

QSFP-100G-ER4 Design Verification Testing Report

Reviewers

Department	Name	Review Date
Technical Testing Department	Liuchang	2022-5-24

Test Name	Temperature(°C)	Spec Min	Spec Max	Pass/Total	Note
Total launch power(dBm)	-40,25,90		10.5	11/11	
Average launch power, each lane(dBm)	-40,25,90	-2.9	4.5	11/11	
OMA, each lane(dBm)	-40,25,90	0.1	4.5	11/11	
Extinction ratio(dB)	-40,25,90	4		11/11	
Mask margin(%)	-40,25,90	5		11/11	
Transmitter OFF Output Power(dBm)	-40,25,90		-30	11/11	
Transmitter and Dispersion penalty(dB)	-40, 25,85		2.5	11/11	
Center Wavelength Range L0(nm)	-40,25,90	1294.53	1296.59	11/11	
Center Wavelength Range L1(nm)	-40,25,90	1299.02	1301.09	11/11	
Center Wavelength Range L2(nm)	-40,25,90	1303.54	1305.63	11/11	
Center Wavelength Range L3(nm)	-40,25,90	1308.09	1310.09	11/11	
Side Mode Suppression Ratio	-40,25,90	30		11/11	
OMA Sensitivity(B-B)@1E-12(dBm)	-40, 25,85		-14.65	11/11	1
OMA Sensitivity(B-B)@5E-5(dBm)	-40, 25,85		-18.65	11/11	2
OMA Stressed sensitivity@5E-5(dBm)	-40, 25,85		-18.65	11/11	
Maximum Input Power(OMA), each lane(dBm)	-40, 25,85		-1.9	11/11	
LOS De-Assert(dBm)	-40,25,90		-24	11/11	
LOS Assert(dBm)	-40,25,90		-26	11/11	
LOS Hysteresis	-40,25,90	0.5		11/11	
Icc(mA)	-40,25,90		1360	11/11	
DDM- Temperature Error(°C)	-40,25,90	-3	3	11/11	
DDM-Voltage Error(V)	-40,25,90	-0.15	0.15	11/11	
DDM-Tx power Error(dBm)	-40,25,90	-2	2	11/11	
DDM-Rx power Error(dBm)	-40,25,90	-2	2	11/11	

Notes:

1. Measured with a PRBS 2³¹-1 test pattern, @25.78Gb/s, BER < 10⁻¹²
2. Measured with a PRBS 2³¹-1 test pattern, @25.78Gb/s, BER < 5*10⁻⁵

Temperature test (-40°C)

-40C	Total power	Average Power@CH0	Average Power@CH1	Average Power@CH2	Average Power@CH3	OMA Power@CH0	OMA Power@CH1	OMA Power@CH2	OMA Power@CH3
Unit	dBm	dBm	dBm	dBm	dBm	dBm	dBm	dBm	dBm
1	8.32	1	2.34	2.66	3.64	1.78	3.04	3.14	3.88
2	7.37	0.93	0.72	2.21	2.38	1.40	1.30	2.64	2.62
3	7.72	1.3	1.94	1.87	2.34	2.14	2.12	2.34	2.96
4	8.30	0.81	2.28	2.63	3.36	1.08	2.52	2.93	3.90
5	7.32	1.16	1.19	1.26	1.57	1.60	1.57	1.81	2.15
6	7.75	0.69	1.90	2.41	2.26	1.26	2.18	2.83	2.90
7	7.14	0.49	1.29	2.2	1.01	1.04	1.69	2.80	1.29
8	7.35	0.89	0.95	1.41	1.98	1.38	1.32	1.89	2.42
9	7.24	1.66	0.92	1.08	1.19	2.42	1.28	1.57	1.92
10	7.46	1.16	1.17	2.06	1.88	1.43	1.83	2.51	2.51
11	7.52	1.28	1.21	1.98	2.26	1.82	1.74	3.00	2.96

