

40G QSFP+ to 4xLC Breakout

Part Number: LBX-ABL40Cyyy

LBX-ABL40Cyyy is a high performance QSFP+ AOC for 40Gigabit Ethernet data links.

Features

- Supports various channel bit rates from: 1 Gb/s to 14.5 Gb/s (includes 40GBASE SR4)
- 4-channel full-duplex
- Single 3.3 V power supply
- Low power consumption (≤ 0.7 W)
- Up to 100 m
- Attached fiber breakout
- with 4xLC duplex connectors
- SFF-8685 and SFF-8636 compliant
- Hot pluggable
- Commercial operating case temperature range: 0°C to 70°C
- RoHS compliant

Applications

- IEEE 802.3ba 40GBASE SR4
- Infiniband SDR/DDR/QDR/FDR
- Data center: Servers, switches, storages and NIC adapters

Ordering Information

Part Number	Link Length	Data Rate	Laser	Detector	Fiber Type	Temperature
LBX-ABL40Cyyy	up to 100m	40G	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-ABL40Cyyy is a 40G QSFP+ best used to distribute 40G port of a switch to 4x10G transceivers (ports) of another switch. 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 _{STO}	-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	I _{CC}	-	600		mA
Power Consumption				0.7	W

Electrical Specifications

Parameter	Symbol	Min	Typical	Max	Unit
Transmitter					
Data Rate	DR	1	10.3125	14.0625	Gb/s
Input Differential Impedance	R _{IN}	-	100	-	Ω
Differential Data Input Swing	V _{INP-P}	-	-	900	mV
Receiver					
Data Rate per channel	DR		10.3125	10.3125	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	-

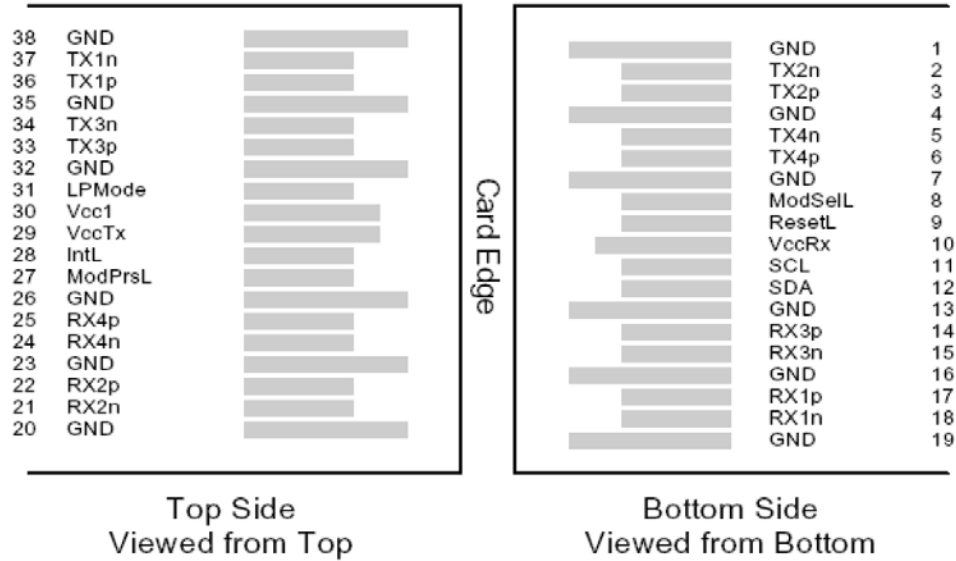
Optical Specifications

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Transmitter						
Centre Wavelength	λ_c	840	850	860	nm	-
RMS spectral width	σ	-	-	0.65	Nm	-
Average launch power, each lane	Pavg	-7.6	-	2.4	dBm	-
Optical Modulation Amplitude (OMA), each lane	TxOMA	-5.6		3	dBm	-
Transmitter and dispersion penalty (TDP), each lane	TDP			3.5	dB	
Extinction Ratio	ER	3	-		dB	-
Average launch power of OFF transmitter, each lane				-30	dBm	-
Eye Mask coordinates: {X1, X2, X3, Y1, Y2, Y3}	SPECIFICATION VALUES	0.23, 0.34, 0.43, 0.27, 0.35, 0.4				Hit Ratio = 5×10^{-5}
Receiver						
Centre Wavelength	λ_c	840	850	860	nm	-
Stressed receiver sensitivity in OMA	RxOMA			-5.4	dBm	1
Average power at receiver, each lane	-9.5			2.4	dBm	
Receiver Reflectance				-12	dB	-
LOS Assert	LOSA	-30			dBm	-
LOS De-Assert	LOSD			-12	dBm	-
LOS Hysteresis		0.5			dB	-

Note:

