QSFP28-100GB-BX-D-80-MX-AO

NVIDIA® Compatible TAA 100GBase-ZR4 BX QSFP28 Transceiver (SMF, 1310.19nmTx/1272.55nmRx, 80km, LC, DOM)

Features:

- QSFP28 MSA Compliant
- Built-In 4-Channel CDR
- Hot-Pluggable
- Supports 103.1Gbps to 112.2Gbps OTU4
- LAN WDM EML Laser and PIN Receiver with SOA
- Excellent EMI Performance
- Single 3.3V Power Supply
- Up to 80km Reach for G.652 SMF
- Single LC Receptacle
- Power Consumption: 5.5W
- Operating Temperature: 0 to 70 Celsius
- RoHS Compliant and Lead-Free



Applications:

- InfiniBand QDR and DDR
- 100GBase Ethernet

Product Description

This NVIDIA® compatible QSFP28 transceiver provides 100GBase-BX ZR4 throughput up to 80km over single-mode fiber (SMF) using a wavelength of 1310.19nmTx/1272.55nmRx via an LC connector. This bidirectional unit must be used with another transceiver or network appliance of complementing wavelengths. It can operate at temperatures between 0 and 70C. Our transceiver is built to meet or exceed OEM specifications and is guaranteed to be 100% compatible with NVIDIA®. It has been programmed, uniquely serialized, and tested for data-traffic and application to ensure that it will initialize and perform identically. All of our transceivers comply with Multi-Source Agreement (MSA) standards to provide seamless network integration. Additional product features include Digital Optical Monitoring (DOM) support which allows access to real-time operating parameters. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

AddOn's transceivers are RoHS compliant and lead-free.

TAA refers to the Trade Agreements Act (19 U.S.C. & 2501-2581), which is intended to foster fair and open international trade. TAA requires that the U.S. Government may acquire only "U.S.-made or designated country end products."

TAA COMPLIANT

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Storage Temperature	Tstg	-40		85	°C	
Operating Case Temperature	Tc	0		70	°C	
Relative Humidity (Non-Condensing)	RH	15		85	%	
Supply Voltage	Vcc	-0.3		4.0	V	
Damage Threshold	THd	6.5			dBm	
Data Rate Per Lane			25.78125	28.05	Gbps	
Power Consumption	P			5.5	W	
Link Distance (SMF)	D			80	km	1

Notes:

1. Depends on actual fiber loss/km (link distance specified is for a fiber insertion loss of 0.35dB/km).

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Power Supply Voltage	Vcc	3.135	3.3	3.465	V	
Power Supply Current	Icc			1585	mA	
Control Input Voltage - High		2		Vcc	V	
Control Input Voltage - Low		0		0.8	V	
Transmitter Per Lane						
Input Differential Impedance	RIN		100		Ω	
Differential Termination Mismatch				10	%	
Differential Data Input Amplitude	VIN,pp	180		1000	mV	
LPMODE, Reset, and ModSelL	VIL	-0.3		0.8	V	
	VIH	2		Vcc+0.3	V	
Receiver						
Differential Data Output Amplitude	VOUT,pp	350		900	mV	
Differential Termination Mismatch				10	%	
Transition Time (20-80%)		9.5			ps	
ModPrsL and IntL	VOL	0		0.4	V	
	VOH	Vcc-0.5		Vcc+0.3	V	

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Center Wavelength	λC	1294.53	1295.56	1296.59	nm	
		1299.02	1300.05	1301.09		
		1303.54	1304.58	1305.63		
		1308.09	1309.14	1310.19		
Side-Mode Suppression Ratio	SMSR	30				
Total Average Power	Pt	8.0		10.5	dBm	
Average Launch Power Per Lane	Pavg	2.0		4.5	dBm	
Extinction Ratio	ER	6			dB	
Difference in Launch Power Between Any Two Lanes (OMA)				3.6	dB	
Average Launch Power of Off Transmitter Per Lane	Poff			-30	dBm	
Transmitter Reflectance				-12	dB	
$RIN_{20}OMA$	RIN			-130	dB/Hz	
Optical Return Loss Tolerance	TOL			20	dB	
Transmitter Eye Mask: {X1, X2, X3, Y1, Y2, Y3}		{0.25, 0.4, 0.45, 0.25, 0.28, 0.4}				
Receiver						
Center Wavelength	λC	1272.55	1273.55	1274.54	nm	
		1276.89	1277.89	1278.89		
		1281.25	1282.26	1283.27		
		1285.65	1286.66	1287.68		
Average Receive Power Per Lane	Pin	-30		-7	dBm	
Receive Power on OMA Per Lane	PinOMA			-7	dBm	
Receiver Reflectance	dB			-26	dB	
Average Receiver Sensitivity	SEN1			-22	dBm	1
	SEN2			-21	dBm	2
	SEN3			-28	dBm	3
	SEN4			-27	dBm	4
LOS Assert	LOSA	-40			dBm	
LOS De-Assert	LOSD			-29	dBm	
LOS Hysteresis	LOSH	0.5			dB	

