SFCxxB16PAxD – SFP Dual Fibre CWDM

ITU CWDM / 16Db / OC-48 / STM-16 Multi-rate

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

SFCxxB16PAxD is a high performance transceiver module for 100 Mbits to 2.67 Gbps data links over a singlemode fibre pair. The power budget is 16dB end of life (EOL). The emitter is a CWDM DFB laser, the receiver a PIN photodiode.

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

2. Features

- SFP Multi-Source Agreement compliant *[INF-8074]*
- Hot pluggable SFP footprint
- Serial ID functionality supported according to [SFF-8472]
- Class 1 laser safety standard IEC 60825 compliant
- Dual LC connector
- CWDM DFB transmitter
- Data Rate up to 2.67Gbps
- Power Budget >16 dB on singlemode fibre
- Operating temperature range 0°C to 70°C or -20°C to 85°C
- Low power dissipation (<1W)
- Digital Diagnostics Monitoring (DDM)

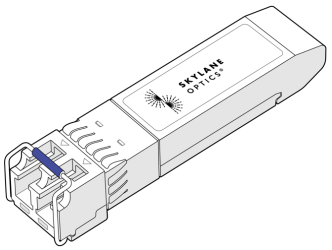

Figure 1. SFP Dual Fibre ITU CWDM
(non-binding illustration)

3. Applications

- Storage, 2x Fibre channel, 1x Fibre channel
- Datacom Ethernet, Fast Ethernet, Gigabit Ethernet
- Telecom Sonet/SDH, Sonet OC-48/ SDH STM-16, Sonet OC-12 / SDH STM-4, Sonet OC-3/ SDH STM-1

4. Optical Interface

P/N	Wavelength [nm]	Output Optical Power[2] [dBm]	Optical Receiver Sensitivity[3] [dBm]	Optical Receiver Overload[4] [dBm]	Power Budget[2] [dB]
SFCxxB16PAxD	ITU CWDM (27 to 45)	-3 to 2	≤ -19	0	≥ 16

1. Optical budget value is guaranteed EOL.
2. EOL, over operating temperature range
3. Measured at OC-48
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	-20		85	°C	For SFCxxB16PA1D
Operating Case Temperature	0		70	°C	For SFCxxB16PA0D
Relative Humidity	5		95	%	Non condensing
Power Supply Voltage	3.15	3.3	3.45	V	
Power Supply Current			300	mA	

5.2. General Specifications					
Parameter	**Min**	**Typ**	**Max**	**Unit**	**Notes**
Data Rate	0.1		2.67	Gbps	

5.3. Transmitter Optical Specifications					
Parameter	**Min**	**Typ**	**Max**	**Units**	**Notes**
Average Output Power	-3		2	dBm	5
Center Wavelength	1270		1450	nm	
Optical Extinction Ratio ER	8.2			dB	6
Spectral Width			1	nm	

5. Output power coupled into a 9/125 µm single-mode fibre
6. ITU-T G.694.2 CWDM. For available wavelengths, see section 9.

5.4. Receiver Optical Specifications					
Parameter	**Min**	**Typ**	**Max**	**Units**	**Notes**
Sensitivity			-19	dBm	7
Receiver Overload	0			dBm	7
Wavelength of Operation	1260		1630	nm	

