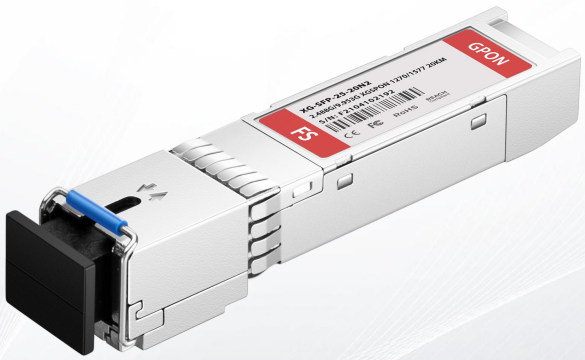
XGPON ONU SFP+ 1270nmTX/1577nmRX 20km DDM Transceiver

XG-SFP-25-20N2



Application

- Asymmetric 10-Gigabit capable passive optical network(XG-PON) system

Features

- Integrated Single fiber bi-directional optical subassembly
- Asymmetric 2.48832Gb/s upstream and 9.95328Gb/s downstream bit rate
- SFP+ metallic package, SC/UPC connector
- +3.3V single power supply
- Low power consumption
- - 40 to 85℃ operating case temperature
- Burst enable :H-active
- Class 1 Laser eye safety
- Excellent EMI and EMC characteristics
- Compliant with RoHS&WEEE

Description

The XG-PON1 ONU Transceiver is designed for XG-PON1 transmission. The module incorporates 2.48832Gb/s 1270nm burst-mode transmitter and 9.95328Gb/s 1577nm continuous-mode receiver. An integrated WDM coupler can separate 1270nm input light and 1577nm output light. The metallic package guarantees excellent EMI and EMC characteristics, which totally comply with international relevant standards.

Product Specifications

I. Absolute Maximum Ratings

Parameter	Symbol	Unit	Min	Max
Storage Temperature Range	Ts	oC	-40	+85
Relative Humidity	RH	%	5	95
Power Supply Voltage	Vcc	V	0	+4
Receiver Damage Threshold		dBm	-5	

II. Recommended Operating Conditions

Parameter	Symbol	Unit	Min	Typ	Max
Supply Voltage	Tc	℃	-40		85
Supply Voltage Noise Tolerance	Vcc	V	3.135	3.3	3.465

III. Optical Characteristics

Parameter	Symbol	Unit	Min	Typ	Max
Electrical Characteristics					
Power Consumption		W			1.5
LVPECL Single Ended Data Input Swing		mV	100		800
CML Single Ended Data Output Swing		mV	300		500
Differential Data input impedance		Ω		100	
Signal Level(LVTTL)	VOH	V	2.4		Vcc
	VOL	V	0		0.8
Optical transmitter Characteristics					
Data Rate		Mbps		2.48832	
Center Wavelength Range	lc	nm	1260		1280
Spectral Width(@-20dB)	Dl	nm			1
Launch Optical Power	Po	dBm	+2		+7
Off level light		dBm			-45
Burst turn on/off time	Ton/Toff	bit			32
Extinction Ratio [1]	EX	dB	8.2		
Eye Diagram		Compliant with ITU-T G.987.2			
Transmitter dispersion penalty [2]	TDP	dB			0.5

Optical receiver Characteristics					
Data Rate		Mbps		9953.28	
Center Wavelength Range	λc	nm	1575		1580
Receiver Sensitivity [3]	S	dBm			-28.0
Overload Input Optical Power	Pin	dBm	-8.0		
LOS **Optical Dessert**		dB			-29
Optical Assert			-44		
LOS Hysteresis		dB	0.5		6

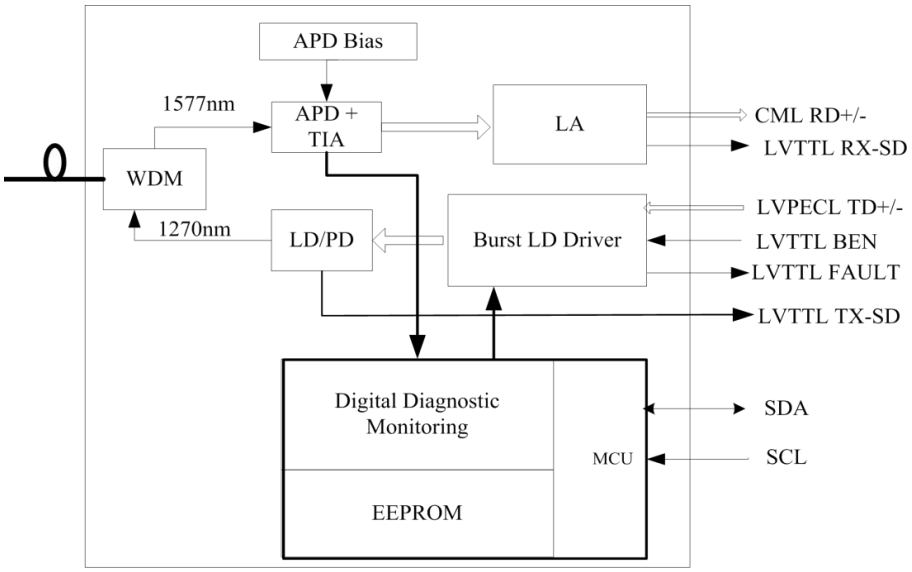
Note:

1. Measured with PRBS 2^{23}-1 test pattern @2.48832Gbps.

2.Transmit on 20km SMF.

3.Measured with PRBS 2^{23}-1 test pattern @9.95328Gbps with Tx on ER=8.2dB, BER=10^{-3}

IV. Principle diagram



V. Optic Ports Definition

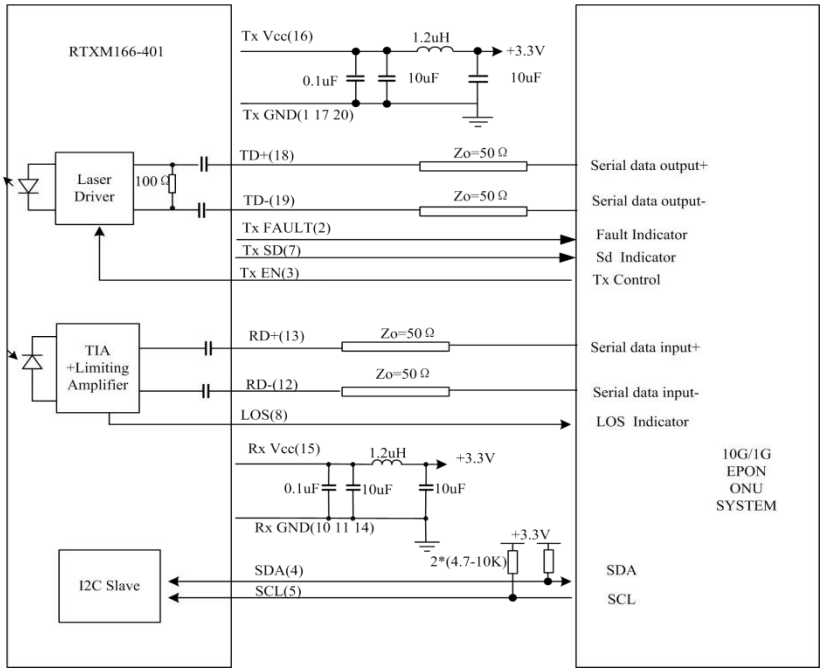
Single SC/UPC receptacle optical interface

VI. Electric Ports Definition

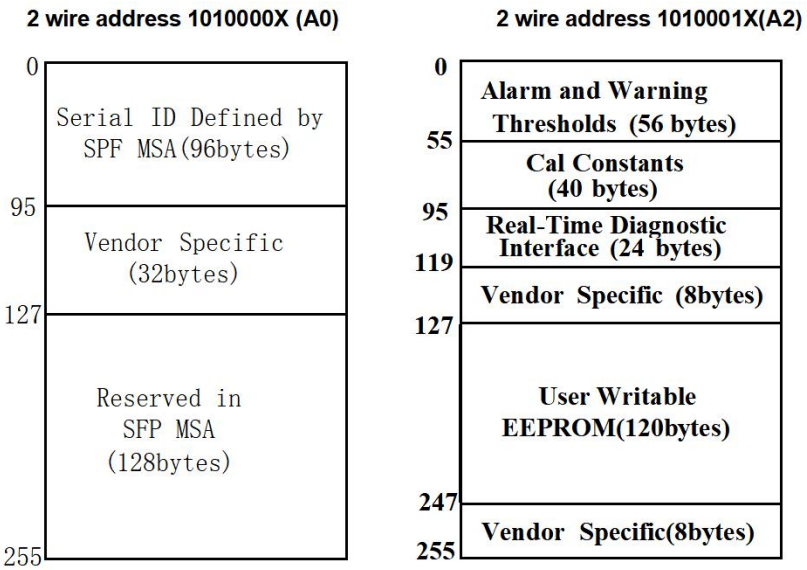
Parameter	Description
GND_T	Transmitter ground
TX_FAULT	LVTTL Signal detect output, internally pull up
TX_BRST	LVTTL ransmitter burst mode control, “L”: Tx ON
SDA	I²C Serial Data （LVTTL）
SCL	I²C Serial Clock（LVTTL）
MOS_ABS	Internally connected GND
TX-SD	LVTTL Signal detect output, internally pull up

