OSG10G3003-OPC

Huawei® OSG10G3003 Compatible TAA Compliant 10GBs XGS PON OLT XFP Transceiver (SMF, 1577nmTx/1270nmRx, SC, N2, 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 Huawei® OSG10G3003 Compatible OLT XFP transceiver provides 10GBase-N2 throughput up to 20km over single-mode fiber (SMF) using a wavelength of 1577nmTx/1270nmRx via a SC connector. It is built to meet or exceed Huwei® standards and is uniquely serialized and data-traffic and application tested to ensure that they will integrate into your network seamlessly. 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.

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

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit
Maximum Supply Voltage	VCC3	-0.5		3.6	V
Storage Ambient Temperature	Tstg	-40		85	˚C
Operating Case Temperature	Tc	0		70	˚C
Operating Humidity	OH	5		85	%
Date Rate			9.953 2.488		Gbps

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Power Supply Voltage	Vcc3	3.13	3.3	3.47	V	
Power Supply Current	Icc3			1000	mA	
Power Consumption	P			3	W	
Transmitter						
Data Input Differential Swing		120		850	mV	1
Input Differential Impedance		90	100	110	Ω	
Transmitter Enable Voltage - Low		0		0.8	V	
Transmitter Disable Voltage - High		2.0		VCC	V	

Notes:

1. CML input, AC coupled

Optical Characteristics

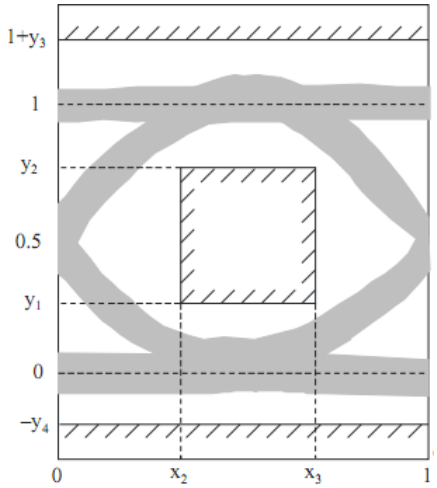
Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Optical Center Wavelength	λC	1575		1580	nm	
Optical Spectrum Width (-20dB)	Δλ			1	nm	
Side Mode Suppression Ratio	SMSR	30			dB	
Optical Wavelength Diagram	Compliant with ITU G.987.2					1
Average Launch Optical Power (BOL)	AOP2	+4.5		+8	dBm	2
Average Launch Optical Power (EOL)		+4		+8	dBm	
Pow er-OFF Transmitter Optical Power				-39	dBm	2
Extinction Ratio	ER	8.2			dB	3
Total Jitter	TJ			0.39	UI	3
$RIN_{15}OMA$				-128	dB/Hz	
Transmitter Reflectance				-10	dB	
Transmitter and Dispersion Penalty	TDP			1	dB	4
10G PON Receiver						
Operating Wavelength		1260		1280	nm	
Max Optical input				0	dBm	5
Sensitivity	SEN			-28	dBm	6
Saturation Optical Power	SAT	-7			dBm	6
SD Assert Level				-29	dBm	
SD De-assert Level		-45			dBm	
Hysteresis		0.5		6	dB	
Receiver Reflectance				-12	dB	
2.5G PON Receiver						
Operating Wavelength		1260		1280	nm	
Max Optical input				0	dBm	5
Sensitivity	SEN			-29.5	dBm	7
Saturation Optical Power	SAT	-9			dBm	7
SD Assert Level				-30	dBm	
SD De-assert Level		-45			dBm	
Hysteresis		0.5		6	dB	
Receiver Reflectance				-20	dB	

Notes:

1. Eye mask figure below, Mask Margin >5%

2. Launched into SMF
3. PRBS2^{31}-1 @9.953Gbps
4. Transmit on 20km SMF
5. Input without incurring damage
6. PRBS2^{31}-1@9.953Gbps BER ≤1×10^{-3}
7. PRBS 2^{23}-1@2.488Gbps BER ≤1×10^{-4}

