100-04482-AO

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 ITU G.987.2, ITU G.9807.1
- Complies with INF-8077i
- XFP package with SC Receptacle connector
- Hot Pluggable
- 3.3V power supply
- Single-mode Fiber
- High power 1577nm EML LD & High sensitivity 1270nm APD
- Low EMI and excellent ESD protection
- SD indication
- Digital diagnostic monitor interface

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.

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."

Rev. 081722

Regulatory Compliance

- ESD to the Electrical PINs: compatible with MIL-STD-883E Method 3015.4
- ESD to the LC Receptacle: compatible with IEC 61000-4-3
- 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

Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit
Maximum Supply Voltage	VCC3	0	3.6	V
Storage Ambient Temperature	T_{stg}	-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	LVTTL
Transmitter FAULT	Tx_FAULT	0	V_{CC3}+0.5	V	LVTTL
Burst Mode Signal Detect	Rx_SD	0	V_{CC3}+0.5	V	LVTTL
Receive Reset	Rx_Reset	0	V_{CC3}+0.5	V	LVTTL
Receive Data Rate Select	Rate_Select	0	V_{CC3}+0.5	V	LVTTL
Digital RSSI Trigger Input	TRI	0	V_{CC3}+0.5	V	LVTTL
I^2C Serial Data	SDA	0	V_{CC3}+0.5	V	LVTTL
I^2C Serial Clock	SCL	0	V_{CC3}+0.5	V	LVTTL
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	Vcc3	3.135	3.30	3.465	V	
Power Supply Current	Icc3		500	750	mA	
Transmitter						
Tx Differential Input Amplitude	V_{IN}	120		820	mV	
Tx Differential Input Impendence	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 Impendence	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)

I^2C Serial Logic

Parameter	Symbol	State	Logic	Min.	Max.	Unit
I^2C Serial Data	SDA	HIGH	LVTTL	$0.7*V_{CC3}$	V_{CC3}	V
	SDA	LOW	LVTTL	0	0.8	V
I^2C 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	Sdown	9.953			Gb/s	
Average Launch Power	POUT	2		5	dBm	N1
Tolerance to the Transmitter Incident Light Power	Tt	-15			dB	
Optical Center Wavelength	λ	1575	1577	1580	nm	
Spectral Width	Δλ			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	

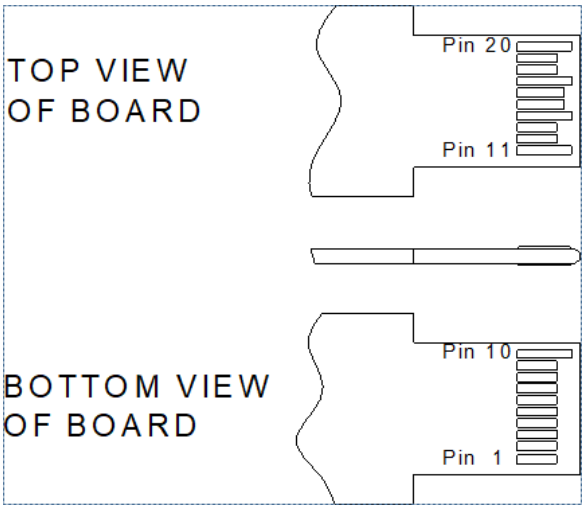
Notes:

Sensitivity and Overload Test Condition:

