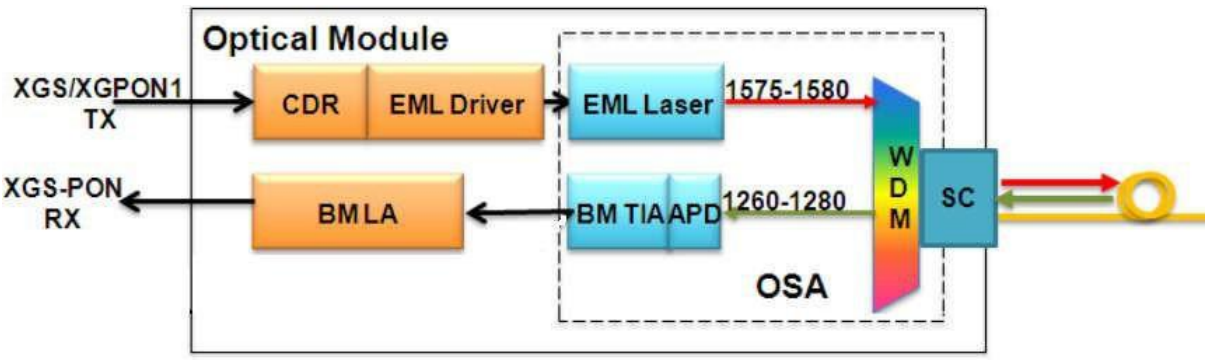
XGSPON OLT XFP 1577/1270nm 20km Optical Transceiver

GNTP-27299-XSCD

Product Features

- Complies with ITU-T XGS-PON and G.987.2
- Support XGSPON 20km application
- Single fiber bi-directional data links
- 1577nm 9.953G continuous-mode transmitter with EML laser, 1270nm 9.953G burst-mode receiver with APD-TIA
- 2-wire interface for integrated digital diagnostic monitoring
- Digital receiving signal strength indication (RSSI)
- XFP MSA package with SC/UPC or SC/APC receptacle optical interface
- +3.3V and +5V power supply
- Operating case temperature: 0~70°C
- RoHS6 compliance



Operating Condition

Parameter	Unit	Min.	Typical	Max.
Storage Temperature	°C	-40		85
Operating Case Temp for C-temp	°C	0		70
Operating Relative Humidity	%	5		85
Power Supply Voltage(3.3V)	V	3.15	3.3	3.45

Supply Current(3.3V)	mA			1000
Power Supply Voltage(5V)	V	4.75	5	5.25
Supply Current(5V)	mA			300
Bit Rate for Tx 1577nm	Gbps		9.953	
Bit Rate for Rx 1270nm	Gbps		9.953	

