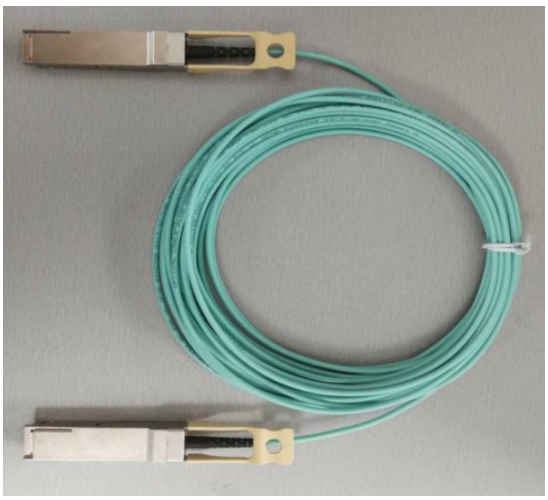


100G QSFP28 Active Optical Cables

Datatronix 100G QSFP28 Active Optical Cable assemblies are high performance, cost effective I/O solutions for 100G Ethernet and 100G Fibre Channel applications. They are designed expressed for high speed, high density and low power consumption for today's data centre networking applications. They offer 4 independent data transmission channels and 4 data receiving channels via the multimode fibres. An aggregate data rate of 100 Gbps can be achieved by this product. The QSFP28 Active Optical Cable is one kind of parallel transceiver which provides increased port density and total system cost savings. It has low power scattering and has a rigid force tab for enhanced high-density installments. It is fully tested for compatibility with intended equipment.

Applications

- IEEE 802.3bm 100GBASE SR4 and 40GBASE SR4 28G Fibre Channel
- InfiniBand FDR/EDR

Features

- Four-channel full-duplex active optical cable with QSFP28 plugs
- Multi-rate capability: 10Gb/s and 25Gb/s per channel
- Reliable VCSEL array technology using MMF
- Hot Pluggable
- Power dissipation: <3.5W
- Operating case temperature 0°C to 70°C
- RoHS compliant

Specifications

Absolute Maximum Ratings

ELEMENT	VALUE	SYMBOL	MIN	MAX
Storage Temperature	°C	T_S	-20	85
Relative Humidity	%	R_H	0	85
Case Operating Temperature	°C	T_{Case}	0	70
Supply Voltage	V	V_{CC}	-0.5	3.6

Recommended Operating Conditions

ELEMENT	VALUE	SYMBOL	MIN	TYPICAL	MAX
Case Operating Temperature	°C	T_{Case}	0		70
Humidity		R_H	5		85
Supply Voltage	V	V_{CC}	3.13	3.3	3.47
Data Rate Per Lane	Gbit/s	DR		25.78125	
Fibre Bend Radius	cm	R_H	3		

Electrical Characteristics

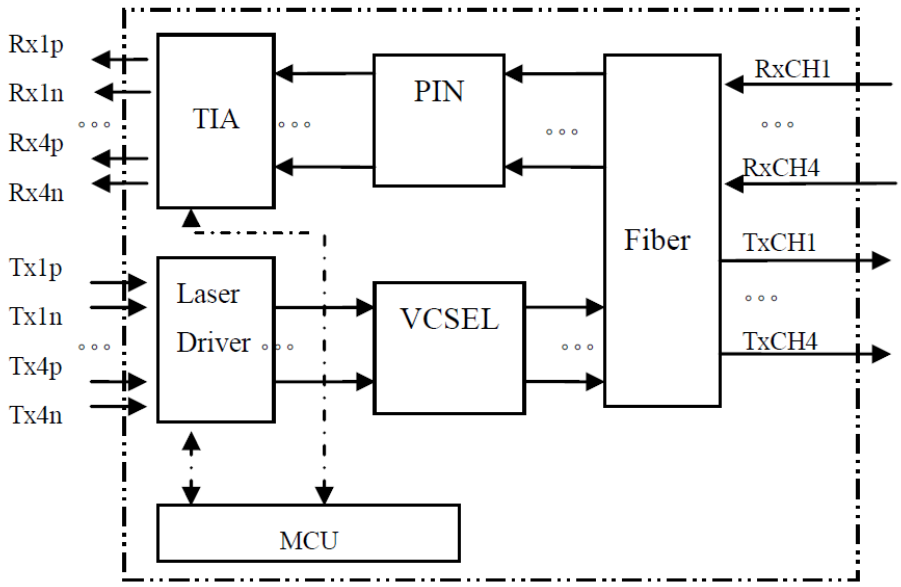
NOTE: The EDR module requires an electrical connector compliant with SFF-8662 or SFF-8672 be used on the host board to guarantee its electrical interface specification. Please check with the connector supplier.

