

**Alpha Bridge  
AGPON-OLT-C++  
Datasheet**



## Features

- Support ITU-T G.984.2 GPON OLT C++ 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
- Operation case temperature -40~85°C for industrial and 0~70°C for commercial
- RoHS6 compliance

## Operating Condition

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

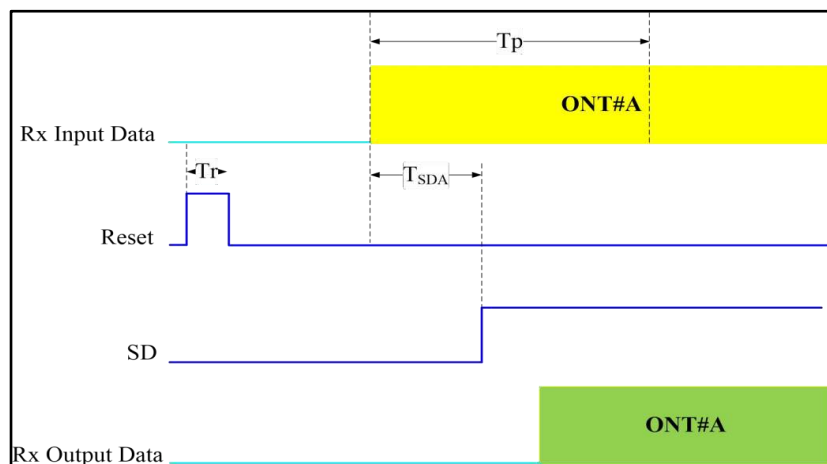
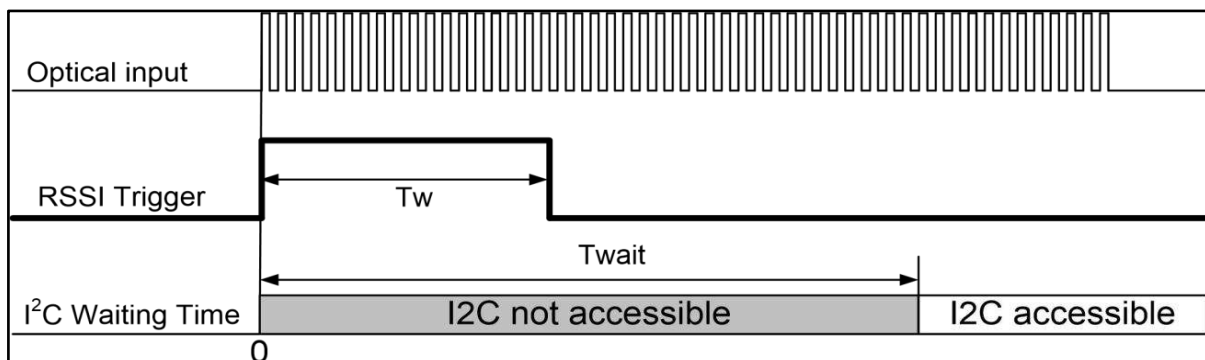
## Characteristics

All performance is specified at whole working temperature and conditions.

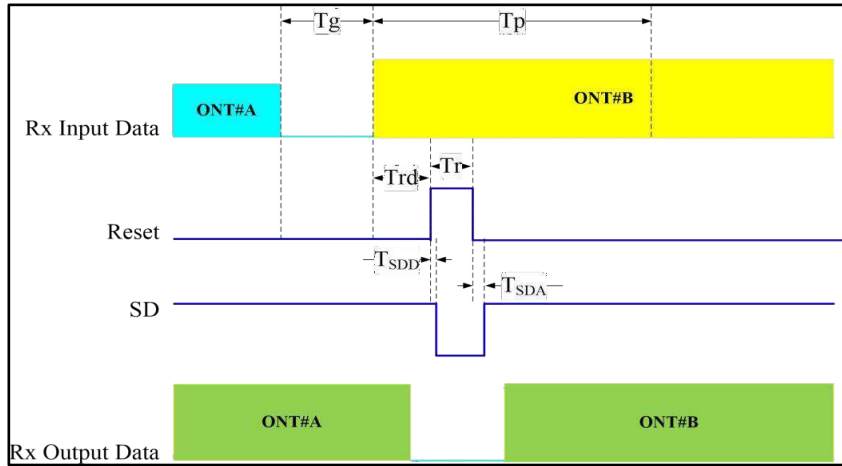
Parameter	Unit	Min.	Typical	Max.
<b>Transmitter</b>				
TX Central Wavelength	nm	1480	1490	1500
Spectral Width (-20dB)	nm			1
Side Mode Suppression Ratio (SMSR)	dB	30		
Mean Launched Power	dBm	3		7
Mean Launched Power (TX Off)	dBm			-45
Extinction Ratio	dB	8.2		
Optical Return Loss Tolerance	dB	-12		
Transmitter and dispersion Penalty	dB			1
Transmitter Mask (PRBS2 <sup>23</sup> -1@2.488G)	Compliant With ITU-T G.984.2			
<b>Receiver</b>				
Receive Wavelength	nm	1290	1310	1330
Sensitivity (PRBS2 <sup>23</sup> -1@1.244G,ER=10,BER<10 <sup>-10</sup> )	dBm			-30
Overload (PRBS2 <sup>23</sup> -1@1.244G,ER=10,BER<10 <sup>-10</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
Date 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
<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

