

GEPON OLT PX20+ Optical Module

CLEPONOLTPX20+

CLEPONOLTPX20+I

Product Features

- Compatible IEEE 802.3ah 1000BASE-PX20/PX20+ GEPON application
- Applied to EPON OLT for a Single Fiber Bi-directional EPON System
- SFP, Single SC connector, Digital Diagnostic Interface Compliant with SFF-8472
- Burst Digital Receiving Signal Strength Indication (RSSI)
- Single 3.3V power supply
- Operation case temperature -40~85°C for industrial and -10~70°C for commercial
- RoHS-6 compliance

Absolute Maximum Ratings

Parameter	Unit	Min.	Typical	Max.
Power Supply	V	0		4.2
Storage Ambient Temperature	°C	-40		85
Operating Case Temperature	°C	-40		85
Operating Relative Humidity	%	5		95
Receiver Damaged Threshold	dBm	0		

Operating Condition

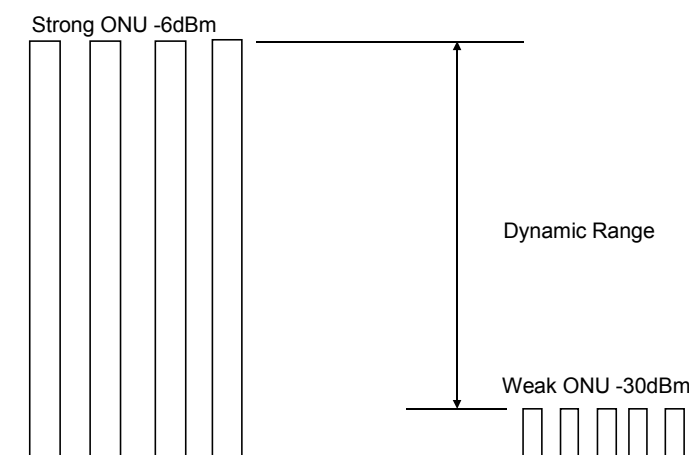
Parameter	Unit	Min.	Typical	Max.
Power Supply	V	3.1	3.3	3.5
Operating Case Temp for C-temp	°C	-10		70
Operating Case Temp for I-temp	°C	-40		85
Operating Relative Humidity	%	5		95
Data Rate(TX/RX)	Gbit/s		1.25	

Optical Characteristics

Parameter	Unit	Min.	Typ.	Max.
TX Central Wavelength	nm	1480		1500
Spectral Width (-20dB)	nm			1
SMSR	dB	30		
Mean Launched Power	dBm	2		7
Mean Launched Power (TX Off)	dBm			-39
Extinction Ratio(Note 1)	dB	9		
TX Total Jitter	UI			0.43
Rise/Fall Time (20%-80%)	ps			260
RIN ₁₅ OMA	dB/Hz			-115
Optical Return Loss Tolerance	dB			12
Transmitter and dispersion Penalty(20km G.652)	dB			2.3
TX Optical Eye Mask	Compliant With IEEE Std 802.3ah™-2004			
Receive Wavelength	nm	1260		1360
Sensitivity (Note 2)	dBm			-30
Overload	dBm	-6		
Receiver Threshold Settling Time	ns			250
RX Dynamic Range(Note 3)	dBm	-30		-6
LOS-Deassert	dBm			-31
LOS-Assert	dBm	-45		
SD Hysteresis	dB	0.5		6
Receiver Reflectance	dB			-12

Note:

1. Measured with PRBS 2⁷-1 test pattern @1.25Gbps, Low Pass Filter is on.
2. Measured with a PRBS 2⁷-1 test pattern @1.25Gbps and ER=10dB, BER =10⁻¹²
3. RX Dynamic Range Definition



