



# CXR

## GPON OLT OPTICAL MODULE



### Product Features

- Support ITU-T G.984.2 GPON OLT C+/C++ application
- Single fiber bi-directional data links with symmetric 2.488Gbps Tx and 1.244 Gbps Rx
- 1490nm continuous-mode transmitter with DFB LD
- 1310nm burst-mode receiver with APD-TIA
- 2-wire interface for integrated digital diagnostic monitoring
- Receiver RESET, Signal Detect, RSSI function indication (RESET, RX\_SD, RSSI)
- SFP package with SC/UPC receptable optical interface
- Single +3.3V power supply
- Operation case temperature 0~70 °C for commercial
- RoHS6 compliance

### Operating Condition

Parameter	Unit	Min.	Typical	Max.
Storage Temperature	°C	-40	3.3	85
Operating case Temp for C-Temp	°C	0		70
Operating Relative Humidity	%	5		95
Power Supply Voltage	V	3.15		3.45
Supply Current	mA			600
Bit Rate for Tx	Gbps		2.488	
Bit Rate for Rx	Gbps		1.244	

# Characteristics

## SFP-GP-OLT-SM20H

Parameter	Unit	Min.	Typical	Max.
<b>Transmitter</b>				
TX Central Wavelength	nm	1480	1490	1500
Spectral Width (-20dB)	nm			1
Side Mode Suppression Ratio (SMSR)	dB	30		
Mean Launched Power	dBm	3		7
Mean Launched Power (TX Off)	dBm			-45
Extinction Ratio	dB	8.2		
Optical Return Loss Tolerance	dB	-12		
Transmitter and dispersion Penalty	dB			1
Transmitter Mask(PRBS2 <sup>23</sup> -1@2.488G)		Compliant With ITU-T G.9842		
<b>Receiver</b>				
Receive Wavelength	nm	1290	1310	1330
Sensitivity(PRBS2 <sup>23</sup> -1@1.244G,ER=10,BER<10 <sup>-23</sup> )	dBm			-31
Overload(PRBS2 <sup>23</sup> -1@1.244G,ER=10,BER<10 <sup>-23</sup> )	dBm	-12		
Receiver Burst Mode Dynamic Range	dB	15		
Damage Threshold for Receiver	dBm	5		
SD Assert Level	dBm			-33
SD De-assert Level	dBm	-45		
SD Hysteresis	dB	0.5		6
WDM Filter isolation to 1550nm	dB	38		
WDM Filter isolation to 1650nm	dB	35		
<b>Electrical Interface Characteristics</b>				
Data Input Swing Differential/TX	mV	200		2000
Data Output Swing Differential/RX	mV	400		1600
Data Differential Impedance	Ω	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
<b>Timing Characteristics</b>				
Guard Time (Tg)	ns	25.6		
Reset Pulse Width (Tr)	ns			12.8
Reset Delay (Trd)	ns			12.8
Receiver Preamble Time (Tp)	ns			140
SD Assert Time (TSDA)	ns			100
SD De-assert Time (TSDD)	ns			12.8
RSSI Trigger Delay (Ttd)	ns	25		
RSSI Trigger Pulse Width (Tw)	ns	500		
Internal I2C Delay (Twait)	us			500

# Characteristics

## SFP-GP-OLT-SM20HPP

Parameter	Unit	Min.	Typical	Max.
<b>Transmitter</b>				
TX Central Wavelength	nm	1480	1490	1500
Spectral Width (-20dB)	nm			1
Side Mode Suppression Ratio (SMSR)	dB	30		
Mean Launched Power	dBm	4.5		10
Mean Launched Power (TX Off)	dBm			-45
Extinction Ratio	dB	8.2		
Optical Return Loss Tolerance	dB	-12		
Transmitter and dispersion Penalty	dB			1
Transmitter Mask(PRBS2 <sup>23</sup> -1@2.488G)		Compliant With ITU-T G.9842		
<b>Receiver</b>				
Receive Wavelength	nm	1290	1310	1330
Sensitivity(PRBS2 <sup>23</sup> -1@1.244G,ER=10,BER<10 <sup>-9</sup> )	dBm			-31
Overload(PRBS2 <sup>23</sup> -1@1.244G,ER=10,BER<10 <sup>-9</sup> )	dBm	-12		
Receiver Burst Mode Dynamic Range	dB	15		
Damage Threshold for Receiver	dBm	5		
SD Assert Level	dBm			-33
SD De-assert Level	dBm	-45		
SD Hysteresis	dB	0.5		6
WDM Filter isolation to 1550nm	dB	38		
WDM Filter isolation to 1650nm	dB	35		
<b>Electrical Interface Characteristics</b>				
Data Input Swing Differential/TX	mV	200		2000
Data Output Swing Differential/RX	mV	400		1600
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
<b>Timing Characteristics</b>				
Guard Time (Tg)	ns	25.6		
Reset Pulse Width (Tr)	ns			12.8
Reset Delay (Trd)	ns			12.8
Receiver Preamble Time (Tp)	ns			14.0
SD Assert Time (TSDA)	ns			10.0
SD De-assert Time (TSDD)	ns			12.8
RSSI Trigger Delay (Ttd)	ns	25		
RSSI Trigger Pulse Width (Tw)	ns	500		
Internal I2C Delay (Twait)	us			500

## Ordering Information

Model	Description
<b>SFP-GP-OLT-SM20H</b>	OLT SFP module, Class C+ standard, downlink 2.5G/uplink 1.25G, TX wavelength 1490nm, RX wavelength 1310nm, SC interface
<b>SFP-GP-OLT-SM20HPP</b>	OLT SFP module, Class C+ standard, downlink 2.5G/uplink 1.25G, TX wavelength 1490nm, RX wavelength 1310nm, SC interface



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