

## **LO800-SR8M2C**

# **OSFP 800GBASE-SR8 Optical Transceiver**

## **LO800-SR8M2C**

### **Description**

*Fly Global Trading Limited's LO800-SR8M2C modules are designed and optimized for 800G Ethernet and Data center applications. They are compliant with IEEE 802.3db & IEEE 802.3ck and OSFP MSA. The modules offer 8 independent transmit and receive channels, each is capable of 100Gb/s operation for an aggregate data rate of 800Gb/s over 50m of OM4 multi-mode fiber. Digital diagnostics functions are available via a 2-wire serial interface.*

### **Applications**

- 2 x 400G SR4 applications with FEC
- 8 x 100GbE breakout applications
- InfiniBand NDR

### **Standard**

- Compliant to IEEE 802.3db 800GAUI-8
- Compliant to IEEE 802.3ck 800GBASE-SR8
- Compliant to CMIS5.0
- Compliant to RoHS

### **Features**

- Hot-pluggable OSFP module
- Double MPO12/APC receptacle
- 8 channels full-duplex transceiver module
- Single 3.3V power supply
- Maximum power consumption < 14W
- Commercial operating temperature range: 0°C ~ 70°C
- Link distance up to 50m over OM4 fiber
- 8 x 100Gb/s 850nm VCSEL-based transmitter
- Built-in digital diagnostic functions
- I<sup>2</sup>C management interface

### **Ordering Information**

Part Number	Description
<b>LO800-SR8M2C</b>	OSFP, 800GBASE-SR8, 50m on OM4 MMF, Double MPO-12,0°C ~ 70°C

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## Absolute Maximum Ratings

Parameter	Symbol	Min	Typ	Max	Unit	Note
Maximum Voltage Supply	V <sub>cc</sub>	-0.3		3.6	V	
Storage Temperature	T <sub>st</sub>	-20		85	°C	
Relative Humidity	RH	5		85	%	

## Recommended Operating Conditions

Parameter	Symbol	Min	Typ	Max	Unit	Note
Power Supply Voltage (Vcc-GND)	V <sub>cc</sub>	3.135	3.3	3.465	V	
Power Supply Current	I <sub>cc</sub>			4242	mA	1
Operating Temperature (Case)	T <sub>op</sub>	0		70	°C	
Power Consumption				14	W	
Transmission Distance	L1			50	m	OM4
Transmission Distance	L2			30	m	OM3
Data Rate	DR		53.125		GBd	
Notes:						
1. Max. current at V <sub>cc</sub> =3.3V.						

## Electrical Characteristics

Parameter	Symbol	Min	Typ	Max	Unit	Note
Transmitter						
Input Differential Impedance	Z <sub>in</sub>	90	100	110	Ω	
Input Amplitude	V <sub>in-pp</sub>			900	mV	
Receiver						
Output Differential Impedance	Z <sub>out</sub>	90	100	110	Ω	
Differential Data Output Swing	V <sub>out-pp</sub>			900	mV	