1. Measured with conformance test signal at TP3 for BER = 10^{-12}

Electrical Connector Layout



Electrical Pin Definition

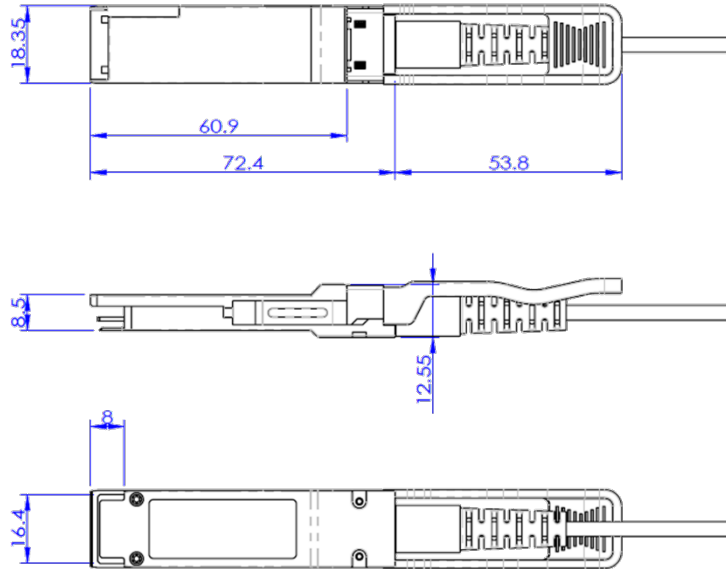
Pin	Name	Description	Note
1	GND	Ground	1
2	Tx2n	Transmitter Inverted Data Input	
3	Tx2p	Transmitter Non-Inverted Data Input	
4	GND	Ground	1
5	Tx4n	Transmitter Inverted Data Input	
6	Tx4p	Transmitter Non-Inverted Data Input	
7	GND	Ground	1
8	ModSelL	Module Select	
9	ResetL	Module Reset	
10	Vcc Rx	3.3V 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	ModPrsL	Module Present	
28	IntL	Interrupt	
29	Vcc Tx	3.3V Power supply transmitter	2
30	Vcc 1	3.3V Power Supply	2
31	LPMODE	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 :

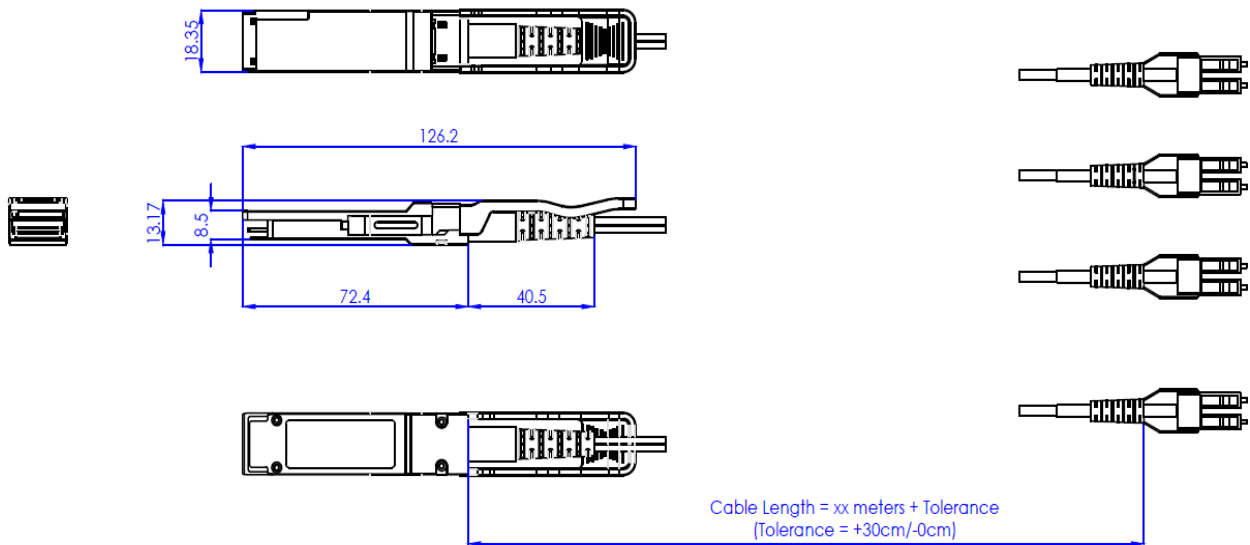
1. GND is the symbol for signal and supply (power) common for the QSFP module. All are common within the QSFP module and all module voltages are referenced to this potential unless otherwise noted. Connect these directly to the host board signal-common ground plane.
2. Vcc Rx, Vcc1 and Vcc Tx are the 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 – QSFP+ Terminal



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

Mechanical Dimensions – Breakout



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

Mechanical Dimensions – Breakout

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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