

QSFP28 Active Optical Cable

CLC100GSFPA-XM

Features

- ◆ 4 channels full-duplex transceiver modules
- ◆ Supports 100Gbps total data rate
- ◆ Transmission data rate up to 25.78125 Gbps per channel
- ◆ 4 channels 850nm VCSEL array
- ◆ 4 channels PIN photo detector array
- ◆ Low power consumption <3.5W
- ◆ Hot Pluggable QSFP form factor
- ◆ Maximum link length of 70m on OM3 Multimode Fiber (MMF) and 100m on OM4 MMF
- ◆ Single MPO connector receptacle
- ◆ Built-in digital diagnostic functions
- ◆ Operating case temperature 0°C to +70°C
- ◆ 3.3V power supply voltage
- ◆ RoHS 6 compliant (lead free)



Applications

- ◆ IEEE 802.3bm 100GBASE SR4
- ◆ Infiniband EDR
- ◆ 128G Fibre Channel
- ◆ 4x28Gb/s Multimode OTN

Ordering Information

Part No.	Data Rate	AOC Length	CASE Temp.	DDM
CLC10GSFPA-xM	100Gbps	X=1~70m	-40 ~+85	Yes

Product Description

The CLC100GSFPA-XM is a Four-Channel, Pluggable, Parallel, Fiber-Optic QSFP+ AOC for 100 Gigabit Ethernet and Infiniband EDR Applications. This AOC is a high performance module for short-range multi-lane data communication and interconnect applications. It integrates four data lanes in each direction with 100 Gbps bandwidth. Each lane can operate at 25.78125 Gbps up to 70 m using OM3 fiber or 100 m using OM4 fiber. These modules are designed to operate over multimode fiber systems using a nominal wavelength of 850nm. The electrical interface uses a 38 contact edge type connector. The optical interface uses an 12 fiber MTP (MPO) connector.

Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit	Note
Storage Temperature Tst	Tst	40	+85	degC	
Relative Humidity (non-condensation)	RH	5	90	%	
Operating Case Temperature	Topc	0	+70	degC	
Operating Range		0.002	70	m	
Supply Voltage	VCC	-0.3	3.6	V	

Recommended Operating Conditions

Parameter	Symbol	Min.	Typical	Max.	Unit
Supply Voltage	Vcc	3.1	3.3	3.5	V
Case Operating Temperature	Tca	0	25	70	°C
Data Rate Per Lane	fd		25.78125		Gbps
Humidity	Rh	5		85	%
Power Dissipation	Pm			1.5	W
Fiber Bend Radius	Rb	0.5			cm

Performance Specifications - Electrical

Parameter	Symbol	Min	Typic	Max	Unit
Differential input impedance	Z _{in}	90	100	110	ohm
Differential Output impedance	Z _{out}	90	100		ohm
Differential input voltage	ΔV _{in}	300		1100	mVp
Differential output voltage	ΔV _{out}	500		800	mVp
Skew	Sw			300	ps
Bit Error Rate	BER			E-12	
Input Logic Level High	V _{IH}	2.0		VCC	V
Input Logic Level Low	V _{IL}	0		0.8	V
Output Logic Level High	V _{OH}	VCC-		VCC	V
Output Logic Level Low	V _{OL}	0		0.4	V

