

XFP1301010xD – XFP Dual Fibre Transceiver

1310nm / 10km / 10 Gigabit Ethernet

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 Class 1 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

XFP1301010xD is a high performance XFP transceiver module for 10 Gigabit Ethernet data links over a single mode fibre pair. The maximum reach is 10km, with 8.4dB end of life (EOL) power budget. The transmitter is a 1310nm DFB laser, the receiver is a PIN photodiode.

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

2. Features

- XFP Multi-Source Agreement compliant (INF-8077)
- Hot pluggable XFP footprint
- Serial ID functionality supported according to (INF-8077)
- Class 1 laser safety standard IEC 60825 compliant
- Dual LC connector
- 1310nm DFB transmitter
- 10km point-to-point transmission on single mode fibre
- Operating temperature range 0°C to 70°C or -40°C to 85°C
- Low power dissipation (<2.5W)
- Digital diagnostics monitoring (DDM)

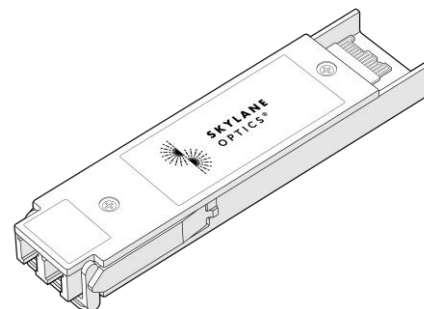


Figure 1. XFP Dual Fiber (non-binding illustration)

3. Applications

- 10GBASE-LR/-LW
- 10GBASE-LR/-LW FEC
- 10×Fiber Channel

4. Optical Interface

P/N	Wavelength [nm]	Optical Output Power ² [dBm]	Optical Receiver Sensitivity ³ [dBm]	Transmitter Dispersion Penalty [dB]	Optical Receiver Overload ⁴ [dBm]	Power Budget ² [dB]
XFP1301010xD	1310nm	-6 to -1	≤ -14.4	0	0	≥ 8.4

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 at 10.3125Gbps, 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	XFP13010100D
	-40		85		XFP13010102D
Relative Humidity	5		95	%	Noncondensing
Power Supply Voltage	3.15	3.3	3.45	V	
Power Supply Current			720	mA	
Power Dissipation			2.5	W	

5.2. Transmitter Optical Specifications					
Parameter	Min	Typ	Max	Units	Notes
Average Output Power	-6		-1	dBm	5
Centre Wavelength	1290		1330	nm	
Transmitter and Dispersion Penalty		0		dB	
Optical Extinction Ratio	6			dB	
Spectral Width			1	nm	

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

5.3. Receiver Optical Specifications					
Parameter	Min	Typ	Max	Units	Notes
Sensitivity			-14.4	dBm	6
Receiver Overload	0			dBm	6
Wavelength of Operation	1270		1600	nm	