-40C	Extinction Ratio@CH0	Extinction Ratio@CH1	Extinction Ratio@CH2	Extinction Ratio@CH3	Mask Margin @CH0	Mask Margin @CH1	Mask Margin @CH2	Mask Margin @CH3	Transmitter OFF Output Power
Unit	dB	dB	dB	dB	%	%	%	%	dBm
1	6.00	5.85	5.48	5.11	21.7	14.1	23.3	15.8	<-35
2	5.46	5.64	5.39	5.11	21.5	15.3	16.6	19.2	<-35
3	6.12	5.02	5.46	5.71	16.2	14.0	19.3	16.2	<-35
4	5.15	5.11	5.19	5.58	20.7	17.0	21.5	16.6	<-35
5	5.41	5.32	5.60	5.64	19.3	18.0	19.2	16.5	<-35
6	5.63	5.17	5.38	5.74	17.2	12.7	16.6	14.1	<-35
7	5.59	5.35	5.68	5.17	16.6	14.7	18.0	10.2	<-35
8	5.49	5.30	5.48	5.41	16.2	11.5	14.4	11.5	<-35
9	5.97	5.28	5.49	5.91	16.2	14.1	17.0	14.1	<-35
10	5.15	5.77	5.43	5.72	16.2	13.3	13.1	14.7	<-35
11	5.58	5.57	6.46	5.85	14.7	13.3	11.2	17.8	<-35

-40C	TDP@CH0	TDP@CH1	TDP@CH2	TDP@CH3	Center Wavelength Range L0	Center Wavelength Range L1	Center Wavelength Range L2	Center Wavelength Range L3	SMSR CH0-CH3
Unit	dB	dB	dB	dB	nm	nm	nm	nm	dB
1	0	0	0	2.44	1295.2	1299.6	1304.3	1309.0	>35
2	0	0	0.18	0.26	1295.1	1299.8	1304.6	1309.3	>35
3	0	0	0	1.43	1295.4	1299.8	1304.9	1309.7	>35
4	0	0	0.24	1.40	1295.2	1299.6	1304.4	1309.3	>35
5	0	0	0	0.00	1295.6	1299.5	1304.3	1309.1	>35
6	0	0	0.33	0.00	1296.1	1299.6	1304.9	1309.2	>35
7	0	0	0	0.27	1296.2	1299.5	1305.1	1309.3	>35
8	0	0	0	0.00	1296.2	1299.7	1304.3	1309.0	>35
9	0	0	0	0.81	1296.2	1299.6	1303.9	1309.6	>35
10	0	0	0.25	0.56	1295.1	1299.9	1304.4	1309.6	>35
11	0	0	0.3	1.41	1295.9	1299.5	1304.5	1309.3	>35

-40C	1E-12 OMA Sensitivity @CH0	1E-12 OMA Sensitivity @CH1	1E-12 OMA Sensitivity @CH2	1E-12 OMA Sensitivity @CH3	5E-5 OMA Sensitivity @CH0	5E-5 OMA Sensitivity @CH1	5E-5 OMA Sensitivity @CH2	5E-5 OMA Sensitivity @CH3	Max Input Power(OMA) CH0-CH3
Unit	dBm	dBm	dBm	dBm	dBm	dBm	dBm	dBm	dBm
1	-18.4	-18.2	-17.7	-17.5	-23.7	-23.5	-22.9	-22.7	>-1.5
2	-18.6	-18.0	-18.1	-17.7	-24.0	-23.5	-23.2	-23.4	>-1.5
3	-18.3	-17.7	-17.6	-17.1	-23.7	-23.1	-22.8	-22.3	>-1.5
4	-17.9	-17.4	-17.5	-17.2	-23.3	-23.3	-22.8	-22.9	>-1.5
5	-18.3	-16.8	-17.7	-18.7	-23.5	-23.2	-23.2	-23.5	>-1.5
6	-17.9	-17.3	-17.3	-17.1	-23.3	-22.9	-22.9	-22.8	>-1.5
7	-17.3	-16.7	-16.7	-17.0	-22.7	-22.4	-22.5	-22.6	>-1.5
8	-18.4	-16.9	-18.2	-18.0	-23.4	-22.8	-23.1	-23.2	>-1.5
9	-17.0	-17.0	-17.1	-17.1	-22.8	-22.7	-22.6	-22.8	>-1.5
10	-17.6	-17.2	-16.8	-16.6	-22.9	-22.4	-22.7	-22.1	>-1.5
11	-18.1	-16.7	-17.1	-17.8	-23.3	-22.5	-23.0	-23.0	>-1.5

