

100G QSFP to 4×SFP28 Breakout Active Optical Cable

Part Number: LBX-AB100Cyyy

LBX-AB100Cyyy is a high performance QSFP+ breakout AOC for 100 Gigabit Ethernet data links.

Features

- Up to 28.05 Gbps per channel
- 4 independent full-duplex
- Single 3.3 V power supply
- Low power consumption: < 2.0W on QSFP end, < 0.8W on SFP end
- Up to 30 m*
- Hot pluggable
- RoHS compliant
- Commercial operating case temperature range: 0°C to 70°C

Applications

- 10/25G Ethernet
- Data center: Servers, switches, storages and NIC adapters

Ordering Information

Part Number	Link Length	Data Rate	Laser	Detector	Fiber Type	Temperature
LBX-AB100Cyyy	up to 30m*	100G	850nm VCSEL	850nm PIN array	MMF	0 – 70°C
yyy=003	3m					
yyy=005	5m					
yyy=010	10m					
yyy=yyy*	yyym					

* Customized length is available upon request.

Product Overview

Vitex **LBX-AB100Cyyy** is a 100G QSFP28 breakout AOC used for 100G Ethernet links up to 30m. These AOCs take full advantage of the high transmission bandwidth, low power consumption and long reach.

Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Storage Temperature	T _{STG}	-20	70	°C
Supply Voltage	V _{IN}	0	4.0	V

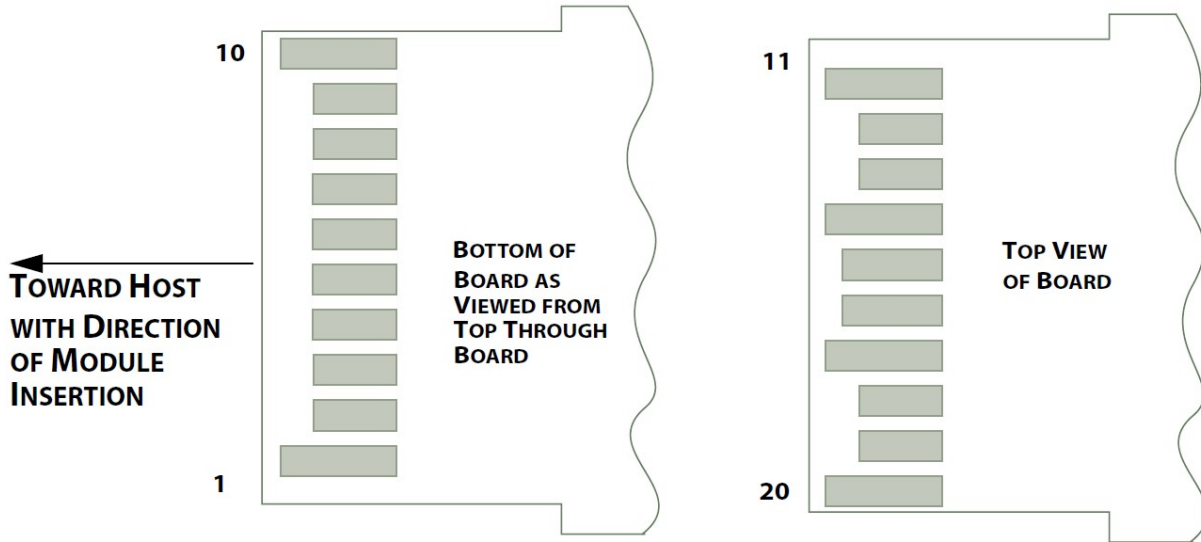
Recommended Operating Conditions

Parameter	Symbol	Min	Typical	Max	Unit
Operating Case Temperature	T _{OP}	0	-	70	°C
Power Supply Voltage	V _{CC}	3.13	3.3	3.47	V
Power Supply Current	SFP28	I _{CC}	-	220	mA
	QSFP28		-	600	
Power Consumption	SFP28		-	0.8	W
	QSFP28		-	2.0	

