



XFC31B10100DC20

Juniper Networks® EX-XFP-10GE-LR40-1310 Compatible 10GBase-CWDM XFP Transceiver (SMF, 1310nm, 40km, LC, DOM)

Product Description

This Juniper Networks® EX-XFP-10GE-LR40-1310 compatible XFP transceiver provides 10GBase-CWDM throughput up to 40km over single-mode fiber (SMF) using a wavelength of 1310nm via an LC connector. It can operate at temperatures between 0 and 70C. The listed reach has been determined using a link budget calculation and tested in a standard environment. Actual link distances achieved will be dependent upon the deployed environment. Our transceiver is built to meet or exceed OEM specifications and is guaranteed to be 100% compatible with Juniper Networks®. It has been programmed, uniquely serialized, and tested for data-traffic and application to ensure that it will initialize and perform identically. All of our transceivers comply with Multi-Source Agreement (MSA) standards to provide seamless network integration. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

Skylane's transceivers are RoHS compliant and lead-free.

Features:

- INF-8077i Compliance
- Duplex LC Connector
- Commercial Temperature 0 to 70 Celsius
- Single-mode Fiber
- Hot Pluggable
- Excellent ESD Protection
- Metal with Lower EMI
- RoHS Compliant and Lead Free



Applications:

- 10x Gigabit Ethernet over CWDM
- Access, Metro and Enterprise
- 8x/10x Fibre Channel
- Mobile Fronthaul CPRI/OBSAI

For your product safety, please read the following information carefully before any manipulation of the transceiver:



ESD

This transceiver is specified as ESD threshold 1kV for SFI pins and 2kV for all others electrical input pins, tested per MIL-STD-883G, Method 3015.4 /JESD22-A114-A (HBM). However, normal ESD precautions are still required during the handling of this module.



LASER SAFETY

This is a Class1 Laser Product according to IEC 60825-1:2007. This product complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated (June 24, 2007).

The optical ports of the module need to be terminated with an optical connector or with a dust plug in order to avoid contamination.

Regulatory Compliance

- ESD to the Electrical PINs: compatible with MIL-STD-883G Method 3015.7
- ESD to the LC Receptacle: compatible with IEC 61000-4-3
- EMI/EMC compatible with FCC Part 15 Subpart B Rules, EN55022:2010
- Laser Eye Safety compatible with FDA 21CFR, EN60950-1& EN (IEC) 60825-1,2
- RoHS compliant with EU RoHS 2.0 directive 2015/863/EU

CWDM Wavelength

Band	Channels	Wavelength		
		Min.	Typ.	Max.
O-Band	27	1264	1270	1277.5
	29	1284	1290	1297.5
	31	1304	1310	1317.5
	33	1324	1330	1337.5
	35	1344	1350	1357.5
E-Band Extended	37	1364	1370	1377.5
	39	1384	1390	1397.5
	41	1404	1410	1417.5
	43	1424	1430	1437.5
	45	1444	1450	1457.5

Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Storage Temperature	TS	-40	+85	°C
Maximum Supply Voltage	VCC	-0.5	3.6	V
Operating Relative Humidity			95	%
Operating Case Temperature	Tc	0	+70	°C

*Exceeding any one of these values may destroy the device immediately.

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Power Supply Voltage	Vcc	3.15	3.3	3.45	V	
Power Supply Current	Icc			750	mA	
Transmitter						
Input differential Impedance	Rin		100			
Differential data input	Vin,pp	120		820	mV	1
Transmit Disable Voltage	VD	2.0		Vcc	V	
Transmit Enable Voltage	VEN	GND		GND +0.8	V	
Transmit Disable Assert Time				10	us	
Receiver						
Differential data output swing	Vout,pp	340	650	850	mV	1
RX Rise time (20-80%)	tr			38	ps	
RX Fall time (20-80%)	tf			38	ps	
LOS Fault	VLOS fault	Vcc – 0.5		VccHOST	V	2
LOS Normal	VLOS norm	GND		GND+0.5		2

Notes:

1. After internal AC coupling
2. Loss of signal is open collector to be pulled up to with a 4.7k-10kohm resister to 3.15-3.6V. Logic 0 indicates normal operation; logic 1 indicates no signal detected.