Electrical Characteristics

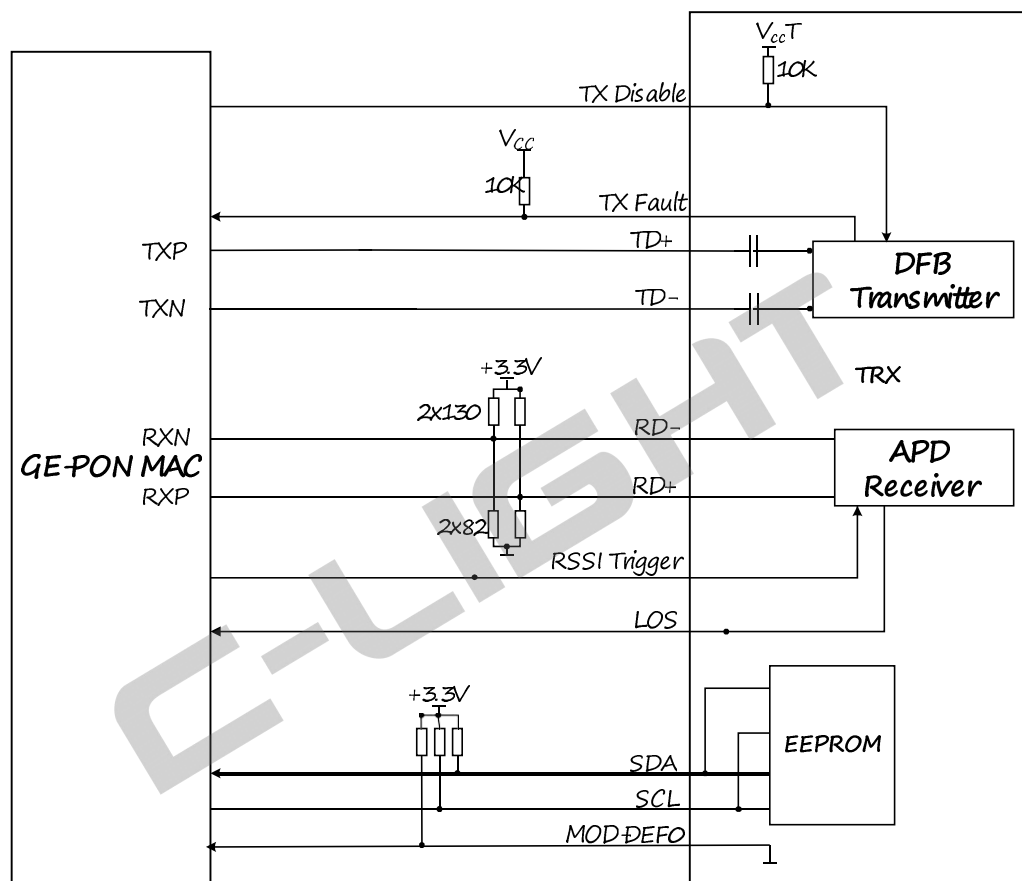
Parameter	Unit	Min.	Typical	Max.
Power Supply Current	mA			300
Data Input Differential Swing	mV	200		1600
Data Differential Impedance	Ω	90	100	110
TTL Input -Low	V	0		0.8
TTL Input -High	V	2.0		Vcc
TTLOutput -Low	V	0		0.4
TTLOutput -High	V	2.4		Vcc
Data Output Differential Swing	mV	400		1600
Los Assert Time	ns			500
Los Deassert Time	ns			500

Pin Definition

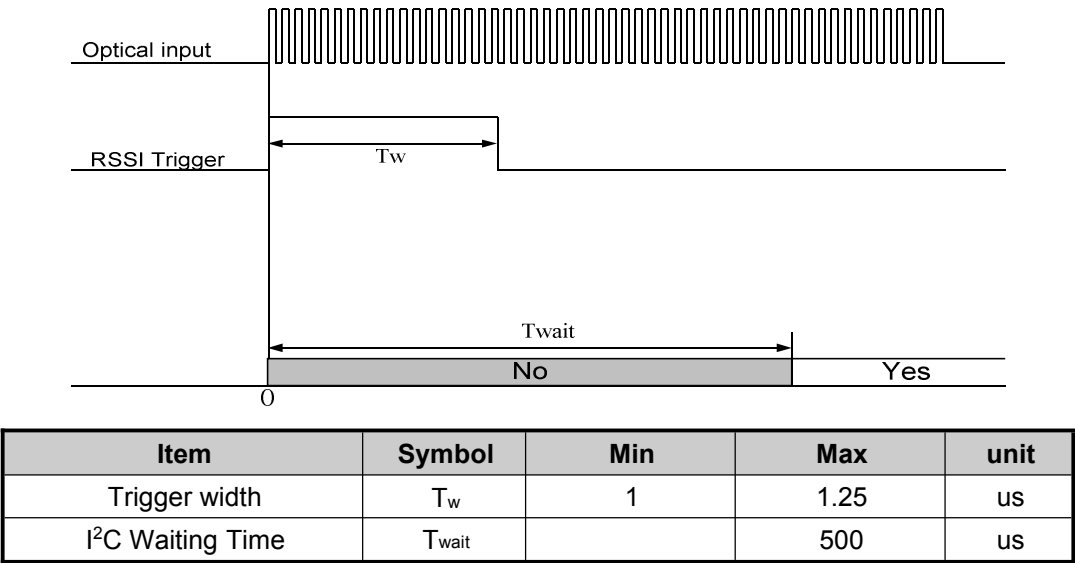
Pin No.	Name	Level/Logic	Function	Description
1	GNDT	NA	Ground	Transmitter Ground
2	TX_Fault	LVTTTL	TX Fault	TX Fault Alarm, TX Fault State: High; TX Normal State: Low
3	TX_Dis	LVTTTL	Transmitter Enable/Disable	Active High
4	MOD-DEF2	LVTTTL	SDA	I2C clock
5	MOD-DEF1	LVTTTL	SCL	I2C data
6	MOD-DEF0	MOD-DEF0		Module Definition 0, Grounding in SFP
7	RSSI_Trig	LVTTTL	RSSI Trigger	Active High for Sampling
8	LOS	LVTTTL	Receiver Signal Detection	Loss of Signal. Asserted when light is off
9	GNDR	NA	Ground	Receiver Ground
10	GNDR	NA	Ground	Receiver Ground
11	GNDR	NA	Ground	Receiver Ground
12	RD-	LVPECL	Rx Data-	RX data NOT output, DC coupled output
13	RD+	LVPECL	Rx Data+	RX data output, DC coupled output
14	GNDR	GNDR	Ground	Receiver Ground
15	V _{cc} R	NA	Receiver Power Supply	Rx Power
16	V _{cc} T	NA	Transmitter Power Supply	Tx Power
17	GNDT	GNDT	Ground	Transmitter Ground
18	TD+	LVPECL	Tx Data+	TX data input, internally DC coupled with 100ohm