Performance Specifications - Optical

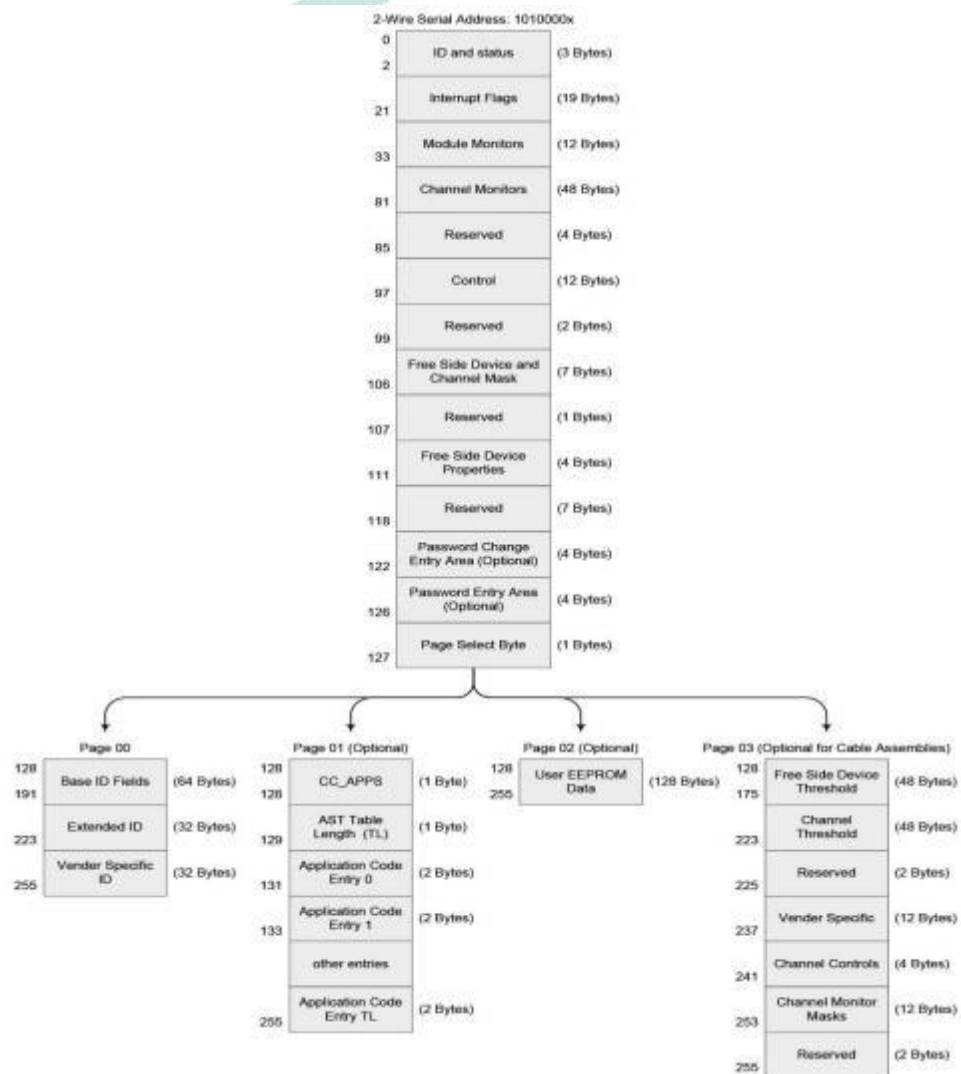
Parameter	Symbol	Min	Typical	Max	Unit	Notes
Transmitter						
Centre Wavelength	λ _c	840	850	860	nm	-
RMS spectral width	Δλ	-	-	0.6	nm	-
Average launch power,	P _{out}	-8.4	-	2.4	dBm	-
Optical Modulation Amplitude (OMA),each lane	OMA	-6.4		3	dBm	-
Transmitter and dispersion eye	TDEC			4.3	dB	
Extinction Ratio	ER	3	-	-	dB	-
Average launch power of OFF transmitter, each				-30	dB	-
Eye Mask coordinates: X1, X2, X3, Y1, Y2, Y3		SPECIFICATION VALUES {0.3,0.38,0.45,0.35,0.41,0.5}				Hit Ratio = 5x10-5
Receiver						
Centre Wavelength	λ _c	840	850	860	nm	-

Maximum Average power at receiver , each lane				2.4	dBm	-
---	--	--	--	-----	-----	---

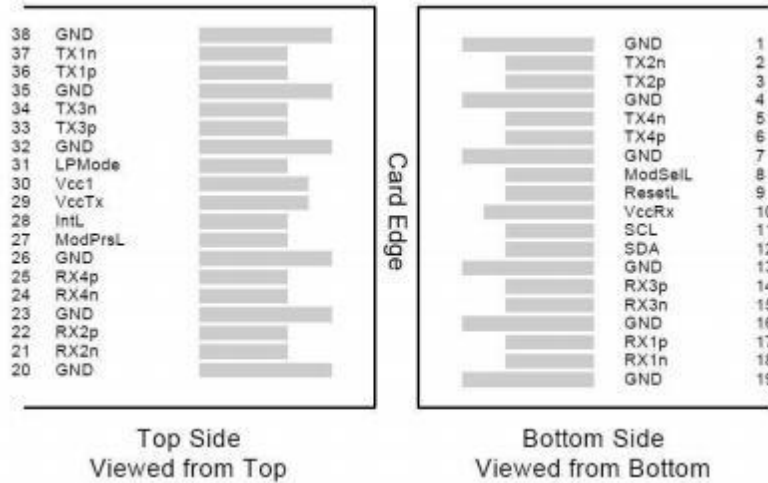


Minimum Average power at receiver , each				-10.3	dBm	
Receiver Reflectance				-12	dB	-
LOS Assert		-30			dBm	-
LOS De-Assert – OMA				-7.5	dBm	-
LOS Hysteresis		0.5			dB	-

