X2-10GB-ZR-C

Cisco® X2-10GB-ZR Compatible TAA 10GBase-ZR X2 Transceiver (SMF, 1550nm, 80km, SC, DOM)

Features:

- X2 MSA 2.0 Compliance
- Duplex SC Connector
- Single-mode Fiber
- Commercial Temperature 0 to 70 Celsius
- Hot Pluggable
- Metal with Lower EMI
- Excellent ESD Protection
- RoHS Compliant and Lead Free

Applications:

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

Product Description

This Cisco® X2-10GB-ZR compatible X2 transceiver provides 10GBase-ZR throughput up to 80km over single-mode fiber (SMF) using a wavelength of 1550nm via an SC connector. It can operate at temperatures between 0 and 70C. Our transceiver is built to meet or exceed OEM specifications and is guaranteed to be 100% compatible with Cisco®. 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. Additional product features include Digital Optical Monitoring (DOM) support which allows 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.

ProLabs' 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.")

TAA COMPLIANT

Rev. 100225

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit
Supply Voltage +5V	Vcc5			6.0	V
Supply Voltage +3.3V	Vcc3			4	V
Supply Voltage APS	Vaps			2	V
Storage Temperature	Tstg	-20		85	℃
Optical Input Received Power	APD			-7	dBm

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Operating Case Temperature	Tc			70	℃	
Supply Voltage +5V	Vcc5	4.75	5	5.25	V	
Supply Current +5V	Icc5			500	mA	
Supply Voltage +3.3V	Vcc3	3.14	3.3	3.47	V	
Supply Current +3.3V	Icc3			1000	mA	
Supply Voltage APS	Vaps	1.14	1.2	1.26	V	
Supply Current APS	Iaps			1100	mA	
Module Power Dissipation	PD			4	W	
Transmitter						
Data Rate (TXLINE0-3)	TX-xaui		3125		Mbps	
Differential Impedance	ZOUT	80	100	120	Ω	
Differential Input Amplitude	VIN,pp	160		2000	mVp-p	
Input Rise/Fall	Tr/Tf	60		130	ps	
Differential Impedance of ZIN	ZIN		100		Ω	
Receiver						
Data Rate (TXLINE0-3)	RX-xaui		3125		Mbps	
Supply Voltage	VccRx	3.13	3.3	3.47	V	
Differential Output Amplitude	VOUT,pp	800		1600	mV	
Rise/Fall Time	Tr/Tf	50		90	ps	
Differential Impedance of ZOUT	ZOUT		100		Ω	
Signal						
1.2V CMOS						
Input High Voltage	VIL (MAX)			0.36	V	
Input Low Voltage	VIH (MIN)	0.84		1.25	V	

Capacitance				320	pF	
Pull-Up Resistance	Rpull	10k		22k	Ω	
MDIO I/O						
Output Low Voltage	VOL	-0.3		0.2	V	
Output Low Current	IOL			4	mA	
Input High Voltage	VIH	0.84		1.5	V	
Input Low Voltage	VIL	-0.3		0.36	V	
Pull-Up Supply Voltage	VPULL	1.14	1.2	1.26		
Input Capacitance	CIN			10	Pf	
Load Capacitance	CLOD			470	Pf	
External Pull-Up Resistance	EPULL	200			Ω	

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Center Wavelength	λC	1530		1565	pm	
Optical Transmit Power	Po			4	dBm	
Optical Transmit Power (Disabled)	Ptx-dis			-40	dBm	
Extinction Ratio	ER	9			dB	
Side-Mode Suppression Ratio	SMSR	30			dB	
Eye Mask	IEEE 802.3ae Compliant					
Receiver						
Received Power	Rpo	-24.0		-7	dBm	
Maximum Input Power	RX-overload	-7			dBm	
Input Operating Wavelength	λ	1260		1565	nm	
Dispersion Tolerance	DT			1600	ps/nm	