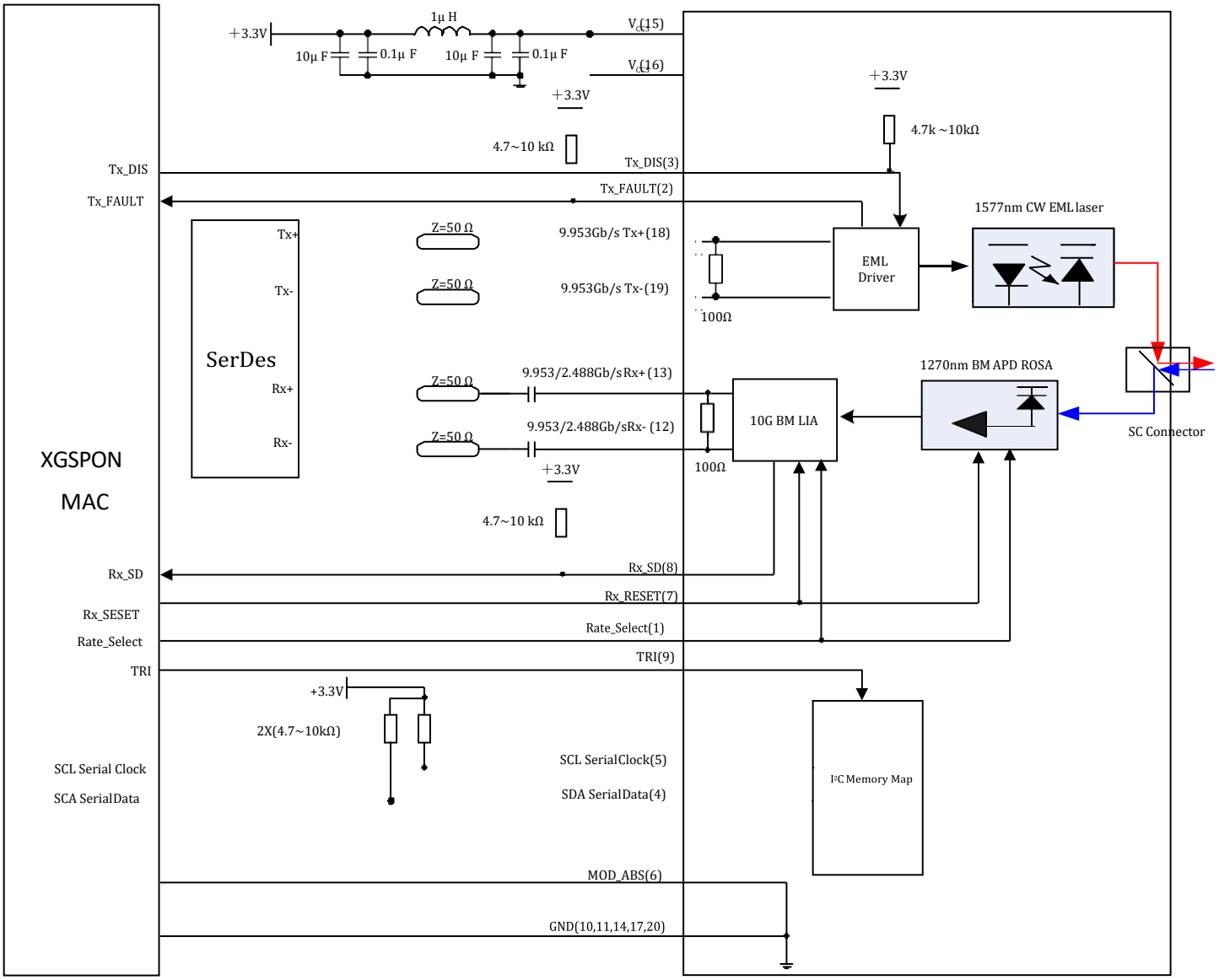
- 1.9.953Gbps: BER@10^{-3} PRBS 2^{31}-1 ER=6.0dB;
- 2.2.488Gbps: BER@10^{-4} PRBS 2^{23}-1 ER=8.2dB ;

Pin Descriptions

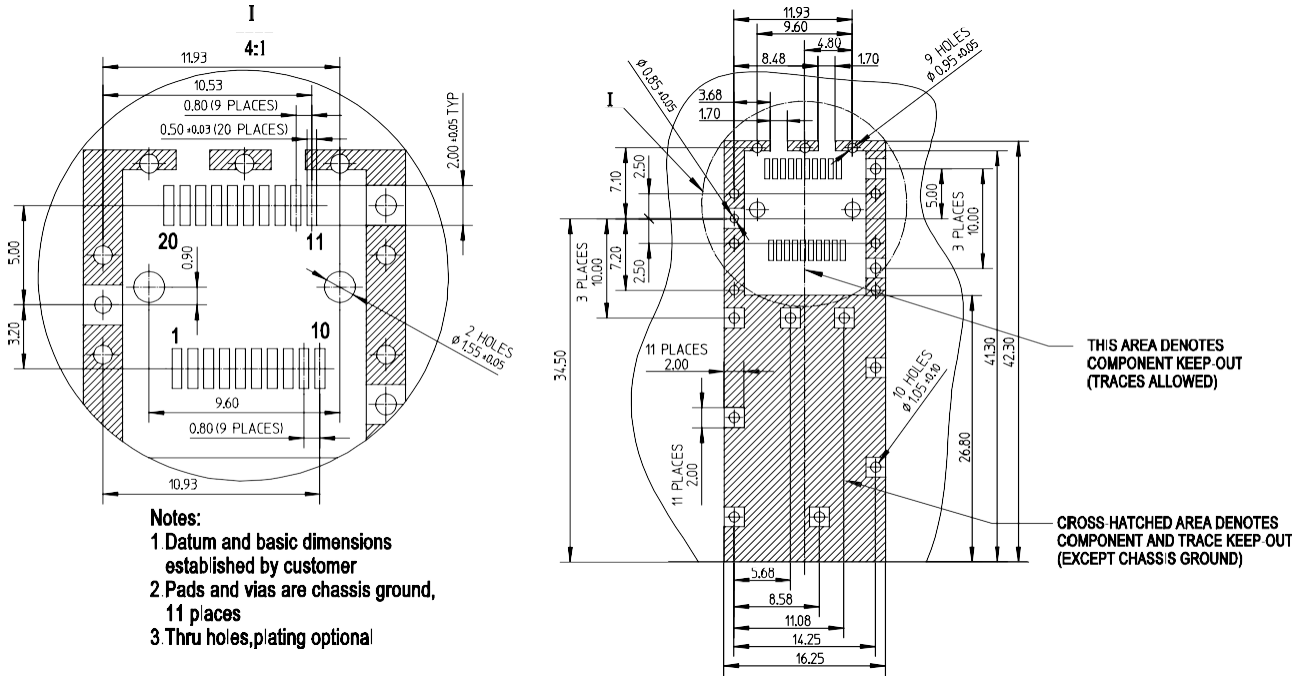
Pin	Symbol	Name/Descriptions	Ref.
1	Rate_Select	Rate selection, Dedicated upstream speed indication. High=10G; LOW=2.5G	
2	Tx_FAULT	Transmitter Fault, LOW = Normal Operation, HIGH = Fault Indication	
3	Tx_DIS	Transmit Disable, LOW = Normal Operation, HIGH = Disables Module	
4	SDA	2-Wire Serial Interface - 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

