Approved Networks
A brand of legrand

QDD-800G-2FR4-5

800GBASE, QSFP-DD, 2x FR4, SMF TRANSCEIVER
1271/1291/1311/1331nm, 2km REACH, DUAL DUPLEX LC CONNECTOR

Features:

- 8x100G PAM4/8x50G PAM4 data rates
- Compliant with IEEE Std 802.3cu 400GBASE-FR4
- 5nm DSP for low power dissipation: <14W
- Compliant with QSFP-DD MSA
- Electrical interface compliant with 100Gbps per lane defined by IEEE 802.3ck
- I2C Management interface compliant to CMIS Rev5.0
- Dual LC receptacles
- Cooled 1271/1291/1311/1331 EML laser
- Up to 2km on 9/125um SMF
- Single +3.3V power supply
- Class 1 laser safety certified
- Commercial operating temperature: 0ºC to +70ºC
- RoHS6 Compliant

Applications

- High speed storage area networks
- 2x400G-FR4 applications
- 2x200G-FR4 applications

1. Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit
Storage Temperature	TS	-40	85	ºC
Relative Humidity	RH	0	85	%
Supply Voltage	VCC	-0.5	3.6	V

2. Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit
Operating Case Temperature	TC	0	25	70	ºC
Supply Voltage	VCC	3.135	3.3	3.465	V
Data Rate		-	106.25	-	Gb/s
		-	53.125	-	

3. General Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
Module Supply Current	Icc	-	4.47	-	A
Power Dissipation	PD	-	14	-	W
Transmitter					
Input Differential Impedance	ZIN	-	100	-	Ω
Differential Data Input Swing	VIN, P-P	180	-	900	mVP-P
Receiver					
Output Differential Impedance	ZO	-	100	-	Ω
Differential Data Output Swing[1]	VOUT, P-P	300	-	850	mVP-P

Note 1: Internally AC coupled, but requires a external 100Ω differential load termination.

4. Optical Characteristics

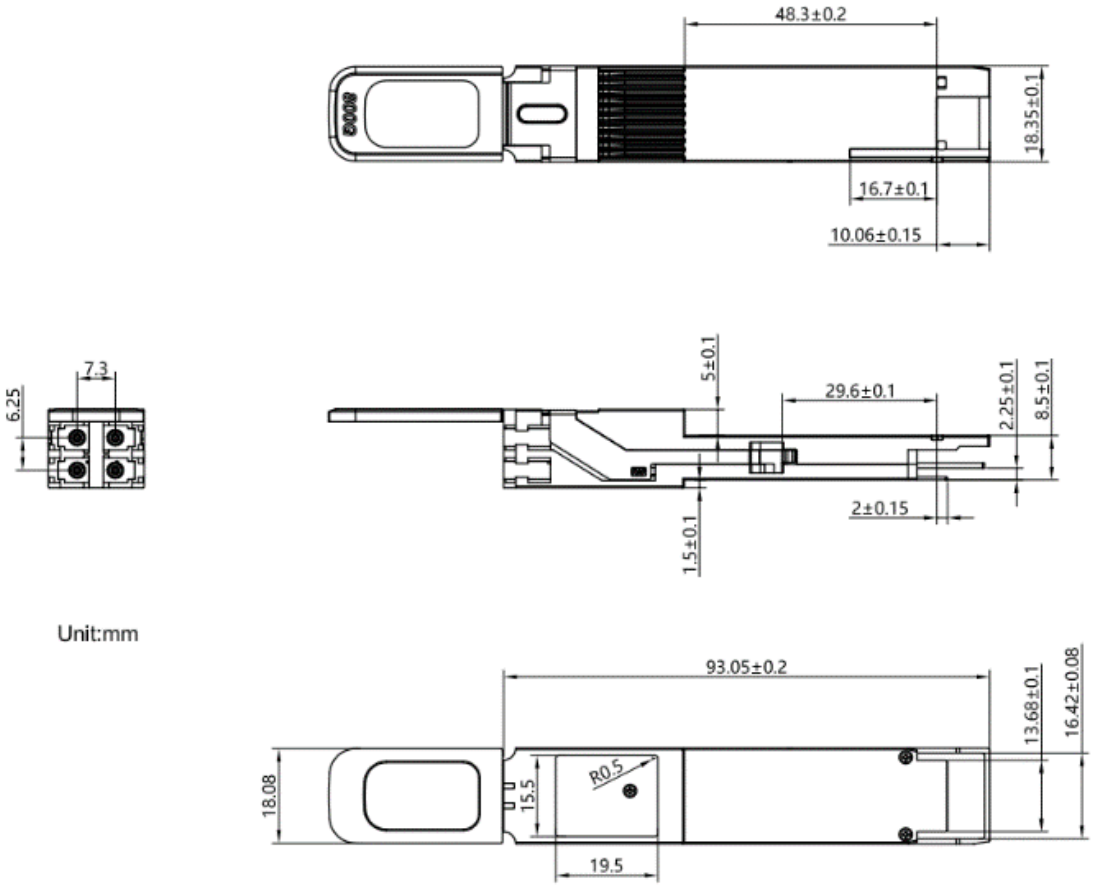
Parameter	Symbol	Min.	Max.	Unit	Notes
Transmitter					
Optical Wavelength Range	CH1	1264.5	1277.5	nm	1
	CH2	1284.5	1297.5	nm	1
	CH3	1304.5	1317.5	nm	1
	CH4	1324.5	1337.5	nm	1
	CH5	1264.5	1277.5	nm	1
	CH6	1284.5	1297.5	nm	1
	CH7	1304.5	1317.5	nm	1
	CH8	1324.5	1337.5	nm	1
Side-mode suppression ratio	SMSR	30	-	dB	2
Average launch power, each lane	Pavr (100G)	-3.2	4.4	dBm	3
	Pavr (50G)	-4.2	4.7	dBm	3
Transmitter and dispersion penalty eye closure for PAM4, each lane	TDECQ(100G)	-	3.4	dB	4
	TDECQ(50G)	-	3.1	dB	5
100G OMAouter per Channel for TDECQ<1.4dB	OMA(100G)	-0.2	3.7	dBm	3
for 1.4dB≤TDECQ≤3.4dB		-1.6+ TDECQ	3.7	dBm	3
50G OMAouter per Channel	OMA(50G)	-1.2	4.5	dBm	3
50G OMAouter minus TDECQ per Channel for ER≥4.5dB	OMA-TDECQ (50G)	-2.6		dBm	-
for ER<4.5dB		-2.5			