Pin Descriptions

Pin	Symbol	I/O	Name/Description	Notes
1	GND		Electrical Ground.	1
2	GND		Electrical Ground.	1
3	GND		Electrical Ground.	1
4	5.0V		Power.	2
5	3.3V		Power.	2
6	3.3V		Power.	2
7	APS=1.2V		Adaptive Power Supply.	2
8	APS=1.2V		Adaptive Power Supply.	2
9	LASI		Open drain compatible. 10k-22kΩ pull-up on the host. Logic high: normal operation. Logic low: LASI asserted.	4
10	RESET	I	Open drain compatible. 10k-22kΩ pull-up on the transceiver. Logic high: normal operation. Logic low: reset. Minimum reset assert time 1ms.	4
11	VENDOR-SPECIFIC		Vendor-Specific Pin. Leave unconnected when not in use.	8
12	TX ON/OFF	I	Open drain compatible. 10k-22kΩ pull-up on the transceiver. Logic high: transmitter on (capable). Logic low: transmitter off (always).	4
13	RESERVED		Reserved.	4
14	MOD_DETECT	O	Pulled low inside the module through 1k.	
15	VENDOR-SPECIFIC		Vendor-Specific Pin. Leave unconnected when not in use.	8
16	VENDOR-SPECIFIC		Vendor-Specific Pin. Leave unconnected when not in use.	8
17	MDIO	I/O	Management Data IO.	4, 5
18	MDC	I	Management Data Clock.	4, 5
19	PRTAD4	I	Port Address Bit 4 (Low = 0).	4
20	PRTAD3	I	Port Address Bit 3 (Low = 0).	4
21	PRTAD2	I	Port Address Bit 2 (Low = 0).	4
22	PRTAD1	I	Port Address Bit 1 (Low = 0).	4
23	PRTAD0	I	Port Address Bit 0 (Low = 0).	4
24	VENDOR-SPECIFIC		Vendor-Specific Pin. Leave unconnected when not in use.	8
25	APS SET		Feedback Input for APS.	
26	RESERVED		Reserved for Avalanche Photodiode Use.	8
27	APS SENSE		APS Sense Connection.	
28	APS=1.2V		Adaptive Power Supply.	2