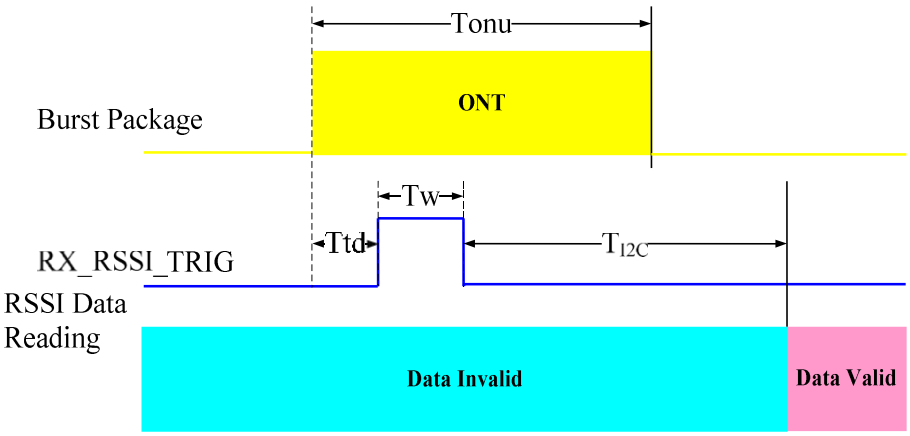
Characteristics

All performance is specified at whole working temperature and conditions

Parameter	Unit	Min.	Typical	Max.
1577nm 10Gbps Transmitter				
TX Central Wavelength	nm	1575	1577	1580
Spectral Width (-20dB)	nm			1
SMSR	dB	30		
Mean Launched Power	dBm	2		5
Mean Launched Power (TX Off)	dBm			-39
Extinction Ratio	dB	8.2		
Optical Return Loss Tolerance	dB	-15		
Transmitter and dispersion Penalty	dB			1
Transmitter Mask (PRBS2^{31}-1@9.953G)	Compliant With ITU-T G.9807.1			
1270nm 9.953G Receiver				
Receive Wavelength	nm	1260	1270	1280
Sensitivity (PRBS2^{31}-1@9.953G, ER=8.2, BER<10^{-3})	dBm			-28.5
Overload	dBm	-8		
Dynamic Range	dBm	-28		-6
Settling time	ns			800
SD Assert Level	dBm			-29
SD De-assert Level	dBm	-45		
SD Hysteresis	dB	0.5		6
Electrical Interface Characteristics				
Data Input Swing Differential/TX	mV	120		820
Data Output Swing Differential/RX	mV	340		850
Data Differential Impedance	Ω	90	100	110
LVTTL Output High	V	2.4		Vcc
LVTTL Output Low	V	0		0.4

LVTTL Input High	V	2.0		Vcc+ 0.3
LVTTL Input Low	V	0		0.8
Timing Characteristics				
RSSI Trigger Delay (Ttd)	ns	300		
RSSI Trigger Pulse Width (Tw)	ns		500	
ONU Package Length (Tonu)	ns		1500	
Internal I^2C Delay (T_{I2C})	us			500