Memory Map



Pin Arrangement and Definition



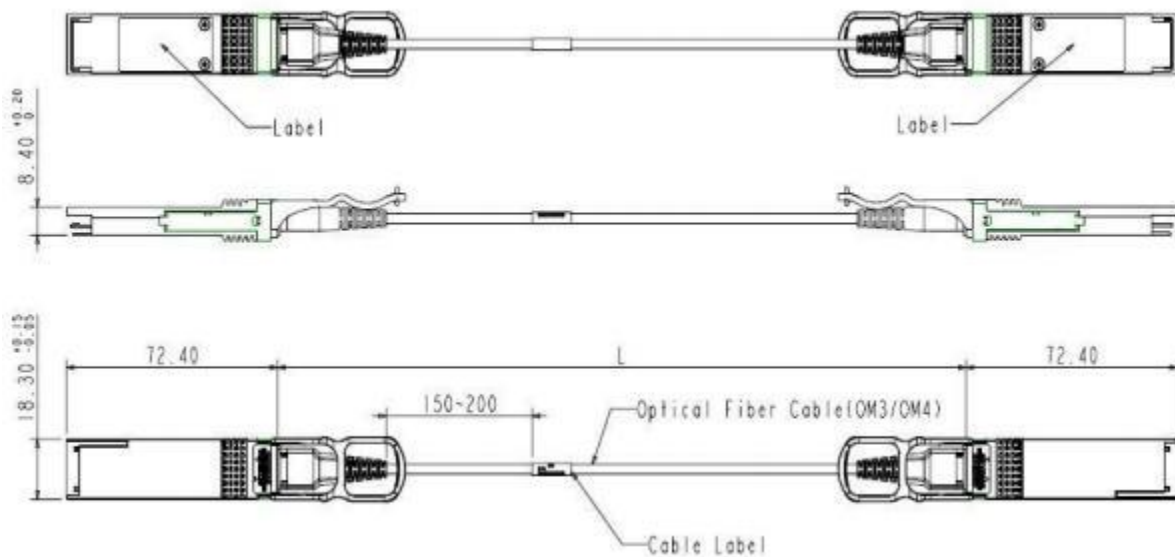
PIN	Logic	Symbol	Name/Description	Note
1		GND	Ground	1
2	CML-I	Tx2n	Transmitter Inverted Data Input	
3	CML-I	Tx2p	Transmitter Non-Inverted Data output	
4		GND	Ground	1
5	CML-I	Tx4n	Transmitter Inverted Data Input	
6	CML-I	Tx4p	Transmitter Non-Inverted Data output	
7		GND	Ground	1
8	LVTLL-I	ModSelL	Module Select	
9	LVTLL-I	ResetL	Module Reset	
10		VccRx	+3.3V Power Supply Receiver	2
11	LVC MOS-I/O	SCL	2-Wire Serial Interface Clock	
12	LVC MOS-I/O	SDA	2-Wire Serial Interface Data	
13		GND	Ground	
14	CML-O	Rx3p	Receiver Non-Inverted Data Output	
15	CML-O	Rx3n	Receiver Inverted Data Output	
16		GND	Ground	1
17	CML-O	Rx1p	Receiver Non-Inverted Data Output	
18	CML-O	Rx1n	Receiver Inverted Data Output	
19		GND	Ground	1
20		GND	Ground	1
21	CML-O	Rx2n	Receiver Inverted Data Output	
22	CML-O	Rx2p	Receiver Non-Inverted Data Output	
23		GND	Ground	1

24	CML-O	Rx4n	Receiver Inverted Data Output	1
----	-------	------	-------------------------------	---



25	CML-O	Rx4p	Receiver Non-Inverted Data Output	
26		GND	Ground	1
27	LVTTL-O	ModPrsL	Module Present	
28	LVTTL-O	IntL	Interrupt	
29		VccTx	+3.3 V Power Supply transmitter	2
30		Vcc1	+3.3 V Power Supply	2
31	LVTTL-I	LPMODE	Low Power Mode	
32		GND	Ground	1
33	CML-I	Tx3p	Transmitter Non-Inverted Data Input	
34	CML-I	Tx3n	Transmitter Inverted Data Output	
35		GND	Ground	1
36	CML-I	Tx1p	Transmitter Non-Inverted Data Input	
37	CML-I	Tx1n	Transmitter Inverted Data Output	
38		GND	Ground	1

Case Mechanical Specifications



Notice:

C-LIGHT reserves the right to make changes to this product in this specification without notice, in order to improve product performance.



Contact:

Shenzhen C-Light network communication co., Ltd

4F East, Building 1, Shunheda Factory Plant, Liuxiandong industrial park,

Xili, Nanshan Dist, Shenzhen

PR. China

Tel: 86-755-2778-9180 **Fax:** 86-755-2778-9174

E-mail: sales@c-light.com <https://www.c-light.com>

