

RT-G01U85-C(I)00

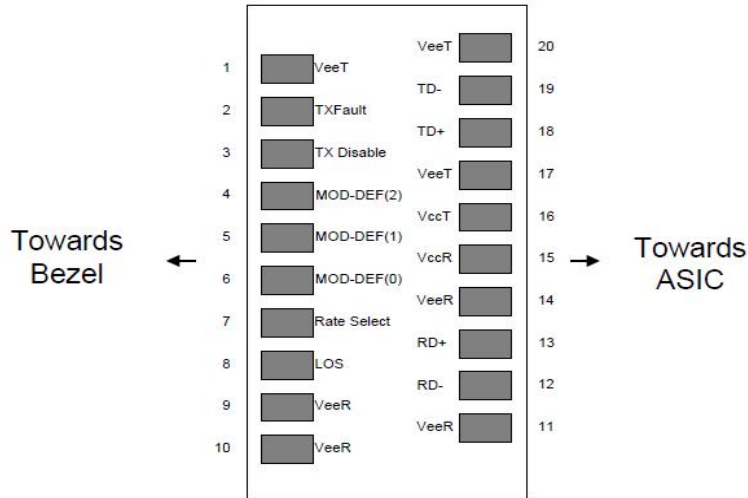
SFP 1.25Gb/s 850nm 550m DDMI

| <p>Product Features</p> <ul style="list-style-type: none"> • Up to 1.25Gbps Data Links • 850nm VCSEL laser transmitter and PIN/TIA receiver • Maximum link length of 550m on 50/125um MMF • Hot-pluggable SFP footprint • Duplex LC receptacles • Low power dissipation • RoHS compliant and lead-free • Support Digital Diagnostic Monitor interface • Single +3.3V power supply • Compliant with SFF-8472 <p>Applications</p> <ul style="list-style-type: none"> • 1000BASE-SX Ethernet • 1.06Gb/s Fibre Channel <p>Compliance</p> <ul style="list-style-type: none"> • SFP MSA • SFF-8472 • IEEE802.3z • ROHS | <p>Ordering Information</p> <table border="1"> <thead> <tr> <th>Part Number</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>RT-G01U85-C(I)00</td> <td>SFP 1.25Gb/s 850nm 550m DDMI</td> </tr> </tbody> </table> <p>For More Information: Wuhan RayOptekCo.,Ltd Address: G3-201,NewEnergy Building,No.999 Gao Xin Road, Wuhan, Hubei, China Phone:0086-27-87106345 Fax: 0086-27-87106345 Email: sales@rayoptek.com</p> | Part Number | Description | RT-G01U85-C(I)00 | SFP 1.25Gb/s 850nm 550m DDMI |
|---|---|-------------|-------------|------------------|------------------------------|
| Part Number | Description | | | | |
| RT-G01U85-C(I)00 | SFP 1.25Gb/s 850nm 550m DDMI | | | | |

Ordering information

| Part No. | Bit Rate (Gbps) | Laser (nm) | Distance (m) | Fiber Type | DDMI | Connector | Temp |
|---------------|-----------------|------------|--------------|------------|------|-----------|------------|
| RT-G01U85-C00 | 1.25 | 850 | 550 | MMF | YES | LC | 0°C~70°C |
| RT-G01U85-I00 | 1.25 | 850 | 550 | MMF | YES | LC | -40°C~85°C |

