RT-G01L13-C(I)00

SFP 1.25Gb/s 1310nm 10km DDMI

Product Features

- Up to 1.25Gbps Data Links
- 1310nm FP laser transmitter and PIN/TIA receiver
- Maximum link length of 10km on 9/125um SMF
- 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

Applications

- 1000BASE-LX Ethernet
- 1.06Gb/s Fibre Channel

Compliance

- SFP MSA
- SFF-8472
- IEEE802.3z
- ROHS

Ordering Information

Part Number	Description
RT-G01L13-C(I)00	SFP 1.25Gb/s 1310nm 10km DDMI

For More Information:
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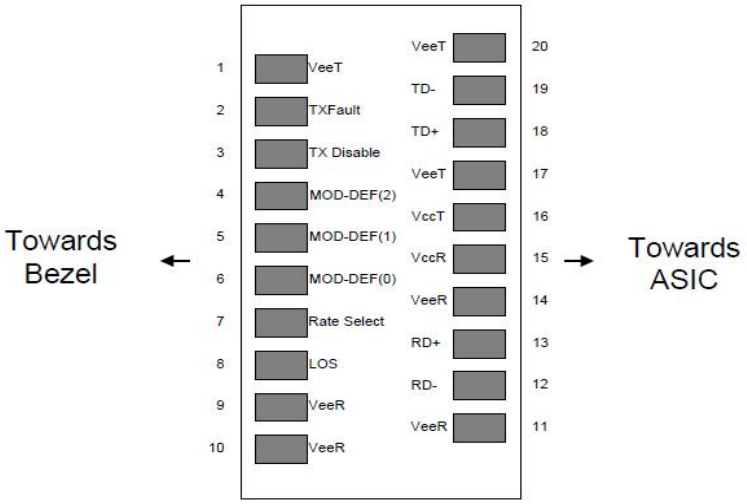
Ordering information

Part No.	Bit Rate (Gbps)	Laser (nm)	Distance（km）	Fiber Type	DDMI	Connector	Temp
RT-G01L13-C00	1.25	1310	10	SMF	YES	LC	0℃~70℃
RT-G01L13-I00	1.25	1310	10	SMF	YES	LC	-40℃~85℃

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	℃	1
Case Operating Temperature	TOP	0		70	℃	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	λc	1280	1310	1340	nm	
RMS Spectral Width	Pm			3	nm	
Average Output Power	Pavg	-9		-3	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	λc	1260		1600	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	

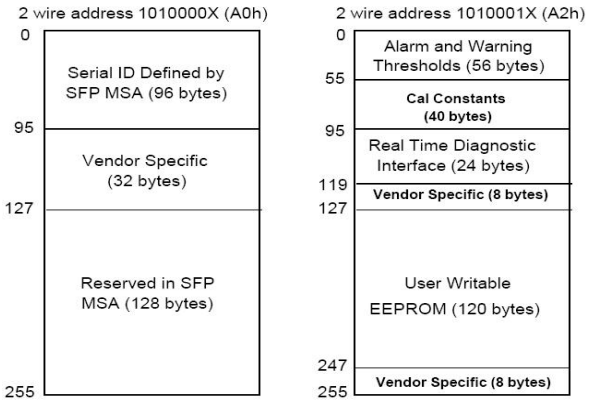
Electrical Characteristics (TOP = 0°C to 70°C, VCC = 3.3 ± 5% Volts)

Parameter	Symbol	Min	Type	Max	Unit	Ref.
Supply Voltage	Vcc	3.135	3.3	3.465	V	
Supply Current	Icc			300	mA	
Transmitter						
Input differential impedance	Rin		100			1
Differential data input swing	Vin, pp	200		1000	mV	
Transmit Disable Voltage	V_D	2		V_{CC}	V	
Transmit Enable Voltage	V_{EN}	Vee		Vee+0.8	V	
Receiver						
Differential data output swing	Vout, pp	200		1000	mV	2
LOS Fault	V_{LOS_fault}	2		Vcc	V	3
LOS Normal	V_{LOS_norm}	Vee		Vee+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 LVTTL. Logic 0 indicates normal operation; logic 1 indicates no signal detected.