Electrical Specifications

Parameter	Symbol	Min	Typical	Max	Unit
Transmitter					
Data Rate (per channel)	DR	10.00	25.78	28.05	Gb/s
Input Differential Impedance	R _{IN}	-	100	-	Ω
Differential Data Input Swing	V _{INP-P}	-	-	900	mV
Receiver					
Data Rate per channel	DR	10.00	25.78	28.05	Gb/s
Output Differential Impedance	R _{OUT}	-	100	-	Ω
Differential Data Output Swing	V _{OUTP-P}	-	-	800	mV
Raw Bit Error Ratio (@25.78 Gbps; PRBS 2 ³¹ -1)	-	-	-	10 ⁻⁸	-

Electrical Connector Layout – SFP28 terminal



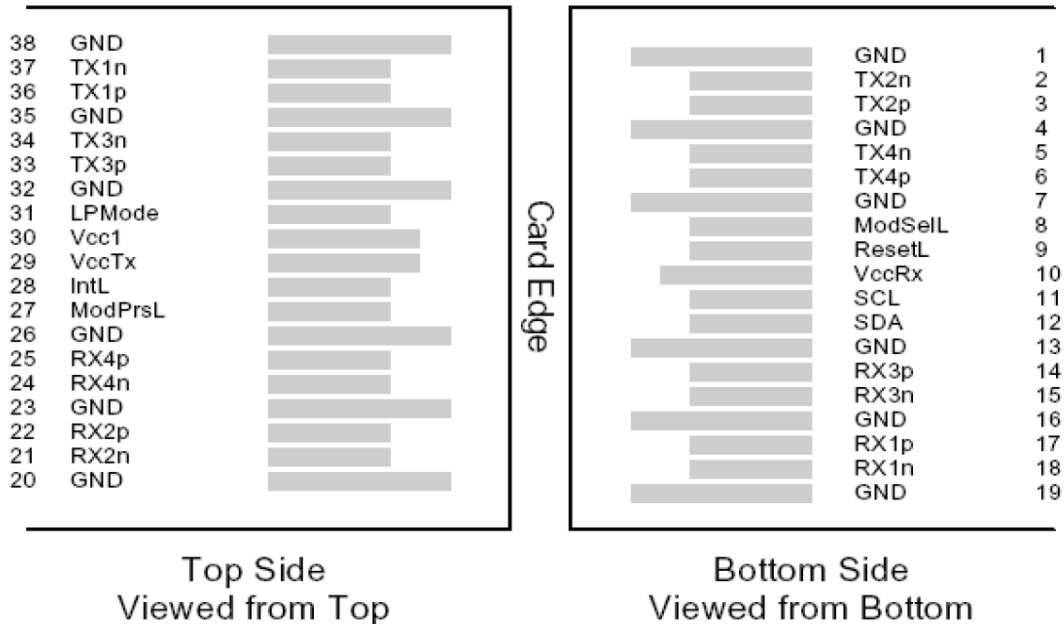
Electrical Pin Definition

Pin	Name	Description	Note
1	VeeT	Module Transmitter Ground	1
2	Tx_Fault	Module Transmitter Fault	2
3	Tx_Disable	Transmitter Disable; Turns off transmitter laser output	3
4	SDA	2-wire Serial Interface Data Line	4
5	SCL	2-wire Serial Interface Clock	4
6	Mod_ABS	Module Absent, grounded within the module	
7	RS0	Rate Select 0, optionally controls SFP+ module receiver	5
8	Rx_LOS	Receiver Loss of Signal Indication	2
9	RS1	Rate Select 1, optionally controls SFP+ module	5
10	VeeR	Module Receiver Ground	1
11	VeeR	Module Receiver Ground	1
12	RD-	Receiver Inverted Data Output	
13	RD+	Receiver Non-Inverted Data Output	
14	VeeR	Module Receiver Ground	1
15	VccR	Module Receiver 3.3V Supply	
16	VccT	Module Transmitter 3.3V Supply	
17	VeeT	Module Transmitter Ground	1
18	TD+	Transmitter Non-Inverted Data Input	
19	TD-	Transmitter Inverted Data Input	
20	VeeT	Module Transmitter Ground	1

