Lightem 10G SFP+ Active Optic Cable OM3 Multimode

FEATURES

- Up to 11.1 Gbps Data rate per channel
- Maximum link length of 3 00m links on OM3 multimode fiber
- High Reliability 850nm VCSEL technology
- Electrically hot pluggable
- Electrical interface compliant to SFF 8431
- Case o perating temperature range: 0 °C to 70 °C
- Power dissipation < 10 W per cable end

APPLICATIONS

- 10G Ethernet
- Infiniband QDR
- Fiber channel
- HPC Interconnections

STANDARD

- Compliant to SFF 8431
- RoHS Compliant

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Storage Temperature	Ts	-40	-	85	°C	
Relative Humidity	RH	5	-	95	%	
Power Supply Voltage	VCC	-0.3	-	+4	V	
Signal Input Voltage	VCC	-0.3	-	+0.3	V	

RECOMMENDED OPERATING CONDITIONS

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Case Operating Temperature	Tcase	0		+70	°C	Without air flow
Power Supply Voltage	VCC	3.14	3.3	3.46	V	
Power Supply Current	ICC	-		300	mA	
Data Rate	BR	-	10.3125		Gbps	

GENERAL PRODUCT CHARACTERISTICS

Parameter	Value
Module Form Factor	SFP+
Maximum Data Rate	11.1 Gb/s
Standard Cable Lengths	3,5,7,10,50,100 meters (Other lengths may be available upon request (<= 300m)
Protocols Supported	Typical applications include Infiniband,Fibre Channel, 10G Ethernet
Electrical Interface and Pin-out	20-pin edge connector (Pin-out as defined by the SFP+ MSA)
Standard Optical Cable Type	Multimode ribbon fiber cable assembly
Maximum Power Consumption per End	1 W (per cable end)
Management Interface	Serial, I2C-based, 400 kHz maximum frequency (As defined by the SFP+ MSA)

ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Min	Typ	Max	Unit	Note
Supply Voltage	VccT,VccR	3.14	3.3	3.46	V	
Supply Current	Icc			300	mA	
Transmitter						
Differential data input swing	Vin, pp	180		1000	mV	1
Single ended input voltage tolerance	VinT	-0.3		4.0	V	
Receiver						
Differential data output swing	Vout,pp	300		850	mV	2
Single-ended output voltage		-0.3		4.0	v	

Notes:
1. AC coupled internally. Self-biasing 100Ω differential input.
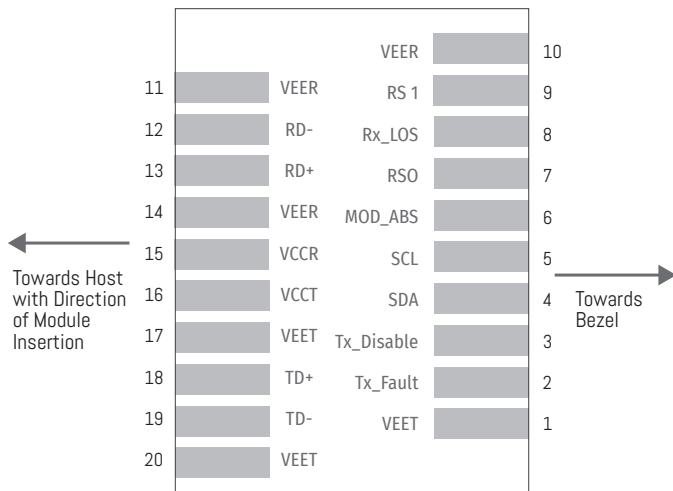2. AC coupled with 100Ω differential output impedance.

PIN DESCRIPTION

Pin	Symbol	Name /Description	
1	VEET	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	SDA	2-wire Serial Interface Data Line	4
5	SCL	2-wire Serial Interface Clock Line	4
6	MOD_ABS	Module Absent. Grounded within the module	4
7	RS0	Rate Select 0	5
8	LOS	Loss of Signal indication. Logic 0 indicates normal operation.	6
9	RS1	No connection required	1
10	VEER	Receiver Ground (Common with Transmitter Ground)	1
11	VEER	Receiver Ground (Common with Transmitter Ground)	1
12	RD-	Receiver Inverted DATA out. AC Coupled	
13	RD+	Receiver Non-inverted DATA out. AC Coupled	
14	VEER	Receiver Ground (Common with Transmitter Ground)	1
15	VCCR	Receiver Power Supply	
16	VCCR	Transmitter Power Supply	
17	VEER	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	VEER	Transmitter Ground (Common with Receiver Ground)	1