7. Measured with, PRBS BER 2^{23}-1, ER=9dB, BER≤10^{-12}

6. Transceiver Electrical Pad Layout

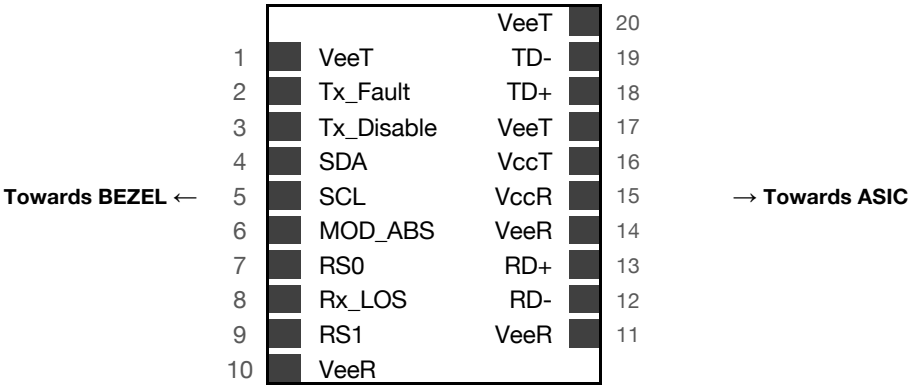

Figure 2. Transceiver Electrical Pad Layout

7. Module Electrical Pin Definition

Pin Number	Name	Function
1	VeeT	Transmitter Ground
2	TX_Fault	Transmitter Fault Indication
3	TX_ Disable	Transmitter Disable
4	SDA	2-Wire Serial Interface Data (SDA)
5	SCL	2-Wire Serial Interface Clock (SCL)
6	MOD_ABS	Function Not available
7	RS0	Rate Select 0 grounded
8	Rx_LOS	Loss of signal
9	RS1	Rate select 1 grounded
10	VeeR	Receiver Ground
11	VeeR	Receiver Ground
12	RD-	Inverted received data output
13	RD+	Received data output
14	VeeR	Receiver Ground
15	VccR	Receiver Power
16	VccT	Transmitter Power
17	VeeT	Transmitter Ground
18	TD+	Transmit data input
19	TD-	Inverted transmit data input
20	VeeT	Transmitter Ground

8. EEPROM

SFP MSA (INF-8074i)