Note :

1. The module signal ground contacts, VeeR and VeeT, should be isolated from the module case.
2. The TTL level TX Fault is an open collector/drain output, which should be pulled up with a 4.7 – 10kΩ resistor on the host board to VccT. When high, output indicates a laser fault of some kind. Low indicates normal operation. In the low state, the output will be pulled to < 0.8V. When sensing an improper power level in the laser driver, the SFP sets this signal high and turns off the laser. TX-FAULT can be reset with the TX-DISABLE line.
3. TX disable is an input that is used to shut down the transmitter optical output. It is pulled up within the module with a 4.7 – 10kΩ resistor. The states are: Low (0 – 0.8V): Transmitter on / (>0.8, < 2.0V): Undefined / High (>2.0): Transmitter Disabled / Open: Transmitter Disabled. Make TX-DISABLE high (TTL logic “1”) to turn off the laser output. The laser will turn on when TX-DISABLE is low (TTL logic “0”).
4. These are the module definition pins. They should be pulled up with a 4.7 – 10kΩ resistor on the host board to supply less than VccT+0.3V or VccR+0.3V.
5. Not used.

Electrical Connector Layout – QSFP28 terminal



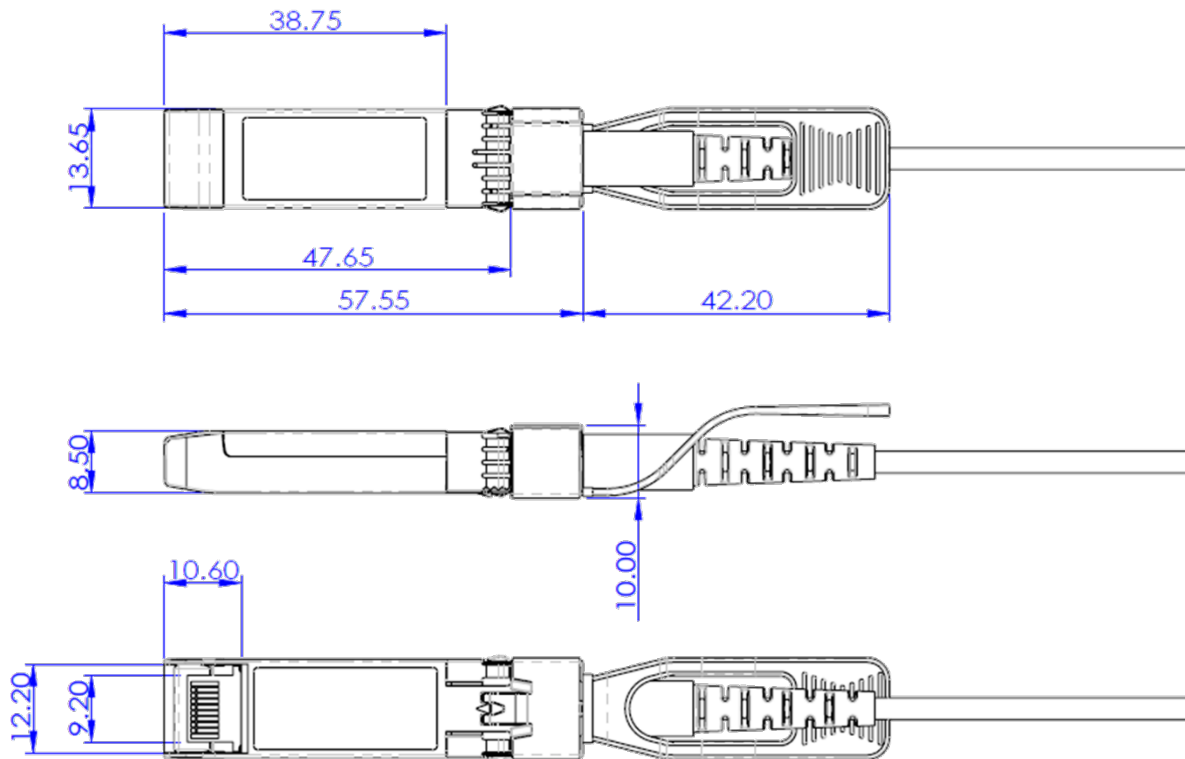
Electrical Pin Definition – QSFP28 Terminal

