40G QSFP+ TO QSFP+ Active Optical Cable

Zion Code and Description

Zion Code	Zion Description
7216030	40G QSFP+ TO QSFP+ Active Optical Cable

Applications

- λ10Gbs~40Gbs Ethernet; Data storage and communications industry
- Servers, switches, storage and host card adap

Features

- Up to 11.2Gbps per channel bandwidth;
- Electrical interface compliant to SFF-8436
- Support 40GBASE-SR4 application
- Maximum link length of 100m links on OM3 multimode fiber
- Single +3.3V power supply operating
- Commercial Temperature range 0°C to 70°C
- RoHS Compliant Part

Description

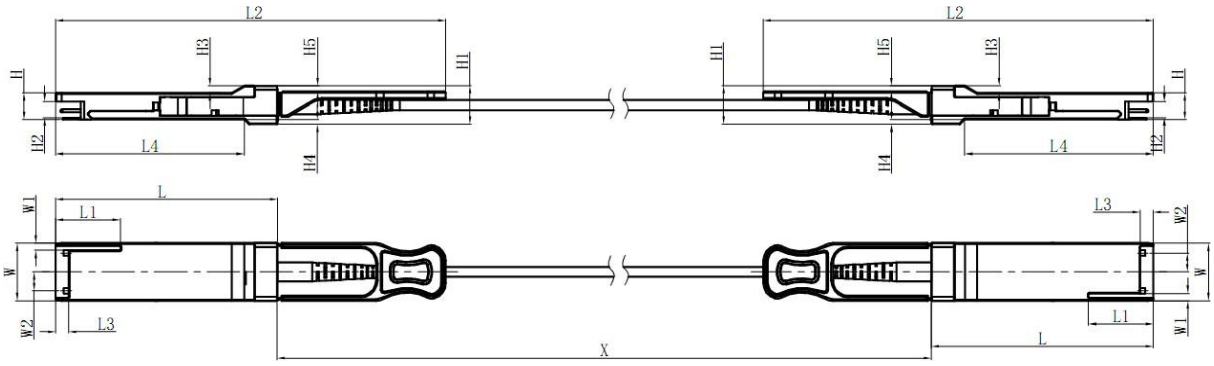
The 7216030 40G QSFP+ TO QSFP+ Active Optical Cables are a high performance, low power consumption,long reach interconnect solution supporting 40G Ethernet.

It is compliant with QSFP+ MSA, IEEE 802.3bm 40GBASE-SR4 standard.40G QSFP+ AOC is an assembly of 4 full-duplex lanes, where each laneis capableof transmitting data at rates up to 10Gb/s, providing an aggregated rateof 40Gb/s.

Main product parameters

Connector Type	QSFP+ to QSFP+	Vendor Name	Zion Communication
Max Data Rate	40Gbps	Fiber cable Type	MMF
Max Cable Distance 1	70m on OM3 MMF		
Transimitter Type	VCSEL	Receiver Type	PIN
Wavelength	850nm	CDR	Support
Power Supply	3.3V	Operating Temp.	0°C to 70°C (32°F to 158°F)

Outline Drawing



Zion Communication's Hot AOC types

Zion Code	Zion Description
7216010	100G QSFP28 TO QSFP28 Active Optical Cable
7216020	100G QSFP28 TO 4×SFP28 Active Optical Cable
7216030	40G QSFP+ TO QSFP+ Active Optical Cable
7216040	40G QSFP+ TO 4×SFP+ Active Optical Cable
7216050	25G SFP28 TO SFP28 Active Optical Cable
7216060	10G SFP+ TO SFP+ Active Optical Cable

Electrical Performance

1 Absolute Maximum Ratings

Parameter	Symbol	Min.	Typical	Max.	Unit
Storage Temperature (°C)	Ts	-10		70	°C
Relative Humidity	RH	5		85	%
Power Supply Voltage	VCC	-0.5		3.6	V

