RoHS 6 compliant (Tunable XFP-DWDM)
Single-mode XFP Transceiver up 40KM link budget W/I DDMI
10GBASE- (Ethernet) / Fiber channel/ SONET OC192 IR2/ SONET OC192/IR-3/SDH STM-64.2b/ SDH STM S-64.3b/ ITU-T G709

Features

- Support 9.953 Gbps (Sonet and SDH), 10.31 Gbps (Ethernet), 10.52 Gbps (Fiber Channel), and corresponding Forward Error Correction (FEC) rate of 10.66/10.709/ 11.09/11.35 Gbps
- Monolithically integrated full C-band tunable transmitter
- Full Duplex LC connector
- Comply with XFP MSA and IEEE802.3ae 10GBASE-ER/EW
- 50 Ghz ITU channel spacing with integrated wavelength locker
- Commercial operating temperature from -5℃ to 70℃
- Maximum power dissipation of 3.5W
- No Reference clock required
- DDMI support

Ordering Information

PART NUMBER	INPUT/OUTPUT	MONITOR	VOLTAGE	TEMPERATURE
CL-XFP-D40-T-XX	AC/AC	Yes	3.3V	-5°C to 70 °C
CL-XFP-D40-T-XXi	AC/AC	Yes	3.3V	-40°C to 85 °C

Absolute Maximum Ratings

PARAMETER	SYMBOL	MIN	MAX	UNITS	NOTE
Storage Temperature	T_S	–40	85	°C	
Supply Voltage 1	*Vcc3*	–0.5	4.0	V	
Supply Voltage 2	*Vcc5*	–0.5	6.0	V	

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Recommended Operating Conditions

PARAMETER	SYMBOL	MIN	MAX	UNITS	NOTE
Case operating Temperature	*Tc*	-5	70	℃	
Supply Voltage	*Vcc3*	3.1	3.5	V	
Supply Current	*Icc3*	---	450	mA	
Supply Voltage	*Vcc5*	4.5	5.5	V	
Supply Current	*Icc5*	---	400	mA	

Transmitter Electro-optical Characteristics

***Vcc* = 3.1 V to 3.5 Vcc5 = 4.5V to 5.5V , T_C = -5 °C to 70 °C (–40 °C to 85 °C)**

PARAMETER	SYMBOL	MIN	TYP.	MAX	UNITS	NOTE
Operating Data Rate		9.95		11.3	Gbps	
Input Reference Clock Rate						
Output power	P_{OUT}	-1		+3	dBm	
Extinction Ratio	*ER*	9			dB	
Center Wavelength	λ_C		ITU CHANNELS		nm	
Sidemode Supression ratio	SSR_{min}	30				
Relative Intensity Noise	*RIN*	---		-130	dB/Hz	
Output Eye						
Differential Input Voltage	V_{DIFF}	0.12		1.0		
Transmit Fault Output-Low	TX_FAULT_L	0.0		0.5		
Transmit Fault Output-High	*TX_FAULT*	2.4				
TX_DISABLE Assert Time	*t_off*	---		10	Ms	
TX_DISABLE Negate Time	*t_on*	---		2	Ms	
Time to initialize	*t_init*			300	Ms	

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Receiver Electro-optical Characteristics

***Vcc3* = 3.1 V to 3.5 V, *Vcc5* = 4.5 V to 55 V, T_A = -5°C to 70 °C**

PARAMETER	SYMBOL	MIN	TYP.	MAX	UNITS	NOTE
Optical Input Power-maximum	P_{IN}	-7				BER < 10^{-12}
Receiver Sensitivity	P_{IN}			-24	dBm	BER < 10^{-12}
Receiver Sensitivity (OMA)	P_{IN}			-22.1	dBm	BER < 10^{-12}
Operating Center Wavelength	λ_C	1270		1600	nm	
Receiver Reflectance	*Rrx*	27			dB	
Dispersion Panelty				3	dB	40 Km
Loss of Signal-Asserted	P_A			-30	dBm	
Loss of Signal-Deasserted	P_D	-22			dBm	
Differential Output Voltage	V_{DIFF}	0.6		0.8		
TTL Input High Voltage		2		Vcc		
TTL Input Low Voltage		0		0.8		
TTL Output High Voltage		2.		Vcc		
TTL Output Low Voltage		0		0.8		
Receiver Loss of Signal Assert Time (off to on)	t_{A,RX_LOS}			100		
Receiver Loss of Signal Assert Time (on to off)	t_{D,RX_LOS}			100		