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

Note :

1. GND is the symbol for signal and supply (power) common for the QSFP module. All are common within the QSFP module and all module voltages are referenced to this potential unless otherwise noted. Connect these directly to the host board signal - common ground plane.
2. Vcc Rx, Vcc1 and Vcc Tx are the receiver and transmitter power supplies and shall be applied concurrently. Vcc Rx, Vcc1 and Vcc Tx may be internally connected within the QSFP transceiver module in any combination. The connector pins are each rated for a maximum current of 500 mA.
3. Not used.

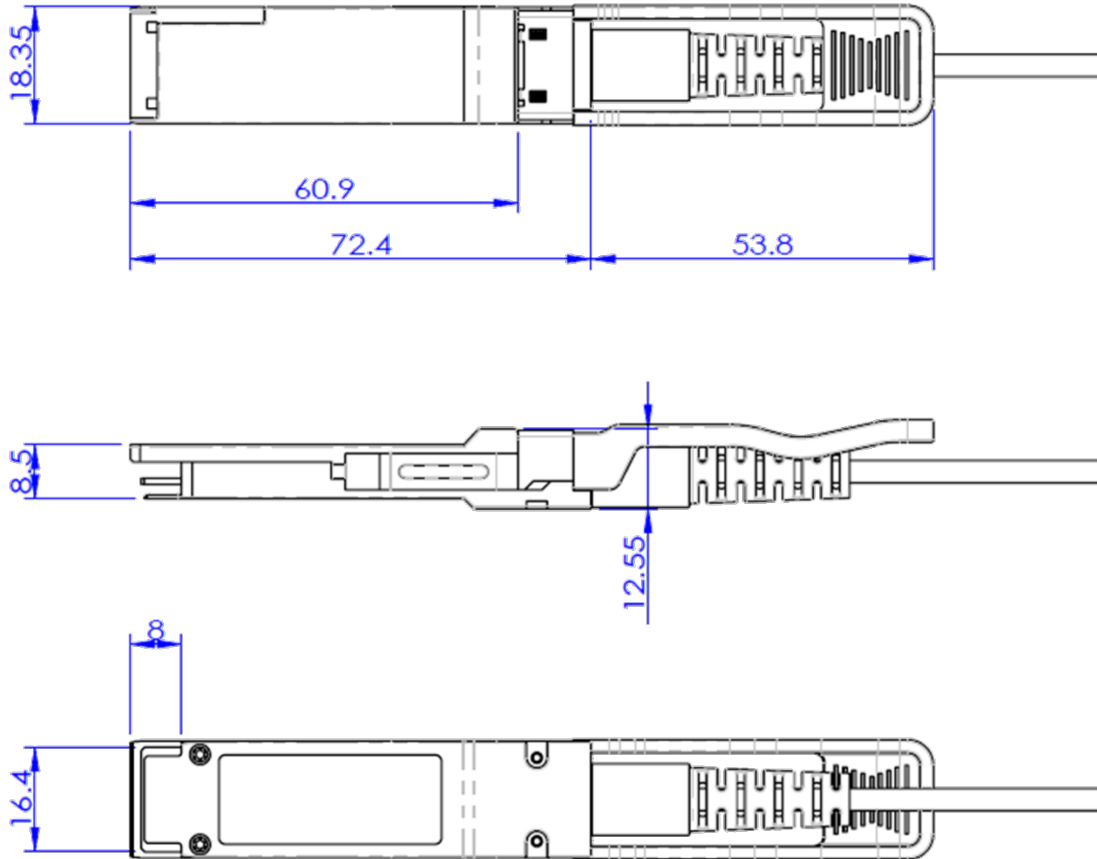