Pin Diagram



Pinout of Connector Block on Host Board

Pin Descriptions

| Pin | Symbol | Name/Description | Ref. |
|-----|-------------|--|------|
| 1 | V_{EET} | Transmitter Ground (Common with Receiver Ground) | 1 |
| 2 | T_{FAULT} | Transmitter Fault. | 2 |
| 3 | T_{DIS} | Transmitter Disable. Laser output disabled on high or open. | 3 |
| 4 | MOD_DEF(2) | Module Definition 2. Data line for Serial ID. | 4 |
| 5 | MOD_DEF(1) | Module Definition 1. Clock line for Serial ID. | 4 |
| 6 | MOD_DEF(0) | Module Definition 0. Grounded within the module. | 4 |
| 7 | Rate Select | No connection required | |
| 8 | LOS | Loss of Signal indication. Logic "0" indicates normal operation. | 5 |
| 9 | V_{EER} | Receiver Ground (Common with Transmitter Ground) | |
| 10 | V_{EER} | Receiver Ground (Common with Transmitter Ground) | 1 |
| 11 | V_{EER} | Receiver Ground (Common with Transmitter Ground) | 1 |
| 12 | RD- | Receiver Inverted DATA out (CML). AC Coupled | |
| 13 | RD+ | Receiver Non-inverted DATA out (CML). AC Coupled | |
| 14 | V_{EER} | Receiver Ground (Common with Transmitter Ground) | 1 |
| 15 | V_{CCR} | Receiver Power Supply | |
| 16 | V_{CCT} | Transmitter Power Supply | |

| | | | |
|----|-----------|--|---|
| 17 | V_{EET} | Transmitter Ground (Common with Receiver Ground) | 1 |
| 18 | TD+ | Transmitter Non-Inverted DATA in. AC Coupled. | |
| 19 | TD- | Transmitter Inverted DATA in. AC Coupled. | |
| 20 | V_{EET} | Transmitter Ground (Common with Receiver Ground) | 1 |

Notes:

1. Circuit ground is internally isolated from chassis ground.
2. T_{FAULT} is an open collector/drain output, which is pulled up with a 4.7kΩ – 10kΩ resistor on the host board, but is grounded inside the SFP cable plug.
3. Laser output disabled on $T_{DIS} > 2.0V$ or open, enabled on $T_{DIS} < 0.8V$.
4. Should be pulled up with 4.7kΩ – 10kΩ on host board to a voltage between 2.0V and 3.6V. MOD_ABS pull line low to indicate module is plugged in.
5. LOS is open collector output. Should be pulled up with 4.7kΩ – 10kΩ on host board to a voltage between 2.0V and 3.6V. Logic 0 indicates normal operation; logic 1 indicates loss of signal.

Absolute Maximum Ratings

| Parameter | Symbol | Min | Type | Max | Unit | Ref. |
|----------------------------|--------|------|------|-----|------|------------|
| Maximum Supply Voltage | Vcc | -0.5 | | 3.6 | V | |
| Storage Temperature | Ts | -40 | | 85 | °C | 1 |
| Case Operating Temperature | TOP | 0 | | 70 | °C | Commercial |
| | | -40 | | 85 | | Industrial |
| Relative Humidity | RH | 0 | | 85 | % | 2 |

Notes:

1. Limited by the fiber cable jacket, not the active ends.
2. Non-condensing.

Optical Characteristics (TOP = 0°C to 70°C, VCC = 3.3 ± 5% Volts)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Remark |
|-------------------------------------|-------------|------|------|------|------|--------|
| Transmitter | | | | | | |
| Center Wavelength | λ_c | 840 | 850 | 860 | nm | |
| RMS Spectral Width | Pm | | | 0.85 | nm | |
| Average Output Power | Pavg | -9.5 | | 0 | dBm | |
| Optical Modulation Amplitude (OMA) | Poma | 174 | | | uW | |
| Extinction Ratio | ER | 9 | | | dB | |
| Return Loss | | 12 | | | dB | |
| Transmitter OFF Output Power | POff | | | -30 | dBm | |
| Receiver | | | | | | |
| Center Wavelength | λ_c | 840 | | 860 | nm | |
| Receiver Sensitivity, Average Power | | | | -24 | dBm | |

| | | | | | | |
|---------------------------|---------------------------------|-----|--|-----|-----|--|
| Receiver Saturation Power | Psat | | | -3 | dBm | |
| Loss of Signal Assert | P _A | -35 | | | dBm | |
| Loss of Signal De-assert | P _D | | | -26 | dBm | |
| LOS Hysteresis | P _D - P _A | 0.5 | | | dB | |