Notes:

1. Measured @25.78125Gbps, ER=8.2dB, BER=<$1E^{-12}$, PRBS=2^{31}-1 NRZ.
2. Measured @28.05Gbps, ER=8.2dB, BER=<$1E^{-12}$, PRBS=2^{31}-1 NRZ.
3. Measured @25.78125Gbps, ER=8.2dB, BER=<$5E^{-5}$, PRBS=2^{31}-1 NRZ.
4. Measured @28.05Gbps, ER=8.2dB, BER=<$5E^{-5}$, PRBS=2^{31}-1 NRZ.

Pin Descriptions

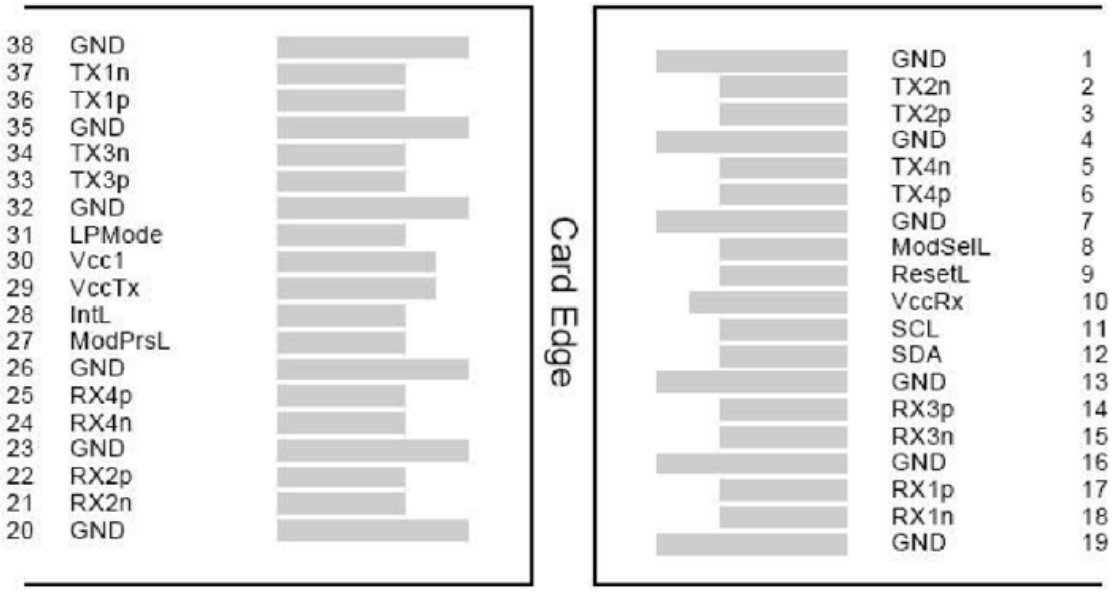
Pin	Symbol	Name/Description	Notes
1	GND	Transmitter Ground. (Common with Receiver Ground).	1
2	Tx2-	Transmitter Inverted Data Input.	
3	Tx2+	Transmitter Non-Inverted Data Output.	
4	GND	Transmitter Ground. (Common with Receiver Ground).	1
5	Tx4-	Transmitter Inverted Data Input.	
6	Tx4+	Transmitter Non-Inverted Data Output.	
7	GND	Transmitter Ground. (Common with Receiver Ground).	1
8	ModSelL	Module Select.	
9	ResetL	Module Reset.	
10	VccRx	+3.3V Receiver Power Supply.	2
11	SCL	2-Wire Serial Interface Clock.	
12	SDA	2-Wire Serial Interface Data.	
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. (Common 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.	
25	Rx4+	Receiver Non-Inverted Data Output.	
26	GND	Transmitter Ground. (Common with Receiver Ground).	1
27	ModPrsL	Module Present.	
28	IntL	Interrupt.	
29	VccTx	+3.3V Transmitter Power Supply.	2
30	Vcc1	+3.3V Power Supply.	2
31	LPMode	Low-Power Mode.	
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