Mechanical Dimensions – SFP28 Terminal



ALL DIMENSIONS ARE ± 0.2 mm UNLESS OTHERWISE SPECIFIED

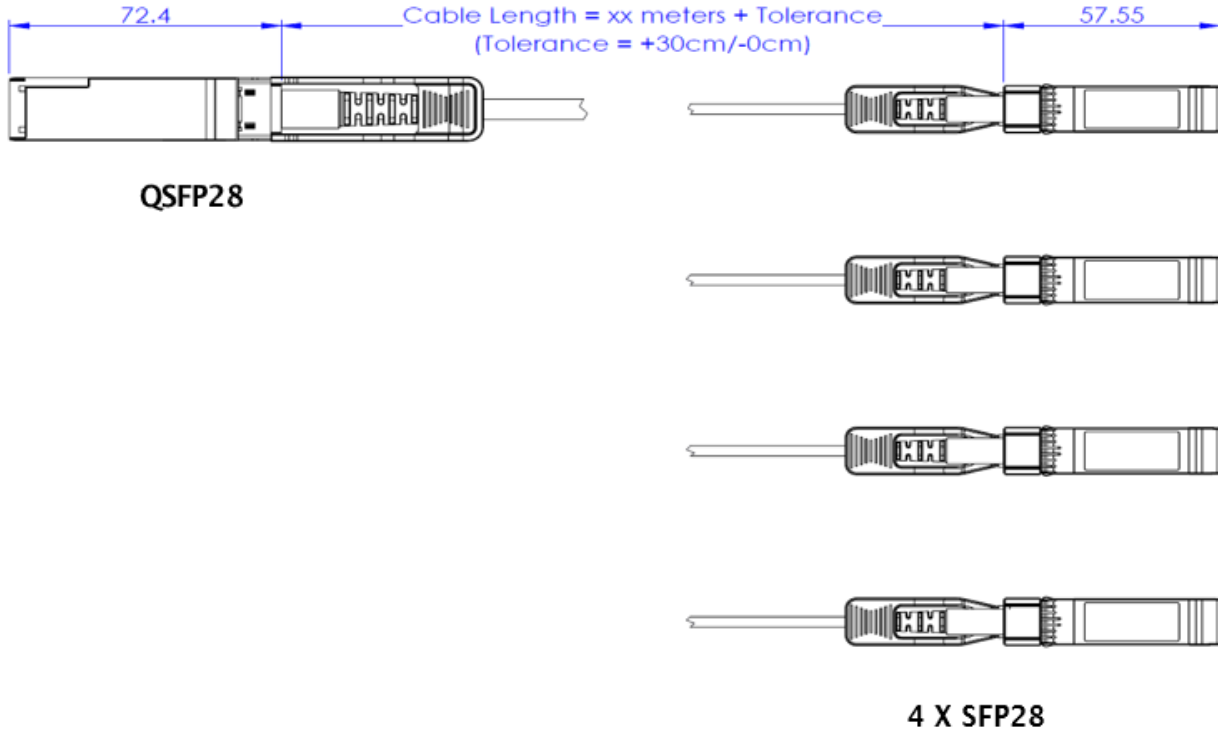
UNIT: mm

Mechanical Dimensions – QSFP+ Terminal



ALL DIMENSIONS ARE ± 0.2 mm UNLESS OTHERWISE SPECIFIED
UNIT: mm

Mechanical Dimensions – QSFP+ Breakout



ALL DIMENSIONS ARE $\pm 0.2\text{mm}$ UNLESS OTHERWISE SPECIFIED
UNIT: mm

Active Optical Cable

Parameter	Value	Unit	Note
Cable Diameter	$\varnothing 2.2 \pm 0.15$	mm	
Minimum Bend Radius	50	mm	
Length Tolerance	+300 / -0	mm	
Cable Jacket	PVC, Aqua (Orange color is available upon request)		

Contact Information

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