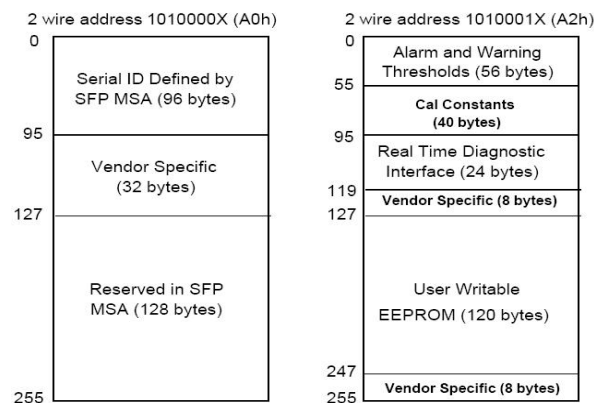
Electrical Characteristics (TOP = 0°C to 70°C, VCC = 3.3 ± 5% Volts)

| Parameter | Symbol | Min | Type | Max | Unit | Ref. |
|--------------------------------|------------------------------------|----------------------|------|----------------------|------|------|
| Supply Voltage | V _{CC} | 3.135 | 3.3 | 3.465 | V | |
| Supply Current | I _{CC} | | | 300 | mA | |
| Transmitter | | | | | | |
| Input differential impedance | R _{in} | | 100 | | | 1 |
| Differential data input swing | V _{in, pp} | 200 | | 1000 | mV | |
| Transmit Disable Voltage | V _D | 2 | | V _{CC} | V | |
| Transmit Enable Voltage | V _{EN} | V _{EE} | | V _{EE} +0.8 | V | |
| Receiver | | | | | | |
| Differential data output swing | V _{out, pp} | 200 | | 1000 | mV | 2 |
| LOS Fault | V _{LOS_fault} | 2 | | V _{CC} | V | 3 |
| LOS Normal | V _{LOS_norm} | V _{EE} | | V _{EE} +0.8 | V | 3 |
| Power Supply Noise Tolerance | V _{CCT} /V _{CCR} | Per SFF-8431 Rev 4.1 | | | mVpp | 4 |

Notes:

1. Connected directly to TX data input pins.AC coupling from pins into laser driver IC.
2. Into 100Ω differential termination.
3. Loss Of Signal is LVTTTL. Logic 0 indicates normal operation; logic 1 indicates no signal detected.

