

SFP85P4oL3xD – SFP Dual Fibre

850nm / 400m / CPRI

For your product safety, please read the following information carefully before any manipulation of the transceiver:



ESD

This transceiver is specified as ESD threshold 1kV for SFI pins and 2kV for all others electrical input pins, tested per MIL-STD-883G, Method 3015.4 /JESD22-A114-A (HBM). However, normal ESD precautions are still required during the handling of this module.



LASER SAFETY

This is a Class1 Laser Product according to IEC 60825-1:2007. This product complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated (June 24, 2007).

The optical ports of the module need to be terminated with an optical connector or with a dust plug in order to avoid contamination.

1. Overview

SFP85P4oL3xD is a high performance transceiver module for up to 3.072Gbps data links over a multi-mode fibre pair. The maximum reach¹ is 400m, with 3.1dB end of life (EOL) power budget. The transmitter is an 850nm Vertical-Cavity Surface-Emitting Laser (VCSEL), the receiver is a PIN photodiode.

This transceiver module is compliant with the Small Form-factor Pluggable (SFP) and hot pluggable. Always contact Skylane Optics® commercial agents for compatibility with different equipment platforms.

2. Features

- SFP Multi-Source Agreement compliant (INF-8074i)
- Hot pluggable SFP+ footprint
- Management interface specification as per SFF-8431 and SFF-8472
- Supports data rates between 0.6 and 3.072Gbps
- Dual LC Connector
- 850nm VCSEL Transmitter
- PIN Receiver
- Up to 400m Point-to-Point Transmission on OM3 Multi-Mode Fibre
- Operating temperature range 0°C to 70°C or -40°C to 85°C
- Power Dissipation < 1W
- Digital Diagnostics Monitoring (DDM)

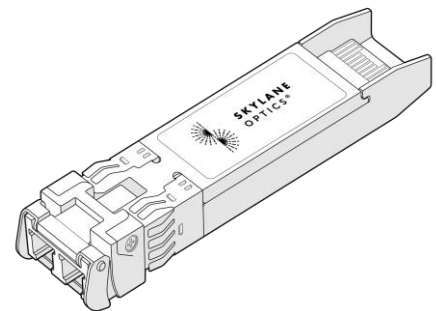


Figure 1. SFP Dual Fibre (non-binding illustration)

3. Applications

- CPRI 3.072/2.4576/1.228/0.614Gbps
- OBSAI 3.072/1.536/0.768Gbps

4. Optical Interface

P/N	Wavelength [nm]	Optical Output Power ² [dBm]	Receiver Sensitivity ³ [dBm]	Transmitter and Dispersion Penalty [dB]	Receiver Overload ⁴ [dBm]	Power Budget ² [dB]
SFP85P4oL3xD	850	-9 to 0	≤ -12.1	NA	0	≥ 3.1

1. Distance is estimated assuming typical optical losses after decent quality fibre deployment; only optical budget value is guaranteed

2. EOL, over operating temperature range

3. Measured with 3.072Gbps PRBS 2³¹-1, BER≤10⁻¹²

4. The optical input to the receiver should not exceed this value. Transmitters must never be directly connected to receivers (optical loop back) before ensuring that proper optical attenuation is used

5. Technical Parameters

5.1. Recommended Operating Conditions					
Parameter	Min	Typ	Max	Unit	Notes
Storage temperature	-40		85	°C	
Operating Case Temperature	0		70	°C	SFP85P4oL3oD
	-40		85		SFP85P4oL3zD
Relative Humidity	5		95	%	Non-Condensing
Power Supply Voltage	3.15	3.3	3.45	V	
Power Supply Current			300	mA	
Power Dissipation			1	W	

5.2. Transmitter Optical Specifications					
Parameter	Min	Typ	Max	Unit	Notes
Average Output Power	-9		0	dBm	5
Centre Wavelength	830		860	nm	
Spectral Width (RMS)			0.85	nm	
Extinction Ratio	3.5			dB	
Transmitter and Dispersion Penalty		NA			

5. Output power coupled into a 9/125 µm multi-mode fibre

5.3. Receiver Optical Specifications					
Parameter	Min	Typ	Max	Unit	Notes
Receiver Sensitivity			-12.1	dBm	6
Receiver Overload	0			dBm	6
Operating Wavelength	760		860	nm	

