

100-04482-C

Calix® 100-04482 Compatible TAA 10GBs XGS-PON OLT XFP Transceiver with Burst Mode (SMF, 1577nmTx/1270nmRx, SC, N1, DOM)

Features:

- Single fiber bi-directional data links TX 9.953Gbps, Burst Mode RX 9.953G/2.488Gbps application
- Complies with INF-8077i
- Complies with ITU G.987.2, ITU G.9807.1
- 3.3V power supply
- XFP package with SC Receptacle connector
- Hot Pluggable
- High power 1577nm EML LD & High sensitivity 1270nm APD
- Single-mode Fiber
- SD indication
- Low EMI and excellent ESD protection
- Digital diagnostic monitor interface
- Operating Temperature: 0C to 70C



Applications:

- XGS PON OLT
- Access and Enterprise

Product Description

This Calix® 100-04482 compatible XFP transceiver provides XGS-N1 throughput up to 20km over single-mode fiber (SMF) using a wavelength of 1577nmTx/1270nmRx via a SC 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.

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."



Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit
Maximum Supply Voltage	VCC3	0	3.6	V
Storage Ambient Temperature	Tstg	-40	+85	°C
Operating Case Temperature	Tc	0	70	°C
Relative Humidity Storage	RH _s	5	90	%
Relative Humidity Operating	RH _o	5	85	%

Note:

Exceeding the Absolute Maximum Ratings may cause irreversible damage to the device. The device is not intended to be operated under the condition of simultaneous Absolute Maximum Ratings, a condition which may cause irreversible damage to the device.

Absolute Maximum Ratings: Control Function Logic Levels

Parameter	Symbol	Min.	Max.	Unit	Notes
Tx_DISABLE	Tx_DIS	0	V _{CC3} +0.5	V	LVTTTL
Transmitter FAULT	Tx_FAULT	0	V _{CC3} +0.5	V	LVTTTL
Burst Mode Signal Detect	Rx_SD	0	V _{CC3} +0.5	V	LVTTTL
Receive Reset	Rx_Reset	0	V _{CC3} +0.5	V	LVTTTL
Receive Data Rate Select	Rate_Select	0	V _{CC3} +0.5	V	LVTTTL
Digital RSSI Trigger Input	TRI	0	V _{CC3} +0.5	V	LVTTTL
I ² C Serial Data	SDA	0	V _{CC3} +0.5	V	LVTTTL
I ² C Serial Clock	SCL	0	V _{CC3} +0.5	V	LVTTTL
I2C Clock frequency	tSCL		400	Khz	
Data hold time	tHD:DAT	120		ns	

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Power Supply Voltage	V _{CC3}	3.135	3.30	3.465	V	
Power Supply Current	I _{CC3}		500	750	mA	
Transmitter						
Tx Differential Input Amplitude	V _{IN}	120		820	mV	
Tx Differential Input Impedence	Z _{IN}	90	100	110	Ω	
Tx_DIS = HIGH (Transmitter OFF / DISABLED)	V _{IH}	0.7*V _{CC3}		V _{CC3}	V	1
Tx_DIS = LOW (Transmitter ON / ENABLED)	V _{IL}	0		0.8	V	1
TX_Fault=HIGH (Fault)	V _{OH}	2.4		V _{CC3}	V	2
TX_Fault=Low (Normal)	V _{OL}	0		0.4	V	2
Receiver						
Rx Differential Output Impedence	Z _{OUT}	90	100	110	Ω	
Rx_Data Differential Output Voltage Amplitude	V _{OUT}	300		800	mV	LVCML
Rx_SD=HIGH	V _{OH}	2.4		V _{CC3}	V	2
Rx_SD=LOW	V _{OL}	0		0.4	V	2
Rx_Reset=HIGH	V _{IH}	2.0		V _{CC3}	V	1
Rx_Reset=LOW	V _{IL}	0		0.8	V	1
Rate_Select=HIGH	V _{IH}	2.0		V _{CC3}	V	1
Rate_Select=LOW	V _{IL}	0		0.8	V	1
TRI=HIGH	V _{IH}	0.7*V _{CC3}		V _{CC3}	V	1
TRI=LOW	V _{IL}	0		0.8	V	1