Transmitter Eye Mask Definitions and Test Procedure



X3-X2	Y1	Y2	Y3	Y4	Unit
0.2	0.25	0.75	0.25	0.25	UI

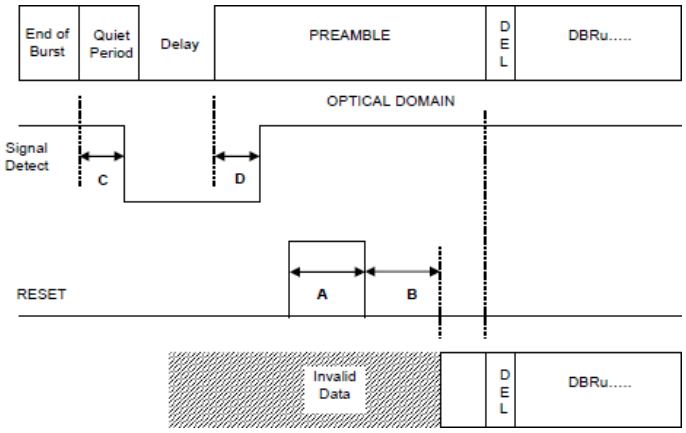
Timing Parameter Definitions in Burst Mode Sequence

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
RSSI Trigger-Low		0		0.8	V	
RSSI Trigger-High		2.0		Vcc	V	
Data Output Differential Swing		340		850	mV	1
Reset-Low		0		0.8	V	
Reset-High		2.0		Vcc	V	
SD Voltage-Low		0		0.4	V	
SD Voltage-High		2.4		Vcc	V	
Reset Width	A	TBD			ns	
Reset to Valid Data Delay	B	TBD			ns	
SD De-assert Time	C			TBD	ns	
SD Assert Time	D			TBD	ns	
Data recovery time				400	ns	2
				400	ns	3

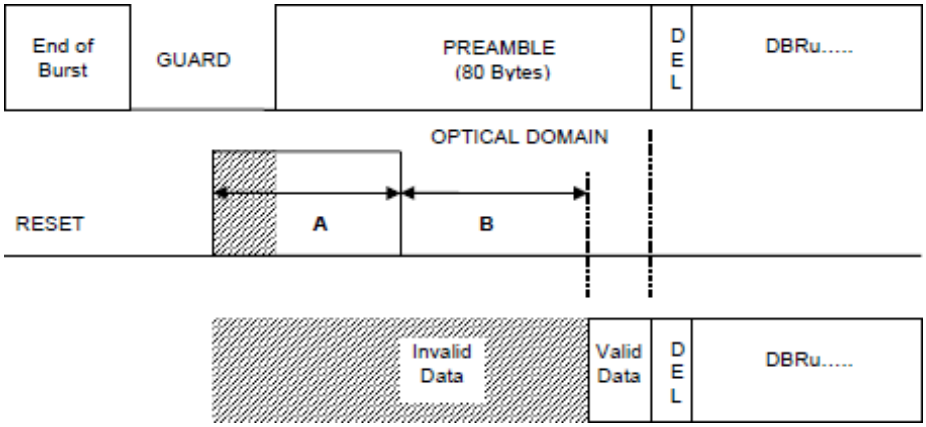
Notes:

1. CML output, DC coupled
2. PRBS 2^{23}-1@2.488Gbps
3. PRBS 2^{31}-1@9.95Gbps

Reset Signal Timing Diagram in Normal Mode



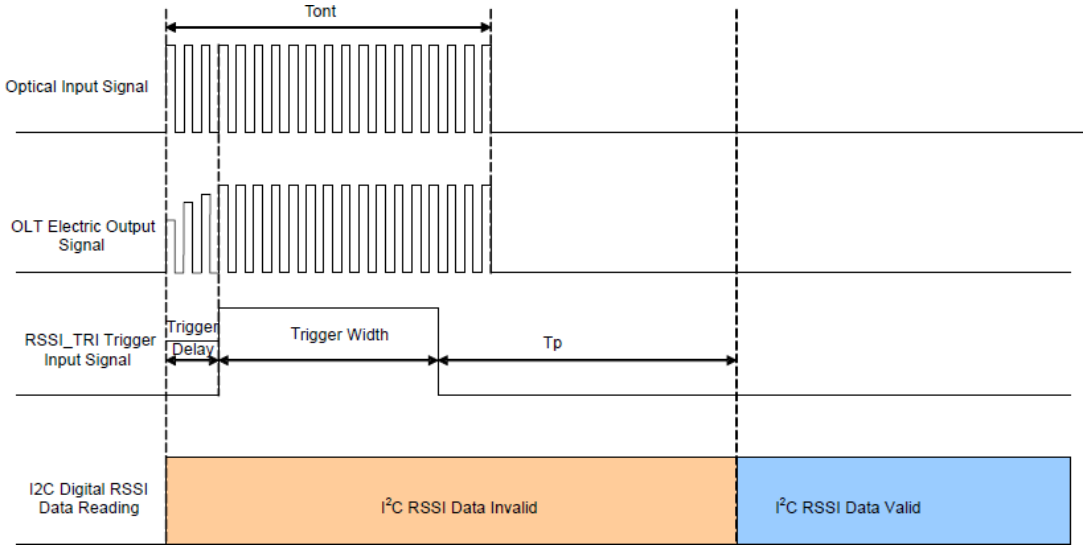
Reset Signal Timing Diagram in Ranging Mode



RSSI Timing Sequence

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Optical Signal During Time	Tont	1200			ns	
RSSI Trigger width	TW	500			ns	
RSSI Trigger Delay	TD	150			ns	
I^2C Access Prohibited Time		500			μs	

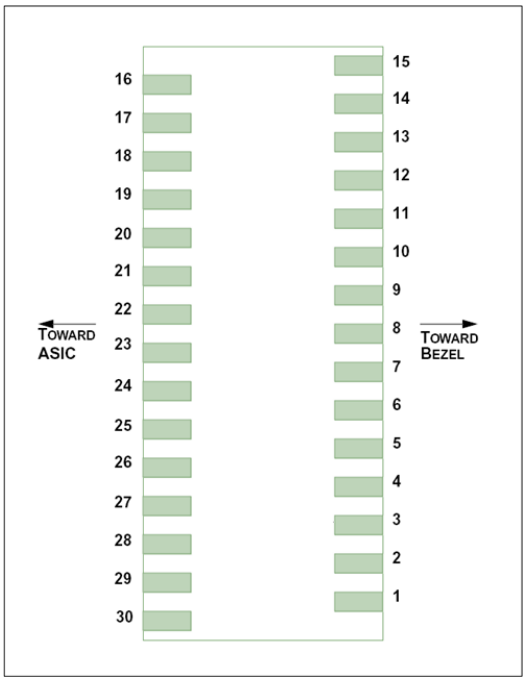
Timing Parameter Definitions in RSSI Trigger



