

XGSPON ONU SFP+ 1270/1577nm 20km Optical Transceiver

GNUP-2555S-R3CDH/GNUP-2555S-R3TDH

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Product Features

- Support XGSPON 20km application
- Single fiber bi-directional data links with asymmetric 10.3125Gbps Tx and 10.3125Gbps Rx
- 1270nm burst-mode transmitter with DFB laser
- 1577nm continuous-mode receiver with APD-TIA
- 2-wire interface for integrated digital diagnostic Monitoring
- Transmitter state indication (TX_SD) and Receiver state indication (RX_LOS)
- SFP+ package with SC/UPC or SC/APC receptacle optical interface
- Single +3.3V power supply
- Operating case temperature: 0~70°C Commercial temperature or -40~85°C Industrial temperature
- RoHS6 compliance

Operating Condition

Parameter	Unit	Min.	Typical	Max.
Storage Temperature	°C	-40		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
Supply Current	mA			450
Bit Rate for Tx	Gbps	10.3125		
Bit Rate for Rx	Gbps	10.3125		

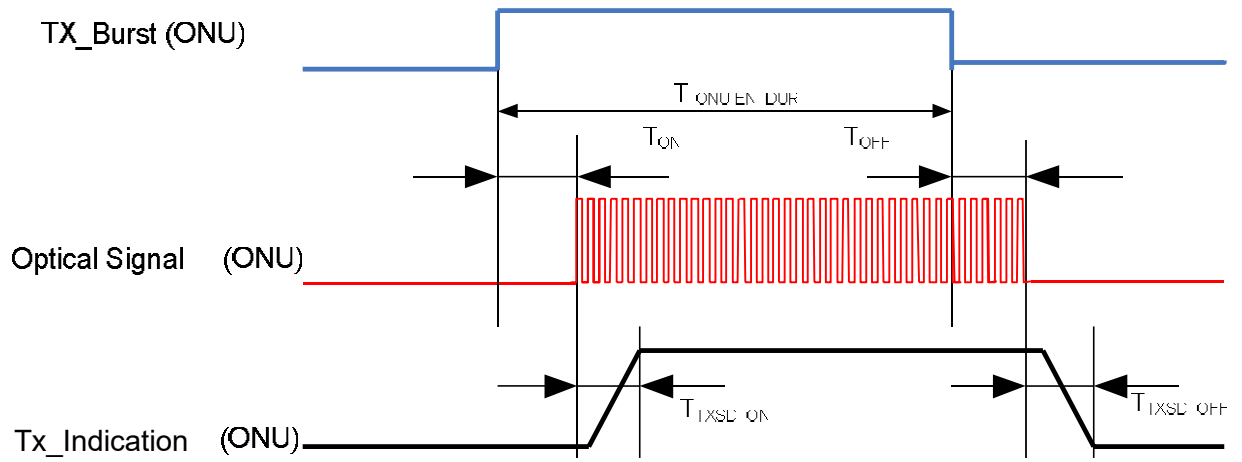
Characteristics

All performance is specified at whole working temperature and conditions

Parameter	Unit	Min.	Typical	Max.
Transmitter				
TX Central Wavelength	nm	1260	1270	1280
Spectral Width (-20dB)	nm			1
Side Mode Suppression Mode(SMSR)	dB	30		
Mean Launched Power	dBm	4		9
Mean Launched Power (TX Off)	dBm			-45
Extinction Ratio	dB	6		
Optical Return Loss Tolerance	dB	-15		

