XGSPON SFP+ ONU Optical Module
CLXGSP-ONU

Product Features:

- Single Fiber XGS-PON ONU Transceiver
- SFP+ package with SC/UPC receptacle connector
- 1270nm burst-mode 9.953Gb/s transmitter with DFB laser
- 1577nm continuous-mode 9.953Gb/s APD/TIA receiver
- Digital diagnostic monitoring (DDM) with internal calibration
- 3.3V separated power supply, low power dissipation
- Support 20km transmission distance with SMF
- CML interface logic level for data output
- Low EMI and excellent ESD protection
- RoHS-6/6 compliant
- No soft TX disable
- Support to keep the DMI value of 25s
- Operating temperature range: 0~+70°C

Applications:

- 10G/10G XGS-PON ONU
- Complies with SFP+ MSA (SFF-8431)

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						
Data Rate	BR		9.953		Gb/s	
Optical Transmitter Power	POUT	4		9	dBm	Launched into 9/125μm SMF
Output Center Wavelength	λc	1260	1270	1280	nm	
Output Spectrum Width (-20dB)	Δλ			1	nm	
Side Mode Suppression Ratio	SMSR	30			dB	
Output Power at Transmit Off	POFF			-45	dBm	
Extinction Ratio	ER	6			dB	
Tolerance to Tx Back Reflection	RL			12	dB	
Transmitter Reflectance				-10	dB	
Transmitter and Dispersion Penalty	TDP			1.5	dB	
Tx_Burst Enable Time	Ton			24	ns	
Tx_Burst Disable Time	Toff			24	ns	

Optical Eye Diagram	Compliant With ITU-T G.9807.1					
Receiver						
Data Rate	BR		9.953		Gb/s	
Operating Wavelength	λc	1575	1577	1580	nm	
Receiver Sensitivity	PSEN			-28.5	dBm	PRBS 2^31-1 @9.953Gbit/s, BER=10^-3
Overload Input Optical Power	PSAT	-8			dBm	
Maximum Input Optical Power	PMAX	+5			dBm	
LOS Assert	PLOSA	-39			dBm	
LOS De-Assert	PLOSD			-30	dBm	
LOS Hysteresis	PLOSD-PLOSA	0.5		5	dB	λ=1577nm
Receiver Reflectance				-20	dB	λ=1577nm
1310nm Tx to 1577nm Rx Crosstalk				-47	dB	
Optical Isolation from External Source	ISO1	35			dB	λ=1560nm
Optical Isolation from External Source	ISO2	35			dB	λ=1600nm

Table 2 – Electrical Characteristics

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Recommended Operating Conditions						
Power Supply Voltage	Vcc	3.15	3.3	3.45	V	
Power Supply Current	ICC			450	mA	
Operating Case Temperature	Tcase	0		+70	℃	
Transmitter Electrical Characteristics						
Initial Time	Tini			100	ns	
Data Input Differential Swing	VIN	200		1600	mV	
Input Differential Impedance	ZIN	90	100	110	Ω	
TX_Burst - Enable		0		0.8	V	
TX_Burst - Disable		2.0		Vcc+0.3	V	
Tx_Fault - Fault		2.4		Vcc	V	
Tx_Fault - Normal		0		0.4	V	
Tx_SD - High		2.4		Vcc	V	
Tx_SD - Low		0		0.4	V	
Transmitter State Indication Turn-ON Time	TINDI_ON	200			ns	
Transmitter State Indication Turn-OFF Time	TINDI_OFF	96			ns	
Receiver Electrical Characteristics						
Data Output Differential Swing	VOUT	340		850	mV	CML output, AC-coupled internally
RX_LOS - Low		0		0.4	V	
RX_LOS - High		2.4		Vcc	V	
LOS Assert Time	TASS			100	us	
LOS De-Assert Time	TDAS			100	us	

Ordering Information

Table 3 - Ordering Information

Part No.	Description
CLXGSP-ONU	XGS-PON ONU SC/UPC SFP+ Transceiver, 9.953Gbps Tx 1270nm, 9.953Gbps Rx 1577nm, SC/UPC connector

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