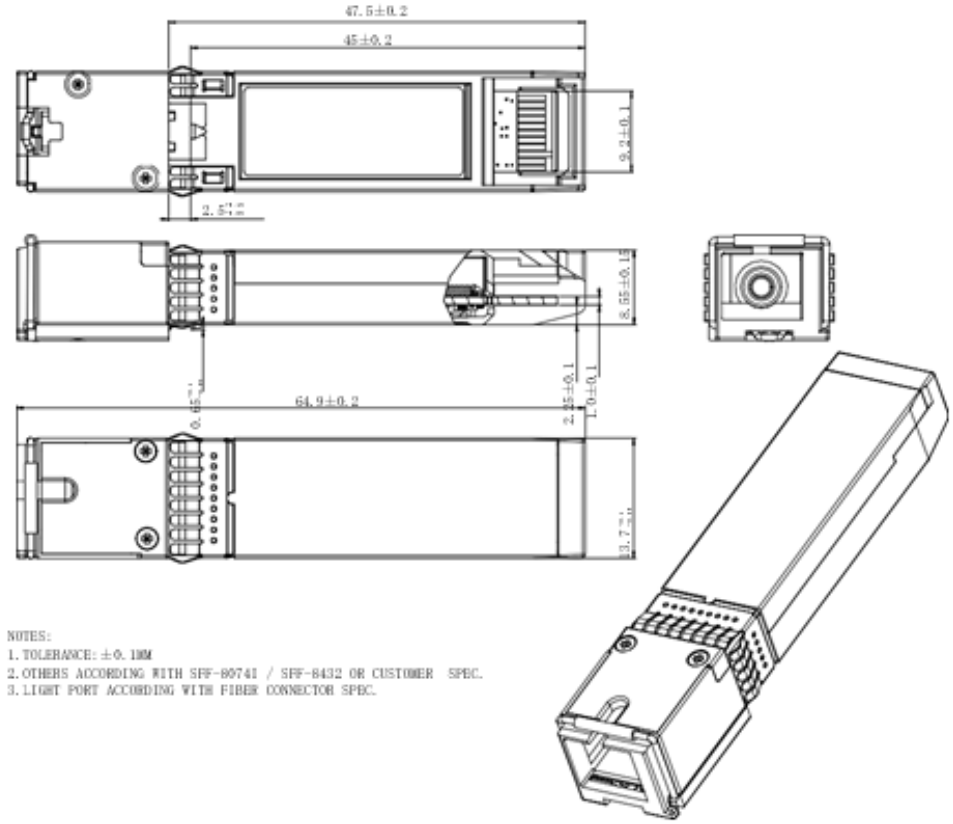


SFP+ Connector Dimensions



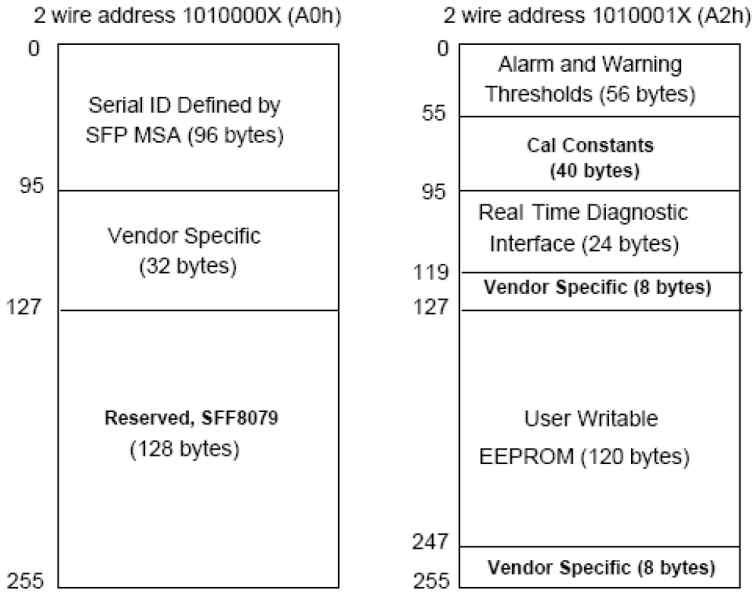
Notes:
1. Datum and basic dimensions established by customer
2. Pads and vias are chassis ground, 11 places
3. Thru holes, plating optional

Mechanical Specifications



EEPROM Information

EEPROM memory map specific data field description is as below:



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 in engrained 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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