Extinction Ratio	ER	3.5	-	dB	6
Average launch power of OFF transmitter	Poff	-	-30	dBm	-
Optical Return Loss Tolerance	ORLT	-	17.1	dB	-
Transmitter reflectance	-	-	-26	dB	-
Receiver					
Optical Wavelength Range	CH1	1264.5	1277.5	nm	1
	CH2	1284.5	1297.5	nm	1
	CH3	1304.5	1317.5	nm	1
	CH4	1324.5	1337.5	nm	1
	CH5	1264.5	1277.5	nm	1
	CH6	1284.5	1297.5	nm	1
	CH7	1304.5	1317.5	nm	1
	CH8	1324.5	1337.5	nm	1
100G Receiver Sensitivity, each lane (OMAouter)	RxSENS1		-4.6	dBm	7
50G Receiver Sensitivity, each lane (OMAouter)	RxSENS2		-5.5	dBm	8
Receiver Overload, each lane (Pavg)	POL	4.4	-	dBm	9
Damage Threshold, each lane		5.4	-	dBm	
Receive power, each lane (OMAouter)	OMA	-	-3.7	dBm	
Receiver Reflectance		-	-26	dB	-
LOS De-Assert	LOSD	-	-10	dBm	10
LOS Assert	LOSA	-16		dBm	10
LOS Hysteresis	-	0.5		dB	

Notes:

1. 13nm width.
2. Modulated.
3. Class 1 Laser Safety per FDA/CDRH and EN (IEC) 60825 regulations.
4. 106.25Gbps PAM4.
5. 53.125Gbps PAM4.
6. 106.25/53.125Gbps PAM4.
7. 106.25Gbps@BER<$2.4x10^{-4}$ and $PRBS2^{31}$-1, per Channel.
8. 53.125Gbps@BER<$2.4x10^{-4}$ and $PRBS2^{31}$-1, per Channel.
9. Per Channel.
10. Average power.

5. Mechanical Specifications



Note: External physical characteristics are subject to variation. This may include, but is not limited to, external case designs, pull tab colors and/or shapes, removal latch styles or colors, and label sizes and placement. These variations do not affect the function or characteristics of the transceivers.

6. Ordering Information

OEM	Part Number	OEM	Part Number
Juniper	QDD-2X400G-FR4-P-A	Juniper	QDD-2X400G-FR4-P-AN
MSA	AN-QDD-800G-2FR4		

7. Contact Information

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