

# SCD43010GExD – Compact SFP (Option 2) Single Fibre

## Tx 1490 & Rx 1310 / 10km / 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

SCD43010GExD is a high performance dual transceiver module for downstream Gigabit Ethernet data links. The maximum reach is 10km with 10dB end of life (EOL) power budget, over a single mode fibre (9/125um). The transmitters are 1490nm Distributed Feedback (DFB) lasers, the receivers are 1310nm PIN photodiodes. Consequently, a module with a 1310nm emitter and a 1490nm receiver is required at the opposite side of the link. The recommended counterpart module is SBU34010GExx.

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

- C-SFP Multi-Source Agreement Option 2 compliant (*INF-MSA CSFP 2.0*)
- Hot-Pluggable SFP Footprint
- Serial ID functionality supported according to SFF-8472 and Compact SFP MSA
- Class 1 FDA and IEC60825-1 Laser Safety Compliant
- 2x LC connector
- 2x1490nm DFB transmitters, 2x1310nm PIN photodiodes
- 10km, point-to-point transmission on single strand, single mode fibre
- Operating temperature range 0°C to 70°C or -40°C to 85°C
- Digital Diagnostics Monitoring (DDM)



Figure 1. C-SFP Single Fibre (non-binding illustration)

## 3. Applications

- Gigabit Ethernet
- 1x Fiber Channel

## 4. Optical Interface

P/N	Wavelength [nm]	Output Optical Power <sup>2</sup> [dBm]	Optical Receiver Sensitivity <sup>3</sup> [dBm]	Optical Receiver Overload <sup>4</sup> [dBm]	Power Budget <sup>2</sup> [dB]
SCD43010GExD	Tx1490nm Rx1310nm	-9.5 to -3	≤ -19.5	-3	≥ 10

1. Distance is estimated assuming typical optical losses after decent quality fiber deployment; Only optical budget value is guaranteed.
2. EOL, over operating temperature range, together with SBU34010GExx
3. Measured with 1.25Gbps PRBS 2<sup>7</sup>-1, ER=9dB, BER≤10<sup>-12</sup>
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	SCD43010GE0D
	-40		85	°C	SCD43010GE2D
Relative Humidity	5		95	%	Non condensing
Power Supply Voltage	3.15	3.3	3.45	V	
Power Supply Current		180	300	mA	Per channel

### 5.2. Transmitter Optical Specifications

Parameter	Min	Typ	Max	Units	Notes
Average Output Power	-9.5		-3	dBm	5
Centre Wavelength	1480	1490	1500	nm	
Optical Extinction Ratio ER	6			dB	
Spectral Width (-20 dB)			1	nm	

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

### 5.3. Receiver Optical Specifications (-40 to 85°C, 3.3V +/- 5%)

Parameter	Min	Typ	Max	Units	Notes
Sensitivity			-19.5	dBm	6
Receiver Overload	-3			dBm	6
Wavelength of Operation	1260		1360	nm	