-40C	5E-5 Stressed Sensitivity @CH0	5E-5 Stressed Sensitivity @CH1	5E-5 Stressed Sensitivity @CH2	5E-5 Stressed Sensitivity @CH3	LOS De-Assert@CH0	LOS De-Assert@CH1	LOS De-Assert@CH2	LOS De-Assert@CH3
Unit	dBm	dBm	dBm	dBm	dBm	dBm	dBm	dBm
1	-23.82	-23.87	-23.62	-23.74	-27.1	-26.2	-25.4	-26.1
2	-23.97	-23.98	-23.6	-23.92	-25.2	-25.6	-24.1	-24.8
3	-23.65	-23.71	-23.42	-23.66	-27.6	-25.7	-26	-25.7
4	-23.48	-23.79	-23.73	-23.94	-26.4	-25.8	-25.6	-25.8
5	-23.8	-23.4	-23.1	-23.2	-24	-24.4	-23.6	-24.3
6	-23.5	-23.2	-23.0	-22.9	-24.8	-24.6	-24.4	-25.3
7	-22.8	-22.6	-22.7	-22.9	-24.4	-24.3	-24.3	-25
8	-23.2	-22.9	-23.4	-23.0	-24.6	-25.3	-24.2	-25
9	-23.1	-23.1	-22.8	-22.8	-24.6	-24.4	-25.1	-25.3
10	-23.3	-22.6	-22.9	-22.3	-25.5	-25.1	-24.9	-24.8
11	-23.5	-22.7	-23.2	-22.2	-24.9	-24.1	-24.9	-24.5

-40C	LOS Assert@CH0	LOS Assert@CH1	LOS Assert@CH2	LOS Assert@CH3	LOS Hysteresis @CH0	LOS Hysteresis @CH1	LOS Hysteresis @CH2	LOS Hysteresis @CH3	Total Current
Unit	dBm	dBm	dBm	dBm	dB	dB	dB	dB	mA
1	-29.1	-28.6	-27.8	-27.9	2.0	2.4	2.4	1.8	1115
2	-27.9	-27.8	-26.4	-26.7	2.7	2.2	2.3	1.9	1077
3	-29.2	-28.9	-28.8	-28.4	1.6	3.2	2.8	2.7	1070
4	-29.0	-28.2	-27.4	-28.0	2.6	2.4	1.8	2.2	1106
5	-27.3	-26.9	-26.4	-27.3	3.3	2.5	2.8	3.0	1075
6	-26.5	-27.2	-27.5	-27.8	1.7	2.6	3.1	2.5	1058
7	-26.8	-26.7	-26.6	-27.4	2.4	2.4	2.3	2.4	1045
8	-27.3	-27.7	-26.7	-27.8	2.7	2.4	2.5	2.8	1064
9	-26.7	-26.7	-27.1	-27.7	2.1	2.3	2.0	2.4	1100
10	-27.5	-27.6	-27.3	-27.3	2.0	2.5	2.4	2.5	1049
11	-27.8	-26.9	-26.7	-27.3	2.9	2.8	1.8	2.8	1062

-40C	DDM Temperature Error	DDM-Voltage Error	DDM Tx Power error@CH0	DDM Tx Power error@CH1	DDM Tx Power error@CH2	DDM Tx Power error@CH3	DDM Rx Power Max error@CH0	DDM Rx Power Max error@CH1	DDM Rx Power Max error@CH2	DDM Rx Power Max error@CH3
Unit	C	V	dB	dB	dB	dB	dB	dB	dB	dB
1	0.4	-0.019	0.41	0.40	0.30	0.35	0.49	0.56	0.37	0.33
2	0.4	-0.012	0.66	0.64	0.21	0.26	0.53	0.90	0.73	0.72
3	0.3	-0.022	-0.13	-0.03	-0.06	0.09	0.64	0.62	0.45	0.30
4	0.2	-0.019	0.29	0.47	0.55	0.49	0.75	0.72	0.53	0.26
5	-0.3	-0.025	0.92	0.66	0.73	0.48	0.56	0.45	0.38	0.45
6	-0.4	-0.024	1.16	0.91	0.63	0.19	0.66	0.42	0.43	0.24
7	-0.3	-0.020	1.08	0.90	0.68	0.42	0.40	0.33	0.11	0.30
8	-0.6	-0.025	0.75	0.57	0.41	0.17	0.58	0.42	0.30	0.20
9	-0.7	-0.027	0.72	0.72	0.73	0.31	0.31	0.61	0.48	0.29
10	0.4	-0.024	1.26	0.74	0.59	0.18	0.60	0.37	0.38	0.59
11	0.3	-0.021	1.07	0.80	0.53	0.01	0.43	0.38	0.38	0.34

