

QSFP-40G-SRBD Design Verification Testing Report

Reviewers

Department	Name	Review Date
Technical Testing Department	YangQin	2022-9-5

Parameter	Temperature(°C)	Spec Min	Spec Max	Pass/Total	Note
Average launch power, each lane(dBm)	-5, 25,75	-4	5	11/11	
Extinction ratio(dB)	-5, 25,75	3.5		11/11	
Laser Off Power Per Channel	-5, 25,75		-30	11/11	
Center Wavelength Range L1(nm)	-5, 25,75	832	868	11/11	
Center Wavelength Range L2(nm)	-5, 25,75	882	918	11/11	
Relative Intensity Noise(dB/HZ)	-5, 25,75		-128	11/11	
Optical Return Loss Tolerance(dB)	-5, 25,75		12	11/11	
Receiver Sensitivity per Channel(dBm)	-5, 25,75		-6.5	11/11	
LOS De-Assert(dBm)	-5, 25,75		-14	11/11	
LOS Assert(dBm)	-5, 25,75	-30		11/11	
LOS Hysteresis	-5, 25,75	0.5		11/11	
Icc(mA)	-5, 25,75		1000	11/11	
DDM- Temperature Error(°C)	-5,25,75	-3	3	11/11	
DDM-Voltage Error(%)	-5,25,75	-0.15	0.15	11/11	
DDM-Tx power Error(dBm)	-5,25,75	-3	3	11/11	
DDM-Rx power Error(dBm)	-5,25,75	-3	3	11/11	

Test Result:

1. Average Power(dBm)

Item	Unit	Spec_Min	Spec_Max	Channel	Test	Max	Min	Average
Average Power	dBm	-4	5	CH1	-5C	1.74	1.22	1.42
					25	1.48	0.96	1.31
					75C	0.09	-0.41	-0.13

Average Power	dBm	-4	5	CH2	-5C	0.97	-0.13	0.69
					25C	0.94	-0.18	0.73
					75C	0.21	-0.95	-0.23

2. Extinction Ratio(dB)

Item	Unit	Spec_Min	Spec_Max	Channel	Test	Max	Min	Average
Extinction Ratio	dB	3.5		CH1	-5C	5.4	4.67	4.92
					25C	5.56	4.68	4.99
					75C	6.04	5.3	5.5
Extinction Ratio	dB	3.5		CH2	-5C	5.21	4.75	4.94
					25C	5.28	4.91	5.12
					75C	6.23	5.7	5.89

3. Laser Off Power Per Channel(dBm)

Item	Unit	Spec_Min	Spec_Max	Channel	Test	Max	Min	Average
Laser Off Power	dBm		-30	CH1	-5C	-45.68	-54.14	-49.04
					25C	-49.2	-54.14	-49.68
					75C	-49.2	-54.14	-50.59
Laser Off Power	dBm		-30	CH2	-5C	-48.09	-55.08	-51.76
					25C	-50.15	-50.15	-50.15
					75C	-50.15	-55.08	-50.64

4. Center Wavelength(nm)

Item	Unit	Spec_Min	Spec_Max	Channel	Test	Max	Min	Average
Center Wavelength	nm	832	868	CH1	-5C	856.5	854.28	855.55
					25C	858.85	856.5	857.84
					75C	862.46	860.2	861.51
Center Wavelength	nm	882	918	CH2	-5C	904.98	904.68	904.82
					25C	907.28	907.03	907.15
					75C	911.12	910.78	910.96

5. Relative Intensity Noise(dB/HZ)

Item	Unit	Spec_Min	Spec_Max	Channel	Test	Max	Min	Average
Relative Intensity Noise	dB/Hz		-128	CH1	-5C	-133.4	-136.3	-134.73
					25C	-133.8	-135.7	-134.87
					75C	-133.4	-135.4	-134.71
Relative Intensity Noise	dB/Hz		-128	CH2	-5C	-132.1	-134.2	-133.49
					25C	-132.7	-135.3	-134.05
					75C	-131.8	-134.9	-134.01

6. Optical Return Loss Tolerance(dB)

Item	Unit	Spec_Min	Spec_Max	Channel	Test	Max	Min	Average
Return Loss Tolerance	dB		12	CH1	-5C	11.2	11.2	11.2
					25C	11.2	11.2	11.2
					75C	11.2	11.2	11.2
Return Loss Tolerance	dB		12	CH2	-5C	11.2	11.2	11.2
					25C	11.2	11.2	11.2
					75C	11.2	11.2	11.2