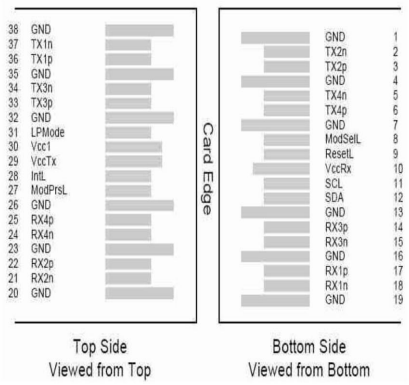
2 Recommended Operating Environment

Parameter	Symbol	Min.	Typical	Max.	Unit	Note
Case operating Temperature	TOP	0		70	°C	
Power Supply Voltage	VCC	3.14	3.3	3.47	V	
Power Dissipation	Pd			1.5	W	
Data Rate	BR	1.25	10.3125		Gbps	Each Channel
Transmission Distance with	TD	0		70/100	m	OM3/OM4

3 Electrical Characteristics

Parameter		**Symbol**	**Min.**	**Typical**	**Max.**	**Unit**
ModSell	Module Select	V_{OL}	0		0.8	V
	Module Unselect	V_{OH}	2.5		Vcc	V
LPMode	Low Power Mode	V_{IL}	0		0.8	V
	Normal Operation	V_{IH}	2.5		Vcc+0.3	V
ResetL	Reset	V_{IL}	0		0.8	V
	Normal Operation	V_{IH}	2.5		Vcc+0.3	V
ModPrsL	Normal Operation	V_{OL}	0		0.4	V
IntL	Interrupt	V_{OL}	0		0.4	V
	Normal Operation	V_{OH}	2.4		Vcc	V
Transmitter						
Differential data input swing		Vin.pp	200		1600	mV
Output Differential Impedance		Z_D	90	100	110	Ω
Receiver						
Differential data output swing		Vin.pp	200		800	mV
Bit Error Rate (1 prbs2^31-1@25.78125Gbps)		BER			E-12	
Input Differential Impedance		Zin	90	100	110	Ω

4 Pin Assignment



5 Pin description

Pin	Logic	Symbol	Max Unit Conditions	Ref.
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 Output	
6	CML-I	Tx4p	Transmitter Non-Inverted Data Output	
7		GND	Ground	1
8	LVTTL-I	ModSelL	Module Select	
9	LVTTL-I	ResetL	Module Reset	
10		VccRx	+3.3V Power Supply Receiver	2
11	LVCMOS-I/O	SCL	2-Wire Serial Interface Clock	
12	LVCMOS-I/O	SDA	2-Wire Serial Interface Data	
13		GND	Ground	1
14	CML-O	Rx3p	Receiver Inverted Data Output	
15	CML-O	Rx3n	Receiver Non-Inverted Data Output	
16		GND	Ground	1
17	CML-O	Rx1p	Receiver Inverted Data Output	
18	CML-O	Rx1n	Receiver Non-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	
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	+3.3V Power Supply Transmitter	2
30		Vcc1	+3.3V Power Supply	2
31	LVTTL-I	LPMode	Low Power Mode	
32		GND	Ground	1
33	CML-I	Tx3p	Transmitter Inverted Data Output	
34	CML-I	Tx3n	Transmitter Non-Inverted Data Output	
35		GND	Ground	1
36	CML-I	Tx1p	Transmitter Inverted Data Output	
37	CML-I	Tx1n	Transmitter Non-Inverted Data Output	
38		GND	Ground	1

Note:

1.GND is the symbol for single and supply(power) common for QSFP modules, All are common within the QSFP module and all module voltages are referenced to this potential otherwise noted. Connect these directly to the host board signal common ground plane. Laser output disabled on TDIS >2.0V or open, enabled on TDIS <0.8V.

2.VccRx, Vcc1 and VccTx are the receiver and transmitter power suppliers and shall be applied concurrently. Recommended host board power supply filtering is shown below. VccRx, Vcc1 and VccTx may be internally connected within the QSFP transceiver module in any combination. The connector pins are each rated for maximum current of 500mA.