Temperature test (25°C)

25C	Total power	Average Power@CH0	Average Power@CH1	Average Power@CH2	Average Power@CH3	OMA Power@CH0	OMA Power@CH1	OMA Power@CH2	OMA Power@CH3
Unit	dBm	dBm	dBm	dBm	dBm	dBm	dBm	dBm	dBm
1	8.32	1.37	2.33	2.6	3.58	1.90	2.89	2.86	3.77
2	7.54	1.34	0.92	2.26	2.48	1.66	1.28	2.58	2.72
3	7.65	1.56	1.62	1.95	2.43	1.88	2.01	2.24	2.84
4	8.23	1.61	2.3	2.48	3.23	1.92	2.51	2.79	3.50
5	7.48	1.32	1.18	1.5	1.81	1.71	1.61	1.91	2.33
6	7.71	0.91	1.71	2.45	2.34	1.33	2.11	2.82	2.74
7	7.34	0.89	1.46	2.45	1.29	1.34	1.86	2.89	1.72
8	7.51	1.04	1.11	1.6	2.12	1.39	1.44	1.92	2.54
9	7.58	1.93	1.04	1.42	1.78	2.40	1.40	1.75	2.23
10	7.63	1.53	1.38	2.16	2.11	2.04	1.84	2.60	2.55
11	7.68	1.62	1.37	2.24	2.31	2.02	1.77	2.98	3.33

25C	Extinction Ratio@CH0	Extinction Ratio@CH1	Extinction Ratio@CH2	Extinction Ratio@CH3	Mask Margin @CH0	Mask Margin @CH1	Mask Margin @CH2	Mask Margin @CH3	Transmitter OFF Output Power
Unit	dBm	dBm	dBm	dBm	%	%	%	%	dBm
1	5.6	5.6	5.1	5.0	21.1	16.2	21.2	16.6	<-35
2	5.2	5.3	5.2	5.1	18.2	16.6	19.7	15.4	<-35
3	5.2	5.3	5.2	5.4	17	14.4	18.7	20.8	<-35
4	5.2	5.1	5.2	5.1	21.7	19.6	21.5	16.6	<-35
5	5.3	5.4	5.4	5.5	18.4	16.6	21.2	16.6	<-35
6	5.4	5.3	5.3	5.4	14.9	11.2	18.7	13.7	<-35
7	5.4	5.3	5.4	5.4	12.5	14	18.4	14.7	<-35
8	5.3	5.2	5.2	5.4	18.7	14.1	19.2	16.5	<-35
9	5.5	5.3	5.2	5.4	19	14.1	14.7	16.6	<-35
10	5.5	5.4	5.4	5.4	12.5	16.2	18.7	14.9	<-35
11	5.3	5.4	5.9	6.5	16.2	11.5	16.2	13.7	<-35

25C	TDP@CH0	TDP@CH1	TDP@CH2	TDP@CH3	Center Wavelength Range L0	Center Wavelength Range L1	Center Wavelength Range L2	Center Wavelength Range L3	SMSR CH0-CH3
Unit	dB	dB	dB	dB	nm	nm	nm	nm	dB
1	0	0	0	1.48	1295.35	1299.71	1304.49	1308.99	>35
2	0	0	0	0.34	1295.12	1299.79	1304.64	1309.29	>35
3	0	0	0	0.64	1295.54	1299.7	1304.94	1309.68	>35
4	0	0	0	0.10	1295.19	1299.68	1304.46	1309.31	>35
5	0	0	0	0.00	1295.62	1299.55	1304.37	1309.1	>35
6	0	0	0	0.00	1296.14	1299.62	1304.88	1309.15	>35
7	0	0	0	0.12	1296.26	1299.5	1305.08	1309.27	>35
8	0	0	0	0.59	1296.26	1299.67	1304.33	1308.97	>35
9	0	0	0	0.24	1296.37	1299.69	1304.05	1309.73	>35
10	0	0	0	0.07	1295.04	1299.94	1304.34	1309.57	>35
11	0	0	0	1.75	1295.93	1299.49	1304.5	1309.24	>35

