XFB2302010xD – XFP Single Fibre

Tx 1270nm Rx 1330nm / 20km / 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 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

XFB2302010xD is a high performance XFP transceiver module for 10 Gigabit Ethernet data links over one single mode fibre. The maximum reach is 20km, with 11dB end of life (EOL) power budget. The transmitter is a 1270nm DFB laser, the receiver is a 1330nm PIN photodiode. Consequently, a module with a 1330nm transmitter and a 1270nm receiver is required at the opposite side of the link. The recommended counterpart is XFB3202010xD.

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
- Single LC connector
- 1270nm DFB transmitter, 1330nm PIN receiver
- 20km point-to-point transmission on single mode fibre
- Operating temperature range 0°C to 70°C or -20°C to 85°C
- Low power dissipation (<2W)
- Digital diagnostics monitoring (DDM)

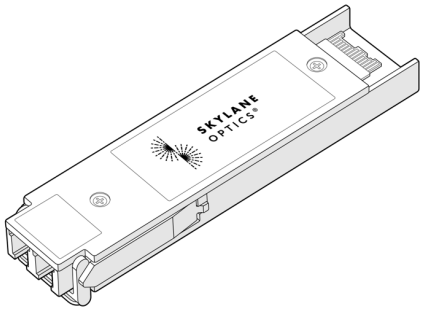


Figure 1. XFP
(non-binding illustration)

3. Applications

- 10GBASE-LW/-LR
- 10×Fiber Channel

4. Optical Interface

P/N	Wavelength [nm]	Optical Output Power[2] [dBm]	Optical Receiver Sensitivity[3] [dBm]	Dispersion Penalty [dB]	Optical Receiver Overload[4] [dBm]	Power Budget[2] [dB]
XFB2302010xD	Tx 1270nm Rx 1330nm	-3.5 to 3	≤ -14.5	2	0	≥ 11

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	XFB23020100D
	-20		85	°C	XFB23020101D
Relative Humidity	5		95	%	Non condensing
Power Supply Voltage	3.15	3.3	3.45	V	
Power Supply Current			580	mA	
Power Dissipation			2	W	

5.2. Transmitter Optical Specifications

Parameter	Min	Typ	Max	Unit	Notes
Average Output Power	-3.5		3	dBm	5
Centre Wavelength	1260	1270	1280	nm	
Spectral Width (-20dB)			1	nm	
Dispersion Penalty			2	dB	
Extinction Ratio	3.5			dB	

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

5.3. Receiver Optical Specifications

Parameter	Min	Typ	Max	Unit	Notes
Receiver Sensitivity			-14.5	dBm	6
Receiver Overload	0			dBm	6
Receiver Operating Range	1320		1340	nm	