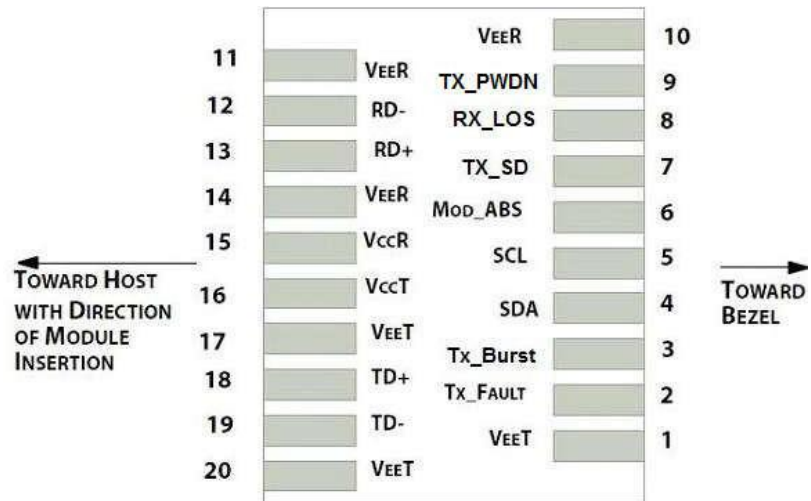
Transmitter and dispersion Penalty	dB			2
Transmitter Mask (PRBS ²³¹ -1@10.3125G)	Compliant With IEEE Std 802.3av			
Receiver				
Receive Wavelength	nm	1575	1577	1580
Sensitivity (PRBS ²³¹ -1@10.3125G, ER=6, BER<10 ⁻³)	dBm			-28.5
Overload	dBm	-8		
SD Assert Level	dBm			-30
SD De-assert Level	dBm	-39		
SD Hysteresis	dB	0.5		5
Electrical Interface Characteristics				
Data Input Swing Differential/TX	mV	200		1000
Data Output Swing Differential/RX	mV	300		850
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			30
Turn Off Time at Burst mode (T _{OFF})	ns			30
TX-SD Assert Time (T _{TXSD ON})	ns			100
TX-SD De-assert Time (T _{TXSD OFF})	ns			100
RX-LOS Assert Time (T _{LOSA})	us			100
RX-LOS De-assert Time (T _{LOSD})	us			100

Burst Mode Transmitter Timing (GNUP-2555S-X3XDH, TX_Burst signal high active transmitter on)

