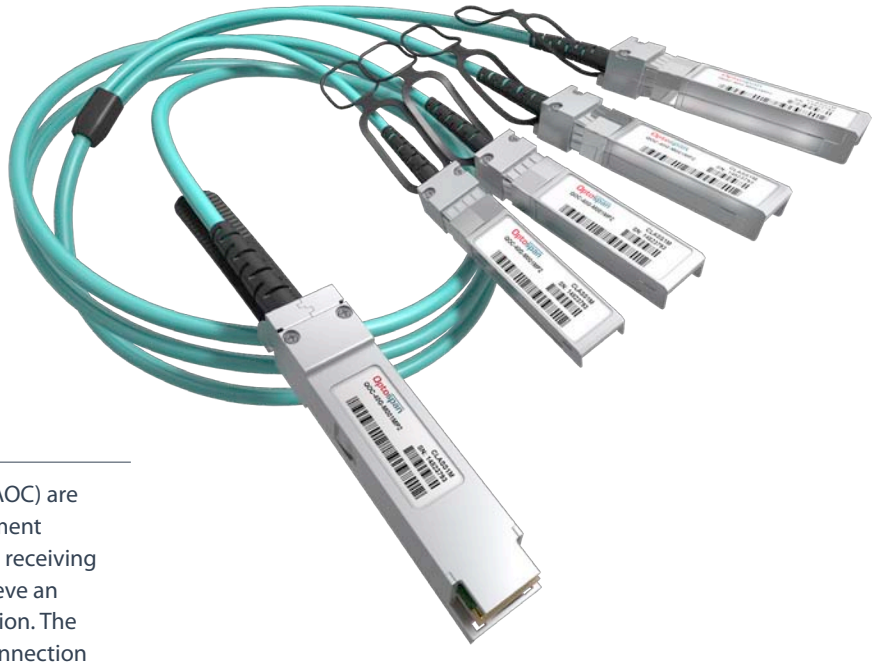
Optospan

40G QSFP+ TO 4x10G SFP+ *BREAKOUT ACTIVE OPTICAL CABLE*



OptoSpan QFSP+ to SFP+ Breakout Active Optic Cables (AOC) are high performance, cost-effective SFP+ and QSFP+ equipment interconnects. With 4 independent data transmission and receiving channels via multiple optical fibers, OptoSpan AOCs achieve an aggregate data rate of 40Gbps over 100 meters transmission. The cables are designed with form factor, optical/electrical connection according to QSFP+ and SFP+ Multi-Source Agreements (MSA).

FEATURES

- Electrical interface compliant to QSFP+ connector
- (SFF-8436) and SFP+ connectors (SFF-8431)
- Hot Pluggable 850nm VCSEL transmitter, PIN photo-detector receiver
- Premium Fire-retardant Plenum cable
- 3.3V power supply voltage
- All-metal housing for superior EMI performance

APPLICATIONS

- 40 Gigabit Ethernet
- Fibre Channel Applications
- InfiniBand QDR, SDR, DDR
- Servers, switches, storage and host card adapters
- High-performance computing clusters

COMPATIBILITY

OEM	Example Part#
Arista	QSFP-4X10G-AOC3M
Avago	AFBR-7IER03Z
Brocade	40G-QSFP-4SFP-AOC-0301
Cisco	QSFP-4X10G-AOC3M
Dell	CBL-QSFP-4X10G-AOC3M
Extreme	10GB-4-F03-QSFP
Juniper	JNP-QSFP-AOCBO-3M
Finisar	FCBN510QE2C03
Generic	

OptoSpan QSFP+ to 4x SFP+ Breakout Active Optical Cables support I2C serial interface, which can be used to identify the product and performance capabilities.