## Optical Characteristics

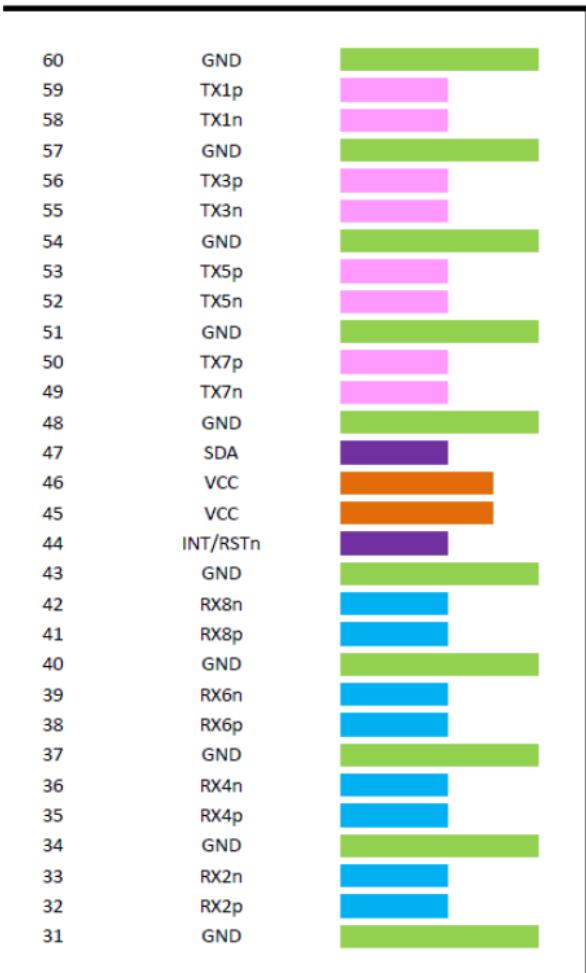
Parameter	Symbol	Min	Typ	Max	Unit	Note
Transmitter						
Wavelength (range)	λ	840	850	868	nm	
RMS Spectral Width	SW <sub>RMS</sub>			0.6	nm	
Optical Output Power	P <sub>o</sub>	-4.6		4.0	dBm	
Optical Modulation Amplitude (OMA)	P <sub>oma</sub>	-2.6		3.5	dBm	
Laser Off Power	P <sub>off</sub>			-30	dBm	
Extinction Ratio	ER	2.5			dB	

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<b>Transmitter and Dispersion</b>	TDECQ			4.4	dB	
<b>Penalty Eye Closure for PAM4, Each Lane</b>						
<b>Optical Return Loss Tolerance</b>	T <sub>RL</sub>			14	dB	
<b>Receiver</b>						
<b>Wavelength (range)</b>	λ	842	850	948	nm	
<b>Average Receive Power, per channel</b>	P <sub>IN</sub>	-6.4		4.0	dBm	
<b>Receiver sensitivity (OMAouter), each lane (max) for TECQ≤1.8 dB for 1.8&lt;TECQ≤4.4 dB</b>	P <sub>sens</sub>			-4.6 - 6.4+TECQ	dBm	
<b>Stressed Receiver Sensitivity (OMA), per Lane</b>	SRS			-2	dBm	
<b>Damage Threshold</b>	P <sub>DT</sub>	5.0			dBm	
<b>Receiver Reflectance</b>	R <sub>RX</sub>			-12	dB	

