

XGSGPON STICK

Product Features

- Support ITU-T G.9807.1 XGSPON Networks application
- Support ITU-T G.988 ONU management and control interface (OMCI) specification
- Support Dying Gasp function
- Single fiber bi-directional data links with symmetric 9.95328 Gbps Tx/Rx
- 1260-1280nm burst-mode transmitter with DFB laser
- 1575-1580nm continuous-mode receiver with APD-TIA
- 2-wire interface for integrated digital diagnostic Monitoring
- SFP+ package with SC/UPC or SC/APC receptacle optical interface
- Single +3.3V power supply
- Operation case temperature -40~85°C for industrial and 0~70°C for commercial
- RoHS6 compliance

Operating Condition

Parameter	Unit	Min.	Typical	Max.
Storage Temperature	°C	-40		85
Operating Relative Humidity	%	5		85
Operating Case Temp for C-temp	°C	0		70
Operating Case Temp for I-temp	°C	-40		85
Power Supply Voltage	V	3.15	3.3	3.45
Power Consumption	W			2
Bit Rate for Tx	Gbps	9.95328		
Bit Rate for Rx	Gbps	9.95328		

Characteristics

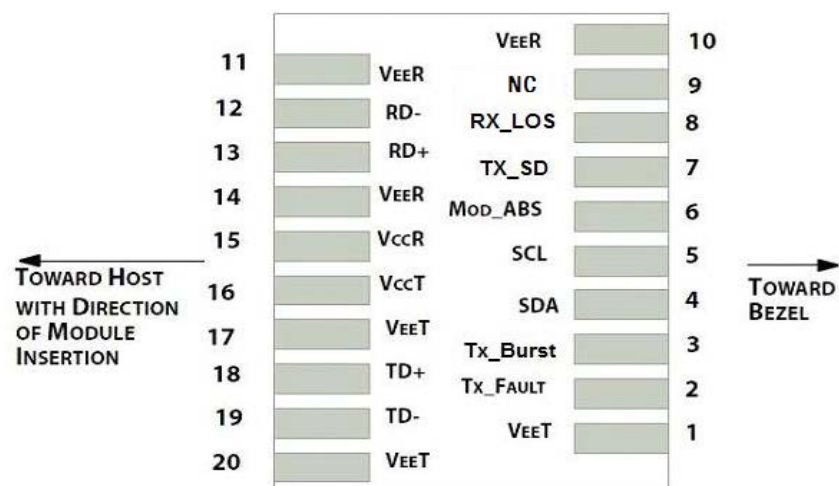
All performance is specified at whole working temperature and conditions

Parameter	Unit	Min.	Typical	Max.
Transmitter				
TX Central Wavelength	nm	1260		1280
Spectral Width (-20dB)	nm			1
Side Mode Suppression Ratio (SMSR)	dB	30		
Mean Launched Power	dBm	0.5		5
Mean Launched Power (TX Off)	dBm			-45

