Differential Date Output Amplitude	–	500	–	800	–
Output Differential Impedance	–	–	100	–	Ω
Low-speed Signal (LVTTL) Interface Specification					
Input High Voltage	–	2.0	–	Vdd1=3.3	V
Input Low Voltage	–	GND	–	0.8	V
Output High Voltage	–	2.4	–	Vdd1=3.3	V
Output Low Voltage	–	GND	–	0.4	V
2 Wire Serial Interface (LVTTL) Specification					
Clock Frequency	f_{SCL}	–	–	400	kHz

SUGGEST TRANSCEIVER / HOST INTERFACE

MOD_NR

The Mod_NR is an output pin that when High, indicates that the module has detected a condition that renders transmitter and or receiver data invalid, shall consist of logical OR of the following signals:

- Transmit Signal Conditioner Loss of Lock
- Transmitter Laser Fault
- Receiver Signal Conditioner Loss of Lock

MOD_DESEL

The Mod_DeSel is an input pin. When held Low by the host, the module responds to 2-wire serial communication commands. The Mod_DeSel allows the use of multiple XFP modules on a single 2-wire interface bus.

When the Mod_DeSel pin is "High", the module shall not respond to or acknowledge any 2-wire interface communication from the host.

INTERRUPT

Interrupt is an output pin. When "Low", indicates possible module operational fault or a status critical to the host system.

TX_DIS

TX_DIS is an input pin. When TX_DIS is asserted High, the XFP module transmitter output must be turned off.

MOD_ABS

Mod_ABS is pulled up to Host_Vcc on the host board and grounded in the XFP module. Mod_ABS is then asserted "High" when the XFP module is physically absent from a host slot.

RX_LOS

The RX_LOS when High indicates insufficient optical power for reliable signal reception.

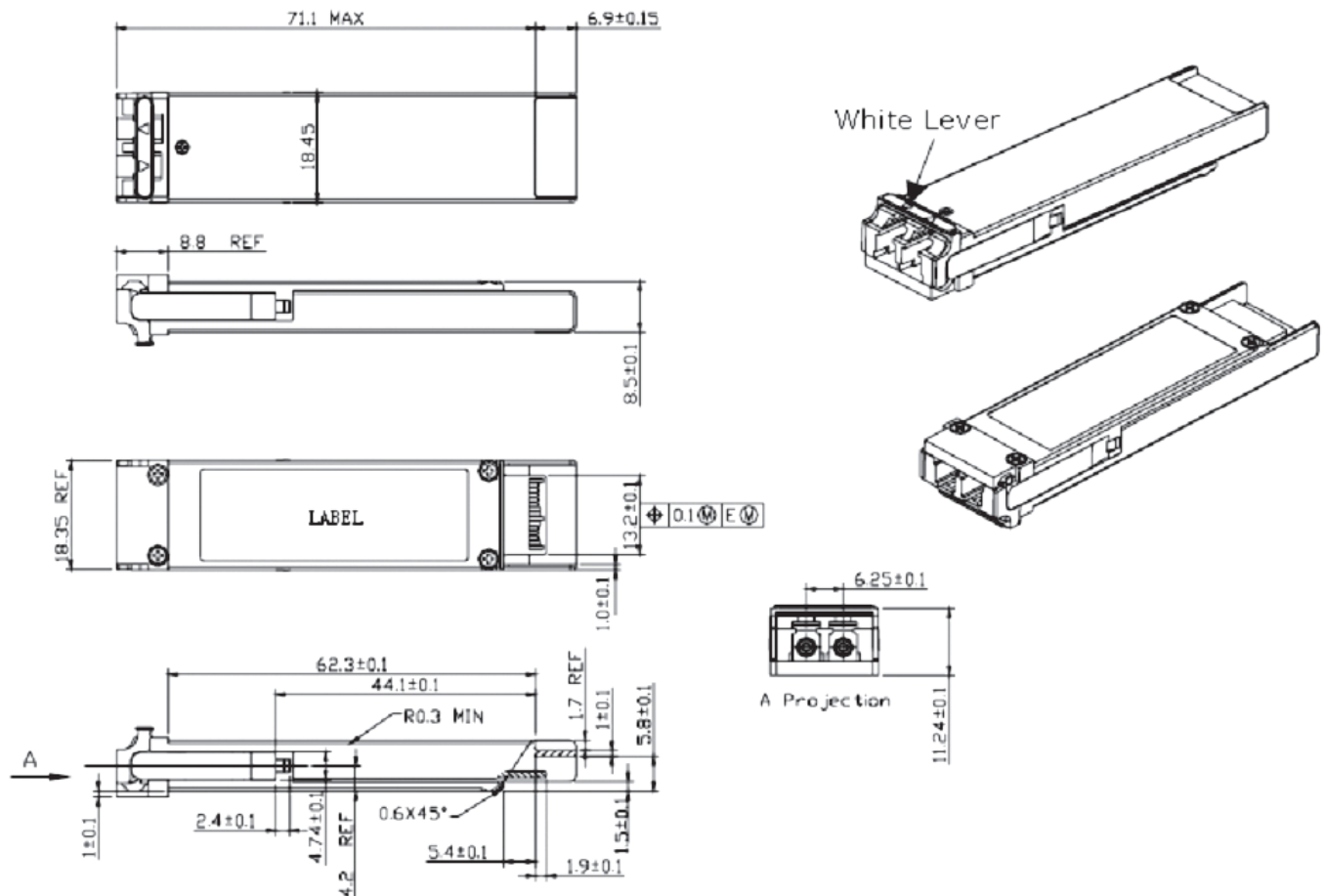
P_DOWN/RST

This is a multifunction pin for module Power Down and Reset. The P_Down/RST pin must be pulled up to VCC3 in the XFP module.

POWER DOWN FUNCTION

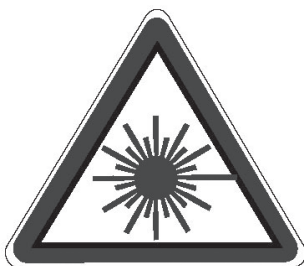
The P_Down pin, when held High by the host, places the module in the standby (Low Power) mode with a maximum power dissipation of 1.5W. This protects hosts which are not capable of cooling higher power modules which may be accidentally inserted.

DIMENSIONS (mm)



SAFETY INFORMATION

- All versions of this laser are Class 1 laser products per IEC* 60825-1:2001. Users should observe safety precautions such as those recommended by ANSI** Z136.1-2000, ANSI Z36.2-1997 and IEC 60825-1:2001.
- Caution: use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.



**INVISIBLE LASER RADIATION
EMITTED FROM END OF FIBER**

**Avoid Exposure to Beam
Class 1 Laser Product**

Wavelength 1250-1630nm, Peak Output Power 5 mW

classified in accordance with IEC 60825-1:2001-08

*IEC is a registered trademark of the International Electrotechnical Commission

**ANSI is a registered trademark of the American National Standards Institute