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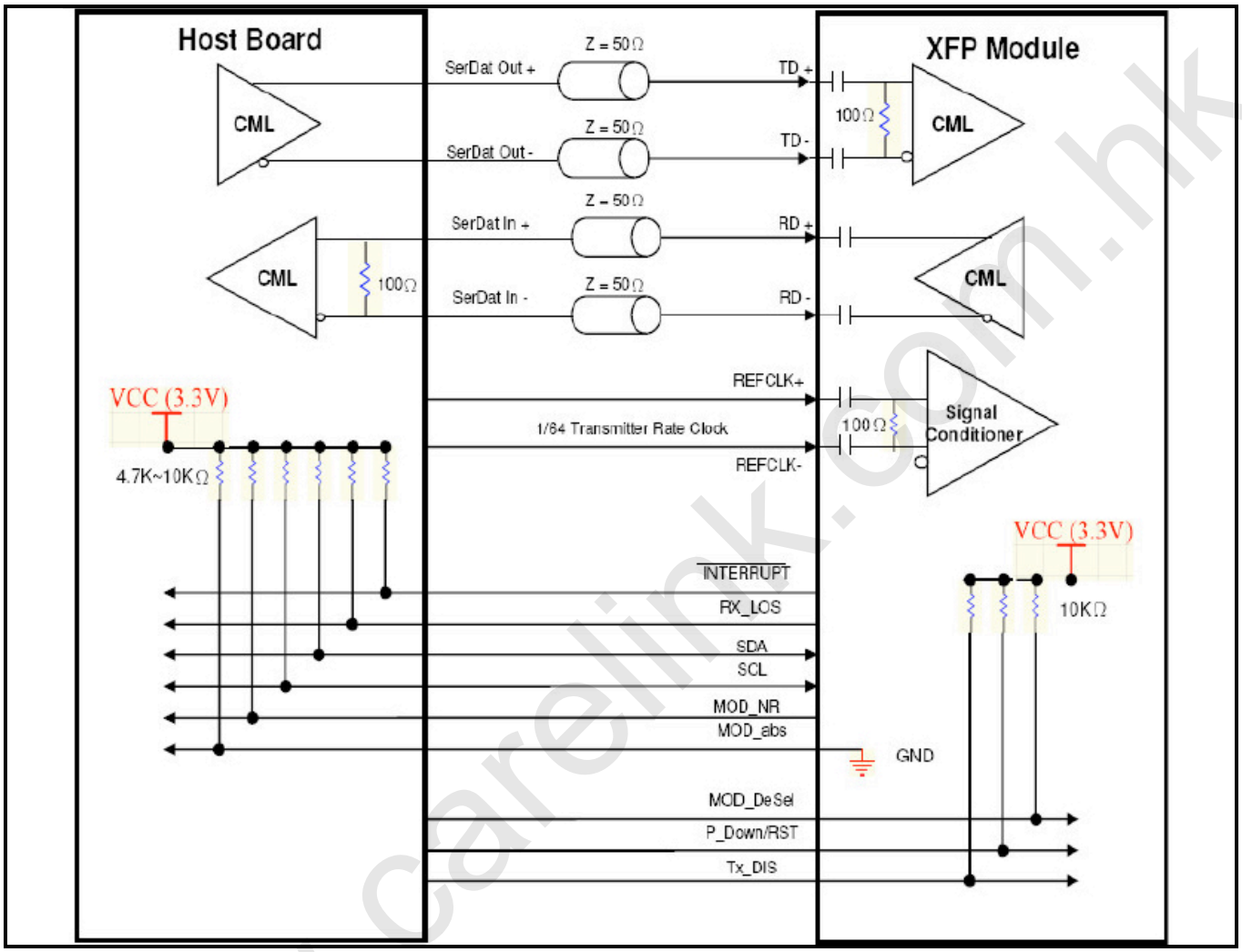
Block Diagram of Transceiver



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

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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.

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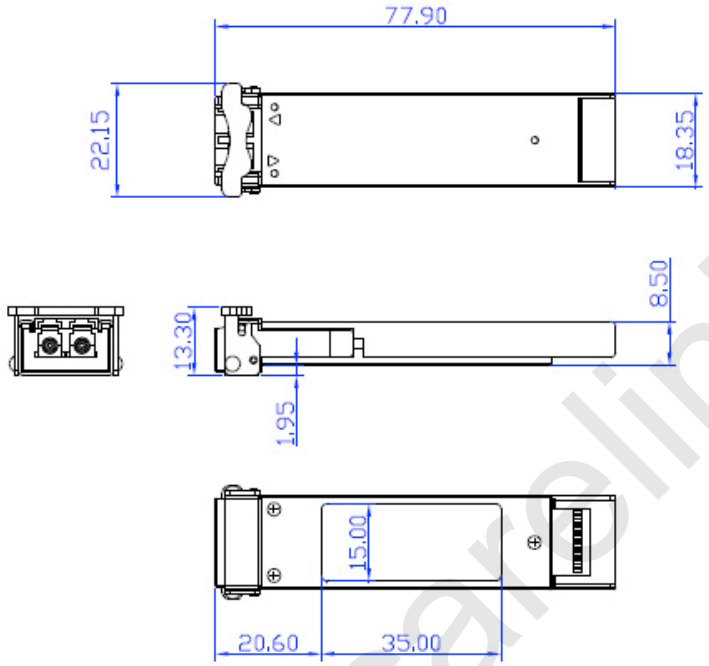
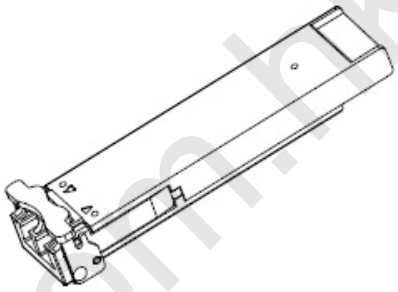
Dimensions