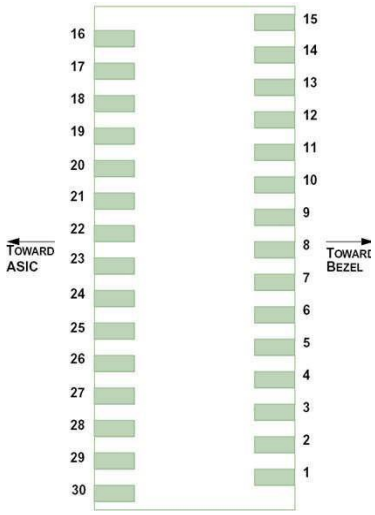
Timing Sequence for RSSI



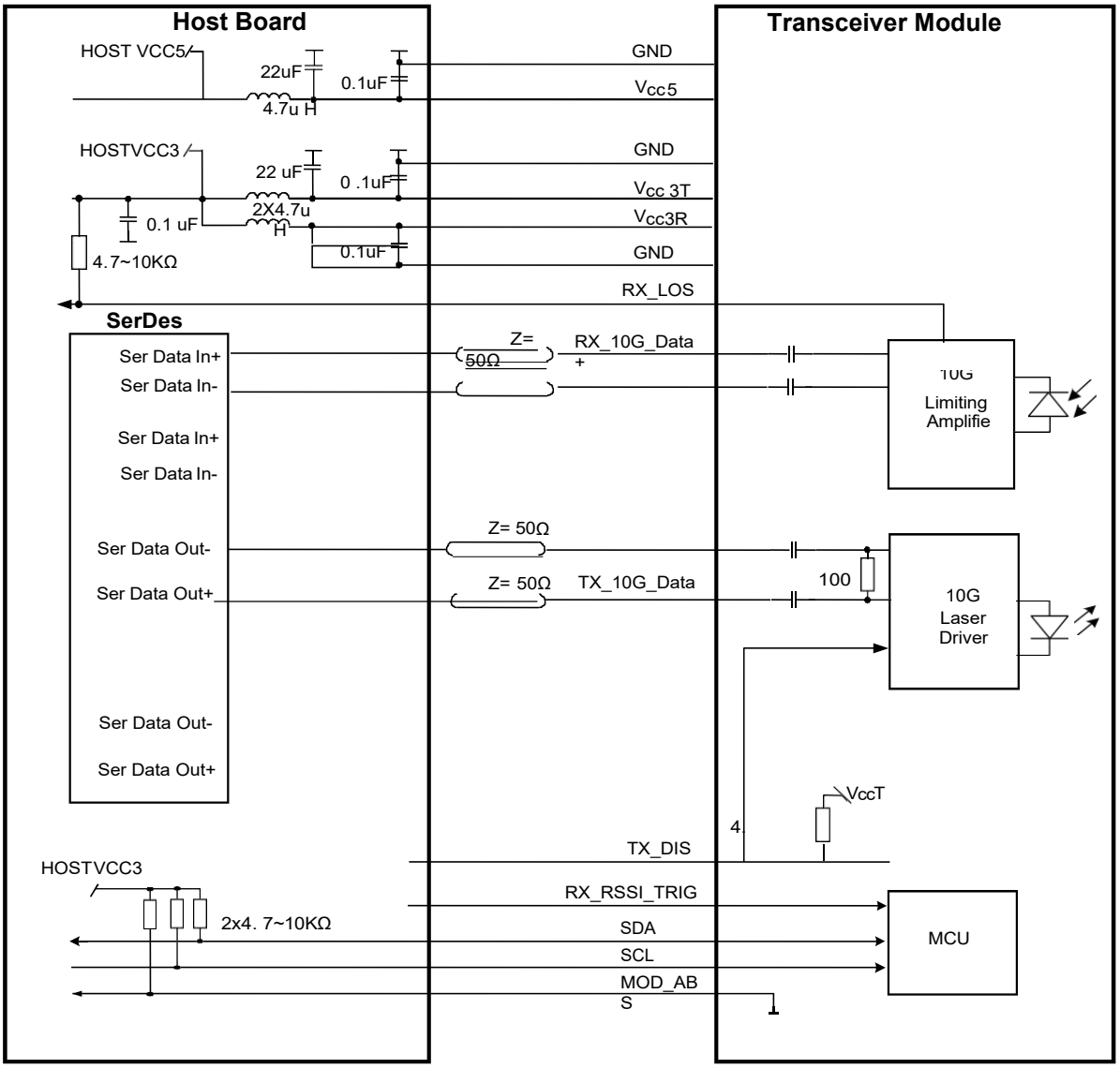
PIN Definition

Pin No.	Symbol	Level / Logic	Description
1	GND		Module Ground
2	TX_Fault	LVTTL-O	Transmitter Fault Indication
3	NC		Reserved. Not used
4	NC		Reserved. Not used
5	TX_DIS	LVTTL-I	Transmitter Disable; Active High Disable Transmitter Output
6	V_{CC5}		+5V Power Supply
7	GND		Module Ground
8	V_{CC3}		+3.3V Power Supply
9	V_{CC3}		+3.3V Power Supply
10	SCL	LVTTL-I	2-Wire Serial Interface Clock
11	SDA	LVTTL-I/O	2-Wire Serial Interface Data Line
12	Mod_Abs	LVTTL-O	Indicates Module is not present. Grounded in the Module
13	Reserved (RX_RST)	CML-O	Reserved for Receiver burst Reset. not used.
14	RX_SD	LVTTL-O	Receiver Signal Detected Indication
15	NC		Reserved. Not used
16	GND		Module Ground
17	RX_10G_Data-	CML-O	Receiver Inverted Data Output for 10G
18	RX_10G_Data+	CML-O	Receiver Non-Inverted Data Output for 10G
19	GND		Module Ground
20	NC		Reserved. Not used
21	RX_RSSI_TRIG		Refer to “Timing Sequence for RSSI”
22	NC		NC
23	GND		Module Ground
24	Reserved (RX_2G_Data+)	LVPECL-O	Reserved for Receiver Nov-Inverted Data Output for 2.488G. not used.
25	Reserved (RX_2G_Data-)	LVPECL-O	Reserved for Receiver Inverted Data Output for 2.488G. not used.