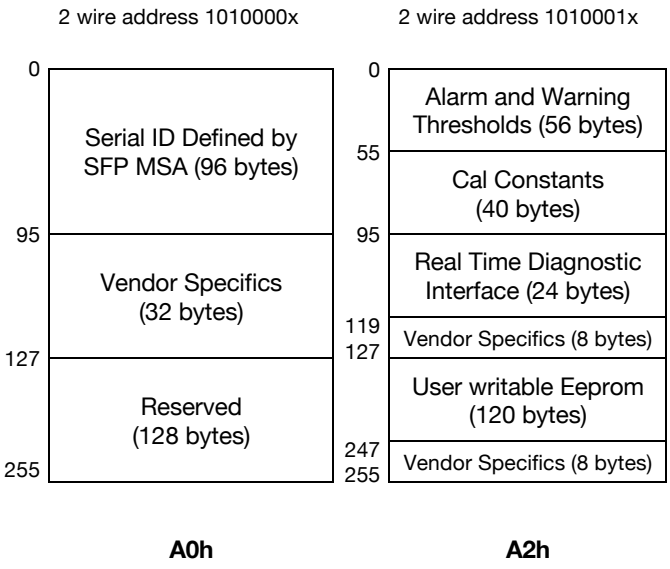

Figure 3. EEPROM of a an SFP

9. Ordering Information

Part Number	Description
SFC27040PA0D	SFP dual fibre CWDM**, Tx 1270nm** (CWDM DFB), Rx (PIN), power budget 16dB, power budget 16dB, OC-48 multirate, LC connector, **0°C to 70°C**, DDM
SFC29040PA0D	SFP dual fibre CWDM, **Tx 1290nm** (CWDM DFB), Rx (PIN), power budget 16dB, power budget 16dB, OC-48 multirate, LC connector, **0°C to 70°C**, DDM
SFC31040PA0D	SFP dual fibre CWDM, **Tx 1310nm** (CWDM DFB), Rx (PIN), power budget 16dB, power budget 16dB, OC-48 multirate, LC connector, **0°C to 70°C**, DDM
SFC33040PA0D	SFP dual fibre CWDM, **Tx 1330nm** (CWDM DFB), Rx (PIN), power budget 16dB, power budget 16dB, OC-48 multirate, LC connector, **0°C to 70°C**, DDM
SFC35040PA0D	SFP dual fibre CWDM, **Tx 1350nm** (CWDM DFB), Rx (PIN), power budget 16dB, power budget 16dB, OC-48 multirate, LC connector, **0°C to 70°C**, DDM
SFC37040PA0D	SFP dual fibre CWDM, **Tx 1370nm** (CWDM DFB), Rx (PIN), power budget 16dB, power budget 16dB, OC-48 multirate, LC connector**, 0°C to 70°C**, DDM
SFC39040PA0D	SFP dual fibre CWDM, **Tx 1390nm** (CWDM DFB), Rx (PIN), power budget 16dB, power budget 16dB, OC-48 multirate, LC connector, **0°C to 70°C**, DDM
SFC41040PA0D	SFP dual fibre CWDM**, Tx 1410nm** (CWDM DFB), Rx (PIN), power budget 16dB, power budget 16dB, OC-48 multirate, LC connector, **0°C to 70°C**, DDM
SFC43040PA0D	SFP dual fibre CWDM**, Tx 1430nm** (CWDM DFB), Rx (PIN), power budget 16dB, power budget 16dB, OC-48 multirate, LC connector, **0°C to 70°C**, DDM
SFC45040PA0D	SFP dual fibre CWDM**, Tx 1450nm** (CWDM DFB), Rx (PIN), power budget 16dB, power budget 16dB, OC-48 multirate, LC connector, **0°C to 70°C**, DDM
SFC27040PA1D	SFP dual fibre CWDM, **Tx 1270nm** (CWDM DFB), Rx (PIN), power budget 16dB, power budget 16dB, OC-48 multirate, LC connector, **-20°C to 85°C,** DDM
SFC29040PA1D	SFP dual fibre CWDM, **Tx 1290nm** (CWDM DFB), Rx (PIN), power budget 16dB, power budget 16dB, OC-48 multirate, LC connector, **-20°C to 85°C**, DDM
SFC31040PA1D	SFP dual fibre CWDM, **Tx 1310nm** (CWDM DFB), Rx (PIN), power budget 16dB, power budget 16dB, OC-48 multirate, LC connector**, -20°C to 85°C**, DDM
SFC33040PA1D	SFP dual fibre CWDM**, Tx 1330nm** (CWDM DFB), Rx (PIN), power budget 16dB, power budget 16dB, OC-48 multirate, LC connector, **-20°C to 85°C,** DDM
SFC35040PA1D	SFP dual fibre CWDM, **Tx 1350nm** (CWDM DFB), Rx (PIN), power budget 16dB, power budget 16dB, OC-48 multirate, LC connector, -**20°C to 85°C**, DDM
SFC37040PA1D	SFP dual fibre CWDM, **Tx 1370nm** (CWDM DFB), Rx (PIN), power budget 16dB, power budget 16dB, OC-48 multirate, LC connector, **-20°C to 85°C**, DDM
SFC39040PA1D	SFP dual fibre CWDM, **Tx 1390nm** (CWDM DFB), Rx (PIN), power budget 16dB, power budget 16dB, OC-48 multirate, LC connector, **-20°C to 85°C,** DDM
SFC41040PA1D	SFP dual fibre CWDM, **Tx 1410nm** (CWDM DFB), Rx (PIN), power budget 16dB, power budget 16dB, OC-48 multirate, LC connector**, -20°C to 85°C,** DDM
SFC43040PA1D	SFP dual fibre CWDM, **Tx 1430nm** (CWDM DFB), Rx (PIN), power budget 16dB, power budget 16dB, OC-48 multirate, LC connector, **-20°C to 85°C,** DDM
SFC45040PA1D	SFP dual fibre CWDM, **Tx 1450nm** (CWDM DFB), Rx (PIN), power budget 16dB, power budget 16dB, OC-48 multirate, LC connector**, -20°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