6. Measured with 10.3125Gbps, PRBS 2^31-1, ER=9dB

6. Electrical Connector

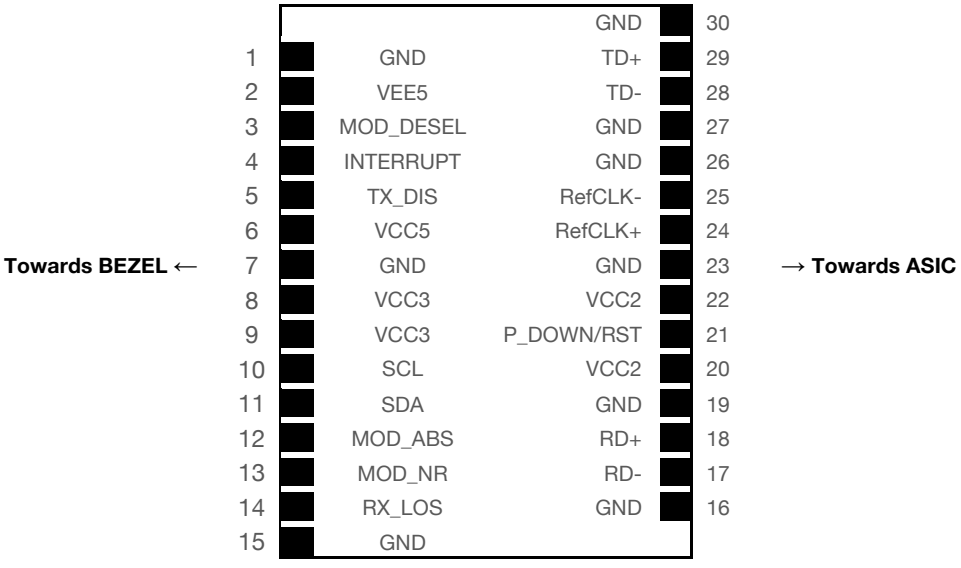


Figure 2. Transceiver Electrical Pad Layout

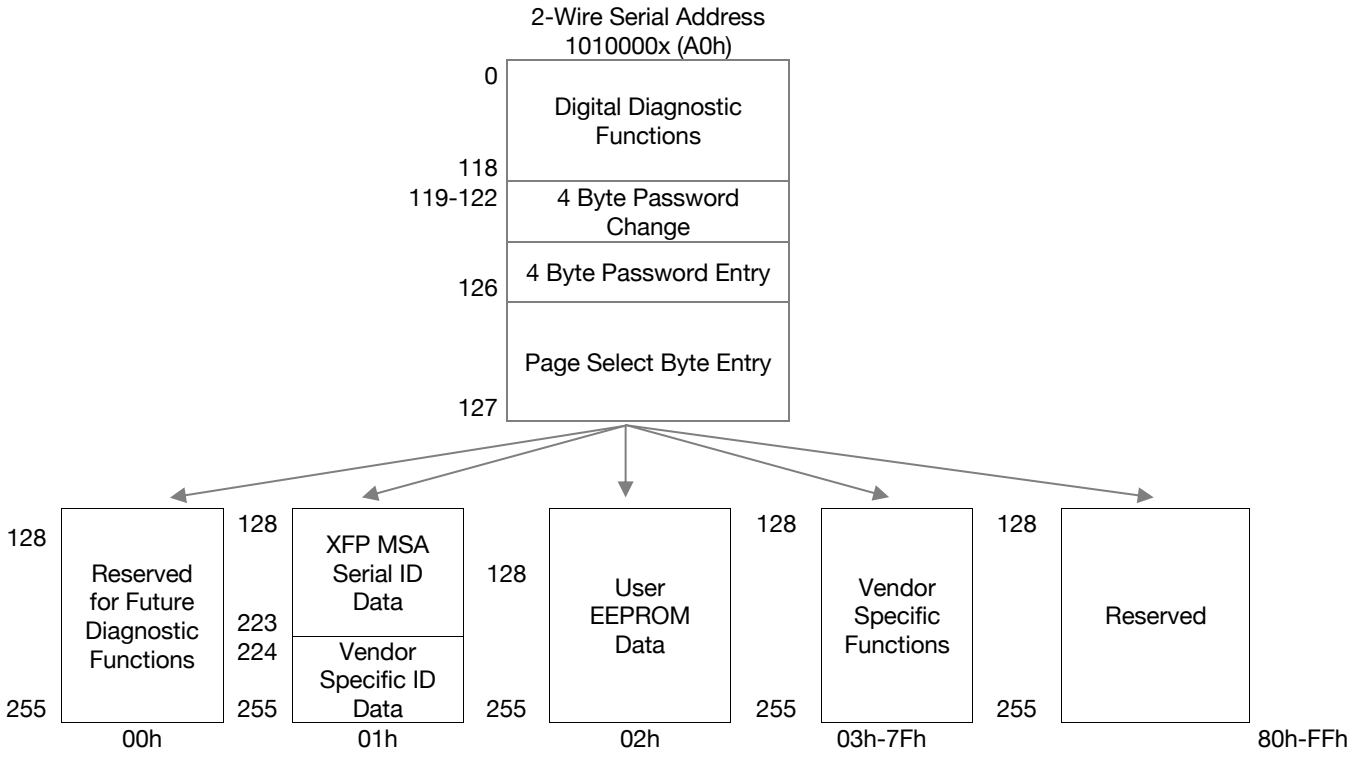
7. Module Electrical Pin Definition

XFP MSA (INF-8077i)

Pin Number	Name	Description
1	GND	Module Ground
2	VEE5	Not Used
3	Mod_DeSeL	Module De-select
4	Interrupt	Indicator of important condition
5	TX_DIS	Transmitter Disable
6	VCC5	Not Used
7	GND	Module Ground
8	VCC3	+3.3V Power Supply
9	VCC3	+3.3V Power Supply
10	SCL	2-Wire Serial Interface Clock
11	SDA	2-Wire Serial Interface Data
12	Mod_Abs	Indicates Module is not present
13	Mod_NR	Module Not Ready
14	RX_LOS	Receiver Loss of Signal Indicator
15	GND	Module Ground
16	GND	Module Ground
17	RD-	Receiver Inverted Data Output
18	RD+	Receiver Non-Inverted Data Output
19	GND	Module Ground
20	VCC2	Not Used
21	P_Down/RST	Power Down / Reset
22	VCC2	Not Used
23	GND	Module Ground
24	RefCLK+	Not Used
25	RefCLK-	Not Used
26	GND	Module Ground
27	GND	Module Ground
28	TD-	Transmitter Inverted Data Input
29	TD+	Transmitter Non-Inverted Data Input
30	GND	Module Ground

8. EEPROM

XFP MSA (INF-8077)



9. Ordering Information

Part Number	Description
XFB23020100D	XFP single fibre, Tx 1270nm (DFB) , Rx 1330nm (PIN), 20km, power budget 11dB, 10 Gigabit Ethernet, LC connector, **0°C to 70°C**, DDM
XFB23020101D	XFP single fibre, Tx 1270nm (DFB) , Rx 1330nm (PIN), 20km, power budget 11dB, 10 Gigabit Ethernet, LC connector, **-20°C to 85°C**, DDM

10. Document Revision Information

Revision	Description
RevA	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