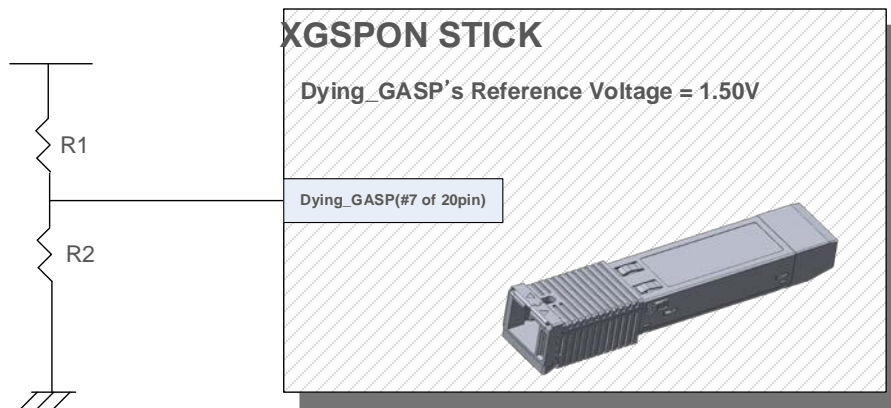
Extinction Ratio	dB	10		
Optical Return Loss Tolerance	dB	-15		
Transmitter and dispersion Penalty	dB			1
Transmitter Mask (PRBS2 ²³ -1??@9.95328G)	Compliant With ITU-T G9807.1			
Receiver				
Receive Wavelength	nm	1575		1580
Sensitivity (PRBS2 ²³ -1??@9.95328G, ER=8.2, BER<10 ⁻¹⁰)	dBm			-28
Overload (PRBS2 ²³ -1??@9.95328G, ER=8.2, BER<10 ⁻¹⁰)	dBm	-8		
Loss of signal De-assert Level	dBm			-29
Loss of signal assert Level	dBm	-39		
LOS Hysteresis	dB	0.5		6
WDM Filter isolation to 1260 nm ~1280 nm,1575 nm ~1580 nm	dB	25		
Electrical Interface Characteristics				
Data Input Swing Differential/TX	mV	200	-	2000
Data Output Swing Differential/RX	mV	400		1600
Date Differential Impedance	Ω	90	100	110
LVTTL Output High	V	2.4		V _{cc}
LVTTL Output Low	V	0		0.4
LVTTL Input High	V	2.0		V _{cc} +0.3
LVTTL Input Low	V	0		0.8
Timing Characteristics				
Turn On Time at Burst mode (T _{ON})	ns			12.8
Turn Off Time at Burst mode (T _{OFF})	ns			12.8
TX-SD Assert Time (T _{TXSD_ON})	ns			100
TX-SD De-assert Time (T _{TXSD_OFF})	ns			100
LOS Assert Time (T _{LOSA})	us			100
LOS De-assert Time (T _{LOSD})	us			100

PIN Definition

Pin No.	Symbol	Level / Logic	Description
1	VeeT		Module Transmitter Ground
2	Tx_Fault	LVTTTL-O	Module Transmitter Fault
3	Tx_Burst	LVTTTL-I	Transmitter Burst Control, transmitter on when Tx_Burst low
4	SDA	LVTTTL-I	2-Wire Serial Interface Data Line
5	SCL	LVTTTL-I/O	2-Wire Serial Interface Clock
6	MOD_ABS	LVTTTL-O	Module Absent, connected to ground in the module
7	Dying_Gasp	LVTTTL-I	Dying_Gasp Input Reference Voltage Level
8	RX_LOS	LVTTTL-O	Loss of Receiver Signal Indication
9	NC		
10	VeeR		Module Receiver Ground
11	VeeR		Module Receiver Ground
12	RD-	CML-O	Receiver Inverted Data Output, AC-coupled
13	RD+	CML-O	Receiver Non-Inverted Data Output, AC-coupled
14	VeeR		Module Receiver Ground
15	VccR		Module Receiver 3.3V Supply
16	VccT		Module Transmitter 3.3V Supply
17	VeeT		Module Transmitter Ground
18	TD+	LVPECL-I	Transmitter Non-Inverted Data Input, DC-coupled
19	TD-	LVPECL-I	Transmitter Inverted Data Input, DC-coupled
20	VeeT		Module Transmitter Ground



