

SBU35040DRxx – SFP Single Fibre

Tx 1310nm & Rx 1550nm / 40km / Dual 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

SBU35040DRxx is a high performance transceiver module for Fast Ethernet and Gigabit Ethernet data links over one single mode fibre. The maximum reach is 40km with 20dB end of life (EOL) power budget. The transmitter is a 1310nm DFB laser, the receiver is a 1550nm PIN photodiode. Consequently, a module with a 1550nm transmitter and a 1310nm receiver is required at the opposite side of the link. The recommended counterpart is SBD53040DRxx.

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
- Single LC or SC connector
- 1310nm DFB transmitter
- 1550nm PIN receiver
- 40km 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 (<1W)
- Digital Diagnostics Monitoring (DDM)

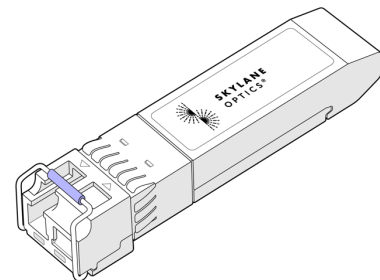


Figure 1. SFP Single Fiber (non-binding illustration)

3. Applications

- Gigabit Ethernet
- Fast Ethernet
- 1x Fiber Channel

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]
SBU35040DRxx	Tx 1310 nm Rx 1550 nm	-3 to 2	≤ -23	-3	≥ 20

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, together with SBD53040FExx

3. Measured with 1.25Gbps PRBS 27-1, ER=9dB, 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	SBU35040DR0x, SBU35040DR3x
	-40		85	°C	SBU35040DR2x, SBU35040DR5x
Relative Humidity			95	%	Non condensing
Power Supply Voltage	3.15	3.3	3.45	V	
Power Supply Current			300	mA	

5.2. Receiver Optical Specifications

Parameter	Min	Typ	Max	Unit	Notes
Average Output Power	-3		2	dBm	5
Centre Wavelength	1290	1310	1330	nm	
Optical Extinction Ratio	8.2			dB	
Spectral Width (-20dB)			1	nm	

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

5.3. Receiver Optical Specifications

Parameter	Min	Typ	Max	Unit	Notes
Sensitivity			-23	dBm	6
Receiver Overload	-3			dBm	6
Wavelength of Operation	1480	1550	1600	nm	

6. Measured with 1.25Gbps PRBS 2⁷-1, ER=9dB, BER≤10⁻¹²

6. Transceiver Electrical Pad Layout

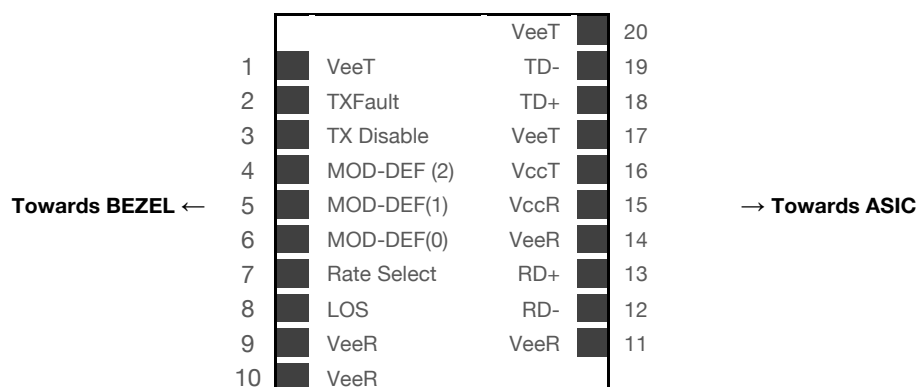


Figure 2. Transceiver Electrical Pad Layout

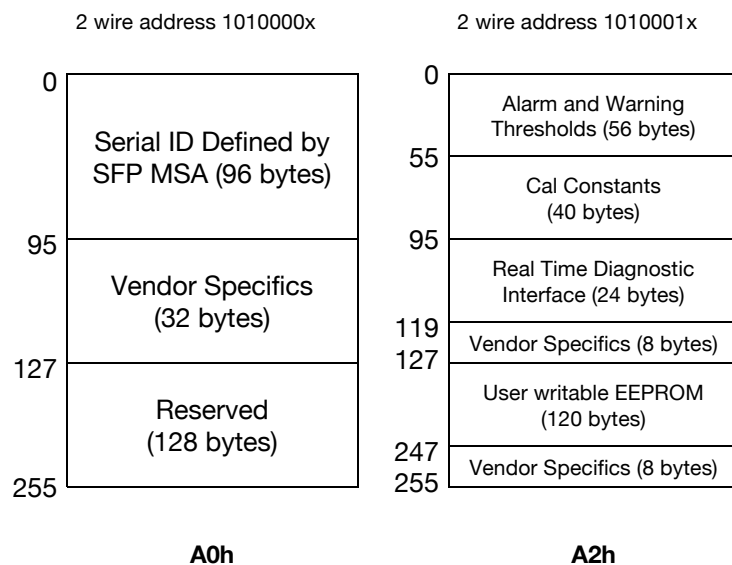
7. Module Electrical Pin Definition

SFP MSA (INF-8074i)

Pin Number	Name	Function
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-DEF0	Grounded in Module
7	Rate Select	Not Connected
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 (INF-8074 & SFF-8472)



9. Ordering Information

Part Number	Description
SBU35040DR00	SFP single fibre upstream, Tx 1310nm (DFB) , Rx 1550nm (PIN), maximum distance 40km, power budget 20dB, Dual Rate, LC connector, 0°C to 70°C
SBU35040DR0D	SFP single fibre upstream, Tx 1310nm (DFB) , Rx 1550nm (PIN), maximum distance 40km, power budget 20dB, Dual Rate, LC connector, 0°C to 70°C, DDM
SBU35040DR20	SFP single fibre upstream, Tx 1310nm (DFB) , Rx 1550nm (PIN), maximum distance 40km, power budget 20dB, Dual Rate, LC connector, -40°C to 85°C
SBU35040DR2D	SFP single fibre upstream, Tx 1310nm (DFB) , Rx 1550nm (PIN), maximum distance 40km, power budget 20dB, Dual Rate, LC connector, -40°C to 85°C, DDM
SBU35040DR30	SFP single fibre upstream, Tx 1310nm (DFB) , Rx 1550nm (PIN), maximum distance 40km, power budget 20dB, Dual Rate, SC connector, 0°C to 70°C
SBU35040DR3D	SFP single fibre upstream, Tx 1310nm (DFB) , Rx 1550nm (PIN), maximum distance 40km, power budget 20dB, Dual Rate, SC connector, 0°C to 70°C, DDM
SBU35040DR50	SFP single fibre upstream, Tx 1310nm (DFB) , Rx 1550nm (PIN), maximum distance 40km, power budget 20dB, Dual Rate, SC connector, -40°C to 85°C
SBU35040DR5D	SFP single fibre upstream, Tx 1310nm (DFB) , Rx 1550nm (PIN), maximum distance 40km, power budget 20dB, Dual Rate, SC 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

**Beyond
Quality**

**Reliable
Alliance**

**Performing
Smartly**