RX_ LOS	LVTTL Signal detect output, internally pull up
NC	Not Connected
GND_R	Receiver ground
GND_R	Receiver ground
RD-(10G)	CML data output-(AC coupled internally)
RD+(10G)	CML data output+(AC coupled internally)
GND_R	Receiver ground
VCC_R	Receiver power supply
VCC_T	Transmitter power supply
GND_T	Transmitter ground
TD+(2G)	LVPECL Data input+(AC coupled and internal terminated)
TD-(2G)	LVPECL Data input-(AC coupled and internal terminated)
GND_T	Transmitter ground

VII. Typical Application Circuit

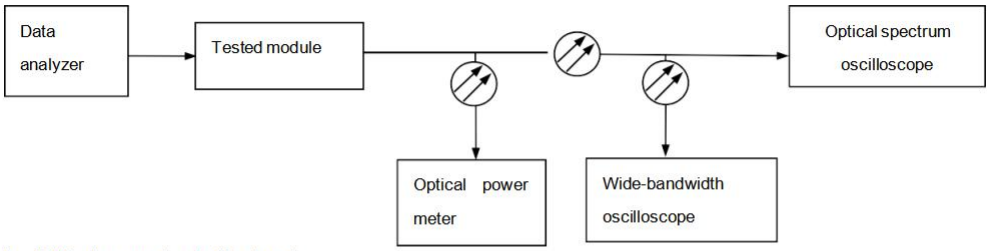


VIII. Digital Diagnostic Memory Map

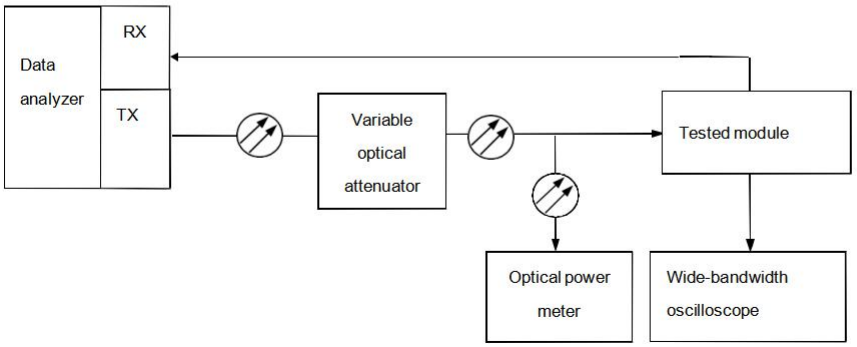


IX. Test Requirement

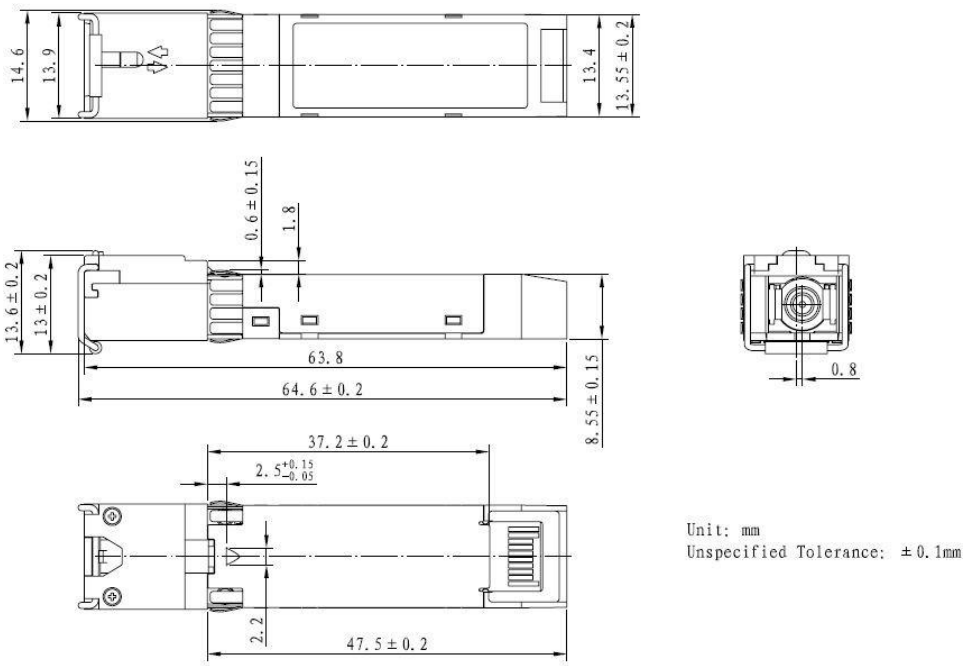
a. TX characteristic test



b. RX characteristic test



X. Package Outline



XI. Regulatory Compliance

Feature	Test Method	Performance
Electrostatic Discharge (ESD) to the Electrical Pins	MIL-STD-883E Method 3015.7	Class 1 (>1.5kV) – Human Body Model
Electrostatic Discharge (ESD) Immunity	IEC61000-4-2	LV4(Air discharge 15kV,Contact discharge 8kV) Performance criterion B
Electromagnetic Interference (EMI)	CISPR22 ITE Class B EN55022 Class B	Compliant with standards
Immunity	IEC61000-4-3 Class 2 EN55024	Typically show no measurable effect from a 3V/m field swept from 80 to 1000MHz applied to the transceiver without a chassis enclosure.
Eye Safety	FDA 21 CFR 1040.10 and 1040.11 UL TUV EN 60825-1	Compliant with Class 1 laser product

Test Center

FS.COM transceivers are tested to ensure connectivity and compatibility in our test center before shipped out. FS.COM test center is supported by a variety of mainstream original brand switches and groups of professional staff, helping our customers make the most efficient use of our products in their systems, network designs and deployments.