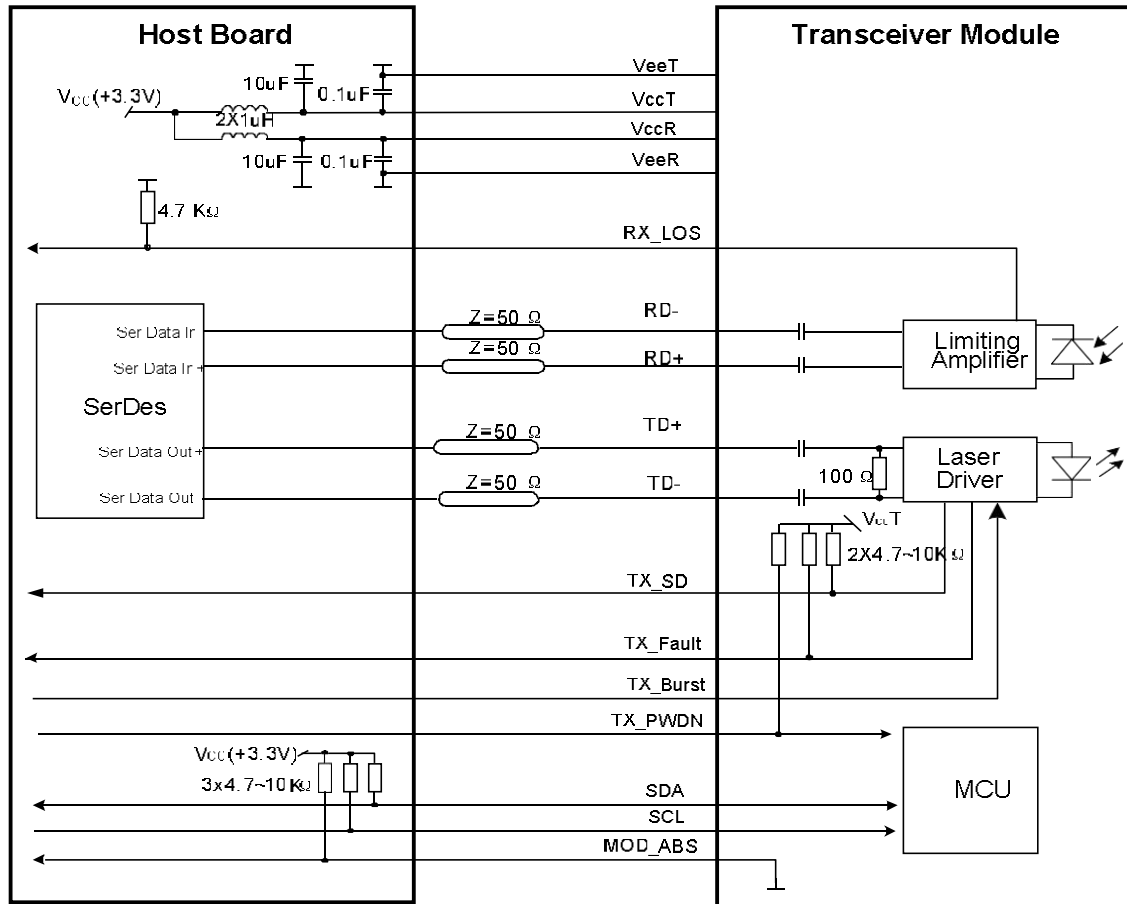


PIN Definition

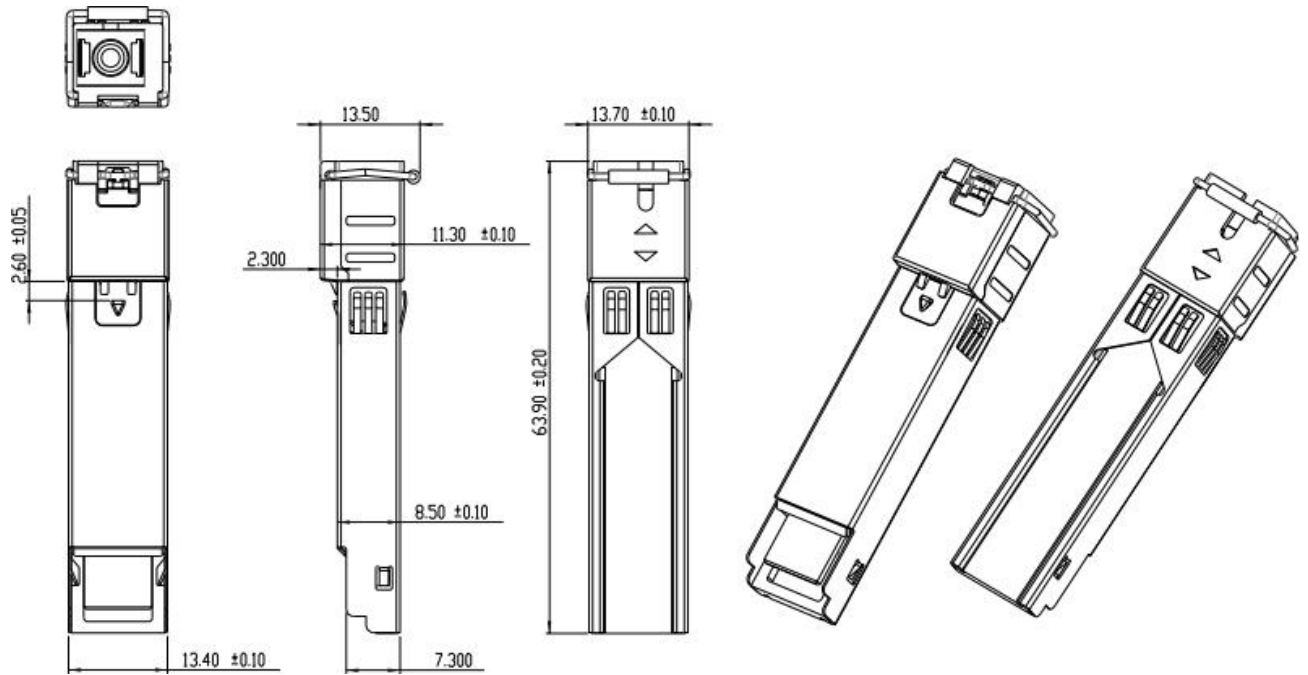
Pin No.	Symbol	Level / Logic	Description
1	VeeT		Module Transmitter Ground
2	Tx_Fault	LVTTL-O	Module Transmitter Fault
3	Tx_Burst	LVTTL-I	Transmitter Burst Control, GNUP-2555S-X3XDH active high for transmitter on
4	SDA	LVTTL-I	2-Wire Serial Interface Data Line
5	SCL	LVTTL-I/O	2-Wire Serial Interface Clock
6	MOD_ABS	LVTTL-O	Module Absent, connected to ground in the module
7	TX_SD	LVTTL-O	Tx Signal Detect, active high when transmitter on
8	RX_LOS	LVTTL-O	Loss of Receiver Signal Indication
9	TX_PWDN	LVTTL-I	Power saving of Tx side, On/off time less than 1ms, active low to active Tx power saving. if this feature will not be used, main board connection should be NC
10	VeeR		Module Receiver Ground
11	VeeR		Module Receiver Ground
12	RD-	CML-O	Receiver Inverted Data Output
13	RD+	CML-O	Receiver Non-Inverted Data Output
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
19	TD-	LVPECL-I	Transmitter Inverted Data Input
20	VeeT		Module Transmitter Ground