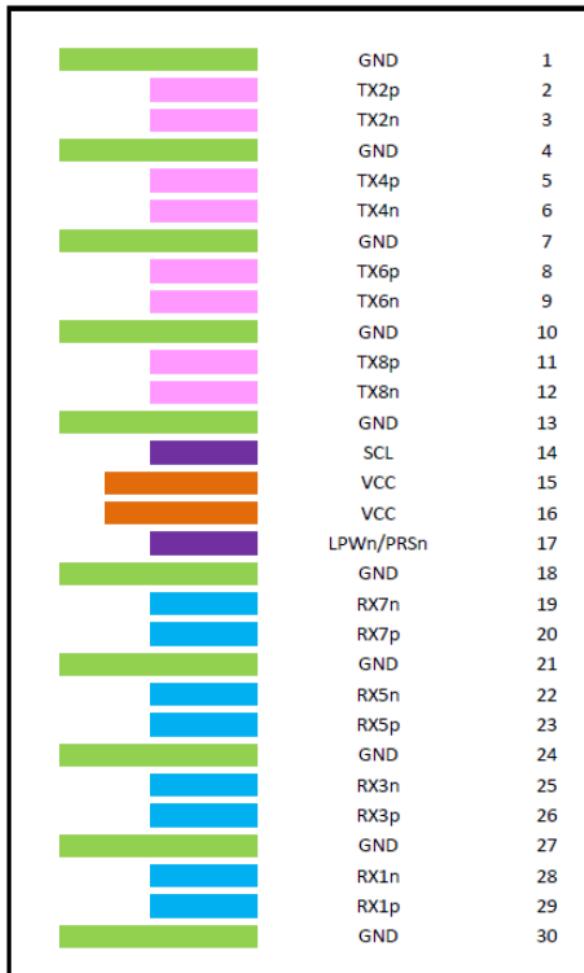
## PIN Definition

**Top Side (viewed from top)**



Module Card Edge

**Bottom Side (viewed from bottom)**



## LO800-SR8M2C

Pin	Symbol	Description	Logic	Direction	Plug Sequence	Notes
1	GND	Ground			1	
2	TX2p	Transmitter Data	CML-I	Input	3	
3	TX2n	Transmitter Data	CML-I	Input	3	
4	GND	Ground			1	
5	TX4p	Transmitter Data	CML-I	Input	3	
6	TX4n	Transmitter Data	CML-I	Input	3	
7	GND	Ground			1	
8	TX6p	Transmitter Data	CML-I	Input	3	
9	TX6n	Transmitter Data	CML-I	Input	3	
10	GND	Ground			1	
11	TX8p	Transmitter Data	CML-I	Input	3	
12	TX8n	Transmitter Data	CML-I	Input	3	
13	GND	Ground			1	
14	SCL	2-wire Serial interface clock	LVCMSO- I/O	Bi-directional	3	Open-Drain with pull up resistor on Host
15	VCC	+3.3V Power		Power	2	
16	VCC	+3.3V Power		Power	2	
17	LPWn/PRS n	Low-Power Mode / Module	Multi-Level	Bi-directional	3	See pin description for required circuit
18	GND	Ground			1	
19	RX7n	Receiver Data	CML-O	Output	3	
20	RX7p	Receiver Data	CML-O	Output	3	
21	GND	Ground			1	
22	RX5n	Receiver Data	CML-O	Output	3	
23	RX5p	Receiver Data	CML-O	Output	3	
24	GND	Ground			1	
25	RX3n	Receiver Data	CML-O	Output	3	
26	RX3p	Receiver Data	CML-O	Output	3	
27	GND	Ground			1	
28	RX1n	Receiver Data	CML-O	Output	3	
29	RX1p	Receiver Data	CML-O	Output	3	
30	GND	Ground			1	
31	GND	Ground			1	
32	RX2p	Receiver Data	CML-O	Output	3	
33	RX2n	Receiver Data	CML-O	Output	3	
34	GND	Ground			1	
35	RX4p	Receiver Data	CML-O	Output	3	
36	RX4n	Receiver Data	CML-O	Output	3	
37	GND	Ground			1	
38	RX6p	Receiver Data	CML-O	Output	3	
39	RX6n	Receiver Data	CML-O	Output	3	
40	GND	Ground			1	
41	RX8p	Receiver Data	CML-O	Output	3	

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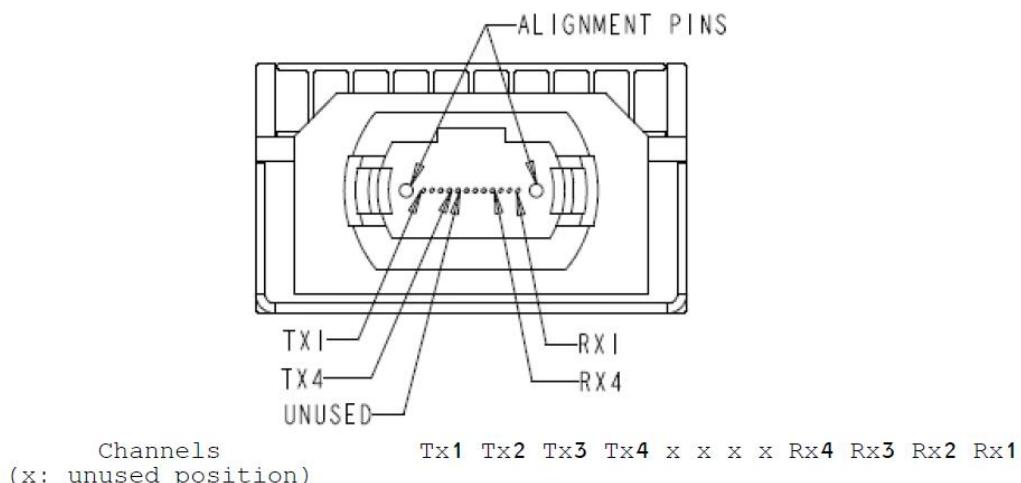
42	RX8n	Receiver Data	CML-O	Output	3	
43	GND	Ground			1	
44	INT/RSTn	Module Interrupt / Module Reset	Multi-Level	Bi-directional	3	See pin description for required circuit
45	VCC	+3.3V Power		Power	2	
46	VCC	+3.3V Power		Power	2	
47	SDA	2-wire Serial interface data	LVCMS- I/O	Bi-directional	3	Open-Drain with pull up resistor on Host
48	GND	Ground			1	
49	TX7n	Transmitter Data	CML-I	Input	3	
50	TX7p	Transmitter Data	CML-I	Input	3	
51	GND	Ground			1	
52	TX5n	Transmitter Data	CML-I	Input	3	
53	TX5p	Transmitter Data	CML-I	Input	3	
54	GND	Ground			1	
55	TX3n	Transmitter Data	CML-I	Input	3	
56	TX3p	Transmitter Data	CML-I	Input	3	
57	GND	Ground			1	
58	TX1n	Transmitter Data	CML-I	Input	3	
59	TX1p	Transmitter Data	CML-I	Input	3	
60	GND	Ground			1	

