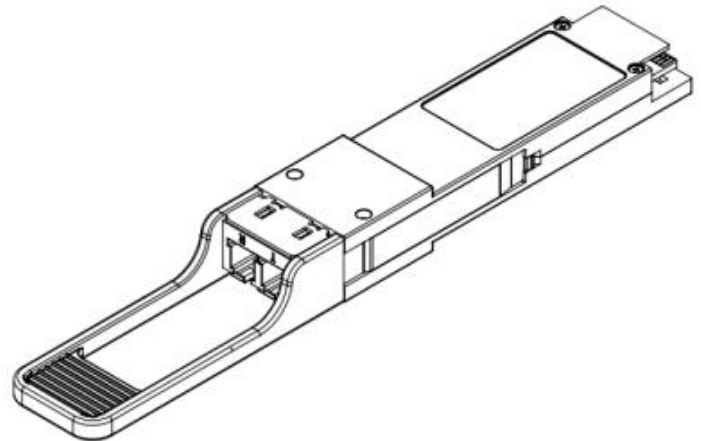


## Features

- ◆ Supports 103Gbps
- ◆ Single 3.3V power supply
- ◆ Power dissipation : 5.5W
- ◆ Up to 80km over SMF
- ◆ Commercial case temperature range of
- ◆ 0°C to 70°C
- ◆ Four 25Gbps EML LAN-WDM lasers on
- ◆ transmitter side
- ◆ SOA&PD on the receiver side
- ◆ 4x25Gbps / electrical interface
- ◆ Duplex LC receptacles
- ◆ I2C interface with integrated Digital Diagnostic
- ◆ Monitoring
- ◆ RoHS compliant



## Applications

- ◆ 100G 80km applications with FEC on host side
- ◆ 100G Datacom & Telecom connections

## Ordering Information

Part No.	Data Rate	Distance	Interface	Temp.	DDMI
SNR-QSFP28-ZR4-80* <small>Note1</small>	103Gbps	80	LC	Standard	YES

Note1: Standard version

## Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit
Storage Temperature	T <sub>s</sub>	-40	+85	°C
Supply Voltage	V <sub>cc</sub>	-0.5	3.6	V
Operating Relative Humidity		5	85	%

\*Exceeding any one of these values may destroy the device immediately.

## Recommended Operating Conditions

Parameter	Symbol	Min	Typical	Max	Unit
Operating case temperature	T <sub>c</sub>	0	70	°C	
Power supply voltage	V <sub>cc</sub>	3.135	3.3	3.465	V
Power dissipation	P <sub>D</sub>	5.5	W		

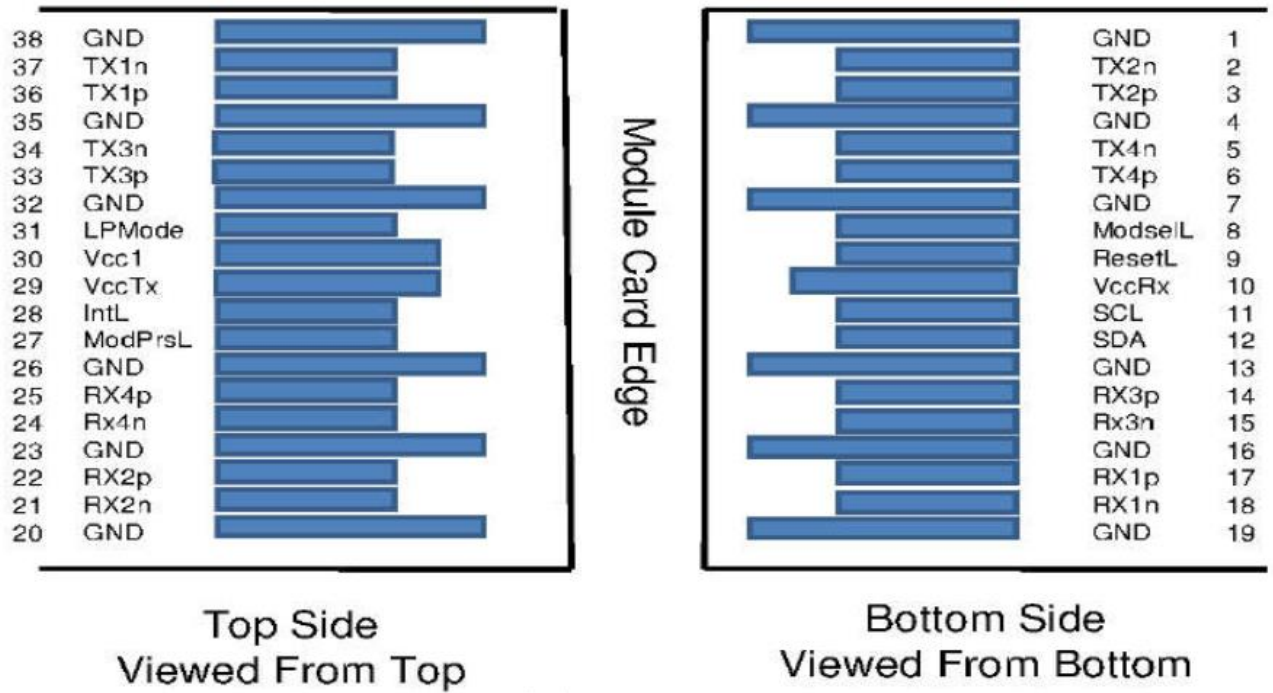
## Performance Specifications – Optical Characteristics 100GBASE Operation

