QSFP-40G-SR-BX

40GBase QSFP+ Bidi
850nm
150m Reach

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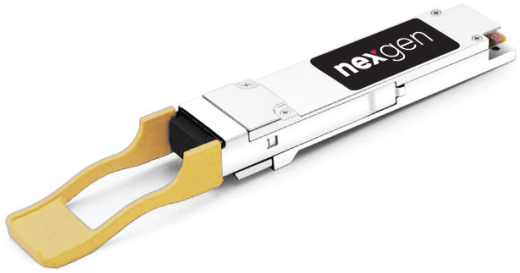
Features

- QSFP+ MSA compliant
- 2 channels full-duplex transceiver modules
- 2*20Gb/s VCSEL-based transmitter
- 4*10Gb/s electrical interface
- Power dissipation <3.5W (0~70°C)
- Hot-pluggable QSFP+ form factor
- LC Duplex connector receptacle
- Up to 150m on OM4 multimode fiber (MMF)
- Operating case temperature 0°C to +70°C
- 3.3V power supply voltage
- RoHS compliant



Applications

- 40GBASE Ethernet Links
- Data Center

Part number	Product description
QSFP-40G-SR-BX	40GBase MMF QSFP+ Bidi 850/900nm 150m 0°C to 70°C LC Duplex DDM

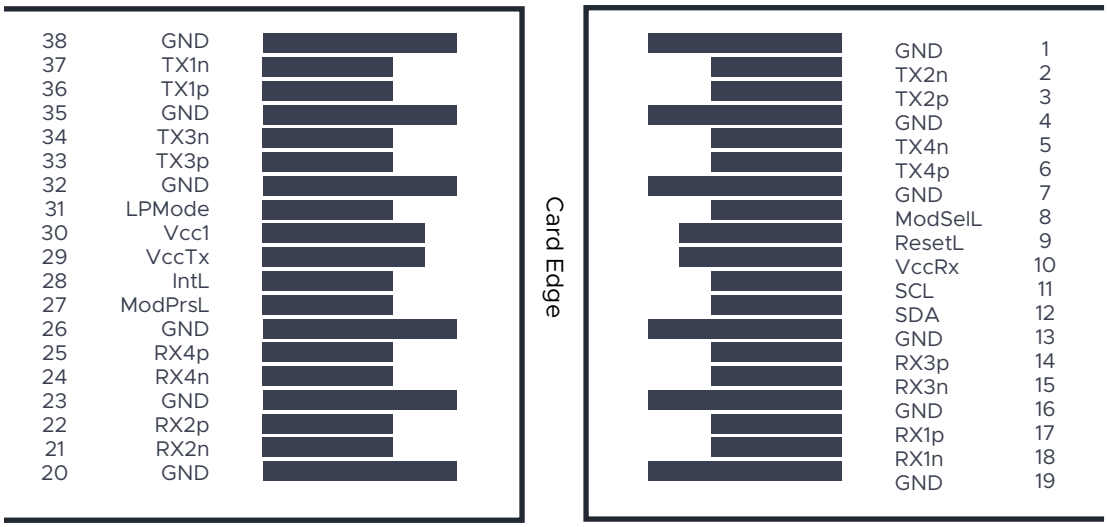
PIN Description

Pin		Function/Description	Notes
1	GND	Transmitter Ground (Common with Receiver Ground)	1
2	Tx2-	Transmitter Inverted Data Input	
3	Tx2+	Transmitter Non-Inverted Data output	
4	GND	Transmitter Ground (Common with Receiver Ground)	1
5	Tx4-	Transmitter Inverted Data Input	
6	Tx4+	Transmitter Non-Inverted Data output	
7	GND	Transmitter Ground (Common with Receiver Ground)	1
8	ModSelL	Module Select	2
9	ResetL	Module Reset	2
10	VccRx	3.3V Power Supply Receiver	
11	SCL	2-Wire serial Interface Clock	2
12	SDA	2-Wire serial Interface Data	2
13	GND	Transmitter Ground (Common with Receiver Ground)	1
14	Rx3+	Receiver Non-Inverted Data Output	
15	Rx3-	Receiver Inverted Data Output	
16	GND	Transmitter Ground (Common with Receiver Ground)	1
17	Rx1+	Receiver Non-Inverted Data Output	
18	Rx1-	Receiver Inverted Data Output	
19	GND	Transmitter Ground (C ommon with Receiver Ground)	1
20	GND	Transmitter Ground (Common with Receiver Ground)	1
21	Rx2-	Receiver Inverted Data Output	
22	Rx2+	Receiver Non-Inverted Data Output	
23	GND	Transmitter Ground (Common with Receiver Ground)	1
24	Rx4-	Receiver Inverted Data Output	1
25	Rx4+	Receiver Non-Inverted Data Output	
26	GND	Transmitter Ground (Common with Receiver Ground)	1
27	ModPrsl	Module Present	
28	IntL	Interrupt	2
29	VccTx	3.3V power supply transmitter	
30	Vcc1	3.3V power supply	
31	LPMode	Low Power Mode	2
32	GND	Transmitter Ground (Common with Receiver Ground)	1
33	Tx3+	Transmitter Non-Inverted Data Input	
34	Tx3-	Transmitter Inverted Data Output	
35	GND	Transmitter Ground (Common with Receiver Ground)	1
36	Tx1+	Transmitter Non-Inverted Data Input	
37	Tx1-	Transmitter Inverted Data Output	
38	GND	Transmitter Ground (Common with Receiver Ground)	1

Notes:

1. The module signal grounds are isolated from the module case.
2. This is an open collector/drain output that on the host board requires a 4.7KΩ to 10KΩ pull-up resistor to VccHost.