Notes:

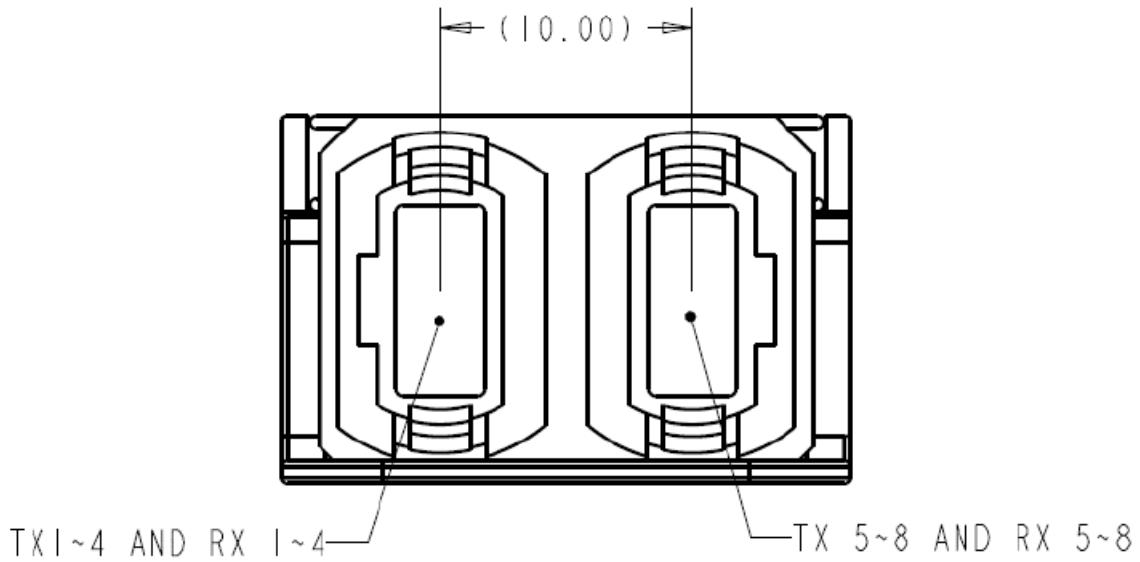
1. Plug Sequence specifies the mating sequence of the host connector and module. The contact sequence is 1,2,3.
2. LPWn/PRSn is a Multi-level signal for low power control from host to module and module presence indication from module to host. It designed according to OSFP Module Specification Section 13.5.3
3. INT/RSTn is a Multi-level signal for interrupt request from module to host and reset control from host to module. It designed according to OSFP Module Specification Section 13.5.2

## Optical Interface Lanes and Assignment

Channel orientation of the optical connector when dual MPO-12 connectors are used show as bellow:



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## Mechanical Dimensions

LO800-SR8M2C transceiver modules mechanical dimensions. (Unit: mm) Compatible with the OSFP Specification for pluggable form factor Type 2 modules.