6. Measured at 10.3125Gbps, PRBS 2³¹-1, BER<10⁻¹²

6. Transceiver Electrical Pad Layout

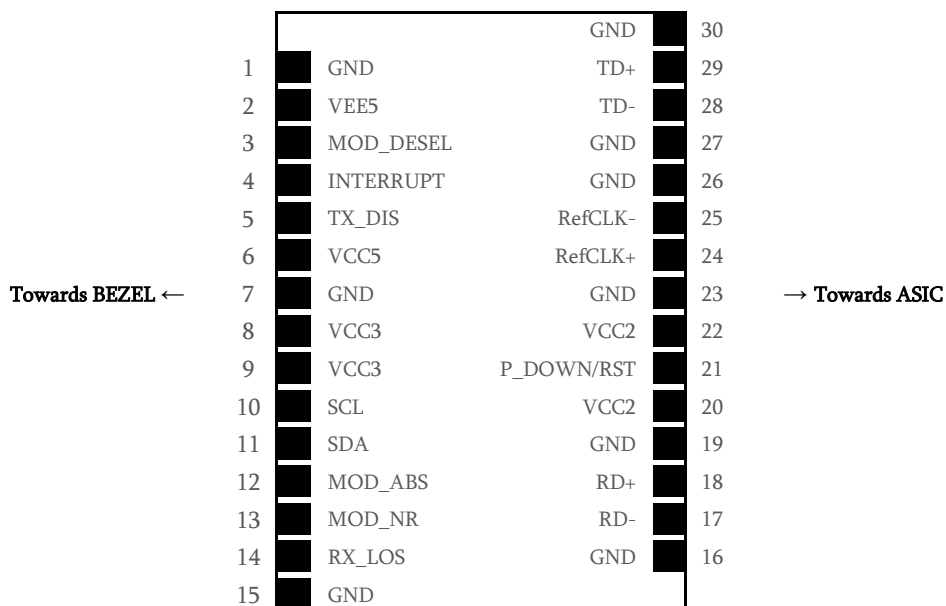


Figure 2. Transceiver Electrical Pad Layout

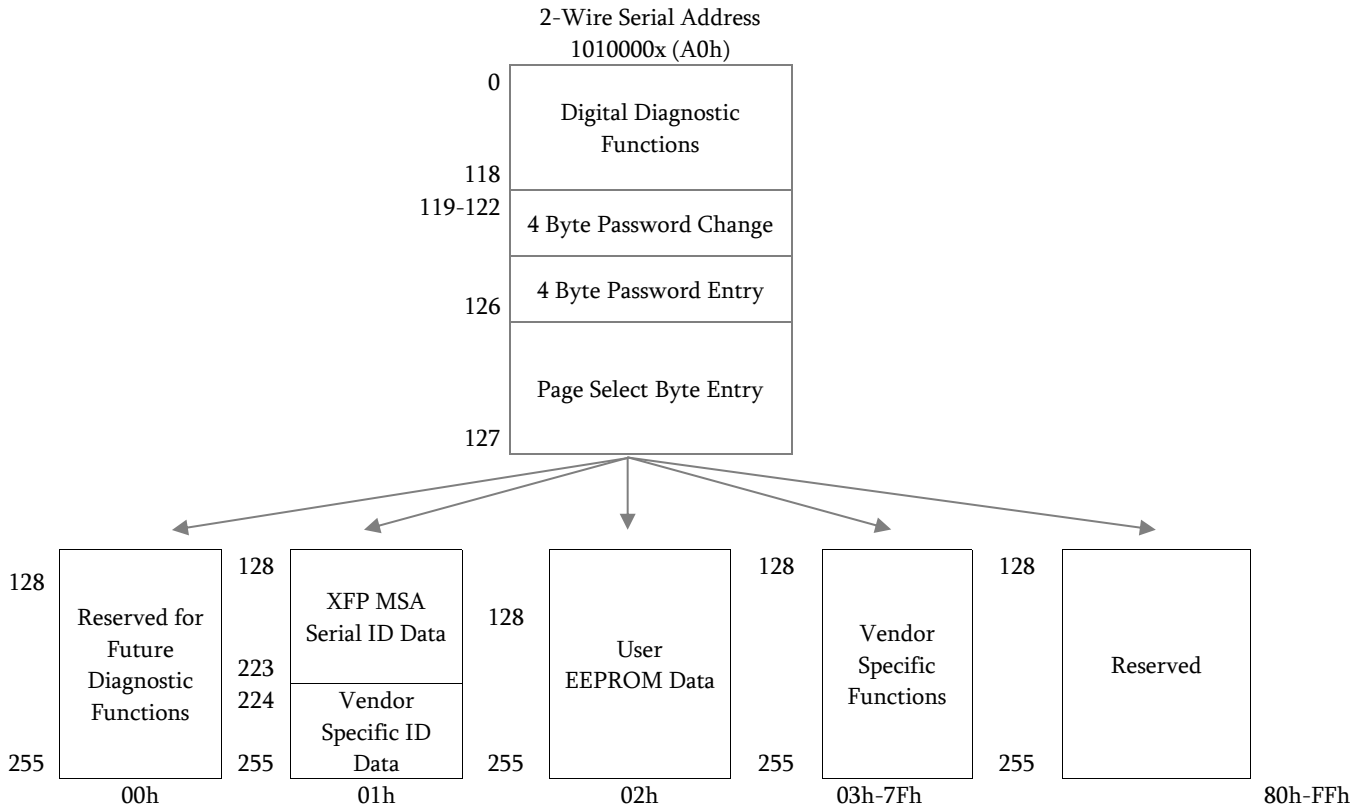


7. Pin Functions Definitions

Pin Number	Name	Description
1	GND	Ground
2	VEE5	Not Used (Optional – 5.2V Power Supply)
3	MOD_DESEL	Module de-select
4	Interrupt	Indicator of important condition
5	TX_Disable	Transmitter Disable
6	VCC5	Not Used (+5V Power Supply)
7	GND	Ground
8	VCC3	+3.3V Power Supply
9	VCC3	+3.3V Power Supply
10	SCL	2-Wire Serial Interface Data
11	SDA	2-Wire Serial Interface Clock
12	Mod-Abs	Indicates module is not present
13	Mod_Nr	Module Not Ready
14	RX_LOS	Loss of Signal
15	GND	Ground
16	GND	Ground
17	RD-	Receiver Inverted Data Output
18	RD+	Receiver Non-Inverted Data Output
19	GND	Ground
20	VCC2	Not Used (+1.8V Power Supply)
21	P_DOWN/RST	Power Down / Reset
22	VCC2	Not Used (+1.8V Power Supply)
23	GND	Ground
24	RefCLK+	Not Used (Ref. Clock Non-Inverted Input)
25	RefCLK-	Not Used (Ref. Clock Inverted Input)
26	GND	Ground
27	GND	Ground
28	TD-	Transmitter Inverted Data Input
29	TD+	Transmitter Non-Inverted Data Input
30	GND	Ground

8. EEPROM

XFP MSA (INF-8077)



9. Ordering Information

Part Number	Description
XFP13010100D	XFP dual fibre, Tx 1310nm (DFB), Rx (PIN), maximum distance 10km, power budget 12dB, 10 Gigabit Ethernet, LC connector, 0°C to 70°C, DDM
XFP13010102D	XFP dual fibre, Tx 1310nm (DFB), Rx (PIN), maximum distance 10km, power budget 12dB, 10 Gigabit Ethernet, LC connector, -40°C to 85°C, DDM

10. Document Revision Information

Revision	Description
A	Initial release
B	Industrial temperature variant added

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

