

## XGSPON & XGPON/GPON Combo OLT Optical Transceivers

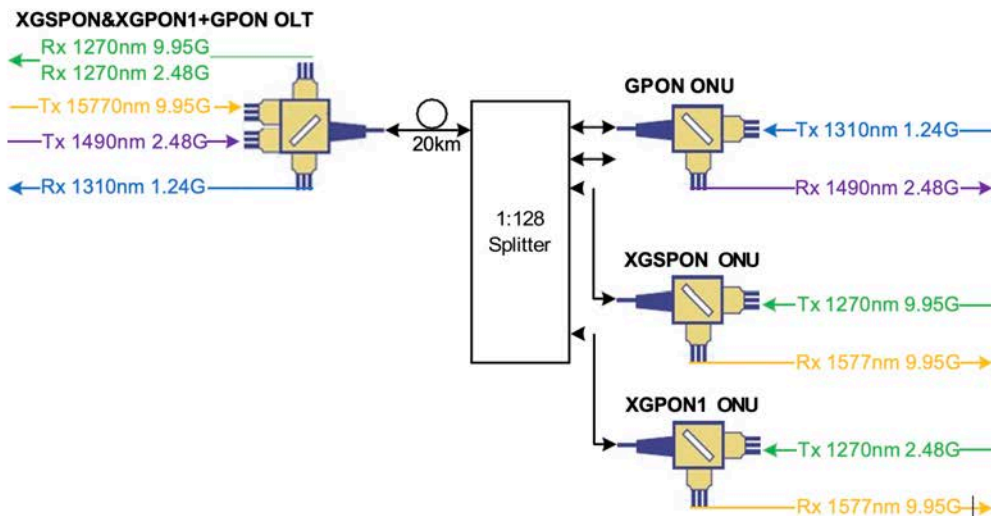
### Description

XGSPON&XGPON/GPON Combo OLT, compatible with GPON OLT B+ and XGSPON&XGPON OLT N1, Featuring TX 1490nm 2.488Gbps / Burst RX 1310nm 1.244Gbps, and TX 1577nm 9.95Gbps / Burst RX 1270nm 9.95Gbps, SFP+ form-factor, BIDI SC/UPC Receptacle, 0~70°C Commercial Temperature Range.



### Product Features

- Support both ITU-T G.9807.1&G.987.2 XGSPON&XGPON OLT N1 and ITU-T G.984.2 GPON OLT B+ application.
- Single fiber Quad-directional data links, and the four wavelengths can work simultaneously
- XGSPON&XGPON 1577nm 9.953G continuous-mode transmitter with EML laser, 1270nm 9.953G&2.488G burst-mode receiver with APD-TIA (with RESET), with GPON 1490nm 2.488G continuous-mode transmitter with DFB laser, 1310nm 1.244G burst-mode receiver with APD-TIA (with RESET)
- 2-wire interface for integrated digital diagnostic monitoring
- Digital receiving signal strength indication (RSSI)
- SFP+ MSA package with SC/UPC receptacle optical interface
- +3.3V power supply
- Operating case temperature: 0~70°C
- RoHS compliance



### Functional Schematic Diagram

## Operating & Storage Conditions

Parameter	Unit	Min.	Typical	Max.
Storage Temperature	°C	-40		85
Operating Case Temp	°C	0		70
Storage Humidity	%	5		90
Operating Relative Humidity	%	5		85
Power Supply Voltage	V	3.135	3.3	3.465
Power Consumption	W			2.8
Damage Threshold for Receiver	dBm	-3		
Bit Rate for Tx 1577nm	Gbps	9.953		
Bit Rate for Rx 1270nm	Gbps	2.488	9.953	
Bit Rate for Tx 1490nm	Gbps	2.488		
Bit Rate for Rx 1310nm	Gbps	1.244		

## Characteristics

All performance is specified at whole working temperature and conditions.

Parameter	Unit	Min.	Typical	Max.
XGSPON1577nm 9.953G Transmitter				
TX Central Wavelength	nm	1575	1577	1580
Spectral Width (-20dB)	nm			1
Side Mode Suppression Ratio	dB	30		
XGSPON Mean Launched Power (N1 BOL)	dBm	2.5		5
XGSPON Mean Launched Power (N1 EOL)	dBm	2		5
Mean Launched Power (TX Off)	dBm			-39
Extinction Ratio	dB	8.2		
Optical Return Loss Tolerance	dB			15
XGSPON Transmitter 20km FiberDispersion Penalty	dB			1
Transmitter Mask (PRBS231-1@9.953G)	Compliant With ITU-TG.9807.1			