25C	1E-12 OMA Sensitivity @CH0	1E-12 OMA Sensitivity @CH1	1E-12 OMA Sensitivity @CH2	1E-12 OMA Sensitivity @CH3	5E-5 OMA Sensitivity @CH0	5E-5 OMA Sensitivity @CH1	5E-5 OMA Sensitivity @CH2	5E-5 OMA Sensitivity @CH3	Max Input Power(OMA) CH0-CH3
Unit	dBm	dBm	dBm	dBm	dBm	dBm	dBm	dBm	dBm
1	-17.1	-17.7	-17.1	-16.9	-22.4	-23.1	-22.2	-21.7	>1.9
2	-17.8	-16.8	-17.3	-17.1	-22.9	-22.6	-22.5	-22.7	>1.9
3	-17.0	-17.4	-16.9	-17.3	-22.4	-22.5	-22.0	-21.2	>1.9
4	-16.7	-17.2	-17.0	-17.1	-22.1	-22.5	-22.3	-22.1	>1.9
5	-17.8	-16.5	-17.2	-18.1	-22.7	-22.3	-22.9	-23.2	>1.9
6	-16.7	-16.4	-16.3	-16.6	-21.8	-21.7	-21.9	-21.9	>1.9
7	-16.3	-15.8	-15.7	-16.4	-21.5	-21.2	-21.4	-21.5	>1.9
8	-17.5	-16.7	-17.1	-16.8	-22.6	-22.5	-22.4	-22.4	>1.9
9	-15.9	-15.9	-16.0	-16.0	-21.4	-21.6	-21.5	-21.8	>1.9
10	-16.9	-16.4	-16.1	-16.1	-21.8	-21.5	-21.6	-21.4	>1.9
11	-16.9	-16.2	-16.4	-17.1	-22.4	-22.0	-22.0	-22.4	>1.9

25C	5E-5 Stressed Sensitivity @CH0	5E-5 Stressed Sensitivity @CH1	5E-5 Stressed Sensitivity @CH2	5E-5 Stressed Sensitivity @CH3	LOS De-Assert@CH0	LOS De-Assert@CH1	LOS De-Assert@CH2	LOS De-Assert@CH3
Unit	dBm	dBm	dBm	dBm	dBm	dBm	dBm	dBm
1	-22.5	-23.0	-22.4	-22.6	-26.5	-25.9	-25.0	-25.8
2	-22.8	-23.0	-22.6	-22.9	-24.8	-25.2	-24.0	-25.0
3	-22.3	-22.7	-22.1	-22.4	-26.5	-26.3	-26.0	-25.1
4	-22.4	-22.6	-22.5	-22.8	-26.0	-25.6	-25.6	-25.4
5	-22.9	-22.5	-23.0	-23.1	-24.0	-24.4	-23.9	-24.7
6	-22.0	-22.0	-22.2	-22.0	-24.6	-24.1	-24.2	-25.0
7	-22.1	-21.5	-21.6	-21.6	-24.3	-24.2	-24.5	-25.0
8	-23.0	-22.8	-22.5	-22.6	-24.2	-25.0	-24.3	-25.0
9	-22.0	-22.0	-22.1	-22.0	-24.5	-24.1	-25.0	-25.0
10	-21.9	-22.1	-21.9	-21.6	-25.1	-24.7	-24.6	-24.8
11	-22.5	-22.3	-22.2	-22.6	-24.5	-24.1	-25.1	-24.7

25C	LOS Assert@CH0	LOS Assert@CH1	LOS Assert@CH2	LOS Assert@CH3	LOS Hysteresis @CH0	LOS Hysteresis @CH1	LOS Hysteresis @CH2	LOS Hysteresis @CH3	Total Current
Unit	dBm	dBm	dBm	dBm	dB	dB	dB	dB	mA
1	-28.2	-28.1	-27.1	-27.7	1.7	2.2	2.1	1.9	898
2	-26.9	-27.0	-26.2	-26.9	2.1	1.8	2.2	1.9	848
3	-28.3	-28.9	-28.3	-27.6	1.8	2.6	2.3	2.5	875
4	-28.0	-27.8	-27.4	-27.4	2.0	2.2	1.8	2.0	887
5	-26.8	-26.8	-26.5	-27.2	2.8	2.4	2.6	2.5	874
6	-26.1	-26.4	-27.1	-27.2	1.5	2.3	2.9	2.2	868
7	-26.3	-26.2	-26.5	-27.0	2.0	2.0	2.0	2.0	875
8	-26.5	-26.9	-26.5	-27.4	2.3	1.9	2.2	2.4	881
9	-26.4	-26.3	-26.9	-27.1	1.9	2.2	1.9	2.1	872
10	-26.6	-26.9	-26.5	-27.1	1.5	2.2	1.9	2.3	882
11	-26.9	-26.5	-26.8	-27.3	2.4	2.4	1.7	2.6	889