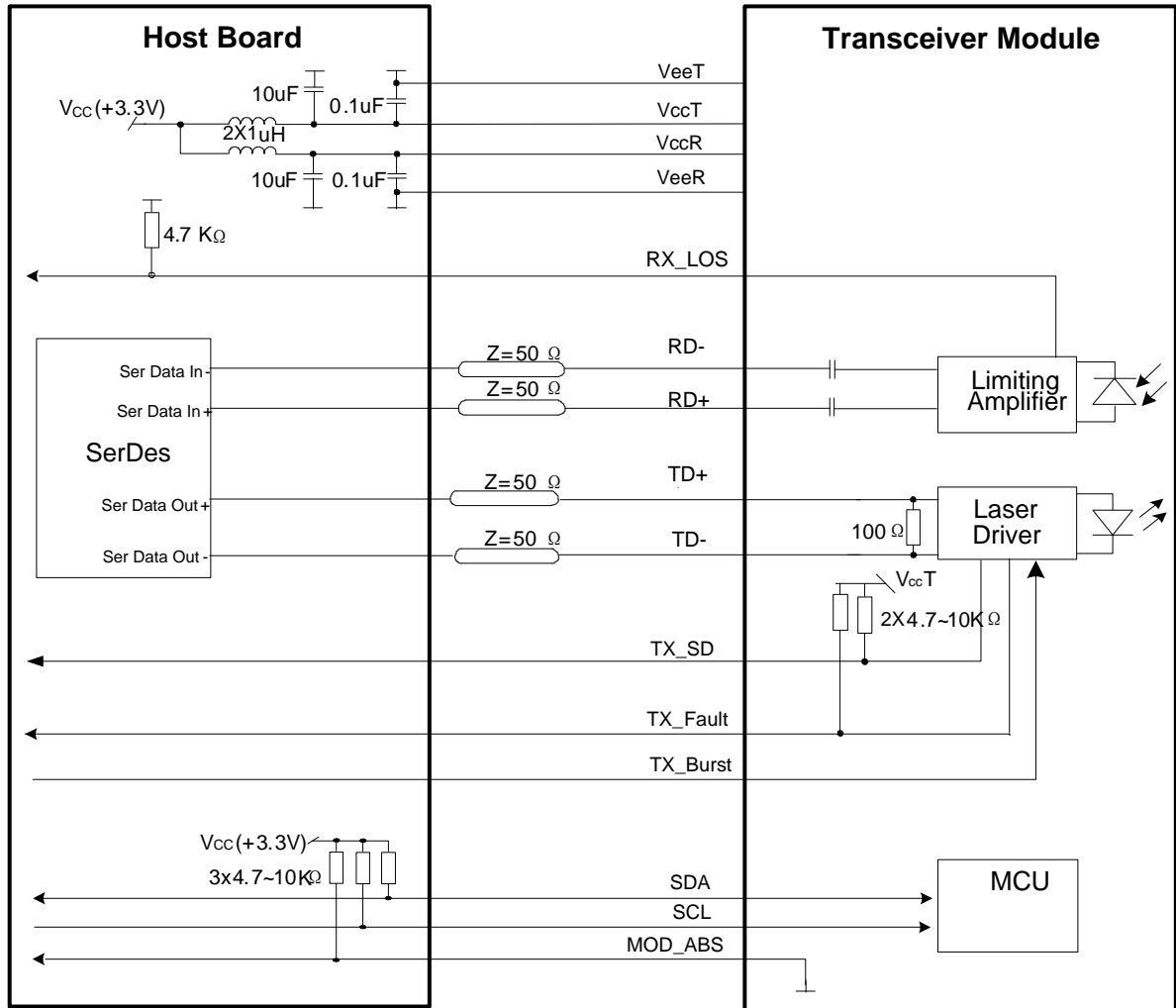
Dying_Gasp Features



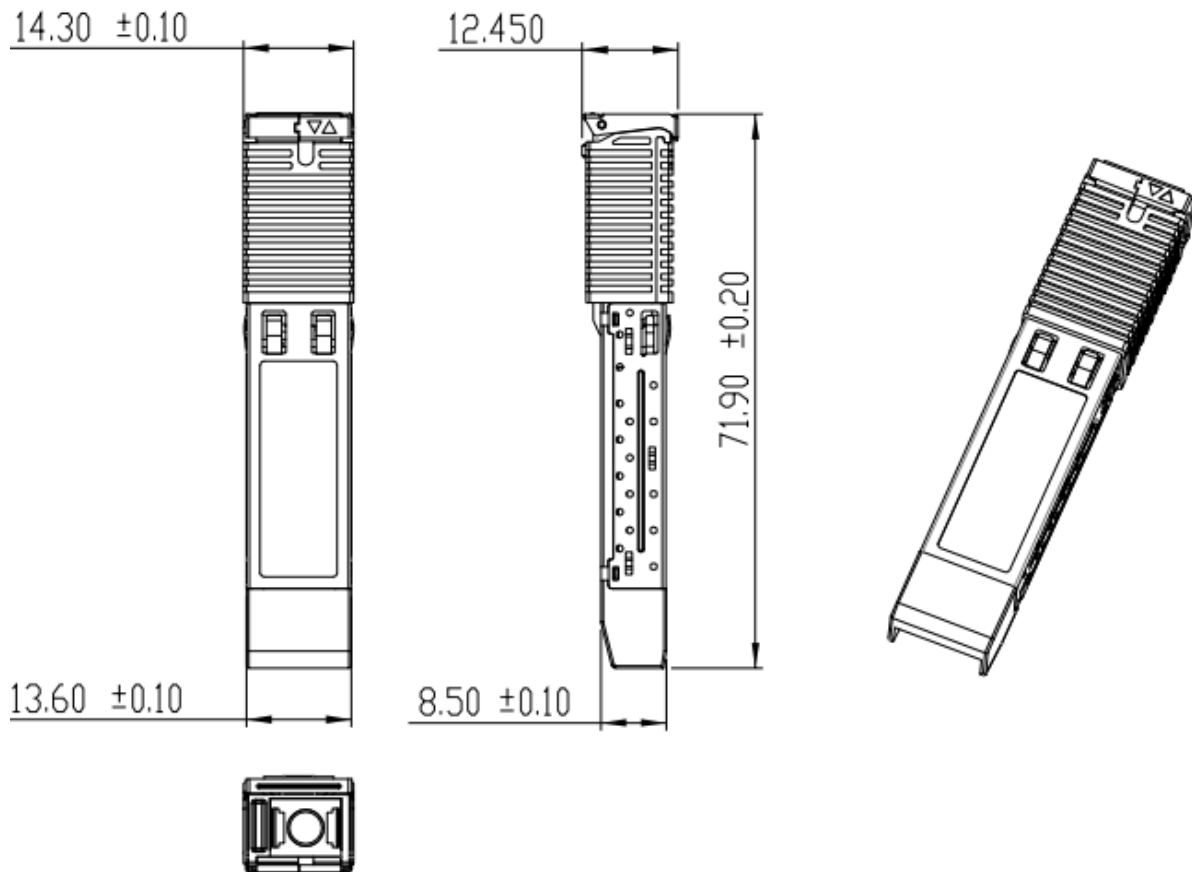
Operation

- (1) If Dying_GASP Reference Voltage Hysteris can over 26mV, 80mV or 130mV,
The XGSPON STICK send PLOAMu message with "DYING_GASP Status" to OLT
- (2) To activate this Dying_Gasp Features, System Operator or OLT system can configure Dying_Gasp Registers with 26mV, 80mV or 130mV
- (3) Default Dying_Gasp Register is 80mV

