

**Alpha Bridge
AB-GLT-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 | | |

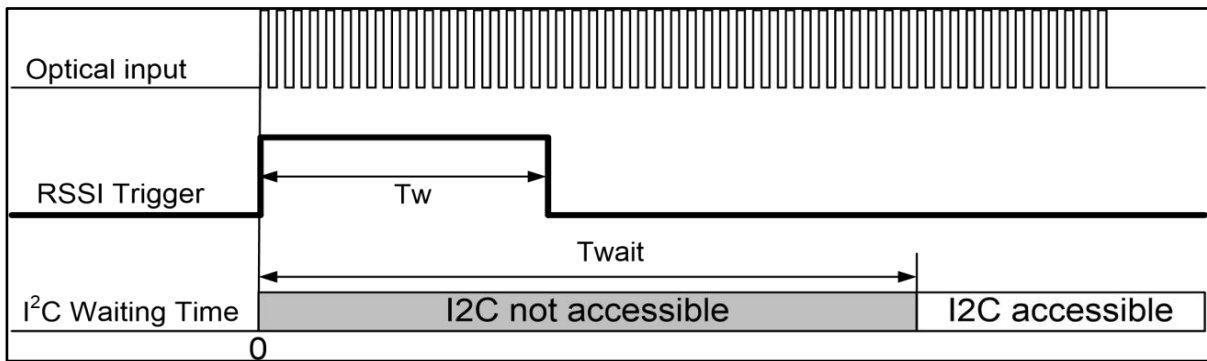
Characteristics

All performance is specified at whole working temperature and conditions.

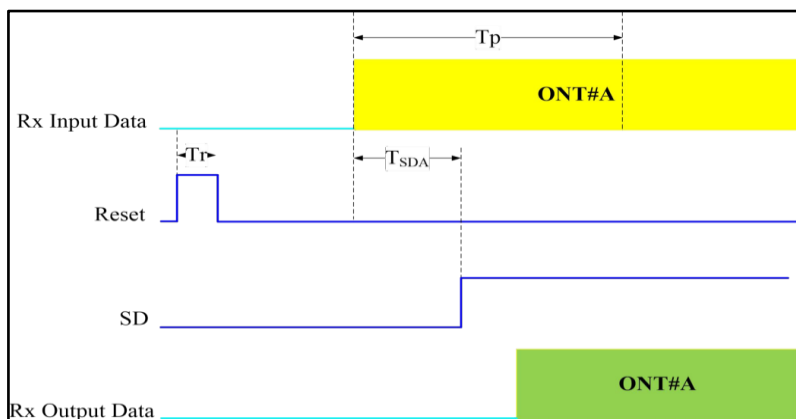
| Parameter | Unit | Min. | Typical | Max. |
|---|------|------|---------|------|
| Transmitter | | | | |
| TX Central Wavelength | nm | 1480 | 1490 | 1500 |
| Spectral Width (-20dB) | nm | | | 1 |
| Side Mode Suppression Ratio (SMSR) | dB | 30 | | |
| Mean Launched Power | dBm | 3 | | 7 |
| Mean Launched Power (TX Off) | dBm | | | -45 |
| Extinction Ratio | dB | 8.2 | | |
| Optical Return Loss Tolerance | dB | -12 | | |
| Transmitter and dispersion Penalty | dB | | | 1 |
| Transmitter Mask (PRBS223-1@2.488G) | | | | |
| Compliant With ITU-T G.984.2 | | | | |
| Receiver | | | | |
| Receive Wavelength | nm | 1290 | 1310 | 1330 |
| Sensitivity | | | | |
| (PRBS223-1@1.244G, ER=10, BER<10 ⁻¹⁰) | dBm | | | -30 |
| Overload | dBm | -12 | | |
| (PRBS223-1@1.244G, ER=10, BER<10 ⁻¹⁰) | | | | |
| 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 | | |
| Electrical Interface Characteristics | | | | |
| Data Input Swing Differential/TX | mV | 200 | - | 2000 |
| Data Output Swing Differential/RX | mV | 400 | | 1600 |
| Date 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 | | Vcc+0.3 |
| LVTTTL Input Low | V | 0 | | 0.8 |
| Timing Characteristics | | | | |
| 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 |