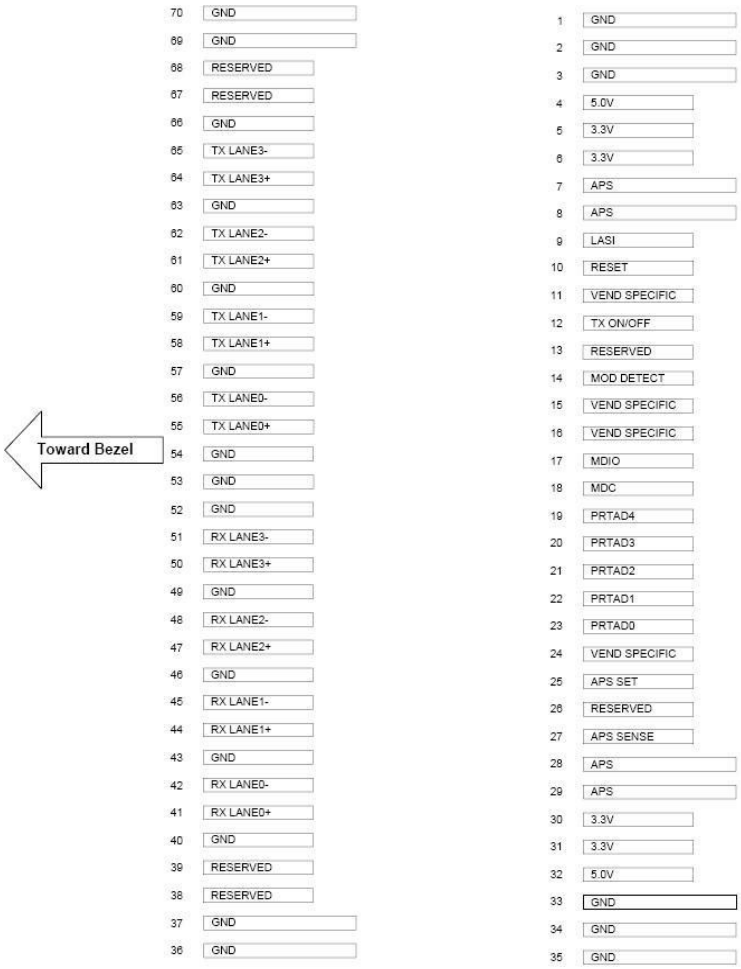
29	APS=1.2V		Adaptive Power Supply.	2
30	3.3V		Power.	2
31	3.3V		Power.	2
32	5.0V		Power.	2
33	GND		Electrical Ground.	1
34	GND		Electrical Ground.	1
35	GND		Electrical Ground.	1
36	GND		Electrical Ground.	1
37	GND		Electrical Ground.	1
38	RESERVED		Reserved.	
39	RESERVED		Reserved.	
40	GND		Electrical Ground.	1
41	RX LANE0+	O	Module XAUI Output Lane 0+.	7
42	RX LANE0-	O	Module XAUI Output Lane 0-.	7
43	GND		Electrical Ground.	1
44	RX LANE1+	O	Module XAUI Output Lane 1+.	7
45	RX LANE1-	O	Module XAUI Output Lane 1-.	7
46	GND		Electrical Ground.	1
47	RX LANE2+	O	Module XAUI Output Lane 2+.	7
48	RX LANE2-	O	Module XAUI Output Lane 2-.	7
49	GND		Electrical Ground.	1
50	RX LANE3+	O	Module XAUI Output Lane 3+.	7
51	RX LANE3-	O	Module XAUI Output Lane 3-.	7
52	GND		Electrical Ground.	1
53	GND		Electrical Ground.	1
54	GND		Electrical Ground.	1
55	TX LANE0+	I	Module XAUI Input Lane 0+.	7
56	TX LANE0-	I	Module XAUI Input Lane 0-.	7
57	GND		Electrical Ground.	1
58	TX LANE1+	I	Module XAUI Input Lane 1+.	7
59	TX LANE1-	I	Module XAUI Input Lane 1-.	7
60	GND		Electrical Ground.	1
61	TX LANE2+	I	Module XAUI Input Lane 2+.	7
62	TX LANE2-	I	Module XAUI Input Lane 2-.	7
63	GND		Electrical Ground.	1
64	TX LANE3+	I	Module XAUI Input Lane 3+.	7

65	TX LANE3-	I	Module XAUI Input Lane 3-.	7
66	GND		Electrical Ground.	1
67	RESERVED		Reserved.	
68	RESERVED		Reserved.	
69	GND		Electrical Ground.	1
70	GND		Electrical Ground.	1