25C	DDM Temperature Error	DDM-Voltage Error	DDM Tx Power error@CH0	DDM Tx Power error@CH1	DDM Tx Power error@CH2	DDM Tx Power error@CH3	DDM Rx Power Max error@CH0	DDM Rx Power Max error@CH1	DDM Rx Power Max error@CH2	DDM Rx Power Max error@CH3
Unit	C	V	dB	dB	dB	dB	dB	dB	dB	dB
1	0.10	-0.002	0.10	0.39	0.35	0.40	0.12	0.23	-0.14	-0.13
2	0.10	-0.001	0.43	0.57	0.30	0.36	0.09	0.43	0.29	0.17
3	0.30	-0.004	-0.04	-0.01	-0.01	0.07	0.26	0.12	-0.14	-0.17
4	0.10	-0.002	0.03	0.12	0.32	0.29	0.24	0.25	-0.11	-0.36
5	-0.45	-0.017	0.63	0.56	0.46	0.21	0.07	0.09	-0.17	-0.10
6	-0.38	-0.017	0.61	0.74	0.29	-0.07	0.29	0.02	0.00	-0.13
7	0.42	-0.012	0.53	0.52	0.30	-0.09	0.05	-0.04	-0.19	-0.06
8	0.56	-0.015	0.51	0.36	0.21	0.01	0.19	0.04	-0.09	0.09
9	0.00	-0.014	0.48	0.55	0.37	-0.05	-0.07	0.24	0.11	-0.11
10	-0.10	-0.018	0.70	0.43	0.37	-0.08	0.07	-0.14	-0.11	0.03
11	0.10	-0.013	0.66	0.55	0.32	-0.05	0.00	0.02	-0.07	0.00

Temperature test (85°C)

85C	Total power	Average Power@CH0	Average Power@CH1	Average Power@CH2	Average Power@CH3	OMA Power@CH0	OMA Power@CH1	OMA Power@CH2	OMA Power@CH3
Unit	dBm	dBm	dBm	dBm	dBm	dBm	dBm	dBm	dBm
1	7.96	1.26	2.00	1.90	2.80	1.53	2.85	2.68	3.13
2	7.33	0.57	0.91	1.76	1.93	1.23	1.21	2.04	2.18
3	7.63	1.24	1.57	1.92	2.20	1.78	2.01	2.31	2.64
4	8.05	1.28	2.14	2.05	2.77	1.47	2.58	2.66	3.02
5	7.16	1.17	1.03	1.16	1.18	1.29	1.18	1.43	1.86
6	7.58	0.75	1.48	2.10	2.04	0.85	1.76	2.37	2.29
7	7.22	0.53	1.28	1.97	1.28	0.78	1.49	2.36	1.50
8	7.17	0.72	0.82	1.29	1.68	0.88	1.00	1.45	2.15
9	7.19	1.71	0.87	0.92	1.11	2.11	1.06	1.15	1.64
10	7.50	1.54	1.21	1.89	1.50	1.71	1.42	2.12	1.81
11	7.39	1.36	1.09	1.53	1.72	1.56	1.26	2.07	2.34

85C	Extinction Ratio@CH0	Extinction Ratio@CH1	Extinction Ratio@CH2	Extinction Ratio@CH3	Mask Margin @CH0	Mask Margin @CH1	Mask Margin @CH2	Mask Margin @CH3	Transmitter OFF Output Power
Unit	dBm	dBm	dBm	dBm	%	%	%	%	dBm
1	5.15	6.13	6.01	5.24	19.2	15.2	20.3	16.5	<-35
2	5.78	5.20	5.17	5.12	14.1	14.1	14.7	16.6	<-35
3	5.58	5.41	5.33	5.42	13.7	14.1	14.7	19.3	<-35
4	5.03	5.41	5.70	5.13	18.0	14.9	16.6	19.2	<-35
5	4.94	4.98	5.14	5.82	12.5	14.1	16.5	10.2	<-35
6	4.91	5.16	5.15	5.12	12.5	11.7	18.4	12.2	<-35
7	5.12	5.06	5.34	5.08	16.6	11.2	15.2	14.1	<-35
8	4.99	5.03	4.99	5.46	14.1	14.1	16.6	13.3	<-35
9	5.34	5.03	5.09	5.56	13.7	13.7	15.3	10.2	<-35
10	5.00	5.06	5.09	5.21	12.4	10.2	16.5	15.1	<-35
11	5.05	5.01	5.58	5.72	11.2	11.2	12.7	16.6	<-35

