

XFP-10G-BX-U-20KM-CX-AO

Calix® Compatible TAA 10GBase-BX XFP Transceiver (SMF, 1270nmTx/1330nmRx, 20km, LC, DOM)

Features

- INF-8077i Compliance
- Uncooled DFB transmitter and PIN receiver
- Simplex 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

- 8x/10x Fibre Channel
- 10GBase-BX Ethernet
- Access, Metro and Enterprise

Product Description

This Calix® XFP transceiver provides 10GBase-BX throughput up to 20km over single-mode fiber (SMF) using a wavelength of 1270nmTx/1330nmRx via an LC connector. It is guaranteed to be 100% compatible with the equivalent Calix® transceiver. This easy to install, hot swappable transceiver has been programmed, uniquely serialized and data-traffic and application tested to ensure that it will initialize and perform identically. Digital optical monitoring (DOM) support is also present to allow access to real-time operating parameters. This transceiver is Trade Agreements Act (TAA) compliant. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

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

TAA refers to the Trade Agreements Act (19 U.S.C. & 2501-2581), which is intended to foster fair and open international trade. TAA requires that the U.S. Government may acquire only "U.S. – made or designated country end products."



Regulatory Compliance

- ESD to the Electrical PINs: compatible with MIL-STD-883E Method 3015.4
- ESD to the LC Receptacle: compatible with IEC 61000-4-2
- EMI/EMC compatible with FCC Part 15 Subpart B Rules, EN55022:2010
- Laser Eye Safety compatible with FDA21CFR, EN60950-1&EN (IEC) 60825-1,2
- RoHS compliant with EU RoHS Directive 2011/65/EU

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ	Max.	Unit
Maximum Supply Voltage	Vcc	-0.5		4.0	V
Storage Temperature	TS	-40		85	°C
Operating Humidity	RH	0		85	%
Operating Temperature	Tc	0		70	°C
Data Rate (Gigabit Ethernet)		9.95	10	10.5	Gbps
9/125µm G.652 SMF	Lmax			20	km

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Power Supply Voltage	Vcc	3.13	3.30	3.47	V	Vcc
Power Supply Current	Icc			350	mA	Icc
Transmitter						
Differential data input swing	Vin, pp	120	600	850	mV	
Input differential impedance	Zin	90	100	110	Ω	
TX Disable-High		2.0		Vcc+0.3	V	
TX Disable-Low		Vee-0.3		0.8	V	
TX Fault-High		2.0		Vcc+0.3	V	
TX Fault-Low		Vee-0.3		0.8	V	
Receiver						
Differential data output swing	Vout, pp	300	600	850	mV	
Output Differential Impedance	Zin	90	100	110	Ω	
LOS-High		2.0		Vcc+0.3	V	
LOS-Low		Vee-0.3		0.8	V	

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Output Opt. Power	PO	1		6	dBm	1
Optical Wavelength	λ	1260	1270	1280	nm	
Spectral Width (-20dB)	σ			1	nm	
Extinction Ratio	ER	4			dB	
Average Power of OFF Transmitter				-40	dBm	
Eye Diagram		Compatible with IEEE 802.3-2005				
Receiver						
Center Wavelength	λC	1320	1330	1340	nm	
Receiver Sensitivity	PIN			-13	dBm	
Receiver Overload	Pmax	0.5			dBm	
LOS Hysteresis		0.5		5	dB	
LOS Assert	LOSA	-30			dBm	
LOS De-Assert	LOSD			-15	dBm	

Note:

1. BER $\leq 10^{-12}$ @PRBS231 -1 at 10.3125Gb/s

Digital Diagnostic Functions

The digital diagnostic monitoring interface also defines another 256-byte memory map in EEPROM, which makes use of the 8 bit address 1010000X (A0h). The monitoring specification of the product is described in this table.

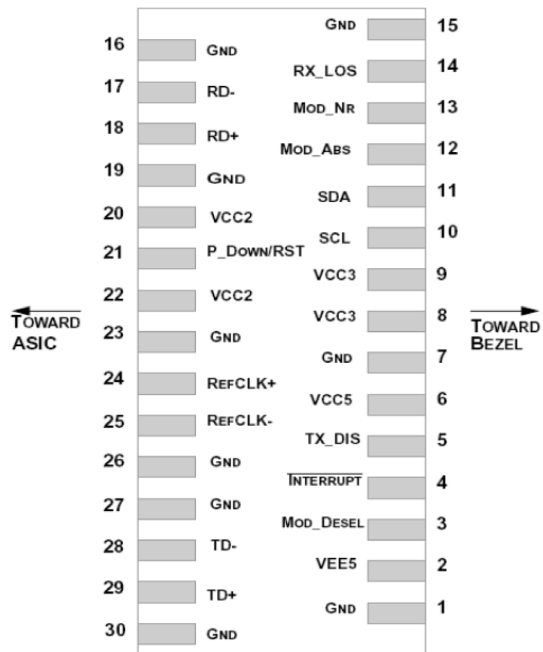
Parameter	Range	Accuracy	Calibration
Temperature	-5 to +85°C	$\pm 3^\circ\text{C}$	Internal
Voltage	2.97 to 3.63V	$\pm 3\%$	Internal
Bias Current	0 to 100mA	$\pm 10\%$	Internal
TX Power	1 to 6dBm	$\pm 2\text{dB}$	Internal
RX Power	-13 to 0.5dBm	$\pm 3\text{dB}$	internal