MAXIMUM RATINGS

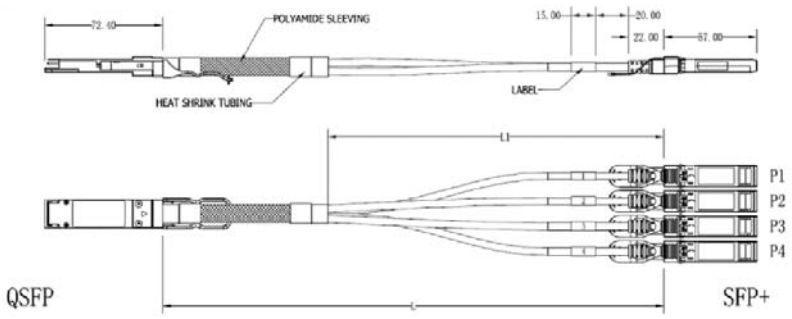
Parameter	Typical Value
Number of Lanes	4 Tx & 4 Rx
Date Rate (each lane)	10.5 Gb/s
Maximum Aggregate Data Rate	41.25 Gb/s
Bit Error Ratio	E^{-12}
Interface	Serial, I2C-based (as defined by QSFP MSA)
Power Consumption (each lane)	0.02 W
Operation Temperature	0~+70 °C

Parameter	Symbol	Min	Max
Storage Temperature	T_{STG}	-20 °C	85 °C
Relative Humidity (non-condensation)	RH	0%	85%
Operating Case Temperature	Topc	0 °C	+70 °C
Supply Voltage	VCC	-0.3V	3.6V

RoHS 2002/95/EC

Specifications may change without notice. Display product photos shown are examples for viewing, not actual products.

MECHANICAL DESIGN



QSFP PIN DESCRIPTIONS

Parameter	Symbol	Name/Description	Parameter	Symbol	Name/Description
1	GND	Ground	20	GND	Ground
2	Tx2n	Transmitter Inverted Data Input	21	Rx2n	Receiver Inverted Data Output
3	Tx2p	Transmitter Non-Inverted Data Input	22	Rx2p	Receiver Non-Inverted Data Output
4	GND	Ground	23	GND	Ground
5	Tx4n	Transmitter Inverted Data Input	24	Rx4n	Receiver Inverted Data Output
6	Tx4p	Transmitter Non-Inverted Data Input	25	Rx4p	Receiver Non-Inverted Data Output
7	GND	Ground	26	GND	Ground
8	ModSelL	Module Select	27	ModPrsL	Module Present
9	ResetL	Module Reset	28	IntL	Interrupt
10	Vcc Rx	+3.3V Power Supply Receiver	29	Vcc Tx	+3.3V Power supply transmitter
11	SCL	2-wire serial interface clock	30	Vcc1	+3.3V Power supply
12	SDA	2-wire serial interface data	31	LPMode	Low Power Mode
13	GND	Ground	32	GND	Ground
14	Rx3p	Receiver Non-Inverted Data Output	33	Tx3p	Transmitter Non-Inverted Data Input
15	Rx3n	Receiver Inverted Data Output	34	Tx3n	Transmitter Inverted Data Input
16	GND	Ground	35	GND	Ground
17	Rx1p	Receiver Non-Inverted Data Output	36	Tx1p	Transmitter Non-Inverted Data Input
18	Rx1n	Receiver Inverted Data Output	37	Tx1n	Transmitter inverted data input
19	GND	Ground	38	GND	Module Ground

SFP+ PIN DESCRIPTIONS

PIN	Name	Function/Description	PIN	Name	Function/Description
1	VeeT	Transmitter Ground	10	VeeR	Receiver Ground
2	Tx_Fault	Transmitter Fault - High indicates a fault condition	11	VeeR	Receiver Ground
3	Tx_Disable	Transmitter Disable – High or open disables the transmitter	12	RD-	Receiver Inverted DATA out
4	SDA	Two wire serial interface Data Line	13	RD+	Receiver Non-inverted DATA out
5	SCL	Two wire serial interface Clock Line	14	VeeR	Receiver Ground
6	MOD_ABS	Module Absent (Output), connected to VeeT or VeeR in the module	15	VccR	Receiver Power Supply
7	RS0	Rx Rate Select,not used	16	VccT	Transmitter Power Supply
8	RX_LOS	Loss of Signal indication. Logic 0 indicates normal operation	17	VeeT	Transmitter Ground
9	RS1	Tx Rate Select,not used	18	TD+	Transmitter Non-Inverted DATA in
			19	TD-	Transmitter Inverted DATA in
			20	VeeT	Transmitter Ground