Notes:

1. LVTTL (Control INPUT)
2. LVTTL (Monitor OUTPUT)

I²C Serial Logic

Parameter	Symbol	State	Logic	Min.	Max.	Unit
I ² C Serial Data	SDA	HIGH	LVTTL	0.7*V _{CC3}	V _{CC3}	V
	SDA	LOW	LVTTL	0	0.8	V
I ² C Serial Clock	SCL	HIGH	LVTTL	0.7*V _{CC3}	V _{CC3}	V
	SCL	LOW	LVTTL	0	0.8	V

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Transmitter Type		CW Mode EML				
Coupling Mode		AC				
Transmitter Signal Rate	S _{down}	9.953			Gb/s	
Average Launch Power	P _{OUT}	2		5	dBm	N1
Tolerance to the Transmitter Incident Light Power	T _t	-15			dB	
Optical Center Wavelength	λ	1575	1577	1580	nm	
Spectral Width	$\Delta\lambda$			1	nm	
Side Mode Suppression Mode	SMSR	30			dB	
Extinction Ratio	ER	8.2			dB	
Receiver						
Receiver Type		Burst Mode APD/TIA				
Optical Center Wavelength	λ	1260	1270	1280	nm	
Damage Optical Power	P _d	-3			dBm	
Receiver Sensitivity	P _{IN}			-26	dBm	@9.953Gbps, N1
	P _{IN}			-27.5	dBm	@2.488Gbps, N1
Receiver Optical Overload	P _{IN} (MAX)	-5			dBm	@9.953Gbps, N1
	P _{IN} (MAX)	-7			dBm	@2.488Gbps, N1
Reflectance of Rx	ORL			-20	dB	@1260~1360nm
Dynamic Range	DR	15			dB	
Immunity from Continuous Identical Digits	CID	72			Bits	

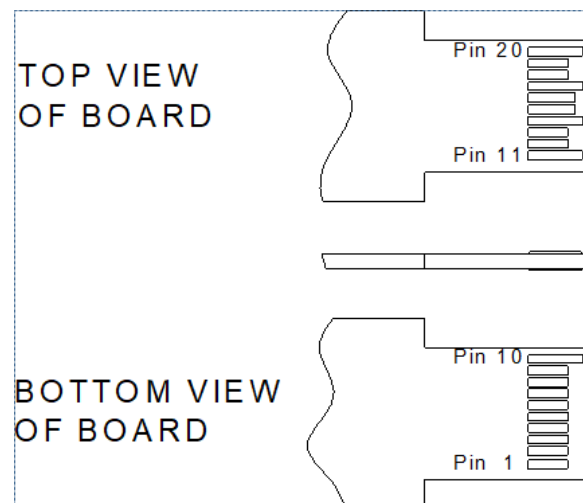
Notes:

Sensitivity and Overload Test Condition:

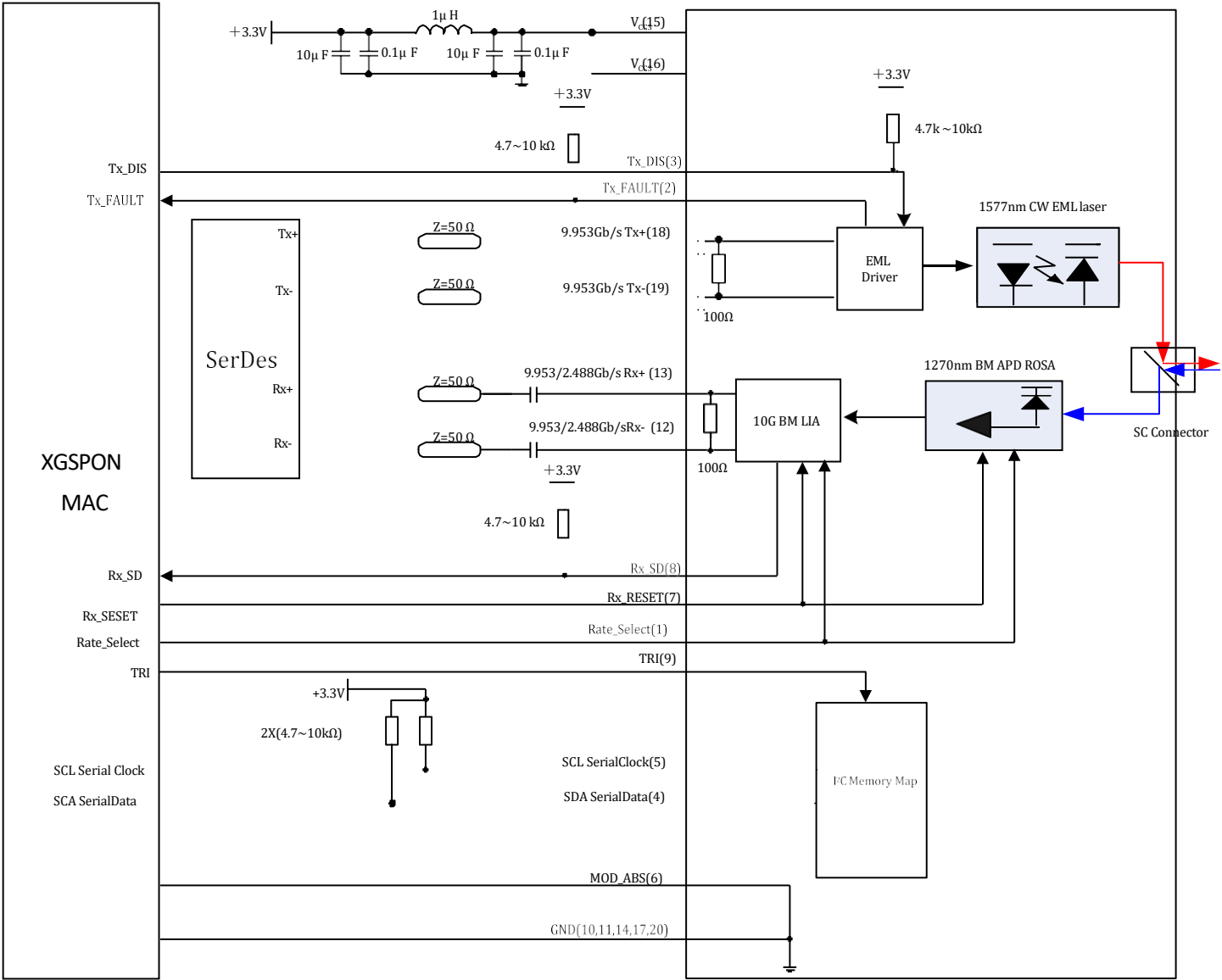
- 1.9.953Gbps: BER@10⁻³ PRBS 2³¹-1 ER=6.0dB;
- 2.2.488Gbps: BER@10⁻⁴ PRBS 2²³-1 ER=8.2dB ;