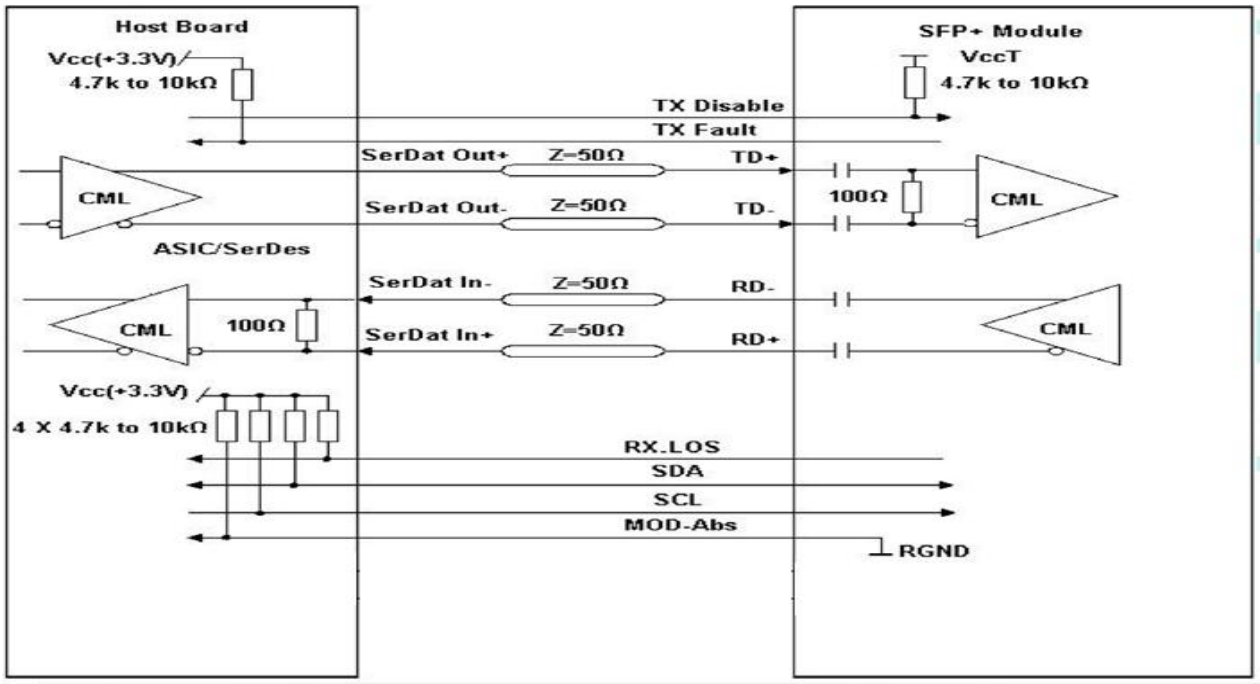
Digital Diagnostic Memory Map



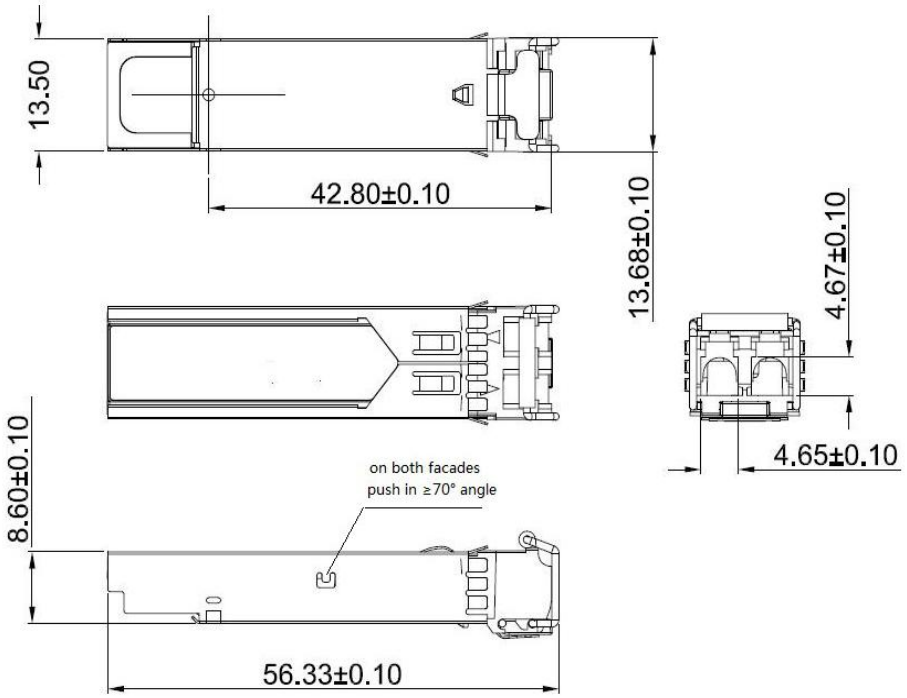
Digital Diagnostic Monitoring Information

Parameter	Unit	Accuracy
Case Temperature	℃	±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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