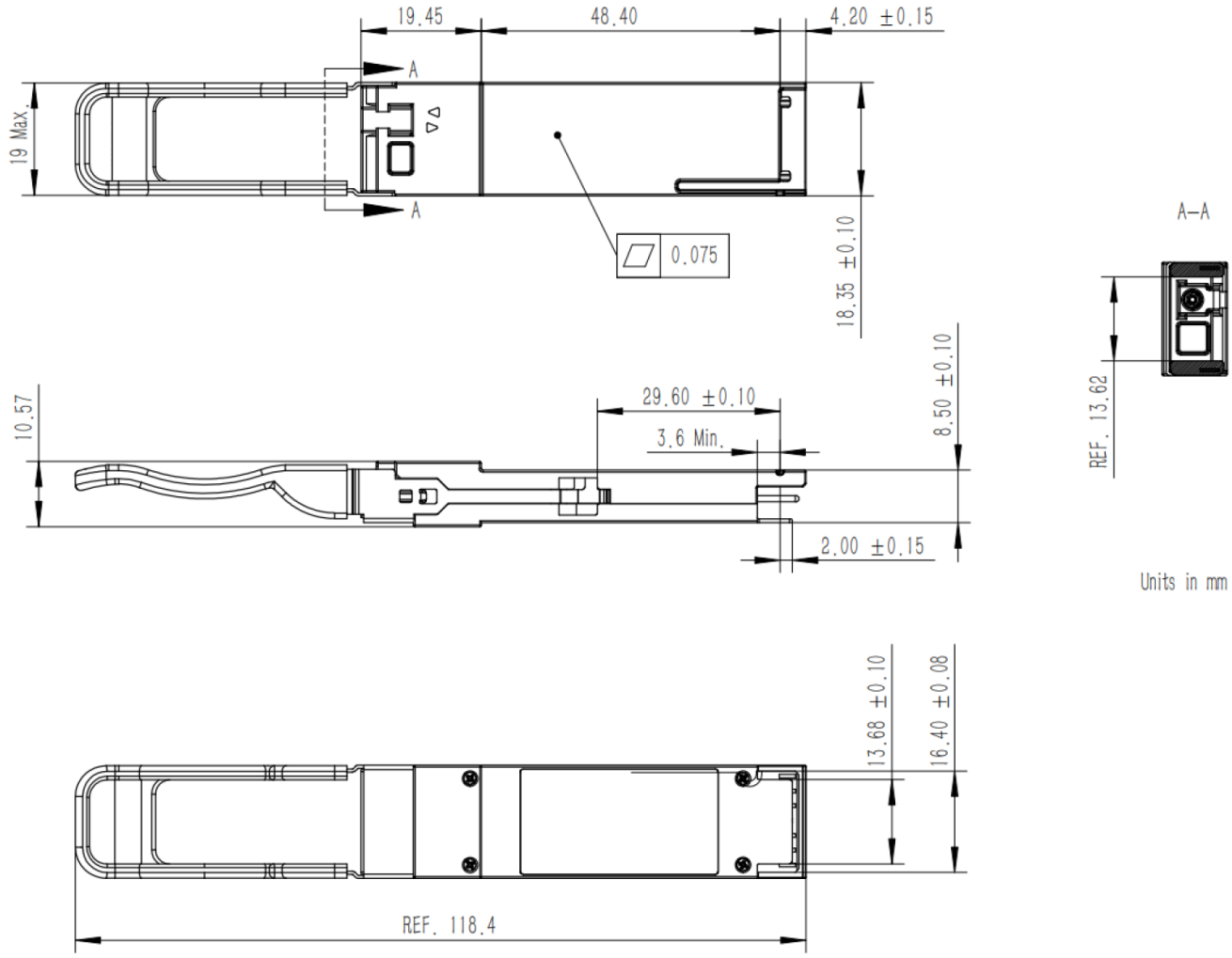
Notes:

1. GND is the symbol for signal and supply (power) common for the QSFP28 module. All are common within the 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. VccRx, Vcc1, and VccTx are the receiving and transmission power suppliers and shall be applied concurrently. Recommended host board power supply filtering is shown below. VccRx, Vcc1, and VccTx may be internally connected within the module in any combination. The connector pins are each rated for a maximum current of 1000mA.

Electrical Pin-Out Details



Mechanical Specifications



About AddOn Networks

In 1999, AddOn Networks entered the market with a single product. Our founders fulfilled a severe shortage for compatible, cost-effective optical transceivers that compete at the same performance levels as leading OEM manufacturers. Adhering to the idea of redefining service and product quality not previously had in the fiber optic networking industry, AddOn invested resources in solution design, production, fulfillment, and global support.

Combining one of the most extensive and stringent testing processes in the industry, an exceptional free tech support center, and a consistent roll-out of innovative technologies, AddOn has continually set industry standards of quality and reliability throughout its history.

Reliability is the cornerstone of any optical fiber network and is ingrained in AddOn's DNA. It has played a key role in nurturing the long-term relationships developed over the years with customers. AddOn remains committed to exceeding industry standards with certifications ranging from NEBS Level 3 to ISO 9001:2015 with every new development while maintaining the signature reliability of its products.



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