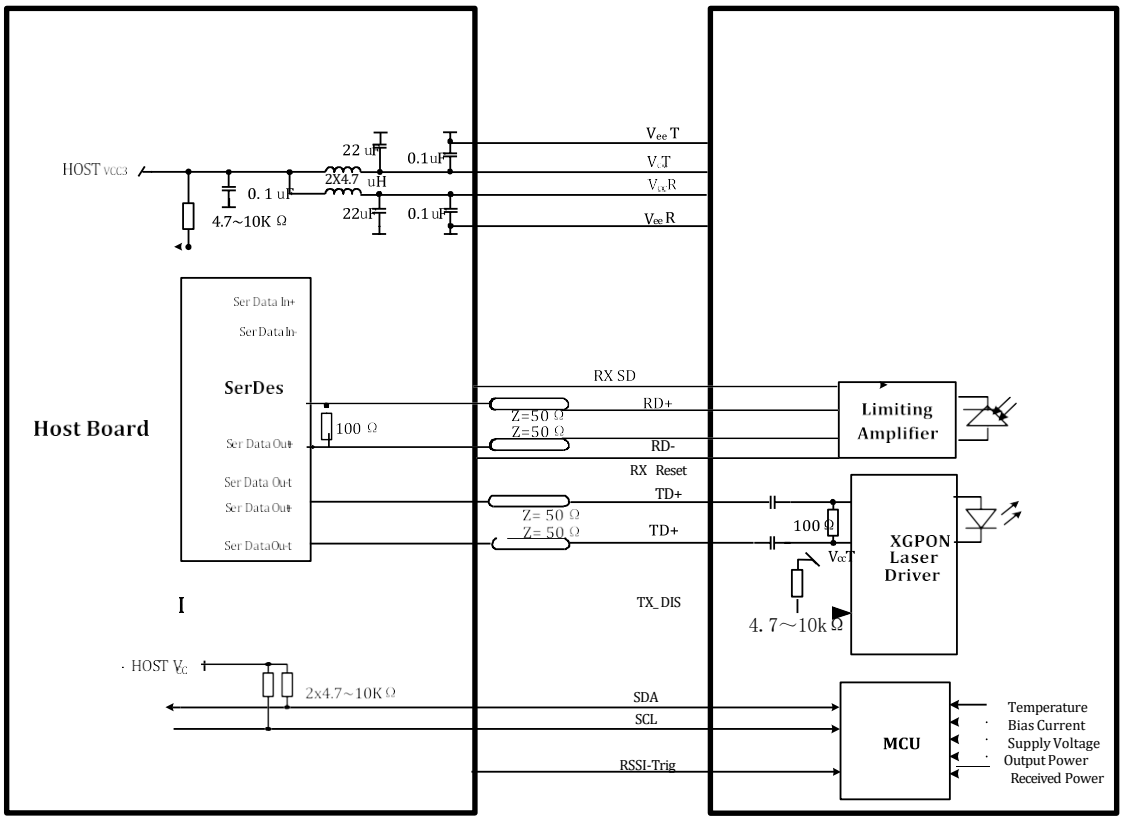
Pin Descriptions

Pin	Name	Descriptions	Notes
1	GND	Module Ground	
2	TX_FAULT	Transmitter Status Indication	Low : Normal; High: Abnormal
3	NC	Not Connected	
4	NC	Not Connected	
5	TX_DIS	Transmitter Disable	LVTTL Input by 10k pull up resistor, Low : transmitter on
6	NC	Not Connected	
7	GND	Module Ground	
8	VCC3_TX	Transmitter 3.3V Pow er Supply	
9	VCC3_RX	Receiver 3.3V Pow er Supply	
10	SCL	The clock line	The clock line of tw o w ire serial interface
11	SDA	The data line	The data line of tw o w ire serial interface
12	MOD_ABS	Indicates Module is not present.	Grounded in the Module
13	RX_Reset	Burst Receiver Reset	LVTTL, High level Reset
14	SD	SD Indication	LVTTL output, active LOW when the receiver lost signal
15	GND	Module Ground	
16	GND	Module Ground	
17	RD_N	Inverted Received Data Out	CML output, DC coupled; No squelch function
18	RD_P	Non-inverted Received Data Out	CML output, DC coupled; No squelch function
19	GND	Module Ground	

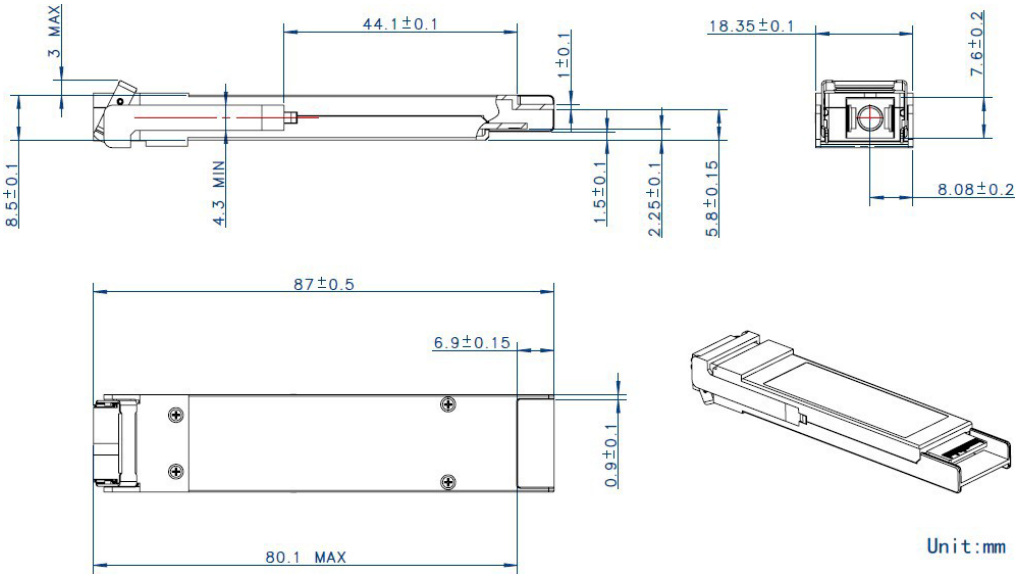
20	NC	Not Connected	
21	RSSI_TRIG	RSSI Trigger for Transceiver	High value indicates start RSSI measurement
22	NC	Not Connected	
23	GND	Module Ground	
24	NC	Not Connected	
25	NC	Not Connected	
26	GND	Module Ground	
27	GND	Module Ground	
28	TX_N	Inverted Transmit Data in	CML input, AC coupled
29	TX_P	Non-Inverted Transmit Data in	CML input, AC coupled
30	GND	Module Ground	