Pin Descriptions

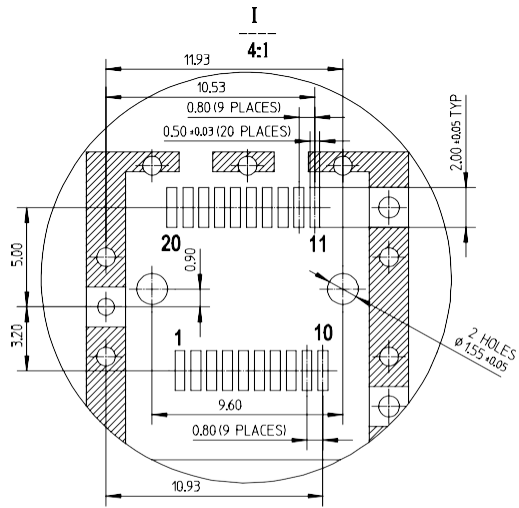
Pin	Symbol	Name/Descriptions	Ref.
1	Rate_Select	Rate selection, Dedicated upstream speed indication. High=10G; LOW=2.5G	
2	Tx_FAULT	Transmitter Fault, LOW = Normal Operation, HIGH = Fault Indication	
3	Tx_DIS	Transmit Disable, LOW = Normal Operation, HIGH = Disables Module	
4	SDA	2-Wire Serial Interface - Serial Data	
5	SCL	2-Wire Serial Interface - Clock Signal	
6	MOD_ABS	Module absent indicate pin. Grounded inside the module.	
7	Rx_RESET	RX Reset Pulse Input for TIA/LIA	
8	Rx_SD	Rx Signal Detect, Assert High when Burst Packet Coming	
9	RSSI_TRI	Receiver Signal Strength Indication trigger input	
10	GND	Module Ground.	
11	GND	Module Ground.	
12	RD-	Receiver Inverted 9.953Gb/s and 2.488Gb/s Data Output; DC coupled inside the module.	
13	RD+	Receiver Non-Inverted 9.953Gb/s and 2.488Gb/s Data Output; DC coupled inside the module.	
14	GND	Module Ground.	
15	VCC3	+3.3V DC Power Supply Input.	
16	VCC3	+3.3V DC Power Supply Input.	
17	GND	Module Ground.	
18	TD+	Transmitter Non-Inverted 9.953Gb/s Data Input.	
19	TD-	Transmitter Inverted 9.953Gb/s Data Input.	
20	GND	Module Ground.	