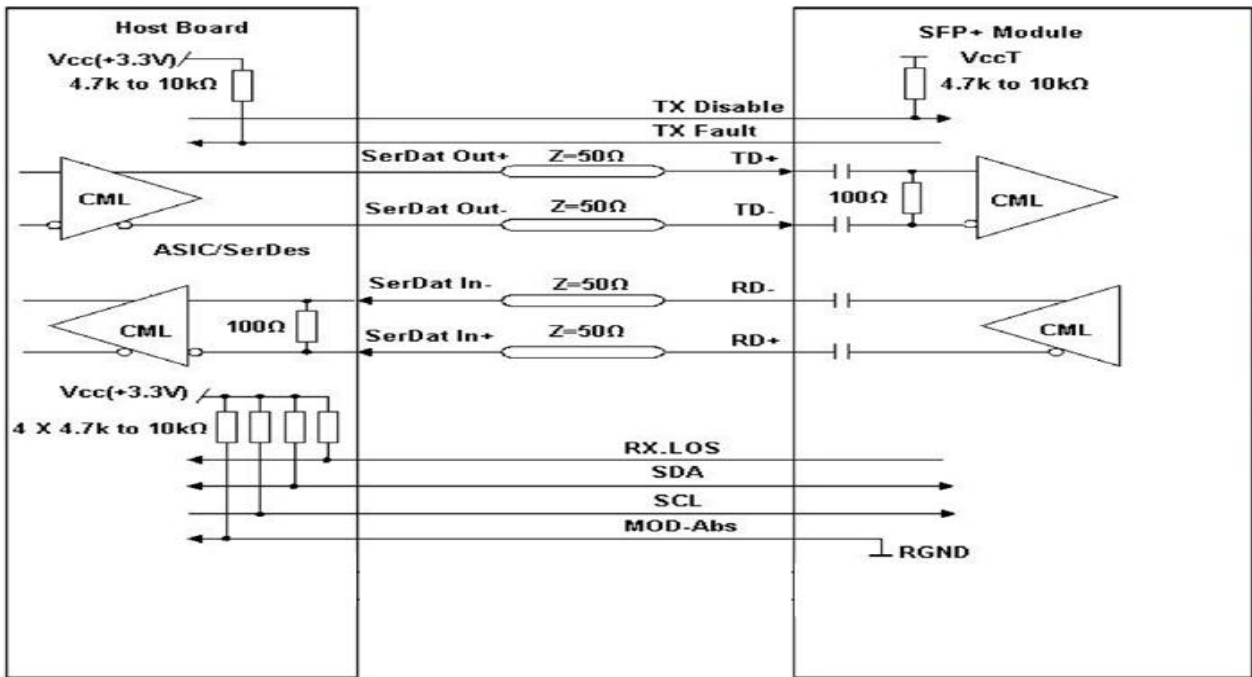
Digital Diagnostic Memory Map



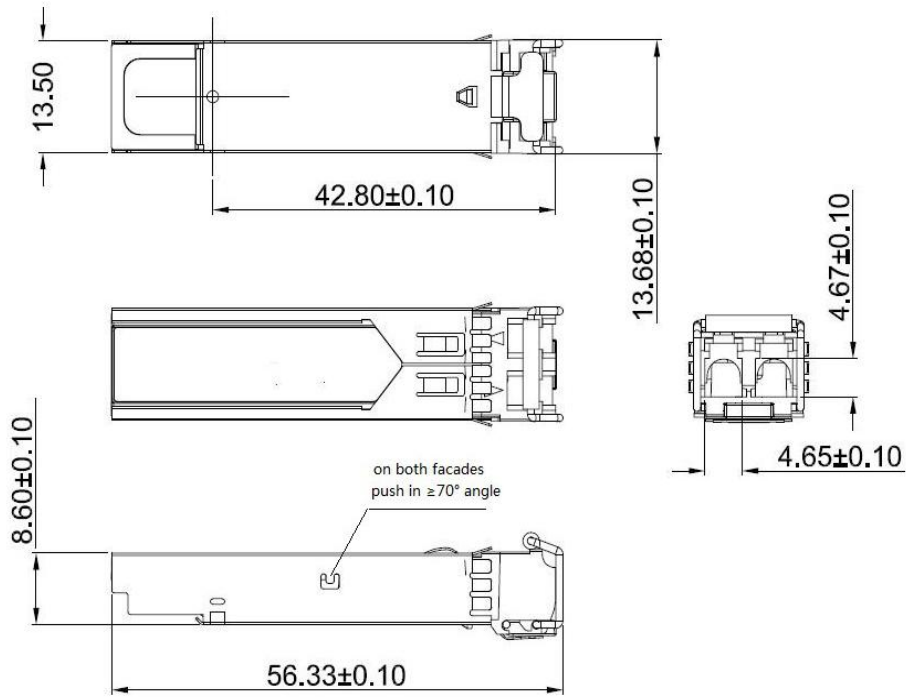
Digital Diagnostic Monitoring Information

| Parameter | Unit | Accuracy |
|------------------|------|----------|
| Case Temperature | °C | ±3 |
| Supply Voltage | V | ±3% |
| Tx Bias Current | mA | ±10% |
| Tx Optical Power | dB | ±3 |
| Rx Optical Power | dB | ±3 |

Recommended Interface Circuit



Mechanical Dimensions



SFP wire mechanical drawing (Unit: mm)

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