The original switches could be found nowhere but at FS.COM test center, eg: Juniper MX960 & EX 4300 series, Cisco Nexus 9396PX & Cisco ASR 9000 Series, HP 5900 Series & HP 5406R ZL2 V3(J9996A), Arista 7050S-64, Brocade ICX7750-26Q & ICX6610-48, Avaya VSP 7000 MDA 2, etc.

Cisco ASR 9000 Series(A9K-MPA-1X40GE)


ARISTA 7050S-64(DCS-7050S-64)

Juniper MX960


Brocade ICX 7750-26Q

Extreme Networks X670V VIM-40G4X

Mellanox M3601Q


Dell N4032F

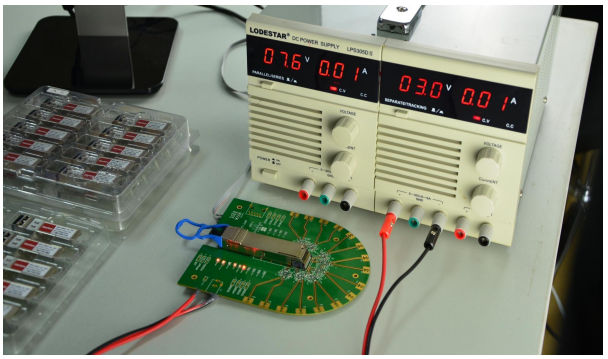
HP 5406R ZL2 V3(J9996A)

AVAYA 7024XLS(7002QQ-MDA)

Test Assured Program

FS.COM truly understands the value of compatibility and interoperability to each optics. Every module FS.COM provides must run through programming and an extensive series of platform diagnostic tests to prove its performance and compatibility. In our test center, we care of every detail from staff to facilities—professionally trained staff, advanced test facilities and comprehensive original-brand switches, to ensure our customers to receive the optics with superior quality.

Our smart data system allows effective product management and quality control according to the unique serial number, properly tracing the order, shipment and every part.



Our in-house coding facility programs all of our parts to standard OEM specs for compatibility on all major vendors and systems such as Cisco, Juniper, Brocade, HP, Dell, Arista and so on.

With a comprehensive line of original-brand switches, we can recreate an environment and test each optics in practical application to ensure quality and distance.

The last test assured step to ensure our products to be shipped with perfect package.

Order Information

Part No	Package	Data rate	Laser	Optical Power	Detector	Sensitivity	Top	Reach	Others
XG-SFP-25-20N2	SFP+	2.48832G US 9.95328G DS	1270nm DFB-LD	+2~ +7dBm	APD 1577nm	-28.0dBm	-40~85℃	20km	DDM,RoHS

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