

## EDSPX-xx

### 10G SFP+ to 10G SFP+ Direct Attach Copper Cables

#### PRODUCT FEATURES

- Support for multi-gigabit data rates up to 10Gb/s
- Data rates backward compatible to 1Gb/s
- Hot-pluggable SFP 20PIN footprint
- Improved Pluggable Form Factor (IPF)
- Compliant for enhanced EMI/EMC performance
- Low Power Consumption < 0.2W
- Power Supply :+3.3V
- Compatible to SFP+ MSA
- Compatible to SFF-8431, SFF8432
- Temperature Range: 0~ 70 °C
- RoHS Compatible



#### APPLICATIONS

- High Passive I/O in Storage Area Networks, Network Attached Storage, and Storage Servers
- Switched fabric I/O such as ultra high bandwidth switches and routers
- Data center cabling infrastructure
- High density connections between networking equipment

## DESCRIPTIONS

The SFP+ Passive cable assemblies are high performance, cost effective I/O solutions for 10Gb Ethernet and 10G Fiber Channel applications. SFP+ copper modules allow hardware manufactures to achieve high port density, configurability and utilization at a very low cost and reduced power budget. The high speed cable assemblies meet and exceed Gigabit Ethernet and Fiber Channel industry standard requirements for performance and reliability.

## Ordering Information

Part No.	Description
EDSPX-xx-30	10G SFP+ to 10G SFP+ Direct Attach Copper Cables 1~3M 30AWG
EDSPX-xx-24	10G SFP+ to 10G SFP+ Direct Attach Copper Cables 3~10M 24AWG

Notes:

- where "x" denotes cable length in meters. Examples are as follows:
- x = 1 for 1m, xx=10 for 10m,

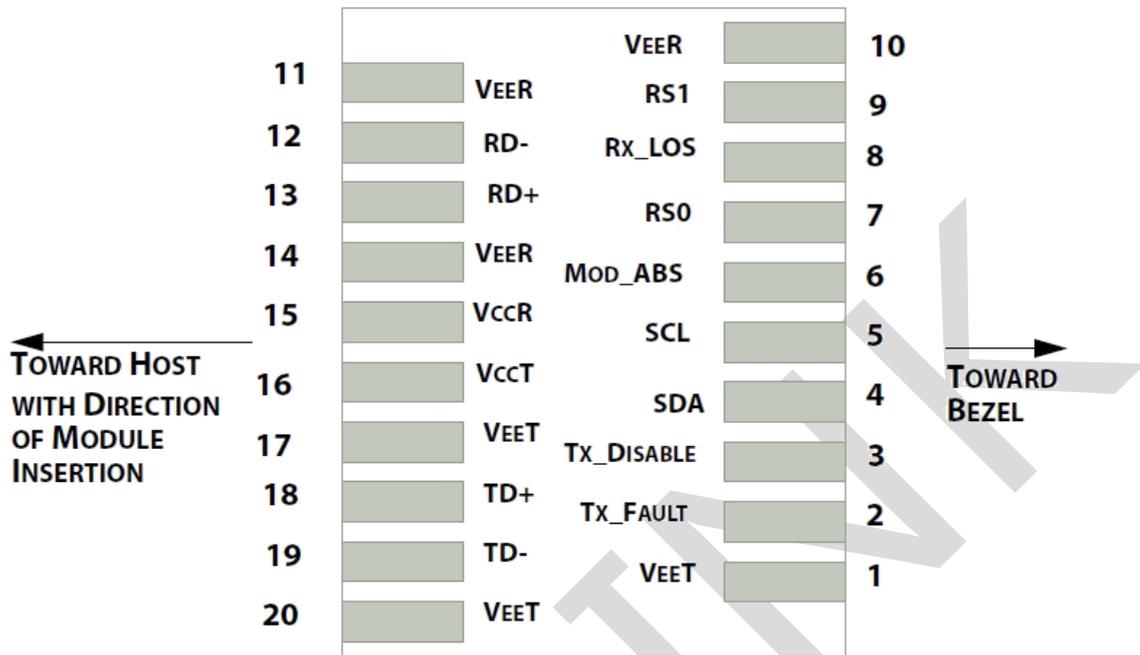
## Recommended Operating Conditions

Parameter	Symbol	Min	Typical	Max	Unit
Storage Ambient Temperature		-40		+85	°C
Operating Case Temperature	T <sub>c</sub>	0		+70	°C
Power Supply Voltage	V <sub>cc3</sub>	3.14	3.3	3.47	V
Power Dissipation	PD			0.2	W

## Systems

Performance	Media	Operating parameters
10.5Gbps line speed, full duplex Bit error rate: better than 10E-12	Hot-pluggable, industry-standard Small Form-Factor Pluggable (SFP+) copper cable, available as 1m, 3m or 5m.	Supply voltage: 3.3V Power consumption(per end): max 0.2W