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Power Budget	PB		14		dB	
Data Rate			10.3125		Gbps	
Transmitter						
Center Wavelength	λ_C	λ_C-6	λ_C	$\lambda_C-7.5$	nm	
Spectral Width (-20dB)	$\Delta\lambda$			1	nm	
Side Mode Suppression Ratio	SMSR	30			dB	
Average Output Power	Pout	-1		4	dBm	3
Extinction Ratio	ER	3.5			dB	
Pout@TX Disable Asserted	Pout			-30	dBm	
Receiver						
Center Wavelength	λ_C	1260		1600	nm	
Receiver Sensitivity	Pmin			-15	dBm	4
Receiver Overload	Pmax	0.5			dBm	
LOS De-Assert	LOSD			-17.8	dBm	
LOS Assert	LOSA	-29.8			dBm	
LOS Hysteresis		1			dB	

Notes:

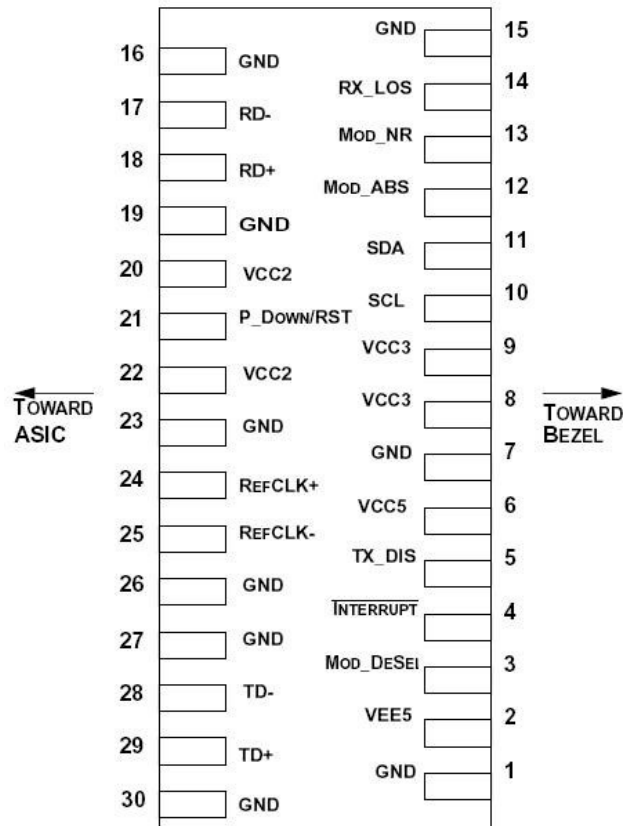
1. Output power is coupled into a 9/125 μ m SMF.
2. Average received power; BER less than 1E-12 and PRBS 231-1 test pattern.