85C	TDP@CH0	TDP@CH1	TDP@CH2	TDP@CH3	Center Wavelength Range L0	Center Wavelength Range L1	Center Wavelength Range L2	Center Wavelength Range L3	SMSR CH0-CH3
Unit	dB	dB	dB	dB	nm	nm	nm	nm	dB
1	0	0	0.00	0.22	1295.4	1299.8	1304.5	1308.7	>35
2	0	0	0.00	0.27	1294.9	1299.8	1304.5	1309.2	>35
3	0	0	0.17	0.94	1295.5	1299.8	1305.0	1309.6	>35
4	0	0	0.21	0.00	1295.2	1299.8	1304.5	1309.3	>35
5	0	0	0.00	0.00	1295.7	1299.6	1304.3	1308.9	>35
6	0	0	0.33	0.00	1296.2	1299.6	1304.9	1309.1	>35
7	0	0	0.00	0.09	1296.2	1299.5	1305.0	1309.2	>35
8	0	0	0.00	0.45	1296.2	1299.6	1304.3	1308.8	>35
9	0	0	0.00	0.00	1296.3	1299.7	1304.1	1309.6	>35
10	0	0	0.00	0.17	1295.0	1299.9	1304.3	1309.4	>35
11	0	0	0.20	1.40	1295.9	1299.5	1304.4	1309.0	>35

85C	1E-12 OMA Sensitivity @CH0	1E-12 OMA Sensitivity @CH1	1E-12 OMA Sensitivity @CH2	1E-12 OMA Sensitivity @CH3	5E-5 OMA Sensitivity @CH0	5E-5 OMA Sensitivity @CH1	5E-5 OMA Sensitivity @CH2	5E-5 OMA Sensitivity @CH3	Max Input Power(OMA) CH0-CH3
Unit	dBm	dBm	dBm	dBm	dBm	dBm	dBm	dBm	dBm
1	-16.2	-17.1	-16.3	-16.4	-21.2	-21.9	-21.1	-21.2	>1.9
2	-16.9	-16.1	-16.4	-16.6	-22.0	-21.3	-21.4	-21.7	>1.9
3	-16.4	-16.5	-16.2	-16.3	-21.2	-21.5	-21.0	-20.5	>1.9
4	-15.9	-16.5	-16.1	-16.3	-21.0	-21.2	-21.1	-20.7	>1.9
5	-16.7	-15.7	-16.4	-17.4	-21.9	-21.1	-21.7	-22.4	>1.9
6	-15.3	-14.8	-15.1	-15.6	-20.1	-19.9	-20.1	-20.7	>1.9
7	-15.1	-14.5	-14.7	-15.1	-20.1	-19.8	-19.8	-19.9	>1.9
8	-16.6	-15.9	-16.0	-16.5	-21.6	-21.2	-21.1	-21.7	>1.9
9	-14.8	-14.9	-14.7	-15.3	-20.0	-19.8	-19.8	-20.1	>1.9
10	-15.6	-15.1	-15.2	-15.5	-20.5	-20.2	-20.1	-20.6	>1.9
11	-16.0	-14.9	-15.2	-16.4	-21.2	-20.4	-20.3	-21.4	>1.9

