SNR-QSFP+LR4 Series

Single-Mode 40GBASE-LR4
QSFP+ Transceiver
RoHS6 Compliant

Features

- Compliant to the IEEE 802.3ba(40GBASE-LR4)
- Compliant to the QSFP+ MSA SFF-8436 Specification
- Up to 30km over SMF
- DFBs and PIN monitor photodiodes array for transmitter section
- PIN detectors and TIAs array for receiver section
- Four 10Gbps CWDM channels in the 1300nm band
- I^2C interface with integrated Digital Diagnostic Monitoring
- Utilizes two standard LC optical connector
- Operating Case Temperature: -10℃~+70℃

Applications

- Extended 40GBASE-LR4 Ethernet links
- Infiniband QDR and DDR interconnects Client-side
- 40G Telecom connections

Ordering Information

Part No.	Data Rate	Fiber	Distance* (note2)	Interface	Temp	DDMI
SNR-QSFP+LR4-30*(note1)	40Gbps	SMF	30km	LC	-10℃ ~+70 ℃	Yes

Note1: Standard version
Note2: Over SMF

Regulatory Compliance*

Product Certificate	Certificate Number	Applicable Standard
TUV	R50135086	EN 60950-1:2006+A11+A1+A12
		EN 60825-1:2007
		EN 60825-2:2004+A1+A2
UL	E317337	UL 60950-1
		CSA C22.2 No. 60950-1-07
EMC CE	AE 50285865 0001	EN 55022:2010
		EN 55024:2010
CB	JPTUV-049251	IEC 60825-1
		IEC 60950-1
FCC	WTF14F0514437E	47 CFR PART 15 OCT., 2013
FDA	1331340-000	CDRH 1040.10
ROHS	RHS01G006464	2011/65/EU

*The above certificate number updated to June 2014, because some certificate will be updated every year, such as FCC, FDA and ROHS. For the latest certification information, please check with NAG.

Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit
Storage Temperature	Ts	-40	+75	°C
Supply Voltage	Vcc	-0.5	3.6	V
Operating Relative Humidity	RH	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_c	QSFP+LR4-30	-10		70	°C
Power Supply Voltage	Vcc		3.15	3.3	3.45	V
Power Supply Current	Icc				1000	mA
Power Dissipation	P_D				3.5	W
Aggregate Bit Rate	BR_{AVE}			41.25		Gbps
Lane Bit Rate	BR_{LANE}			10.3125		Gbps

Performance Specifications - Electrical

Parameter		Symbol	Min.	Typ.	Max	Unit	Notes
Transmitter							
Single ended input voltage tolerance			-0.3		4	V	Referred to TP1 signal common
AC common mode input voltage tolerance			15			mV	RMS
Input Impedance (Differential)		Zin	85	100	115	ohms	Rin > 100 kohms @ DC
TX Disable	Disable	V_{IH}	2		Vcc+0.3	V	
	Enable	V_{IL}	0		0.8		
TX FAULT	Fault	V_{OH}	2.4		Vcc+0.3	V	
	Normal	V_{OL}	0		0.8		
Receiver							
Single ended output voltage			-0.3		4	V	Referred to signal common
AC common mode voltage					7.5	mV	RMS
Termination mismatch at 1MHz					5	%	
Output Impedance (Differential)		Zout	85	100	115	ohms	
Output Rise/Fall Time		t_r/t_f	30			ps	10%~90%
RX_LOS	LOS	V_{OH}	2.4		Vcc+0.3	V	
	Normal	V_{OL}	0		0.8	V	