Typical Interface Circuit

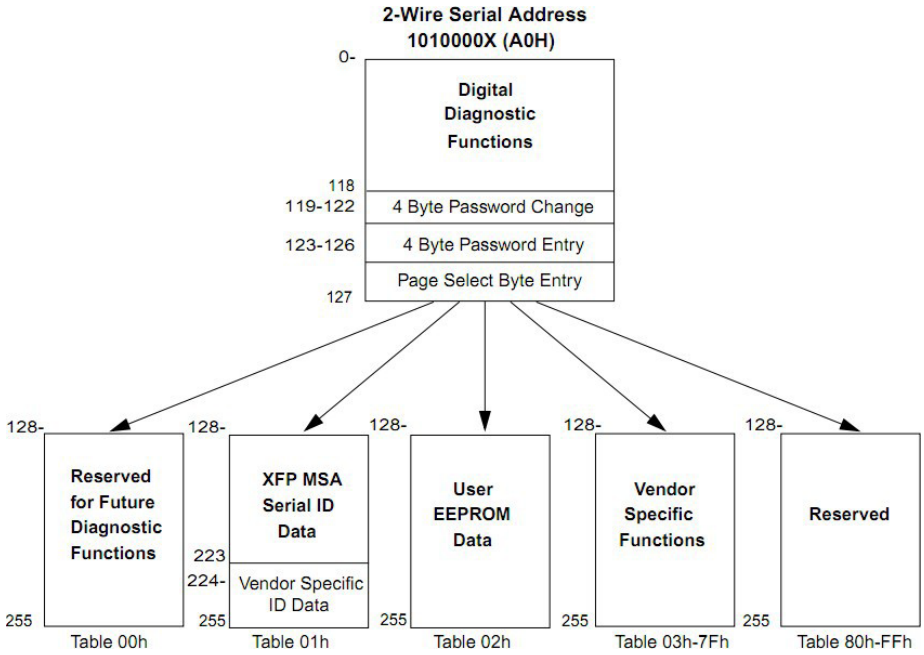


Mechanical Specifications



EEPROM Information

EEPROM memory map specific data field description is as below:



OptioConnect
Innovation for the Future of High-Speed Networking

Who We Are
OptioConnect is reshaping the landscape of communication and high-speed networking through intelligent technology. With a core focus on cutting edge technology, we deliver smarter fiber optic solutions for enterprise networks, data centers, and next-gen telecom infrastructures.

What We Do
At OptioConnect, we fuse advanced engineering with intelligent automation to drive the future of networking. Our AI-integrated solutions are designed to optimize performance and streamline operations with:

- Superior Performance
- Network and traffic optimization
- Intelligent energy management
- Seamless OEM compatibility
- Scalable cost-efficiency

Smarter Networks by Design
Innovation isn't just a goal—it's our process. We embed AI and machine learning across our R&D and product lines, enabling adaptive performance, automated tuning, and faster deployment cycles. The result? Networks that don't just work—they learn, evolve, and outperform.

Our Team
Our engineers, data scientists, and network architects bring decades of experience and a future-focused mindset. We provide hands-on support with intelligent insights that turn complex challenges into simple solutions.

Our Mission
To deliver AI-enhanced connectivity that reduces cost, increases speed, and maximizes efficiency—empowering our partners to operate at the forefront of a rapidly evolving digital world.

Let's Connect
Discover how OptioConnect's intelligent infrastructure solutions can power your network's next leap forward.
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