Parameter	Symbol	Min	Typical	Max	Unit
<b>Transmitter</b>					
Signaling Speed per Lane	BR <sub>AVE</sub>	25.78	Gbps		
Lane_0 center wavelength	λ <sub>C0</sub>	1294.53	1295.56	1296.59	nm
Lane_1 center wavelength	λ <sub>C1</sub>	1299.02	1300.05	1301.09	nm
Lane_2 center wavelength	λ <sub>C2</sub>	1303.54	1304.58	1305.63	nm
Lane_3 center wavelength	λ <sub>C3</sub>	1308.09	1309.14	1310.19	nm
Average launch power per lane*(Note4)	Peach	3	7	dBm	
<b>Receiver</b>					
Lane_0 center wavelength	λ <sub>C0</sub>	1294.53	1295.56	1296.59	nm
Lane_1 center wavelength	λ <sub>C1</sub>	1299.02	1300.05	1301.09	nm
Lane_2 center wavelength	λ <sub>C2</sub>	1303.54	1304.58	1305.63	nm
Lane_3 center wavelength	λ <sub>C3</sub>	1308.09	1309.14	1310.19	nm
Average receive power per lane	Rx_pow	-31	4.5	dBm	
Damage threshold per lane(min) *(Note5)	Pdamage	5.5	dBm		
Receiver overload per Lane	Psat	4.5	dBm		
Receive sensitivity average per lane*(Note6)	Rx_sens	-29	dBm		
Stressed Sensitivity per lane*(Note6)	SRS	-25.1	dBm		

Note5. The receiver shall be able to tolerate, without damage, continuous exposure to an optical input signal having this average power level.

Note6. Measured with conformance test signal for BER = 5E-5@25.78Gbps PRBS<sub>31</sub>-1.

## QSFP28 Transceiver Electrical Pad Layout



## Pin Arrangement and Definition

Pin	Logic	Symbol	Description	Plug Sequence	Notes
1	GND	Ground		1	
2	CML-I	Tx2n	Transmitter Inverted Data Input	3	
3	CML-I	Tx2p	Transmitter Non-Inverted Data Input	3	
4	GND	Ground		1	
5	CML-I	Tx4n	Transmitter Inverted Data Input	3	
6	CML-I	Tx4p	Transmitter Non-Inverted Data Input	3	
7	GND	Ground		1	
8	LVTTL-I	ModSelL	Module Select	3	
9	LVTTL-I	ResetL	Module Reset	3	
10	VccRx	+3.3V Power Supply Receiver		2	
11	LVC MOS-I/O	SCL	2-wire serial interface clock	3	
12	LVC MOS-I/O	SDA	2-wire serial interface data	3	
13	GND	Ground		1	