Optical and Electrical Characteristics

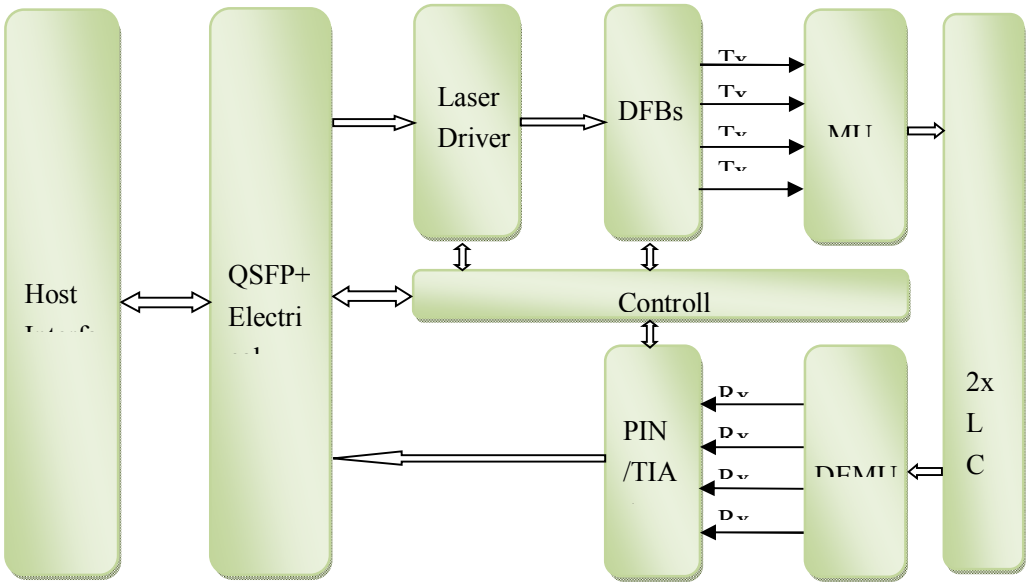
Parameter	Symbol	Min.	Typical	Max.	Unit
SMF	L	-	30	-	km
Aggregate Bit Rate	BR_{AVE}	-	41.25	-	Gbps
Per Lane Bit Rate	BR_{LANE}	-	10.3125	-	Gbps
Transmitter					
Channels wavelength	λ_C	1264.5	1271	1277.5	nm
		1284.5	1291	1297.5	

		1304.5	1311	1317.5	
		1324.5	1331	1337.5	
-20Db spectral width	Δλ	-	-	1	nm
Average Launch Power, Each Lane*(note3)	Pout/lane	-1.5	-	2.3	dBm
Extinction Ratio	Er	3.5	-	-	Db
Output Optical Eye*(note4)	IEEE 802.3ba-2010 Compliant				
Receiver					
Channels wavelength	λ_C	1264.5	1271	1277.5	nm
		1284.5	1291	1297.5	
		1304.5	1311	1317.5	
		1324.5	1331	1337.5	
Damage Threshold		3.3	-	-	dBm
Receiver sensitivity in OMA, each lane	Pmins	-	-	-13.5	dBm
Maximum Receive Power, each lane	Pmax	2.3	-	-	dBm
Receiver reflectance	Rr	-	-	-26	Db
LOS De-Assert	LOS_D			-14.5	dBm
LOS Assert	LOS_A	-30			dBm