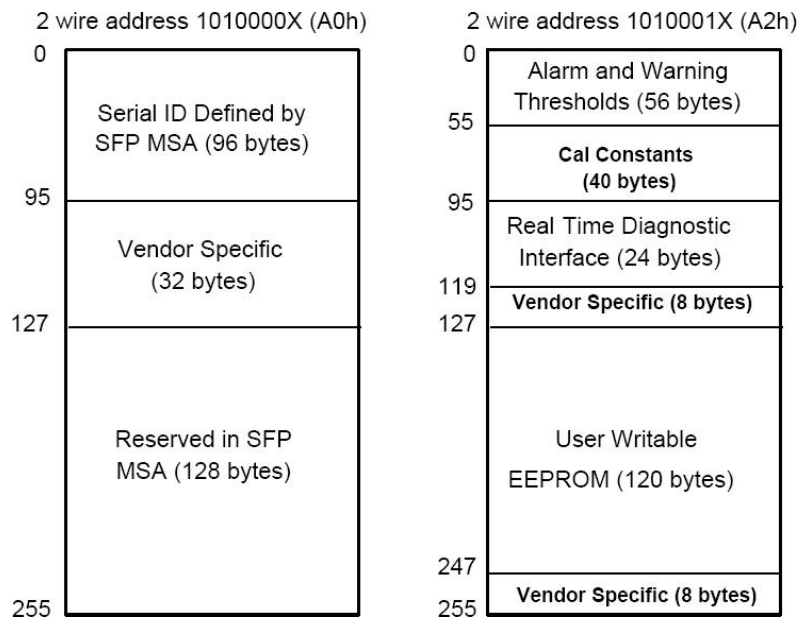
Typical Interface Circuit



Mechanical Diagram



EEPROM Memory Map



Ordering Information

Ordering P/Ns	Description
GNUP-2555S-R3 CDH	XGSPON ONU, 20km, Tx 1270nm 10.3125G, Rx 1577nm 10.3125G, TX_Burst signal high active transmitter on, SFP+ form-factor, SC/APC receptacle connector, 0~70°C Commercial temperature
GNUP-2555S-R3 TDH	XGSPON ONU, 20km, Tx 1270nm 10.3125G, Rx 1577nm 10.3125G, TX_Burst signal high active transmitter on, SFP+ form-factor, SC/APC receptacle connector, -40~85°C Industrial temperature
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Version	Date	Description
V0	Mar-2017	New release
V1	Sep-2018	Add GNUP-2555S-S3CDH and GNUP-2555S-S3TDH type