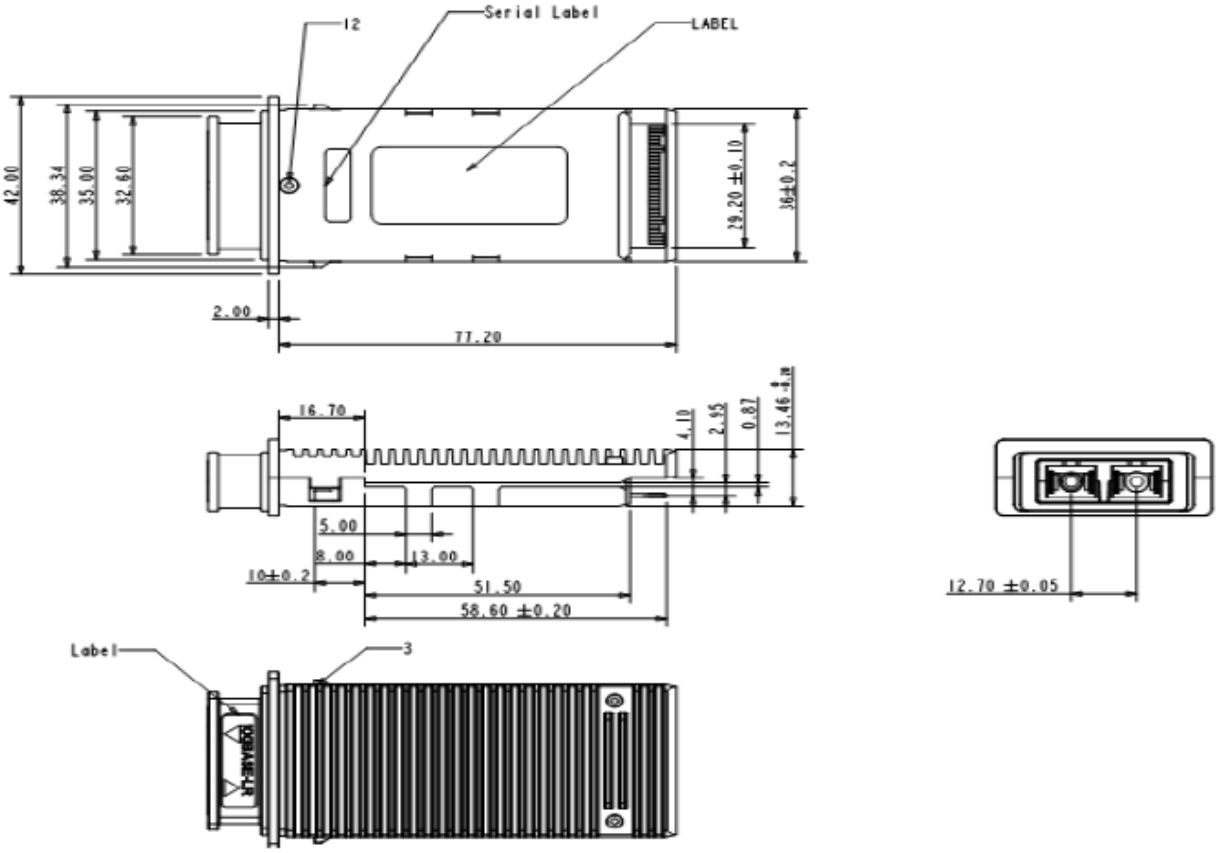
Notes:

1. Ground connections are common for Tx and Rx.
2. All connector contacts are rated at 0.5A nominal.
3. 1.2V CMOS compatible.
4. MDIO and MDC timing must comply with IEEE802.3ae Clause 45.3.
5. XAUI output characteristics should comply with IEEE802.3ae Clause 47.
6. Transceivers will be MSA compliant when no signals are present on the vendor-specific pins.

Electrical Pad Layout



Mechanical Specifications



Dimensions in mm

About ProLabs

Our experience comes as standard; for over 15 years ProLabs has delivered optical connectivity solutions that give our customers freedom and choice through our ability to provide seamless interoperability. At the heart of our company is the ability to provide state-of-the-art optical transport and connectivity solutions that are compatible with over 90 optical switching and transport platforms.

Complete Portfolio of Network Solutions

ProLabs is focused on innovations in optical transport and connectivity. The combination of our knowledge of optics and networking equipment enables ProLabs to be your single source for optical transport and connectivity solutions from 100Mb to 400G while providing innovative solutions that increase network efficiency. We provide the optical connectivity expertise that is compatible with and enhances your switching and transport equipment.

Trusted Partner

Customer service is our number one value. ProLabs has invested in people, labs and manufacturing capacity to ensure that you get immediate answers to your questions and compatible product when needed. With Engineering and Manufacturing offices in the U.K. and U.S. augmented by field offices throughout the U.S., U.K. and Asia, ProLabs is able to be our customers best advocate 24 hours a day.

Contact Information

ProLabs US

Email: sales@prolabs.com
Telephone: 952-852-0252

ProLabs UK

Email: salessupport@prolabs.com
Telephone: +44 1285 719 600