				terminated
19	TD-	LVPECL	Tx Data-	TX data NOT input, internally DC coupled with 100ohm terminated
20	GNDT	NA	Ground	Transmitter Ground

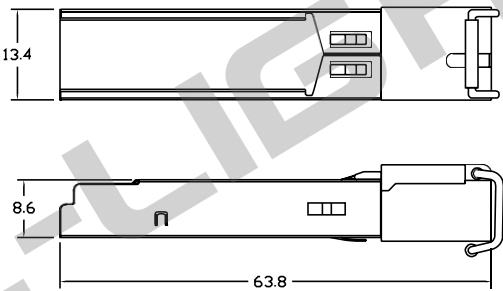
Recommended Interface Circuit



RSSI Trigger Time Sequence



Mechanical Diagram



EEPROM Information

EEPROM Serial ID Memory Contents (A0h)

Addr.	Name	Hex	Description
0	Identifier	03	SFP transceiver
1	Ext. Identifier	04	
2	Connector	01	SC
3-10	Transceiver	00 00 00 00 00 00 00 00	BASE-PX
11	Encoding	01	8B10B
12	BR, Nominal	0D	1.25Gbps
13	Reserved	00	
14	Length (9um)-km	14	20(km)
15	Length (9um)	C8	200(100m)
16~18	Length	00 00 00	Not Support
19	Reserved	00	
20-35	Vendor name	xx xx	
36	Reserved	00	
37-39	Vendor OUI	00 00 00	
40-55	Vendor PN	xxxx	
56-59	Vendor Rev	xx xx 20 20	ASCII("30 31 20 20" means 0.1 Revision)
60-61	Wavelength	05 D2	1490nm Laser Wavelength
62	Reserved	00	
63	CC_BASE	xx	Check sum of byte 0-62
64-65	Options	00 1A	LOS, TX_FAULT and TX_DISABLE
66~67	BR, max BR, min	00 00	
68-83	Vendor SN	xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx	ASCII
84-91	Date code	xx xx xx xx xx xx 20 20	Year(2 bytes), Month(2 bytes), Day(2 bytes)
92	Diagnostic Monitoring Type	68	Compliant with SFF-8472 V9.5 Internally Calibrated Received power measurement type -Average Power
93	Enhanced Options	B0	Soft TX_FAULT, Soft RX_LOS
94	SFF-8472 Compliance	02	Diagnostics Compliance(SFF-8472 V9.5)
95	CC_EXT		Check sum of byte 64-94
96-255	Vendor Specific		

Digital Diagnostic Definition (A2h)

Data Address	Parameter	Range	Accuracy
96-97	Temperature	-40 to +80°C	±3°C
98-99	Vcc Voltage	+2.9V to +3.6V	±3%
100-101	Bias Current	0 to 100mA	±10%
102-103	TX Power	0 to 8dBm	±3dB
104-105	RX Power	-32 to -5dBm	±3dB

Ordering Information

Ordering P/Ns	Description
CLEPONOLTPX20+	EPON OLT PX20+ Diplexer, 20km, Tx 1490nm 1.25G, Rx 1310nm 1.25G, SFP form-factor, SC/UPC receptacle connector, Commercial temperature
CLEPONOLTPX20+I	EPON OLT PX20+ Diplexer, 20km, Tx 1490nm 1.25G, Rx 1310nm 1.25G, SFP form-factor, SC/UPC receptacle connector, Industrial Temperature

VERSION UPDATE:

VERSION NO.	DATE	UPDATED INFORMATION
V20141213	20141213	1. Published

NOTICE:

C-LIGHT reserves the right to make changes to this product in this specification without notice, in order to improve product performance.

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