# Pin Diagram

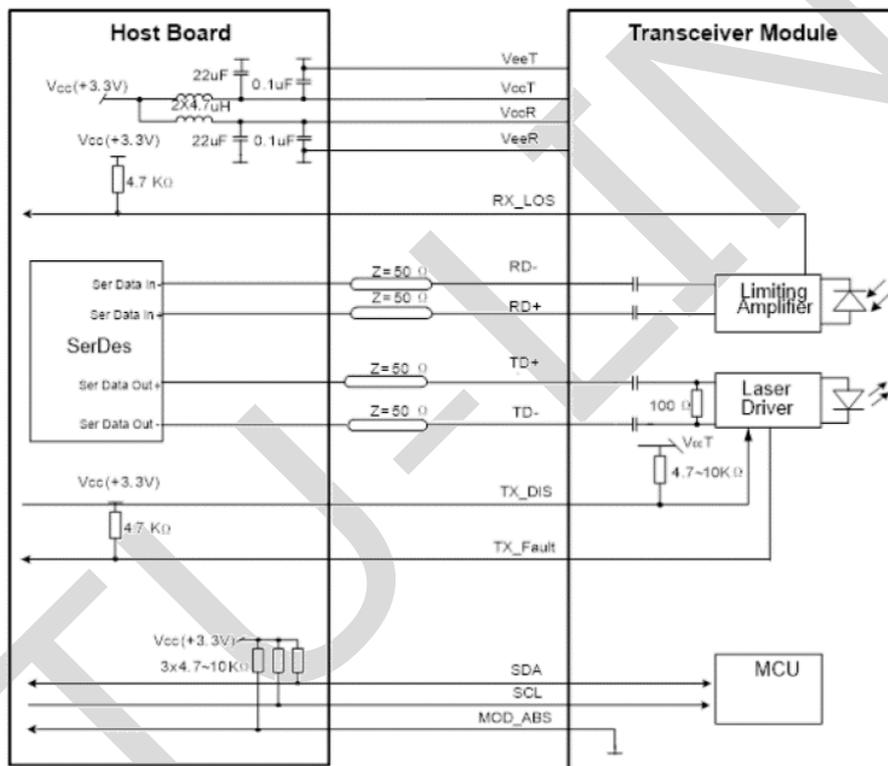


PIN #	Name	Function	Notes
1	VeeT	Module transmitter ground	1
2	Tx Fault	Module transmitter fault	2
3	Tx Disable	Transmitter Disable; Turns off transmitter laser output	3
4	SDL	2 wire serial interface data input/output (SDA)	4
5	SCL	2 wire serial interface clock input (SCL)	4
6	MOD-ABS	Module Absent, connect to VeeR or VeeT in the module	4
7	RS0	Rate select0, optionally control SFP+ receiver. When high, input data rate >4.5Gb/ s; when low, input data rate <=4.5Gb/s	5
8	LOS	Receiver Loss of Signal Indication	6
9	RS1	Rate select0, optionally control SFP+ transmitter. When high, input data rate >4.5Gb/s; when low, input data rate <=4.5Gb/s	1
10	VeeR	Module receiver ground	1
11	VeeR	Module receiver ground	1
12	RD-	Receiver inverted data output	
13	RD+	Receiver non-inverted data output	
14	VeeR	Module receiver ground	1
15	VccR	Module receiver 3.3V supply	
16	VccT	Module transmitter 3.3V supply	
17	VeeT	Module transmitter ground	1
18	TD+	Transmitter inverted data output	
19	TD-	Transmitter non-inverted data output	
20	VeeT	Module transmitter ground	1

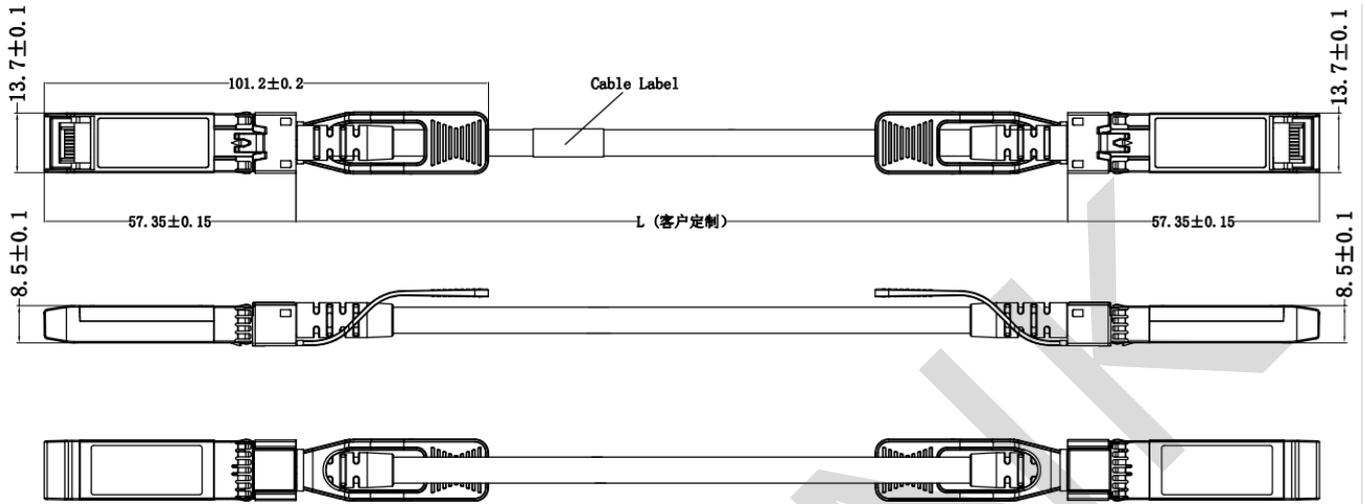
Notes:

1. Circuit ground is internally isolated from chassis ground
2. Tx FAULT 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 Tx DIS >2.0V or open, enabled on Tx DIS <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.

## Recommended Interface Circuit



## Mechanical Diagram



## Revision History

Version No.	Date	Description
1.0	Aug 12, 2017	Preliminary datasheet
1.1	Aug 12, 2024	Format change

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