### Timing Sequence for RSSI



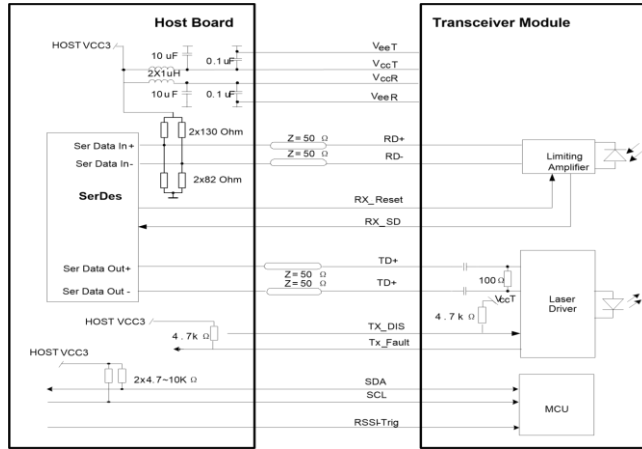
### Timing Sequence for Working Mode



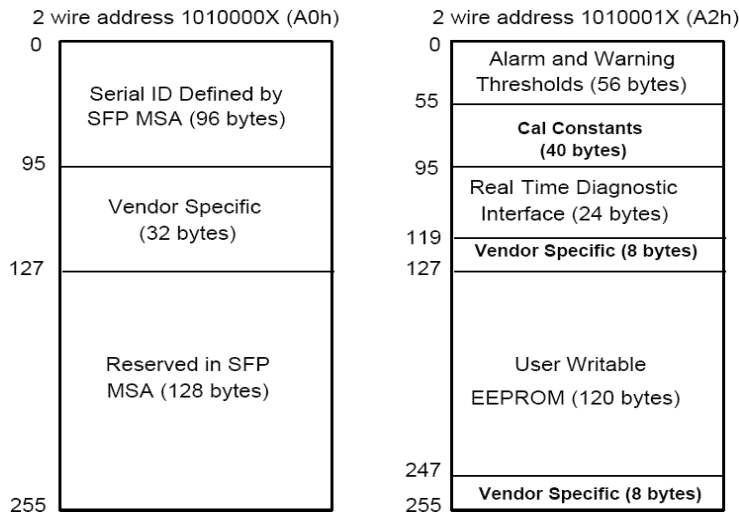
### Pin Definitions

Pin No.	Symbol	Level / Logic	Description
1	VeeT		Module Transmitter Ground
2	Tx_Fault	LVTTTL-O	Module Transmitter Fault
3	Tx_DIS	LVTTTL-I	Laser output is disabled when this pin is asserted high or left unconnected
4	SDA	LVTTTL-I	2-Wire Serial Interface Data Line
5	SCL	LVTTTL-I/O	2-Wire Serial Interface Clock
6	MOD_ABS	LVTTTL-O	Module Absent, connected to ground in the module
7	RX_Reset	LVTTTL-I	Receiver RESET signal
8	RX_SD	LVTTTL-O	Receiver Signal Detected Indication
9	RSSI_TRIG	LVTTTL-I	Receiver RSSI Trigger signal
10	VeeR		Module Receiver Ground
11	VeeR		Module Receiver Ground
12	RD-	LVPECL-O	Receiver Inverted Data Output
13	RD+	LVPECL-O	Receiver Non-Inverted Data Output
14	VeeR		Module Receiver Ground
15	VccR		Module Receiver 3.3V Supply
16	VccT		Module Transmitter 3.3V Supply
17	VeeT		Module Transmitter Ground
18	TD+	LVPECL-I	Transmitter Non-Inverted Data Input
19	TD-	LVPECL-I	Transmitter Inverted Data Input
20	VeeT		Module Transmitter Ground

**Recommended Interface Circuit**



**EEPROM Information**



**Ordering Information**

Model	Description
AGPON-OLT-C++	GPON OLT SFP 2.5G/1.25Gbps Tx1490/Rx1310nm 20km SC C++ >5db
AGPON-OLT-C++-HW	GPON OLT SFP 2.5G/1.25Gbps Tx1490/Rx1310nm 20km SC C++ >5db
AGPON-OLT-C++-ZT	GPON OLT SFP 2.5G/1.25Gbps Tx1490/Rx1310nm 20km SC C++ >5db

Note: All information contained in this document is subject to change without notice.