Pin Descriptions

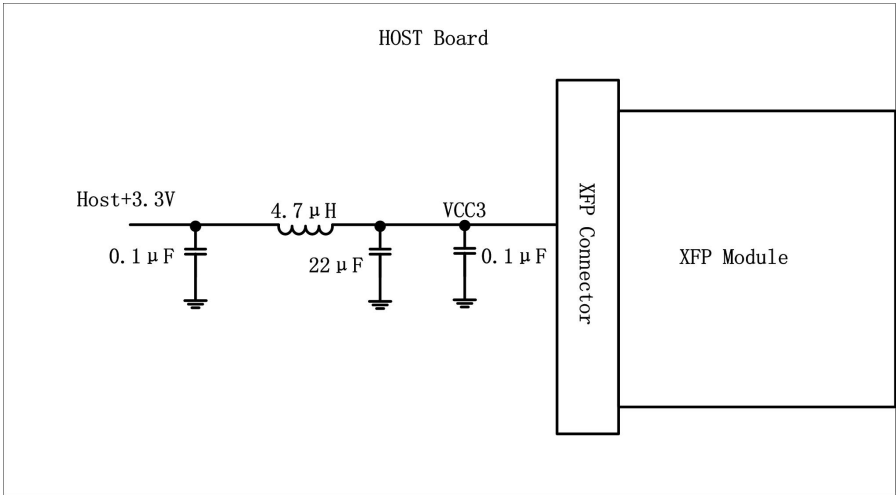
Pin	Symbol	Function	Notes
1	GND	Module Ground	1
2	V _{EE5}	Optional -5.2 Power Supply - Not Required	
3	Mod_Desel	Module De-select; When held low allows module to respond to 2-wire serial interface commands	
4	Interrupt	Interrupt; Indicates presence of an important condition which can be read over the 2-wire serial interface.	2
5	TX_DIS	Transmitter Disable; Transmitter laser source turned off	
6	VCC5	+5V Power Supply – Not required	
7	GND	Module Ground	1
8	VCC3	+3.3V Power Supply	
9	VCC3	+3.3V Power Supply	
10	SCL	Serial 2-wire Interface clock.	2
11	SDA	Serial 2-wire Interface Data Line	2
12	Mod_Abs	Module Absent: Indicated module is not present. Grounded in the module.	2
13	Mod_NR	Module Not Ready	2
14	RX_LOS	Receiver Loss of Signal Indicator	2
15	GND	Module Ground	1
16	GND	Module Ground	1
17	RD-	Receiver Inverted Data Output	
18	RD+	Receiver Non-Inverted Data Output	
19	GND	Module Ground	1
20	VCC2	+1.8V Power Supply (Not required).	
21	P_DOWN/RST	Power down; When high, places the module in the low power stand-by mode and on the falling edge of P_Down initiates a module reset Reset; The falling edge initiates a complete reset of the module including the 2-wire serial interface, equivalent to a power cycle.	
22	VCC2	+1.8V Power Supply (Not required)	
23	GND	Module Ground	1
24	REFCLK+	Reference Clock Non-Inverted Input, AC coupled on the host board - Not Required	3
25	REFCLK-	Reference Clock Inverted Input, AC coupled on the host board – Not Required	3
26	GND	Module Ground	1
27	GND	Module Ground	1
28	TD-	Transmitter Inverted Data Input	
29	TD+	Transmitter Non-Inverted Data Input	
30	GND	Module Ground	1

Notes:

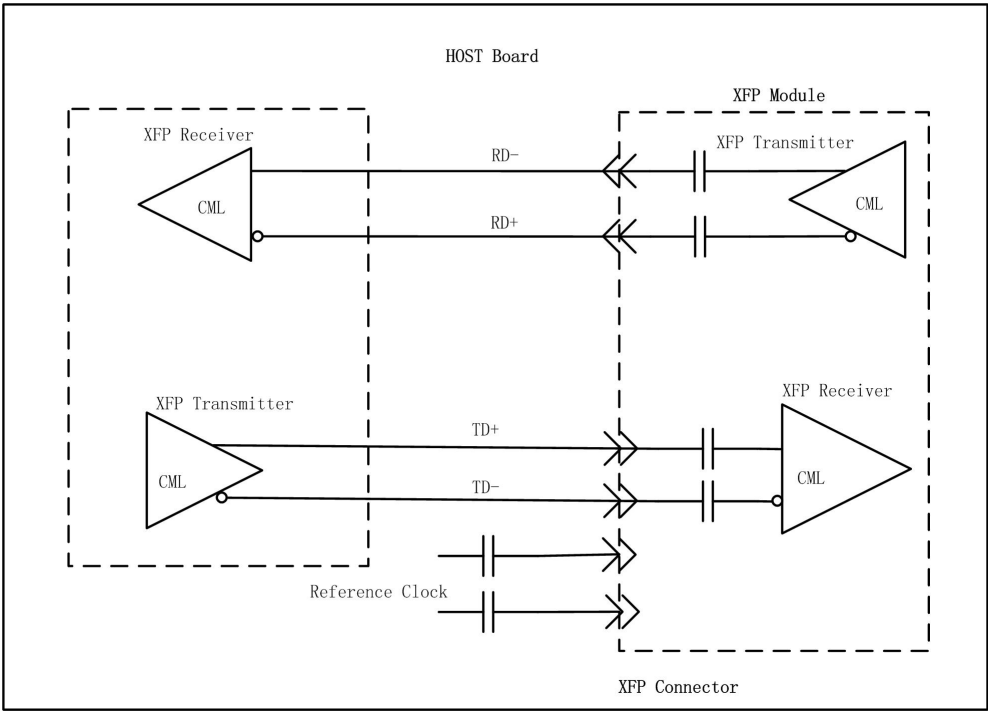
1. Module circuit ground is isolated from module chassis ground within the module.
2. Open collector; should be pulled up with 4.7k-10k ohms on host board to a voltage between 3.15V and 3.6V.
3. Reference Clock input is not required.