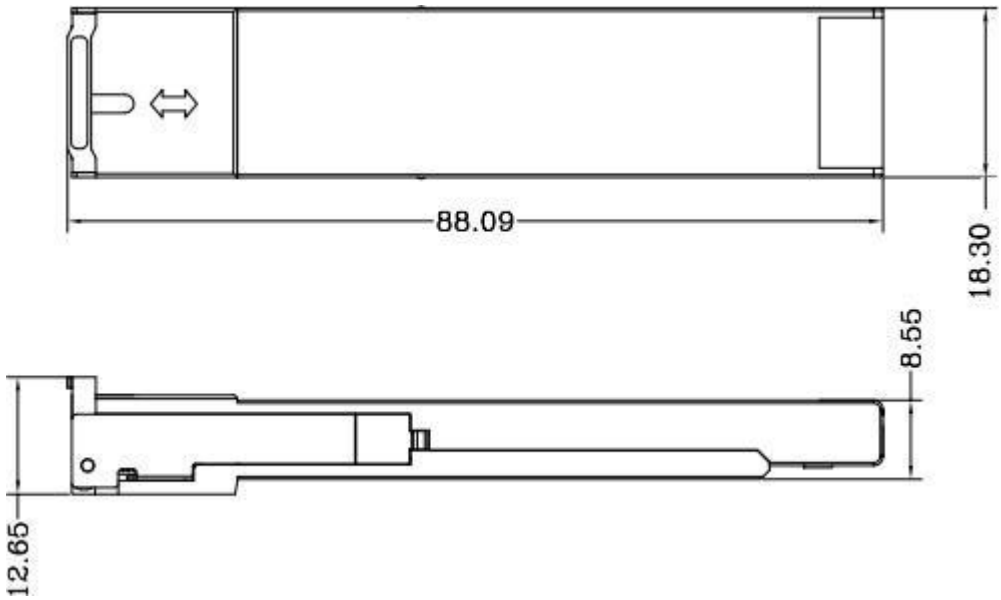
26	GND		Module Ground
27	GND		Module Ground
28	TX_10G_Data-	CML-I	Transmitter Inverted Data Input
29	TX_10G_Data+	CML-I	Transmitter Non-Inverted Data Input
30	GND		Module Ground



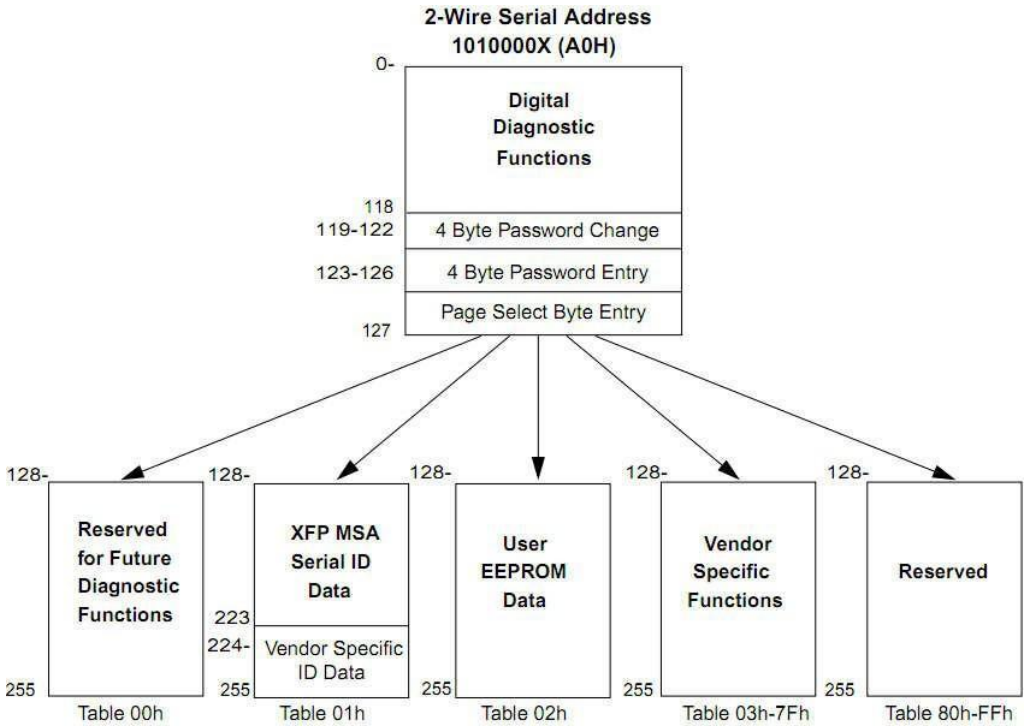
Typical Interface Circuit



Mechanical Diagram



EEPROM Memory Map



Ordering Information

Ordering P/Ns	Description
GNTP-27299-XSCD	XGSPON OLT, 20km, TX 1577nm 9.953Gbps, RX 1270nm 9.953Gbps,XFP form-factor, BIDI SC/UPC Receptacle, 0~70°C Commercial Temperature

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Revision History

Version	Date	Description
V0	Aug-1-2016	New release
V1	Apr-27-2017	Update the overload from -9dBm into -8dBm