Pin Assignment and Description



Top Side
Viewed from Top

Bottom Side
Viewed from Bottom

Absolute Maximum Ratings

Parameter	Min	Typ	Max	Unit	Notes
Maximum Supply Voltage	-0.3	-	3.6	V	-
Storage Temperature	-40	-	+85	°C	-
Relative Humidity	5	-	95	%	1

Notes:
1. Non-condensing.

Recommend Operation Conditions

Parameter	Min	Typ	Max	Unit	Notes
Power Supply Voltage	3.13	3.3	3.47	V	-
Power Supply Current (com.)	-	-	1000	mA	-
Case Operating Temperature (com.)	0	-	+70	°C	-

Electrical Characteristics

Parameter	Min	Typ	Max	Unit	Notes
Transmitter					
Input differential impedance	80	100	120	Ω	1
Differential data input swing	120	-	1200	mV	-
TX Disable-High	Vcc-0.8	-	Vcc	V	-
TX Disable-Low	Vee	-	Vee+0.8	V	-
TX Fault-High	Vcc-0.8	-	Vcc	V	-
TX Fault-Low	Vee	--	Vee+0.8	V	-
Receiver					
Output Differential Impedance	90	100	110	Ω	1
Differential Data Output Swing	-	-	800	mV	2
LOS-High	Vcc-0.8	-	Vcc	V	-
LOS-Low	Vee	-	Vee+0.8	V	-

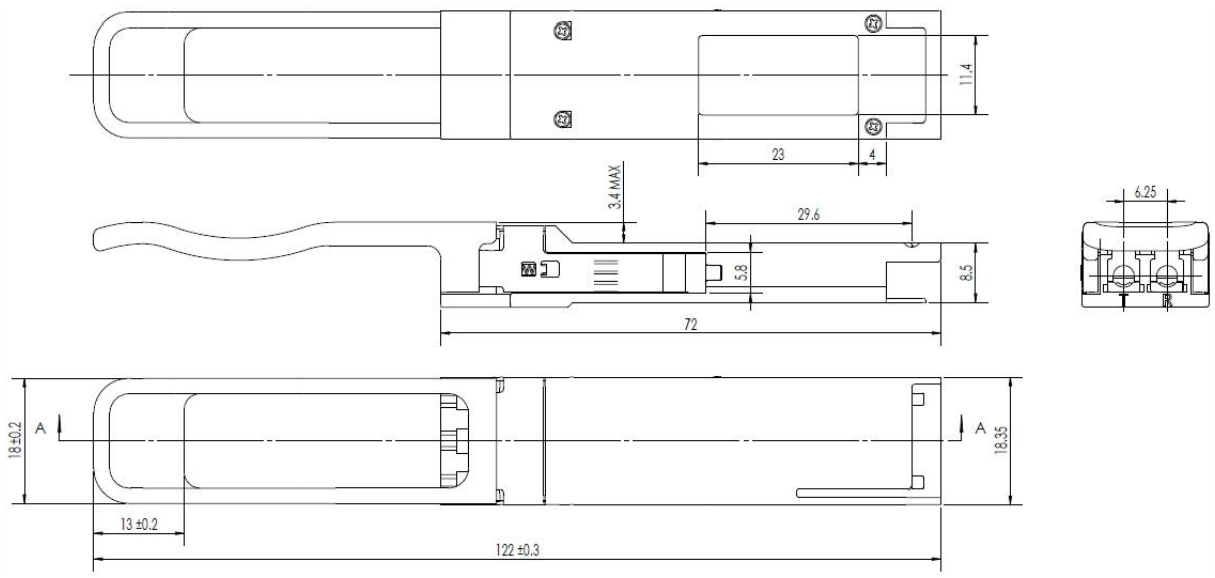
Notes:
1. AC coupled
2. into 100Ω differential termination

Optical Characteristics

Parameter	Min	Typ	Max	Unit	Notes
Transmitter					
Optical Center Wavelength 1	832	850	868	nm	-
Optical Center Wavelength 2	882	900	918	nm	-
Average Output Power per lane	-4.0	-	5.0	dBm	-
RMS Spectral Width	-	0.5	0.65	nm	-
Extinction ratio	3.5	-	-	dB	-
Relative Intensity Noise	-	-	-128	dB/Hz	1
Data Rate per lane	-	20	-	GB/s	2
Receiver					
Optical Center Wavelength 1	900	-	918	nm	-
Optical Center Wavelength 2	844	-	863	nm	-
Receiver Sensitivity per lane	-	-	-4.0	dBm	3
Damage Treshold per lane	5.0	-	-	dBm	-
LOS Assert	-30	-	-	dBm	-
LOS De-Assert	-	-	-14	dBm	-
LOS Hysteresis	0.5	-	-	dB	-

Notes:
1. 12dB Reflection
2. Measured with conformance signals defined in FC-PI-2 Rev. 10.0 specifications.
3. Measured with PRBS 2^{31}-1 at 10^{-12} BER.

Mechanical specifications



units : mm

Revision history

Revision	Date	Author	Description
V1.0	16-01-2023	JGN	Initial Document

Note : Nexgen A/S reserves the right to change this document without notice.