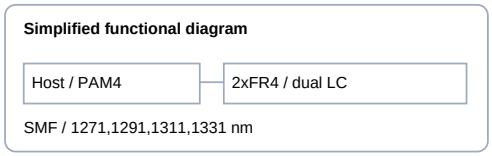
OSFP-2FR4-800G-Finned Top

OSFP, 800GBASE-2FR4, 1310 nm, 2 km, dual LC

1. Product overview

800GBASE-2FR4 OSFP transceiver for up to 2 km over single-mode fiber with duplex LC connectors. The source describes an 800 Gigabit Ethernet signal carried over 1271, 1291, 1311 and 1331 nm. Built-in digital diagnostics provide access to real-time operating parameters.

Simplified functional diagram



2. Key features

- IEEE 802.3cu-2021 2x400GBASE-FR4 optics; IEEE P802.3ck D2.2 2x400GAUI-4 C2M electrical interface
- OSFP MSA; QSFP-DD CMIS Rev 5.0 (as stated); hot-pluggable; DDM
- Maximum power 16.5 W; single +3.6 V supply in features; Class 1 laser; 0°C to +70°C

3. Applications

800G Ethernet; breakout 2x400GBASE-FR4; Data Center; Cloud Networks.

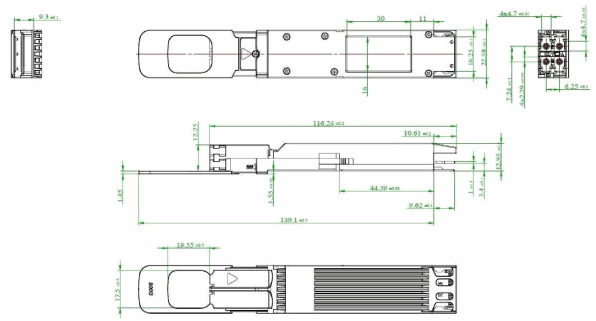
4. Technical data

Parameter	Specification	Parameter	Specification
Form factor / media	OSFP / SMF, dual LC	Storage temperature	-40 to +85°C
Absolute supply voltage	-0.5 to 3.6 V	Humidity, non-condensing	5-95%
Absolute differential data input	1 V max	Absolute control input	-0.3 to Vcc+0.5 V
Absolute control output current	-20 to +20 mA	Host schematic	3.3 V; SCL/SDA pull-ups 2.2 kohm

Electrical characteristics, per lane

TX / input	Specification	RX / output	Specification
Differential p-p tolerance	900 mV min (TP1a)	AC common-mode RMS	25 mV max
Single-ended tolerance	-0.4 to 3.3 V	DC common-mode	-350 to 2850 mV
DC common-mode	-0.35 to 2.85 V	Differential output p-p	600900 mV mV max
Return loss	Differential-to-common: 802.3ck 120G-2, dB	Common-to-differential return loss	802.3ck 120G-1, dB
Effective return loss	8.5 dB min	Effective return loss	8.5 dB min
Termination mismatch	10% max	Termination mismatch	10% max
AC common-mode RMS tolerance	25 mV min (TP1a)	Eye height / VEC	15 mV min / 12 dB max
Interface	IEEE P802.3ck C2M	Transition time (20%-80%)	8.5 ps min

Mechanical drawing from source



5. Recommended operating conditions

Parameter	Specification	Parameter	Specification
Case temperature	0 to +70°C	Supply voltage	3.135 / 3.3 / 3.465 V (min/typ/max)
Power dissipation	16.5 W max	Distance	2-2000 m SMF
Signaling speed / lane	53.125 GBd typ	Serial clock / supply noise	400 kHz max; 66 mV p-p max (1 kHz-1 MHz)
Control VIH / VIL	Vcc*0.7 to Vcc+0.3 V / -0.3 to Vcc*0.3 V	Hot-plug current / low power	ICC_IP, ICC_SP (mA), PDLP

OSFP-2FR4-800G

6. Optical characteristics

Wavelength / transmitter per lane	Specification
L0 wavelength, min/typ/max	1264.5 / 1271 / 1277.5 nm
L1 wavelength, min/typ/max	1284.5 / 1291 / 1297.5 nm
L2 wavelength, min/typ/max	1304.5 / 1311 / 1317.5 nm
L3 wavelength, min/typ/max	1324.5 / 1331 / 1337.5 nm
SMSR	30 dB min
Total average launch power	10.4 max;
Average launch power [1]	-3.2 to +4.4 dBm
OMAouter, TDECQ <1.4 dB	-0.2 min / 3.7 max dBm
OMAouter, 1.4 ≤TDECQ ≤3.4 dB	-1.6+TDECQ min / 3.7 max dBm
Lane-to-lane launch OMAouter difference	3.9 dB max
TDECQ	3.4 dB max
|TDECQ - TECQ|	2.5 dB max
Over/under-shoot	22% max
Transmitter power excursion	1.8 dBm max

Transmitter / receiver per lane	Specification
Average launch power, TX off	-16 dBm max
Extinction ratio	3.5 dB min
TX transition time	17 ps max
RIN17.1OMA	-136 dB/Hz max
Optical return loss tolerance	17.1 dB max
Transmitter reflectance [2]	-26 dB max
RX damage threshold	5.4 dBm min
Average receive power	-7.2 to +4.4 dBm
Receive OMAouter	3.7 dBm max
Lane-to-lane receive OMAouter difference	4.1 max
Receiver reflectance	-26 dB max
RX sensitivity, TECQ <1.4 dB	-4.6 dBm max
RX sensitivity, 1.4 ≤TECQ ≤3.4 dB	-6+TECQ dBm max
Stressed RX sensitivity [3]	-2.6 dBm max
Stress test: SECQ / aggressor OMAouter	3.4 dB typ / 1.4 dBm typ

[1] Minimum average launch power is informative, not the principal signal-strength indicator. [2] Reflectance is defined looking into the transmitter. [3] Conformance test signal at TP3, BER = $2.4x10^{-4}$.

7. Digital diagnostics and management

Parameter	Specification
Management / calibration	CMIS Rev 5.0 (source says QSFP-DD); all listed diagnostics internally calibrated.
DDM: range; accuracy; source unit	Temperature 0-70; ±3; °C (listed twice). Voltage 0-Vcc; 0.1; V. TX bias/lane 0-100; 10%; mA. TX power/lane -3.2 to +4.4; ±3; dB. RX power/lane -7.2 to +4.4; ±3; dB.
Control pins	SCL 14; SDA 47 (LVCMOS-I/O). LPWn/PRSn 17: low power / present. INT/RSTn 44: interrupt / reset (multilevel). Host SCL/SDA pull-ups: 2.2 kohm to 3.3 V.
60-contact pin map	TX p/n lanes 1-8: 59/58, 2/3, 56/55, 5/6, 53/52, 8/9, 50/49, 11/12 (CML-I). RX p/n lanes 1-8: 29/28, 32/33, 26/25, 35/36, 23/22, 38/39, 20/19, 41/42 (CML-O). Vcc: 15,16,45,46 (+3.3 V). GND: 1,4,7,10,13,18,21,24,27,30,31,34,37,40,43,48,51,54,57,60.

8. Safety and regulatory

Class 1 laser safety. Source states IEEE 802.3cu-2021, IEEE P802.3ck D2.2 and OSFP MSA compliance.

9. Ordering information

Ordering number	Product description
OSFP-800G-F-2FR4	OSFP 800G Finned 2xFR4 2x400Gbps PAM4, 1310nm 4dB 2km CMIS5 Dual LC SM