6. Measured with 1.25Gbps PRBS 2<sup>7</sup>-1, ER=9dB, BER≤10<sup>-12</sup>

## 6. Transceiver Electrical Pad Layout

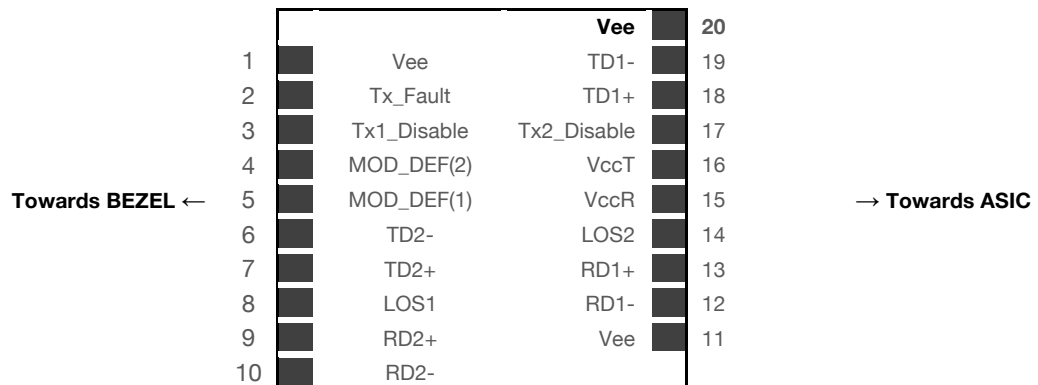


Figure 2. Transceiver Electrical Pad Layout

**7. Module Electrical Pin Definition**

Pin Number	Name	Function
1	Vee	Transceiver Ground
2	TX_Fault	Transmitter Fault Indication
3	TX1_Disable	Channel 1 Transmitter Disable
4	MOD-DEF(2)	2-Wire Serial Interface Data (SDA)
5	MOD-DEF(1)	2-Wire Serial Interface Clock (SCL)
6	TD2-	Channel 2 Inverted Data Input
7	TD2+	Channel 2 Data Input
8	LOS1	Channel 1 Loss Of Signal
9	RD2+	Channel 2 Data Output
10	RD2-	Channel 2 Inverted Data Output
11	Vee	Transceiver Ground
12	RD1-	Channel 1 Inverted Data Output
13	RD1+	Channel 1 Data Output
14	LOS2	Channel 2 Loss Of Signal
15	VccR	Receiver Power
16	VccT	Transmitter Power
17	TX2_Disable	Channel 2 Transmitter Disable
18	TD1+	Channel 1 Data Input
19	TD1-	Channel 1 Inverted Data Input
20	Vee	Transceiver Ground

**8. EEPROM**

CSFP+ MSA (INF-MSA CSFP 2.0)

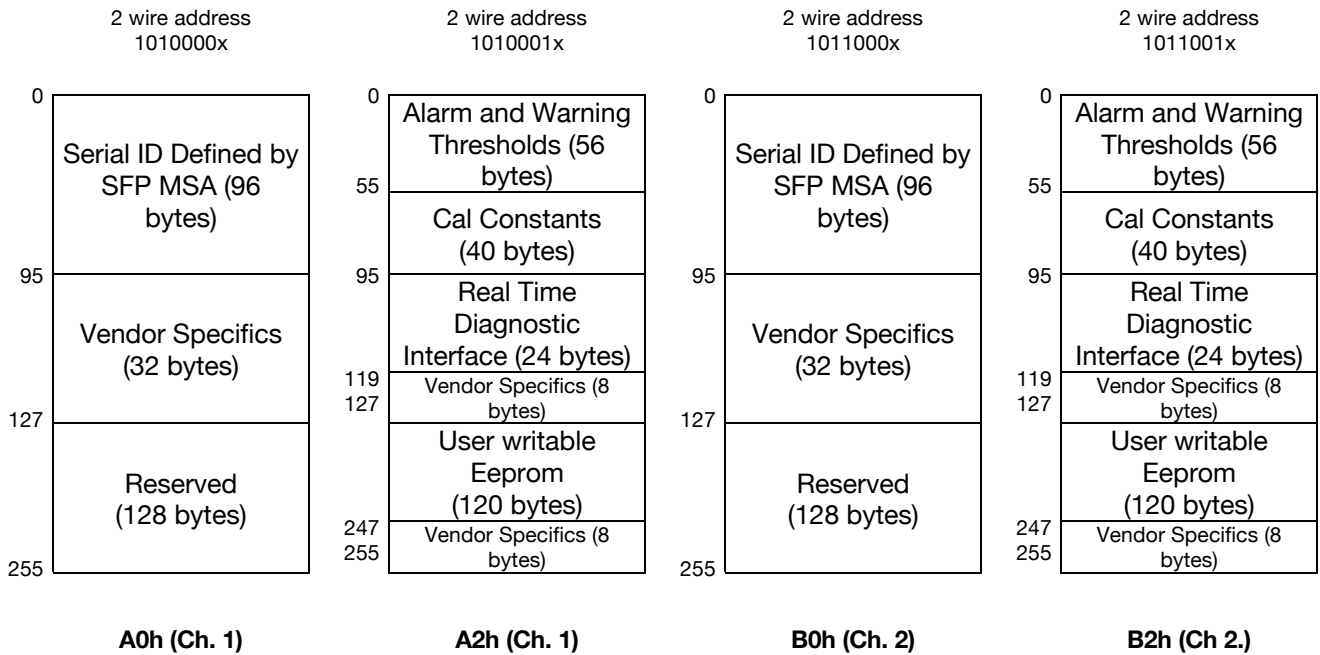


Figure 3. EEPROM of a Compact SFP

## 9. Ordering Information

Part Number	Description
SCD43010GE0D	Compact SFP (option 2) single fibre, Tx 1490nm (DFB), Rx 1310nm (PIN), maximum distance 10km, power budget 10dB, Gigabit Ethernet, LC connector, <b>0°C to 70°C, DDM</b>
SCD43010GE2D	Compact SFP (option 2) single fibre, Tx 1490nm (DFB), Rx 1310nm (PIN), maximum distance 10km, power budget 10dB, Gigabit Ethernet, LC connector, <b>-40°C to 85°C, DDM</b>

## 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](mailto:support@skylaneoptics.com)

**Beyond  
Quality**

**Reliable  
Alliance**

**Performing  
Smartly**