Unit: mm

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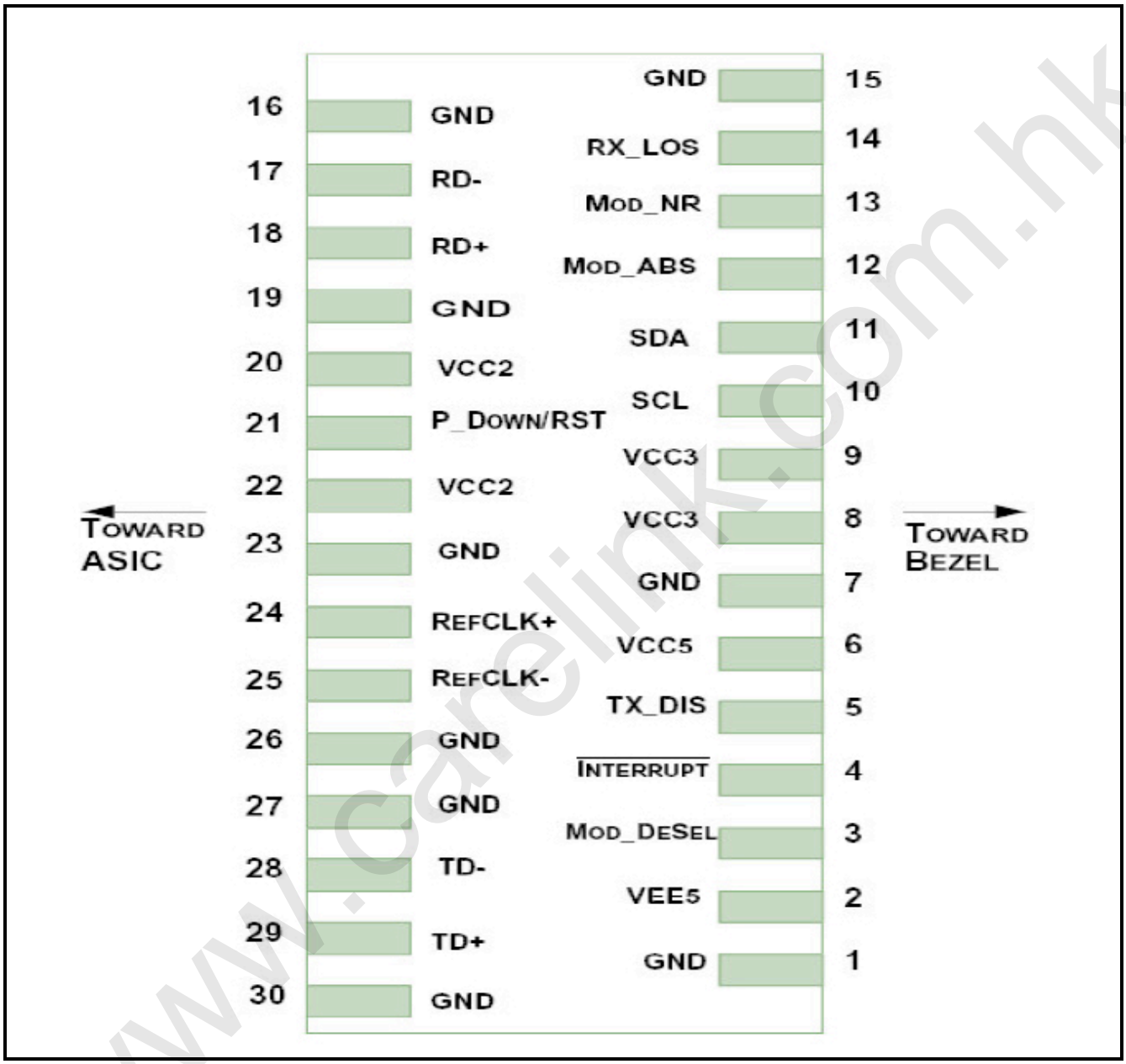
Pin Assignment



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Eye Safety Mark

The XFP series multimode transceiver is a class 1 laser product. It complies with EN 60825-1 and FDA 21 CFR 1040.10 and 1040.11. In order to meet laser safety requirements the transceiver shall be operated within the Absolute Maximum Ratings. ***Caution*** **All adjustments have been done at the factory before the shipment of the devices. No maintenance and user serviceable part is required. Tampering with and modifying the performance of the device will result in voided product warranty.**	**Required Mark** **Class 1 Laser Product Complies with 21 CFR 1040.10 and 1040.11**

Note : All information contained in this document is subject to change without notice.

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