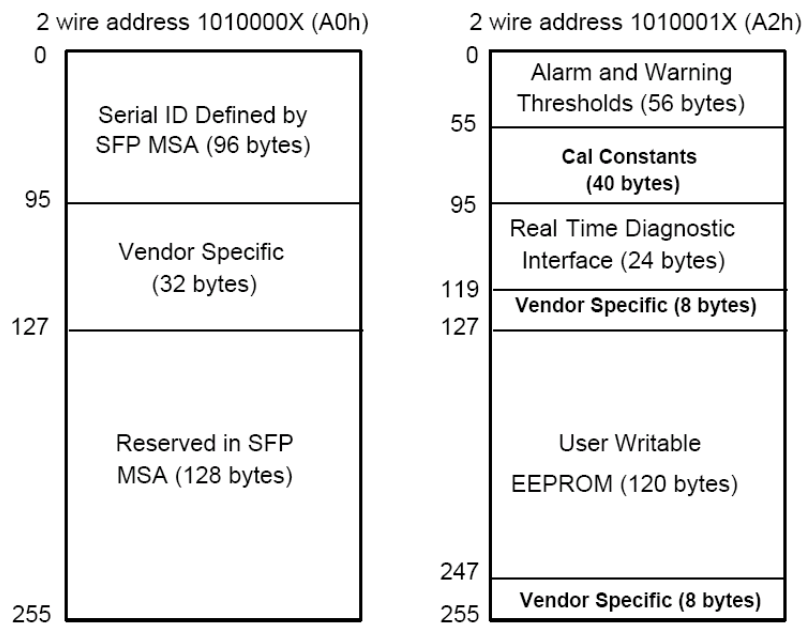
Typical Interface Circuit



Mechanical Diagram



EEPROM Memory Map



Ordering Information

Ordering P/Ns	Description
XGSPON-Stick	XGSPON STICK, B+,9.95328Gbps Tx 1260-1280nm, Rx 1575-1580nm, TX_Burst signal low active transmitter on, SFP+ form-factor, SC/UPC receptacle connector, 0~70°C Commercial temperature

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Version	Date	Description
V0.1	Nov-02-2017	New release