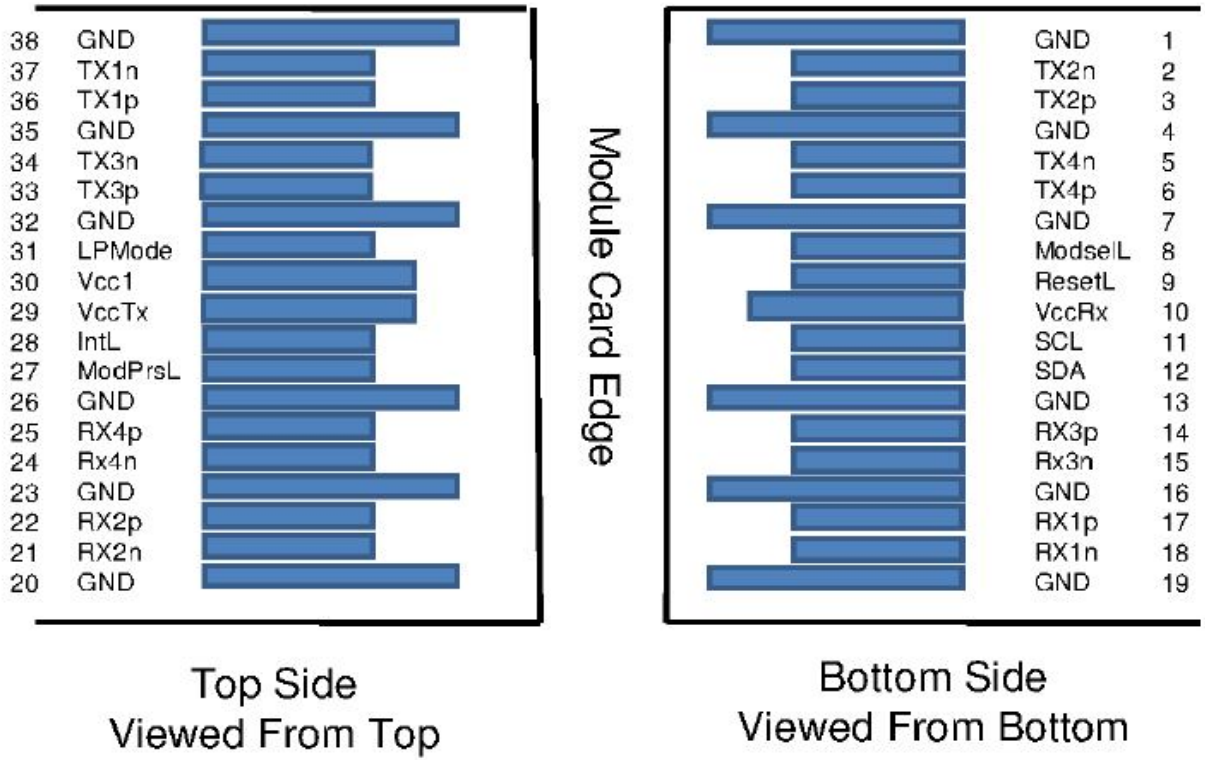
Note3: Output is coupled into a 9/125μm Single-Mode fiber.

Note4: Filtered, measured with a PRBS 2^{31}-1 test pattern @10.3125Gbps

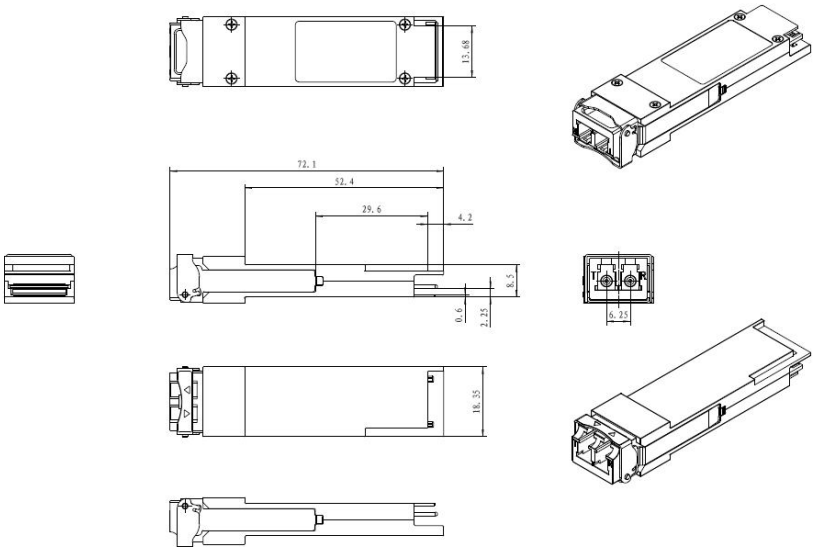
Functional Description of Transceiver



QSFP+ Transceiver Electrical Pad Layout



Mechanical



GUARANTEE:

CONTACT:

Addres: Building 56/2, Predelnaya Street, Yekaterinburg, Russia
Tel: +7(343) 379-98-38
Fax: +7(343) 379-98-38

E-mail: info@nag.ru

Online shop: http://shop.nag.ru