<b>XGPON 1577nm 9.953G Transmitter</b>				
TX Central Wavelength	nm	1575	1577	1580
Spectral Width (-20dB)	nm			1
Side Mode Suppression Ratio	dB	30		
XGPON Mean Launched Power (N1 BOL)	dBm	2.5		6
XGPON Mean Launched Power	dBm	2		6
<b>(N1 EOL)</b>				
Mean Launched Power (TX Off)	dBm			-39
Extinction Ratio	dB	8.2		
Optical Return Loss Tolerance	dB			15
XGPON Transmitter 20km FiberDispersion Penalty	dB			0.5
Transmitter Mask (PRBS231-1@9.953G)	Compliant With ITU-T G.987.2			
<b>XGSPON 1270nm 9.953G Receiver</b>				
Receive Wavelength	nm	1260	1270	1280
Sensitivity (N1 BOL) (PRBS231-1@9.953G,ER=8.2, BER<10 <sup>-3</sup> )	dBm			-26.5
Sensitivity (N1 EOL) (PRBS231-1@9.953G,ER=8.2, BER<10 <sup>-3</sup> )	dBm			-26
Overload (N1)	dBm	-4		
Settling time	ns			100
SD Assert Level	dBm			-29
SD De-assert Level	dBm	-45		
SD Hysteresis	dB	0.5		6
<b>XGPON 1270nm 2.488G Receiver</b>				
Receive Wavelength	nm	1260	1270	1280
Sensitivity (N1 BOL) (PRBS223-1@2.488G,ER=8.2, BER<10 <sup>-4</sup> )	dBm			-28
Sensitivity (N1 EOL) (PRBS223-1@2.488G,ER=8.2, BER<10 <sup>-4</sup> )	dBm			-27.5
Overload (N1)	dBm	-6		

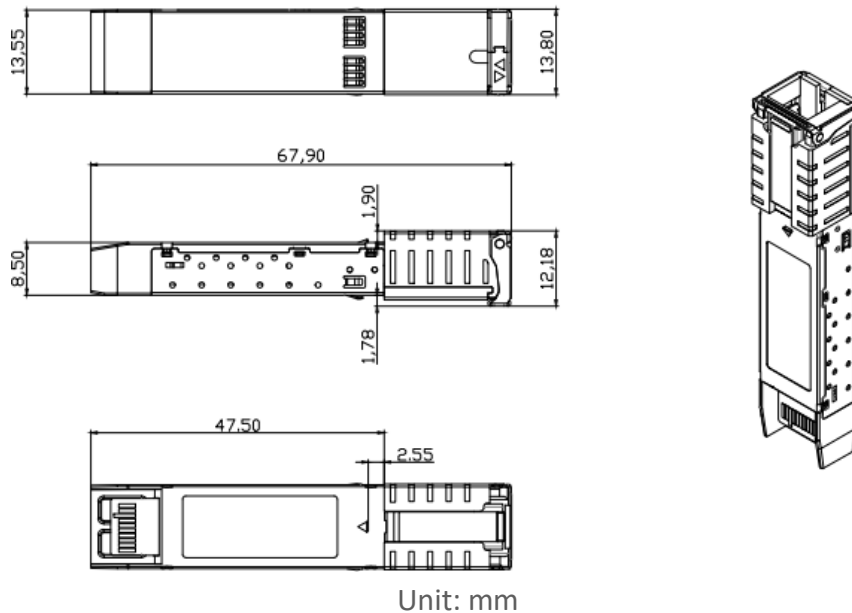
SD Assert Level	dBm			-29
SD De-assert Level	dBm	-45		
SD Hysteresis	dB	0.5		6

Parameter	Unit	Min.	Typical	Max.
<b>GPON 1490nm 2.488G Transmitter</b>				
TX Central Wavelength	nm	1480	1490	1500
Spectral Width (-20dB)	nm			1
Side Mode Suppression Ratio	dB	30		
Mean Launched Power (B+ BOL)	dBm	2.5		5
Mean Launched Power (B+ EOL)	dBm	1.5		5
Mean Launched Power (TX Off)	dBm			-39
Extinction Ratio	dB	8.2		
Optical Return Loss Tolerance	dB			15
GPON Transmitter 20km FiberDispersion Penalty	dB			1
Transmitter Mask(PRBS223-1@2.488G)	Compliant WithITU-TG.984.2			
<b>GPON 1310nm 1.244G Receiver</b>				
Receive Wavelength	nm	1290	1310	1330
Sensitivity (B+ BOL) (PRBS223-1@1.244G,ER=10,BER<10-10)	dBm			-29
Sensitivity (B+ EOL) (PRBS223-1@1.244G,ER=10,BER<10-10)	dBm			-28
Overload (B+)	dBm	-8		
Receiver Burst Mode Dynamic Range	dB	15		
SDAssert Level	dBm			-30
SDDe-assert Level	dBm	-45		
SD Hysteresis	dB	0.5		6

## Electrical Interface Characteristics

Parameter	Unit	Min.	Typical	Max.
XGSPON&XGPON Data Input Swing Differential/TX	mV	120		800
XGSPON&XGPONData Output Swing Differential/RX	mV	400		800
GPONData Input Swing Differential/TX	mV	200		1600
GPONData Output Swing Differential/RX	mV	1200		2000
Data Differential Impedance	$\Omega$	90	100	110
LVTTTL Output High	V	2.4		Vcc
LVTTTL Output Low	V	0		0.4
LVTTTL Input High	V	2.0		Vcc+0.3
LVTTTL Input Low	V	0		0.8

## Mechanical Drawings



## EEPROM Memory Map

