SFP85P55GExx – SFP Dual fibre
850nm / 550m / Gigabit Ethernet / 1000BASE-SX

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

SFP85P55GExx is a high performance transceiver module for Gigabit Ethernet data links over a multimode fibre pair. The maximum reach[1] is 550m (50/125µm), with 7.5dB end of life (EOL) power budget. The emitter is an 850nm VCSEL laser, the receiver is 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
- 850nm VCSEL transmitter
- Up to 550m point-to-point transmission on 50/125µm fibre
- Up to 300m point-to-point transmission on 62.5/125µm fibre
- Gigabit Ethernet compliant
- 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 850nm
(non-binding illustration)

3. Applications

- Gigabit Ethernet
- 1×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]
SFP85P55GExx	850nm	-9.5 to -3	≤ -17	0	≥ 7.5

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 1.25Gbps PRBS 2^7-1, 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	SFP85P55GE00, SFP85P55GE0D
	-20		85	°C	SFP85P55GE10, SFP85P55GE1D
Relative Humidity	5		95	%	Non condensing
Power Supply Voltage	3.15		3.45	V	
Power Supply Current			300	mA	

5.2. Transmitter Optical Specifications					
Parameter	**Min**	**Typ**	**Max**	**Unit**	**Notes**
Average Output Power	-9.5		-3	dBm	5
Centre Wavelength	820	850	860	nm	
Optical Extinction Ratio ER	9			dB	
Spectral Width			0.85	nm	

5. Output power coupled into a 62.5/125 µm multimode fibre

5.3. Receiver Optical Specifications					
Parameter	**Min**	**Typ**	**Max**	**Unit**	**Notes**
Sensitivity			-17	dBm	6
Receiver Overload	0			dBm	6
Wavelength of Operation	760		860	nm	

6. Measured with 1.25Gbps PRBS 2^7-1, ER=9dB, BER≤10^{-12}

6. Transceiver Electrical Pad Layout

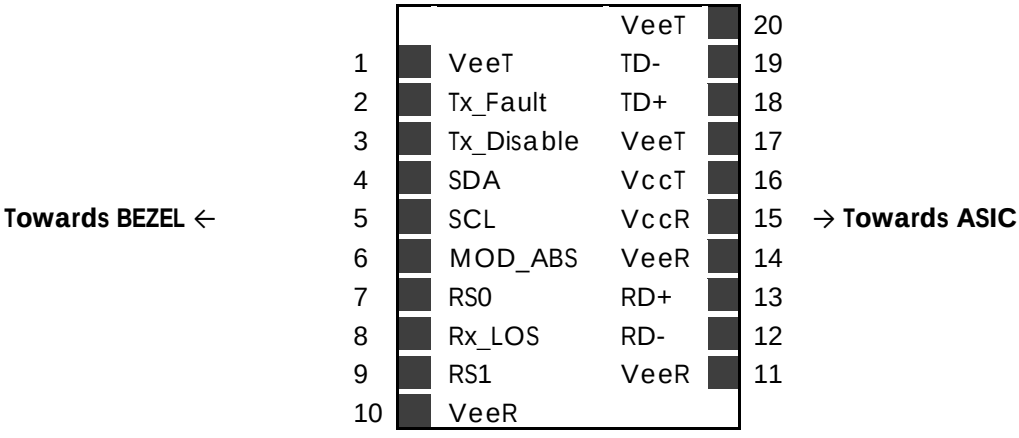

Figure 2. Transceiver Electrical Pad Layout

7. Pin Functions Definitions

Pin Number	Name	Function
1	VeeT	Transmitter Ground
2	TX_Fault	Transmitter Fault Indication
3	TX_ Disable	Transmitter Disable
4	SDA	Two-Wire Serial Interface Data
5	SCL	Two-Wire Serial Interface Clock
6	MOD_ABS	Not Used
7	RS0	Not Used
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-8074 & SFF-8472)

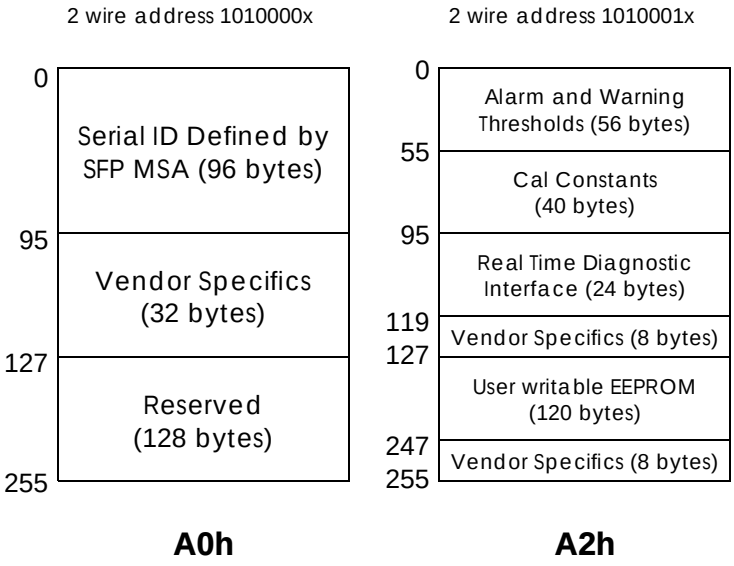

Figure 3. EEPROM of a SFP

9. Ordering information

Part Number	Description
SFP85P55GE00	SFP dual fibre, Tx 850nm (VCSEL) , Rx (PIN), maximum distance 550m, power budget 7.5dB, Gigabit Ethernet, LC connector, **0°C to 70°C**
SFP85P55GE0D	SFP dual fibre, Tx 850nm (VCSEL) , Rx (PIN), maximum distance 550m, power budget 7.5dB, Gigabit Ethernet, LC connector, **0°C to 70°C, DDM**
SFP85P55GE10	SFP dual fibre, Tx 850nm (VCSEL) , Rx (PIN), maximum distance 550m, power budget 7.5dB, Gigabit Ethernet, LC connector, **-20°C to 85°C**
SFP85P55GE1D	SFP dual fibre, Tx 850nm (VCSEL) , Rx (PIN), maximum distance 550m, power budget 7.5dB, Gigabit Ethernet, LC connector, **-20°C to 85°C, DDM**

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:
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