85C	5E-5 Stressed Sensitivity @CH0	5E-5 Stressed Sensitivity @CH1	5E-5 Stressed Sensitivity @CH2	5E-5 Stressed Sensitivity @CH3	LOS De-Assert@CH0	LOS De-Assert@CH1	LOS De-Assert@CH2	LOS De-Assert@CH3
Unit	dBm	dBm	dBm	dBm	dBm	dBm	dBm	dBm
1	-21.3	-21.7	-21.1	-21.4	-25.4	-25.6	-24.9	-25.1
2	-21.5	-21.7	-21.3	-21.8	-24.3	-24.5	-23.5	-24.3
3	-21.3	-21.5	-21.0	-21.2	-26.0	-25.8	-25.7	-24.3
4	-21.2	-21.3	-21.4	-21.7	-25.0	-25.0	-25.2	-24.4
5	-21.9	-21.5	-21.6	-22.6	-23.3	-23.8	-23.1	-24.0
6	-20.1	-20.5	-20.4	-21.0	-24.1	-23.3	-23.3	-24.0
7	-20.2	-20.3	-20.3	-20.3	-23.5	-23.5	-24.7	-24.2
8	-21.7	-21.6	-21.6	-22.1	-23.4	-24.0	-23.6	-24.4
9	-20.1	-20.2	-20.3	-20.4	-23.8	-23.4	-24.2	-24.0
10	-20.7	-20.6	-20.6	-20.8	-24.1	-24.0	-23.9	-23.9
11	-21.3	-20.5	-20.6	-21.6	-23.7	-23.5	-24.5	-23.9

85C	LOS Assert@CH0	LOS Assert@CH1	LOS Assert@CH2	LOS Assert@CH3	LOS Hysteresis @CH0	LOS Hysteresis @CH1	LOS Hysteresis @CH2	LOS Hysteresis @CH3	Total Current
Unit	dBm	dBm	dBm	dBm	dB	dB	dB	dB	mA
1	-27.1	-27.6	-26.8	-26.8	1.7	2.0	1.9	1.7	1015
2	-26.3	-26.1	-25.7	-26.2	2.0	1.6	2.2	1.9	941
3	-27.5	-28.1	-27.8	-26.5	1.5	2.3	2.1	2.2	1025
4	-27.0	-27.2	-26.8	-26.2	2.0	2.2	1.6	1.8	1025
5	-25.7	-26.1	-25.5	-26.5	2.4	2.3	2.4	2.5	992
6	-25.3	-25.4	-26.0	-25.5	1.2	2.1	2.7	1.5	1009
7	-25.2	-25.4	-26.6	-25.8	1.7	1.9	1.9	1.6	988
8	-25.6	-25.7	-25.6	-26.5	2.2	1.7	2.0	2.1	997
9	-25.6	-25.6	-25.8	-25.6	1.8	2.2	1.6	1.6	988
10	-25.4	-25.9	-25.6	-25.3	1.3	1.9	1.7	1.4	982
11	-26.0	-25.6	-25.8	-25.7	2.3	2.1	1.3	1.8	1020

85C	DDM Temperature Error	DDM-Voltage Error	DDM Tx Power error@CH0	DDM Tx Power error@CH1	DDM Tx Power error@CH2	DDM Tx Power error@CH3	DDM Rx Power Max error@CH0	DDM Rx Power Max error@CH1	DDM Rx Power Max error@CH2	DDM Rx Power Max error@CH3
Unit	C	V	dB	dB	dB	dB	dB	dB	dB	dB
1	0.12	-0.016	0.13	0.49	0.647	0.69	-0.867	-0.559	-0.751	-1.038
2	0.21	-0.026	-0.12	-0.07	-0.06	-0.05	-0.718	-0.436	-0.391	-0.606
3	0.31	-0.020	0.25	0.17	0.2881	0.2258	-0.575	-0.718	-0.817	-0.83
4	0.11	-0.016	0.28	0.396	0.62	0.58	-0.75	-0.497	-0.83	-1.18
5	-0.46	-0.033	0.62	0.56	0.53	0.36	-0.9346	-0.867	-1.2709	-0.8336
6	0.4	-0.035	0.55	0.73	0.37	0	-0.867	-1.1439	-1.02	-1.126
7	-0.21	-0.029	0.46	0.41	0.32	-0.33	-0.8336	-0.817	-0.391	-1.0033
8	0.45	-0.030	0.52	0.46	0.4	0.18	-0.5752	-1.1261	-1.1083	-0.8336
9	0.3	-0.031	0.25	0.61	0.63	0.15	-1.0033	-0.5752	-0.784	-1.1439
10	-0.8	-0.031	0.38	0.32	0.32	-0.09	-1	-1.07	-1.14	-1.07
11	-0.6	-0.032	0.667	0.675	0.58	0.12	-1.0555	-0.9007	-0.9517	-0.8

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