6. Measured with 3.072Gbps PRBS $2^{31}-1$, BER $\leq 10^{-12}$

6. Transceiver Electrical Pad Layout

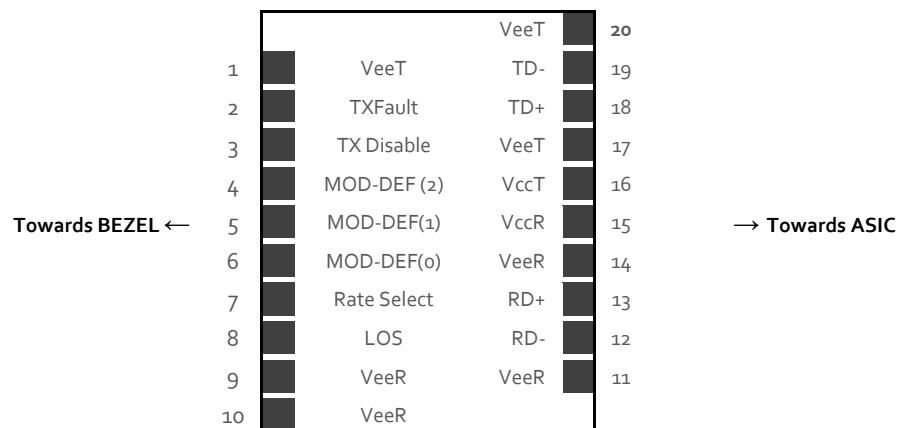


Figure 2. Transceiver Electrical Pad Layout



7. Module Electrical Pin Definition

Pin Number	Name	Function	Notes
1	VeeT	Transmitter Ground	
2	TX Fault	Transmitter Fault Indication	
3	TX_Disable	Transmitter Disable	
4	MOD-DEF2	2-Wire Serial Interface Data	
5	MOD-DEF1	2-Wire Serial Interface Clock	
6	MOD-DEFO	Grounded in Module	
7	Rate Select	Not Used	
8	LOS	Loss of Signal	
9	VeeR	Receiver Ground	
10	VeeR	Receiver Ground	
11	VeeR	Receiver Ground	
12	RD-	Inverted Received Data Out	
13	RD+	Received Data Out	
14	VeeR	Receiver Ground	
15	VccR	Receiver Power	
16	VccT	Transmitter Power	
17	VeeT	Transmitter Ground	
18	TD+	Transmit Data In	
19	TD-	Inverted Transmit Data In	
20	VeeT	Transmitter Ground	

8. EEPROM

SFP MSA (SFF-8472)

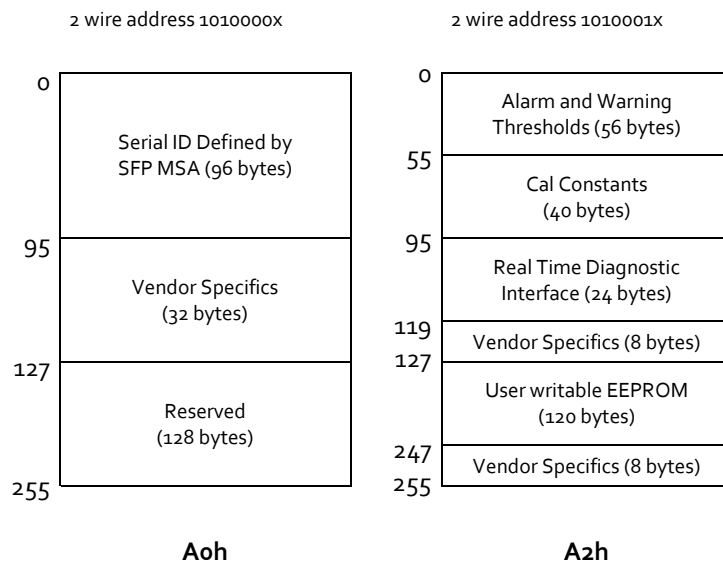


Figure 3. SFP Memory Map

9. Ordering Information

Part Number	Description
SFP85P4oL3oD	SFP, 850nm, Tx (VCSEL) , Rx (PIN), maximum distance 400m, power budget 3.1dB, 3G CPRI, dual LC connector, 0°C to 70°C, DDM
SFP85P4oL32D	SFP, 850nm, Tx (VCSEL) , Rx (PIN), maximum distance 400m, power budget 3.1dB, 3G CPRI, dual LC connector, -40°C to 85°C, DDM

10. Document Revision Information

Revision	Description
A	Initial release

Skylane Optics® supplies a broad range of optical transceivers. Our engineers work closely with our customers to find the best solutions for every application. We are committed to provide high quality products and services to our customers.

For questions on this product please contact:
support@skylaneoptics.com

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