Notes:
1. Circuit ground is internally isolated from chassis ground.
2. TFAULT is an open collector/drain output, which should be pulled up with a 4.7k – 10k Ohms resistor on the host board if intended for use. Pull up voltage should be between 2.0V to Vcc + 0.3V.A high output indicates a transmitter fault caused by either the TX bias current or the TX output power exceeding the preset alarm thresholds. A low output indicates normal operation. In the low state, the output is pulled to <0.8V.
3. Laser output disabled on TDIS >2.0V or open, enabled on TDIS <0.8V.
4. Should be pulled up with 4.7kΩ- 10kΩ host board to a voltage between 2.0V and 3.6V. MOD_ABS pulls line low to indicate module is plugged in.
5. Internally pulled down per SFF-8431 Rev 4.1.
6. LOS is open collector output. It 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.
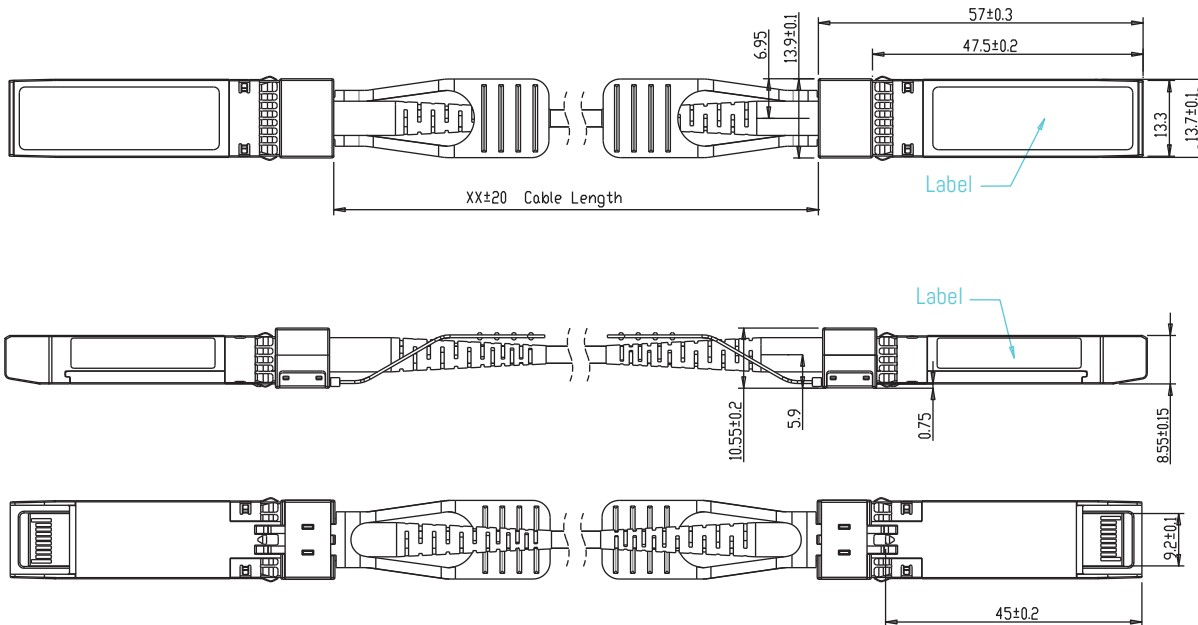
PIN OUT OF CONNECTOR BLACK ON HOST BOARD

	VEER	10
11 VEER	RS 1	9
12 RD-	Rx_LOS	8
13 RD+	RSO	7
14 VEER	MOD_ABS	6
15 VCCR	SCL	5
16 VCCT	SDA	4
17 VEET	Tx_Disable	3
18 TD+	Tx_Fault	2
19 TD-	VEET	1
20 VEET		

Towards Host with Direction of Module Insertion

Towards Bezel

MECHANICAL DIMENSIONS

Units in mm

XX±20 Cable Length

6.95
13.9±0.1
57±0.3
47.5±0.2
13.3
13.7±0.1
Label

Label
10.55±0.2
5.9
0.75
8.55±0.15

9.2±0.1
45±0.2

ORDERING INFORMATION

PN	Description
LSFP+AOCxxx,	10G SFP+ Active Optic Cable OM3 Multimode
xxx	xxx = different cable lengths on OM3 Multimode Fiber (MMF)，max =<300m
eg.	
LSFP+AOC030	030 - 30m Active Optic Cable
LSFP+AOC300	300 - 300m Active Optic Cable