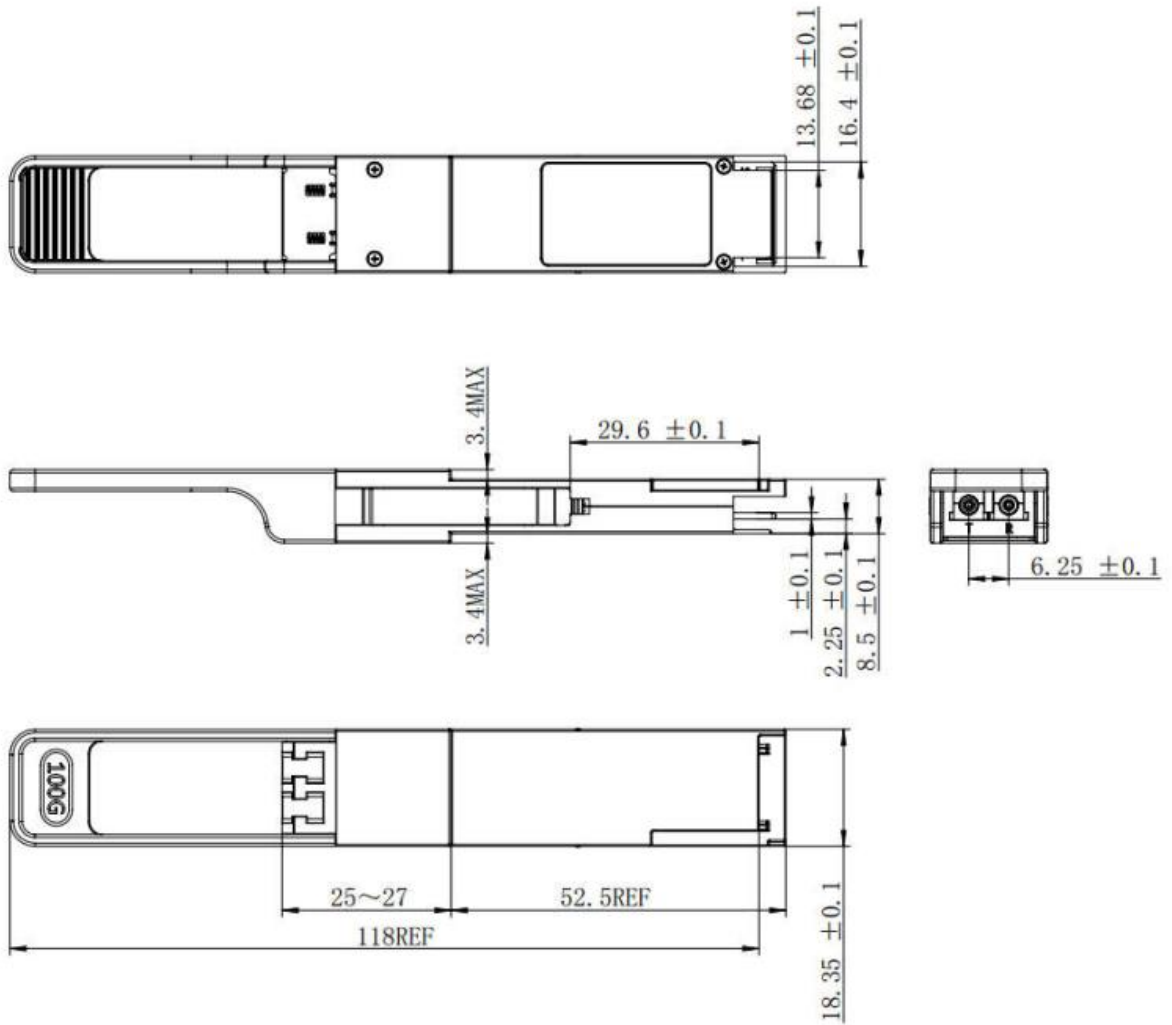
# SNR-QSFP28-ZR4-80

14	CML-O	Rx3p	Receiver Non-Inverted Data Output	3	
15	CML-O	Rx3n	Receiver Inverted Data Output	3	
16	GND	Ground	1	1	
17	CML-O	Rx1p	Receiver Non-Inverted Data Output	3	
18	CML-O	Rx1n	Receiver Inverted Data Output	3	
19	GND	Ground	1	1	
20	GND	Ground	1	1	
21	CML-O	Rx2n	Receiver Inverted Data Output	3	
22	CML-O	Rx2p	Receiver Non-Inverted Data Output	3	
23	GND	Ground	1	1	
24	CML-O	Rx4n	Receiver Inverted Data Output	3	
25	CML-O	Rx4p	Receiver Non-Inverted Data Output	3	
26	GND	Ground	1	1	
27	LVTTL-O	ModPrsL	Module Present	3	
28	LVTTL-O	IntL	Interrupt	3	
29	VccTx	+3.3V Power supply transmitter	2	2	
30	Vcc1	+3.3V Power supply	2	2	
31	LVTTL-I	LPMode	Low Power Mode	3	
32	GND	Ground	1	1	
33	CML-I	Tx3p	Transmitter Non-Inverted Data Input	3	
34	CML-I	Tx3n	Transmitter Inverted Data Input	3	
35	GND	Ground	1	1	
36	CML-I	Tx1p	Transmitter Non-Inverted Data Input	3	
37	CML-I	Tx1n	Transmitter Inverted Data Input	3	
38	GND	Ground	1	1	

1: GND is the symbol for signal and supply (power) common for the QSFP28 module. All are common within the QSFP28 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 QSFP28 Module in any combination. The connector pins are each rated for a maximum current of 100mA.

## Mechanical Specifications



**GUARANTEE:**



**CONTACTS:**

**Address:** Building 56/2, Predelnaya Street, Yekaterinburg, Russia

**Tel:** +7(343) 379-98-38

**Fax:** +7(343) 379-98-38

**E-mail:** [info@nag.ru](mailto:info@nag.ru)

**Online shop:** <http://shop.nag.ru>