Pin Descriptions

Pin	Symbol	Name/Descriptions	Ref.
1	GND	Module Ground	
2	Vee5	(not required)	
3	MOD_DESEL	Module De-select; When Held low allows the module to respond to 2-wire serial interface. LVTTTL-I	
4	/INTERRUPT	Interrupt; Indicates presence of an important condition which can be read via the 2-wire serial interface. LVTTTL-O	2
5	TX_DIS	Transmitter Disable. Logic1 indicates laser output disabled, LVTTTL-I	
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	2-Wire Serial Interface Clock. LVTTTL-I	2
11	SDA	2-Wire Serial Interface Data Line. LVTTTL-I/O	2
12	MOD_Abs	Indicates Module is not present. Grounded in the Module. LVTTTL-O	2
13	MOD_NR	Module Not Ready; Indicating Module Operational Fault. Open-collector. LVTTTL-O	2
14	RX_LOS	Loss of Signal indication. Logic 1 indicates loss of Signal. Open-collector. LVTTTL-O	2
15	GND	Module Ground	1
16	GND	Module Ground	1
17	RD-	Receiver Inverted Data Output. CML-O	
18	RD+	Receiver Non-Inverted Data Output. CML-O	
19	GND	Module Ground	1
20	VCC2	+1.8V Power Supply (Not required).	3
21	P_DOWN/RST	Power down; When high, requires the module to limit power consumption to 1.5W or below. 2-Wire serial interface must be functional in the low power mode. LVTTTL-I Reset; The falling edge initiates a complete reset of the module including the 2-wire serial interface, equivalent to a power cycle. LVTTTL-I	
22	VCC2	+1.8V Power Supply (Not required)	3
23	GND	Module Ground	1
24	REFCLK+	Reference Clock (Not required)	
25	REFCLK-	Reference Clock (Not required)	
26	GND	Module Ground	1
27	GND	Module Ground	1
28	TD-	Transmitter Inverted Data Input. CML-I	
29	TD+	Transmitter Non-Inverted Data Input. CML-I	
30	GND	Module Ground	1

Notes:

1. Module ground pins GND are isolated from the module case and chassis ground within the module.
2. Open collector; should be pulled up with 4.7K-10Kohms to a voltage between 3.15V and 3.6V on the host board.
3. The pins are open within module.

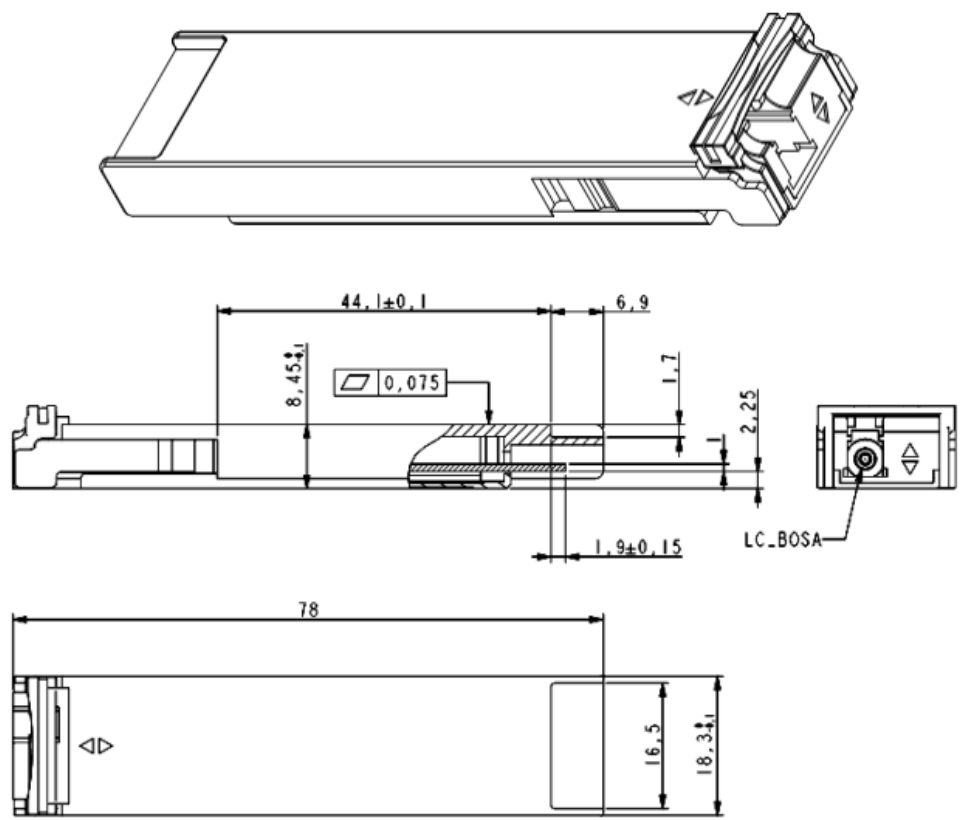


Pin-out of connector Block on Host board

Recommend Circuit Schematic



Mechanical Specifications



About AddOn Networks

In 1999, AddOn Networks entered the market with a single product. Our founders fulfilled a severe shortage for compatible, cost-effective optical transceivers that compete at the same performance levels as leading OEM manufacturers. Adhering to the idea of redefining service and product quality not previously had in the fiber optic networking industry, AddOn invested resources in solution design, production, fulfillment, and global support.

Combining one of the most extensive and stringent testing processes in the industry, an exceptional free tech support center, and a consistent roll-out of innovative technologies, AddOn has continually set industry standards of quality and reliability throughout its history.

Reliability is the cornerstone of any optical fiber network and is ingrained in AddOn's DNA. It has played a key role in nurturing the long-term relationships developed over the years with customers. AddOn remains committed to exceeding industry standards with certifications from ranging from NEBS Level 3 to ISO 9001:2005 with every new development while maintaining the signature reliability of its products.



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