ELEMENT	VALUE	SYMBOL	MIN	TYPICAL	MAX
Supply Voltage	V	V_{CC}	3.15		3.45
Supply Current	mA	I_{CC}			1010
Total Power Dissipation1,2	W	P			3.5
Transmitter					
Differential Input Voltage	mVp-p	V_{in}			900
Differential Termination Resistance Mismatch	%				10
Transition Time, 20 to 80%	ps	Tr, Tf	10		
Receiver					
Differential Output Voltage	mVp-p	V_{out}			900

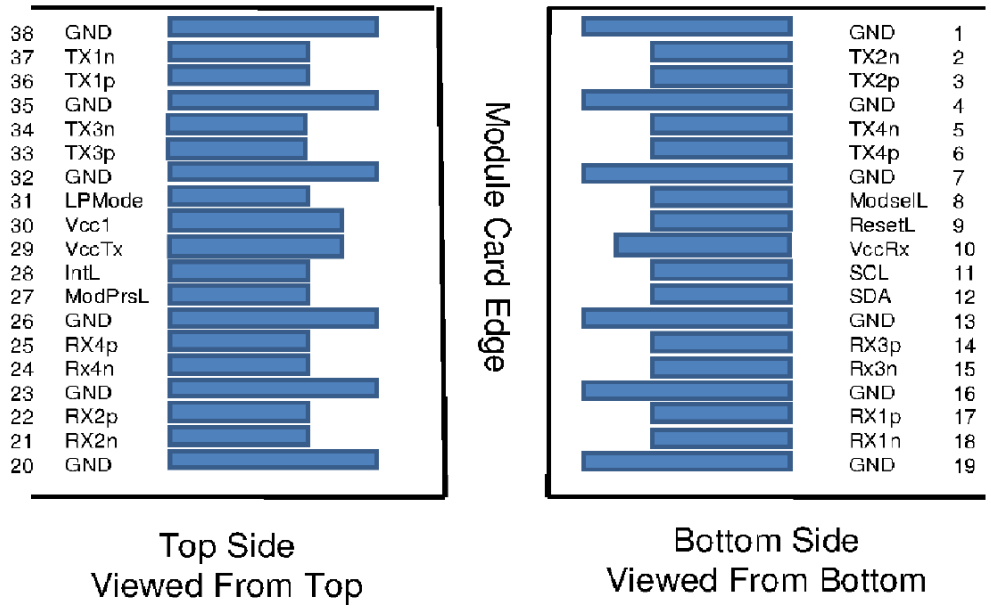
Differential Termination Resistance Mismatch	%			10
Transition Time, 20 to 80%	ps	Tr, Tf	9.5	
Bit Error Rate3		BER		10^{-12}

Note:
- *Maximum total power value is specified across the full temperature and voltage range*
- *Settable in various discrete steps via the I2C interface*
- *BER=10^{-12}, PRBS 2^{31}-1@25.78125Gbps*

Module Block Diagram



Pin Descriptions



Top Side
Viewed From Top

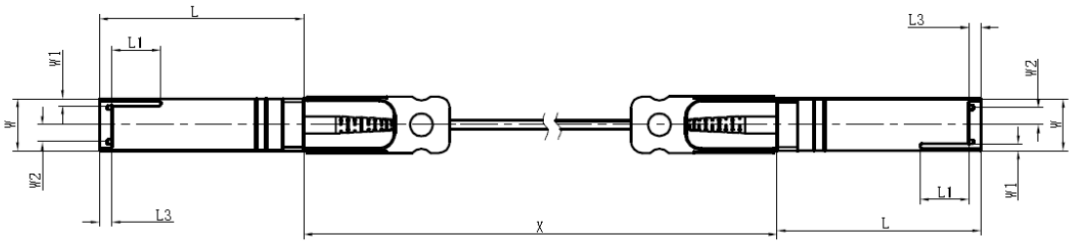
Bottom Side
Viewed From Bottom

Pin Definitions

PIN	SYMBOL	NAME/DESCRIPTION
1	GND	Ground
2	Tx2n	Transmitter Inverted Data Input
3	Tx2p	Transmitter Non-Inverted Data Input
4	GND	Ground
5	Tx4n	Transmitter Inverted Data Input
6	Tx4p	Transmitter Non-Inverted Data Input
7	GND	Ground
8	ModSelL	Module Select
9	ResetL	Module Reset
10	Vcc Rx	+3.3 V Power supply receiver
11	SCL	2-wire serial interface clock
12	SDA	2-wire serial interface data
13	GND	Ground
14	Rx3p	Receiver Non-Inverted Data Output
15	Rx3n	Receiver Inverted Data Output
16	GND	Ground
17	Rx1p	Receiver Non-Inverted Data Output
18	Rx1n	Receiver Inverted Data Output
19	GND	Ground
20	GND	Ground
21	Rx2n	Receiver Inverted Data Output
22	Rx2p	Receiver Non-Inverted Data Output
23	GND	Ground
24	Rx4n	Receiver Inverted Data Output
25	Rx4p	Receiver Non-Inverted Data Output
26	GND	Ground
27	ModPrsL	Module Present
28	IntL	Interrupt
29	Vcc Tx	+3.3 V Power supply transmitter

30	Vcc1	+3.3 V Power Supply
31	LPMode	Low Power Mode
32	GND	Ground
33	Tx3p	Transmitter Non-Inverted Data Input
34	Tx3n	Transmitter Inverted Data Input
35	GND	Ground
36	Tx1p	Transmitter Non-Inverted Data Input
37	Tx1n	Transmitter Inverted Data Input
38	GND	Ground

Mechanical Specifications



Unit: mm

	L	L1	L2	L3	W	W1	W2	H	H1	H2
MAX	72.2	—	122	4.35	18.45	—	6.2	8.6	12.0	5.35
Typical	72.0	—	—	4.20	18.35	—	—	8.5	11.8	5.2
MIN	68.8	16.5	118	4.05	18.25	2.2	5.8	8.4	11.6	5.05

Ordering Information

DESCRIPTION	PART NUMBER
Datatronix 100G QSFP28 Active Optical Cable	QSFP-AOC-100100-XXX

**where XXX is cable length in metres*