7. Receiver Sensitivity per Channel(dBm)

Item	Unit	Spec_Min	Spec_Max	Channel	Test	Max	Min	Average
Receiver Sensitivity per Channel	dBm		-6.5	CH1	-5C	-7.44	-8.34	-8.09
					25C	-7.74	-8.34	-8.06
					75C	-7.14	-7.74	-7.41
Receiver Sensitivity per Channel	dBm		-6.5	CH2	-5C	-8.85	-9.45	-9.21
					25C	-8.85	-9.45	-9.15
					75C	-7.95	-8.55	-8.39

8. LOS De-Assert(dBm)

Item	Unit	Spec_Min	Spec_Max	Channel	Test	Max	Min	Average
LOS De-Assert	dBm		-14	CH1	-5C	-14.92	-15.62	-15.5
					25C	-15.22	-15.62	-15.5
					75C	-15.22	-15.62	-15.43
LOS De-Assert	dBm		-14	CH2	-5C	-14.59	-15.09	-14.91
					25C	-14.59	-15.19	-14.94
					75C	-14.59	-15.09	-14.81

9. Los Assert(dBm)

Item	Unit	Spec_Min	Spec_Max	Channel	Test	Max	Min	Average
LOS Assert	dBm	-30		CH1	-5C	-13.32	-14.22	-13.85
					25C	-13.62	-14.02	-13.85
					75C	-13.62	-14.02	-13.72
LOS Assert	dBm	-30		CH2	-5C	-12.99	-13.59	-13.28
					25C	-12.99	-13.49	-13.28
					75C	-12.99	-13.59	-13.24

10. LOS Hysteresis(dB)

Item	Unit	Spec_Min	Spec_Max	Channel	Test	Max	Min	Average
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LOS Hysteresis	dB	0.5		CH1	-5C	2.7	2.1	2.35
					25C	2.4	2.1	2.35
					75C	2.4	2.1	2.29
LOS Hysteresis	dB	0.5		CH2	-5C	2.7	2.1	2.37
					25C	2.7	2.1	2.35
					75C	2.7	2.1	2.43

11. Supply Current(mA)

Item	Unit	Spec_Min	Spec_Max	Test	Max	Min	Average
Supply Current	mA		1000	-5C	951.2	850.1	890.2
				25C	952.3	840.7	883.5
				75C	986.5	898.8	924.8

12. DDM- Temperature Error(°C)

Item	Unit	Spec_Min	Spec_Max	Channel	Test	Max	Min	Average
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DDM- Temperature Error	°C	-3	3	NA	-5C	0.91	-1.8	-0.41
					25C	1.88	-2.48	-0.32
					75C	1.85	-2.01	0.05

13. DDM- Voltage Error(V)

Item	Unit	Spec_Min	Spec_Max	Channel	Test	Max	Min	Average
DDM- Voltage Error	V	-0.15	0.15	NA	-5C	0.03	-0.02	0
					25C	0.05	-0.03	0
					75C	0.04	-0.02	0

14. DDM-Tx power Error(dB)

Item	Unit	Spec_Min	Spec_Max	Channel	Test	Max	Min	Average
DDM-Tx power Error	dB	-3	3	CH1	-5C	0.04	-0.47	-0.16
					25C	0.29	-0.29	0.03
					75C	0.08	-0.63	-0.26
DDM-Tx power Error	dB	-3	3	CH2	-5C	0.05	-0.97	-0.35
					25C	0	-0.92	-0.32
					75C	-0.09	-1.04	-0.47

15. DDM-Rx power Error(dB)

Item	Unit	Spec_Min	Spec_Max	Channel	Test	Max	Min	Average
DDM-Rx power Error	dB	-3	3	CH1	-5C	0.66	-0.17	0.53
					25C	0.61	0.24	0.56
					75C	0.62	0.27	0.54
DDM-Rx power Error	dB	-3	3	CH2	-5C	-0.14	-0.65	-0.26
					25C	-0.17	-0.71	-0.27
					75C	0.2	-0.69	-0.29

Further Information :

Web www.naddod.com

Email For order requirements: sales@naddod.com

For customer service: support@naddod.com

For technical support: tech@naddod.com

For cooperation: agency@naddod.com

For technical support: tech@naddod.com

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