

GPON OLT Optical Module

CLGPONOLT10+

Product Features:

- Support ITU-T G.984.2 GPON OLT Tx Power +10dBm application
- Single fiber bi-directional data links with symmetric 2.488Gbps Tx and 1.244Gbps 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 receptacle optical interface
- Single +3.3V power supply
- Operating case temperature: 0~70°C
- RoHS6 compliance

Functional Characteristics

The following tables list the performance specifications for the various functional blocks of the module.

Table 1 – Optical Characteristics

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Transmitter						
TX Central Wavelength	λ_c	1480	1490	1550	nm	
Spectral Width (-20dB)	$\Delta\lambda$			1	nm	
Side Mode Suppression Ratio	SMSR	30			dB	
CLGPONOLT10+ Launched Power		10			dBm	
Mean Launched Power (TX Off)				-45	dBm	
Extinction Ratio	ER	8.2			dB	
Optical Return Loss Tolerance		-15			dB	
Transmitter and dispersion Penalty	TDP			1	dB	
Transmitter Mask (PRBS 2^23-1 @2.488G)	Compliant With ITU-T G.984.2, Margin > 20%					
Receiver						
Receive Wavelength	λ_c	1290	1310	1330	nm	
Sensitivity CLGPONOLT10+				-33	dBm	PRBS 2^23-1 @1.244G, ER=10, BER<10^-10
Sensitivity CLGPONOLT10+				-35	dBm	PRBS 2^23-1 @1.244G, ER=10, BER<10^-4
Overload		-15			dBm	PRBS 2^23-1 @1.244G, ER=10, BER<10^-10
Receiver Burst Mode Dynamic Range		15			dB	
Damage Threshold for Receiver		-3			dBm	
SD Assert Level				-36	dBm	
SD De-assert Level		-45			dBm	

SD Hysteresis		0.5		6	dB	
WDM Filter isolation to 1550nm		38			dB	
WDM Filter isolation to 1650nm		35			dB	

Table 2 – Electrical and Timing Characteristics

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Recommended Operating Conditions						
Storage Temperature		-40		85	°C	
Operating Case Temperature (C-temp)	T _c	0		70	°C	
Power Supply Voltage	V _{cc}	3.15	3.3	3.45	V	
Supply Current	I _{cc}			500	mA	
Bit Rate for Tx			2.488		Gbps	
Bit Rate for Rx			1.244		Gbps	
Electrical Interface Characteristics						
Data Input Swing Differential / TX		200	-	1600	mV	
Data Output Swing Differential / RX		400		1600	mV	
Data Differential Impedance	Z _{diff}	90	100	110	Ω	
LVTTL Output High		2.4		V _{cc}	V	
LVTTL Output Low		0		0.4	V	
LVTTL Input High		2.0		V _{cc} +0.3	V	
LVTTL Input Low		0		0.8	V	
Timing Characteristics						
Guard Time	T _g	25.6			ns	
Reset Pulse Width	T _r			12.8	ns	
Reset Delay	T _{rd}			12.8	ns	
Receiver Preamble Time	T _p			140	ns	
SD Assert Time	T _{SDA}			100	ns	
SD De-assert Time	T _{SDD}			12.8	ns	
RSSI Trigger Delay	T _{td}	25			ns	
RSSI Trigger Pulse Width	T _w	500			ns	
ONU Package Length	T _{ont}	300			ns	
Internal I2C Delay	T _{I2C}			500	us	

Ordering Information

Table 3 - Ordering Information

Part No.	Description
CLGPONOLT10+	GPON OLT Tx Power +10dBm, TX 1490nm 2.488Gbps, RX 1310nm 1.244Gbps, SFP, BIDI SC/UPC Receptacle, Commercial Temperature

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