Electrical Interface

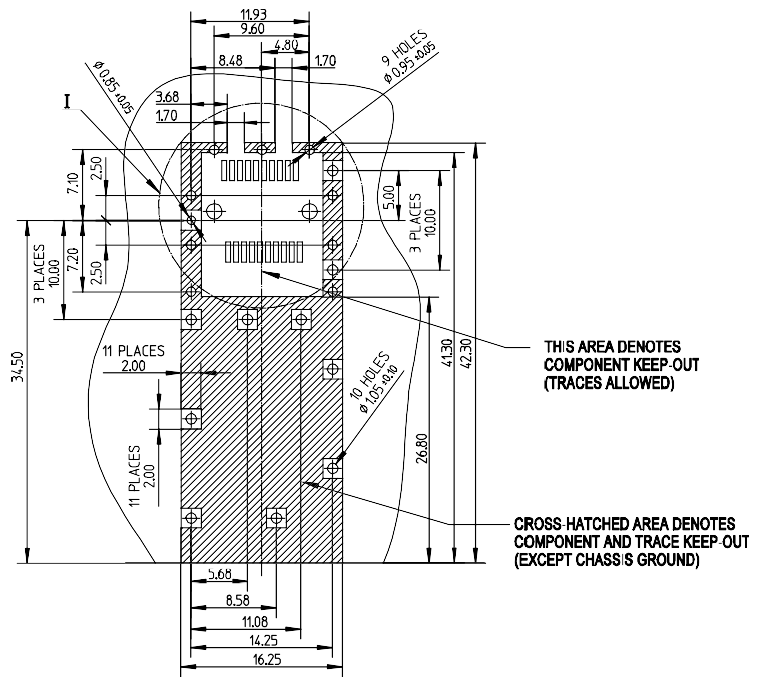


SFP+ Connector Dimensions

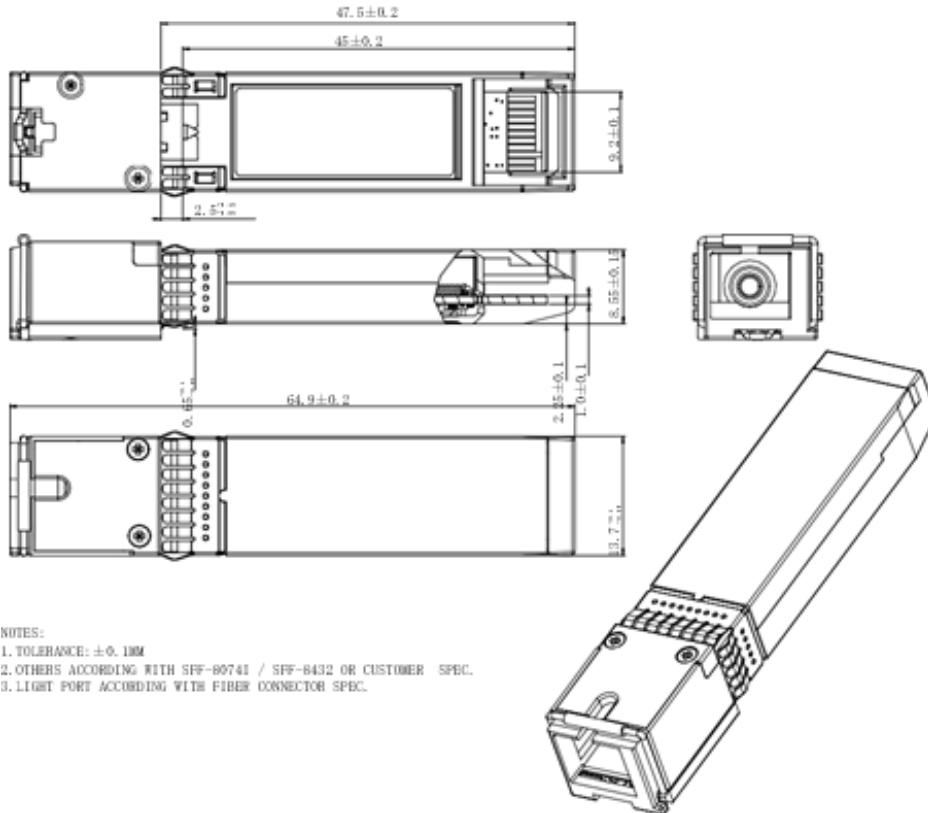


Notes:

1. Datum and basic dimensions established by customer
2. Pads and vias are chassis ground, 11 places
3. Thru holes, plating optional



Mechanical Specifications

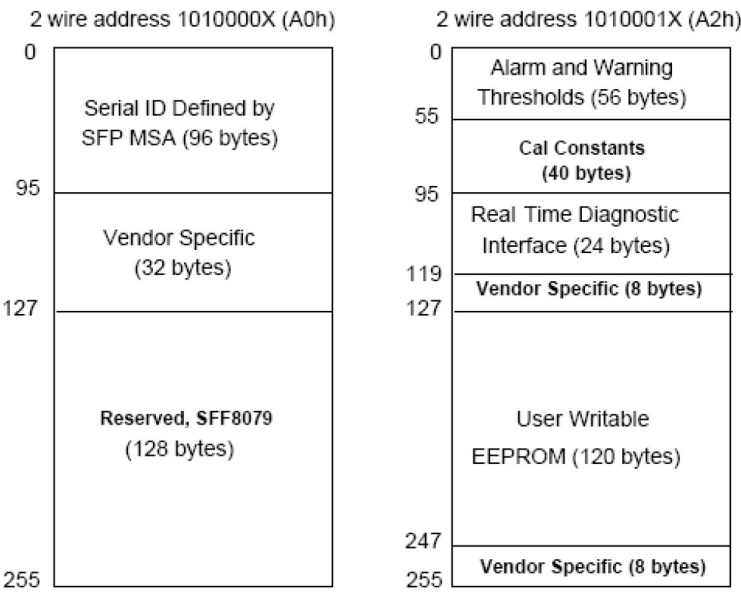


NOTES:

1. TOLERANCE: $\pm 0.1MM$
2. OTHERS ACCORDING WITH SFF-80741 / SFF-8432 OR CUSTOMER SPEC.
3. LIGHT PORT ACCORDING WITH FIBER CONNECTOR SPEC.

EEPROM Information

EEPROM memory map specific data field description is as below:



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.



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