Electrical Pin-out Details

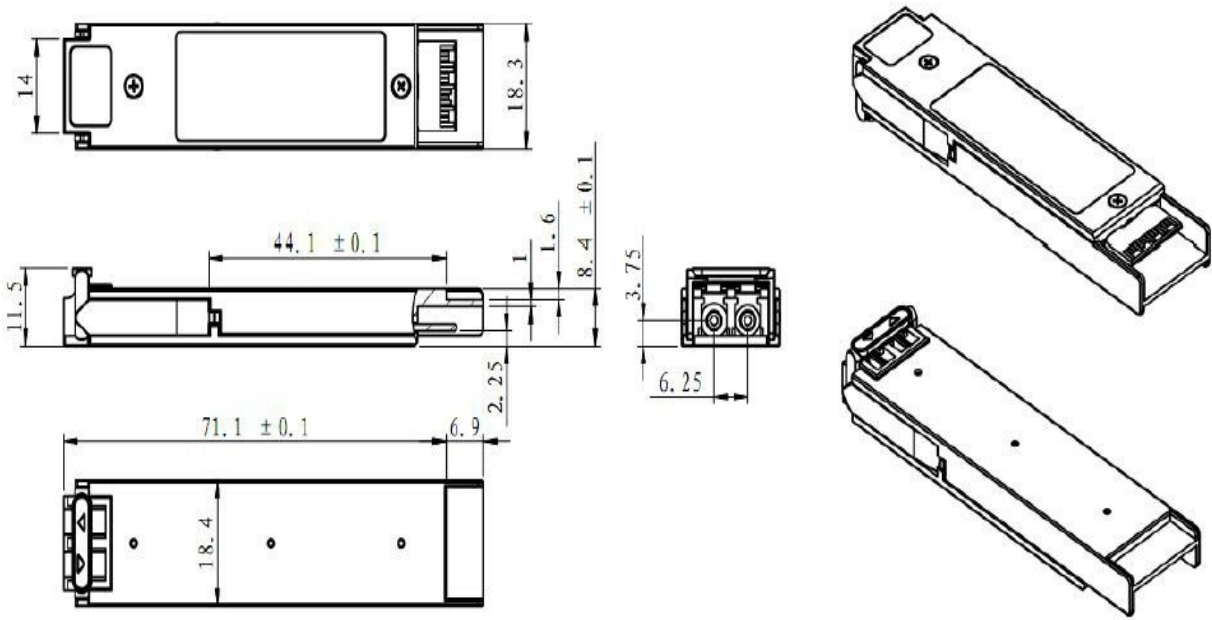
Recommended Host Board Power Supply Circuit



Recommend High-speed Interface Circuit



Mechanical Specifications



About Skylane Optics

Skylane is a leading provider of transceivers for optical communication.

We offer an extensive portfolio for the enterprise, access, datacenter and metropolitan fiber optical market as well as for smart home applications and home networks.

We cover the European, South American and North American market with a strong partner network and have offices in Belgium, Brazil, Sweden and USA.

Our offerings are characterized by high quality and performance. In combination with our strong technical support, we enable our customers to build cost optimized network solutions.

We offer an extensive range of high-quality products including transceivers (Optical and copper), Active Optical Cable (AOC), Direct Attach Cable (DAC), Mux/Demux, Coding Box.