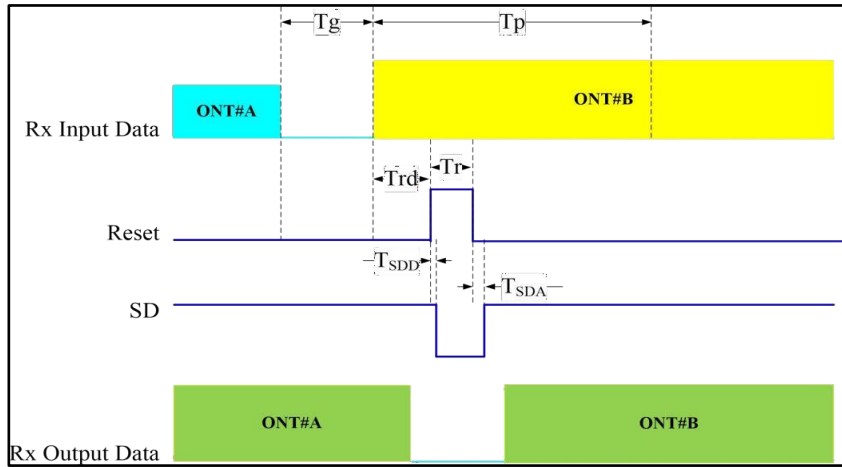
Timing Sequence for RSSI



Timing Sequence for Ranging Mode



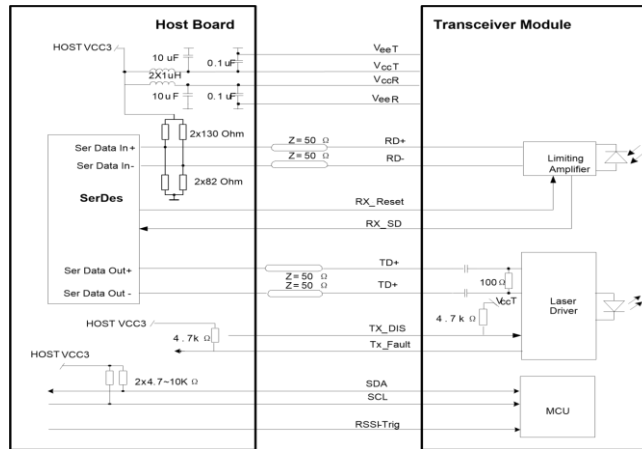
Timing Sequence for Working Mode



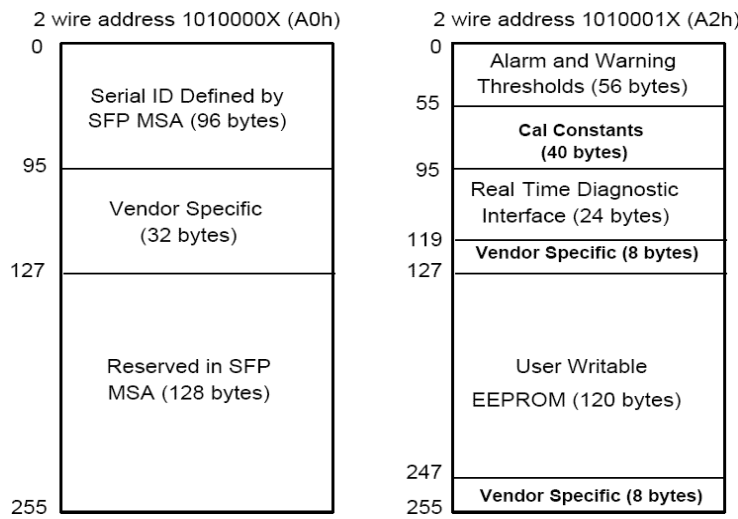
Pin Definitions

| 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 |
|-----------|--|
| AB-GLT-C+ | GPON OLT SFP 2.5G/1.25Gbps Tx1490/Rx1310nm 20km SC C+ >3.5db |

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