

DA PQSxxx4000 – QSFP+ to 4x SFP+ DAC 0.5m to 5m Passive Copper Cable / 40Gigabit Ethernet

For your product safety, please read the following information carefully before any manipulation of the cable:



ESD

This cable 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.



1. Overview

DA PQSxxx4000 is a high performance passive copper cable for 40x Gigabit Ethernet data links. This cable merges a 40x Gigabit Ethernet QSFP+ connector to 4x 10x Gigabit Ethernet SFP+ connectors. Several cable lengths are available, up to 5m.

This transceiver module is compliant with the Quad Small Form-factor Pluggable (QSFP+) and 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

- QSFP+ to 4x SFP+ Splitter cable
- QSFP+ side (1x)
 - QSFP+ footprint
 - Compliant to SFF-8436 QSFP+ specification
- SFP+ side (4x)
 - SFP+ footprint (Small form-factor, pluggable)
 - Compliant to SFF-8431 SFP+ Specification
- Up to 42Gbps Aggregated Data Rate
- Link Length up to 5m
- Low power consumption 0.5 W for both sides
- Operating Case Temperature 0°C to 70°C
- RoHS Compliant
- 30 AWG Cable ($\leq 3m$) / 26 AWG Cable ($> 3m$)



Figure 1. QSFP+ to 4x SFP+ Cable
(non-binding illustration)

3. Applications

- Data center
- 40GBASE Ethernet links
- Fibre Channel
- Infiniband 4xQDR and 4xDDR Interconnects
- Switches and Routers

4. Technical parameters

4.1. Recommended Operating Conditions					
Parameter	Min	Typ	Max	Unit	Notes
Storage temperature	-40		85	°C	
Operating Case Temperature	0		70	°C	
Relative Humidity	-		85	%	Non condensing
Power Supply Voltage	3.15	3.3	3.4	V	Each terminal
Power Supply Current			150	mA	QSFP+ terminal
			150	mA	Each SFP+ terminal
Power Dissipation			0.5	W	QSFP+ terminal
			0.5	W	Each SFP+ terminal

4.2. Electrical Characteristics					
QSFP+ Parameter	Min	Typ	Max	Unit	Notes
Single-ended input voltage tolerance	-0.3		4	V	
Single-ended output voltage	-0.3		4	V	
SFP+ Parameter	Min	Typ	Max	Unit	Notes
Single-ended input voltage tolerance	-0.3		4	V	
Single-ended output voltage	-0.3		4	V	

5. Transceiver Electrical Pad Layout

5.1. QSFP+ (1x)

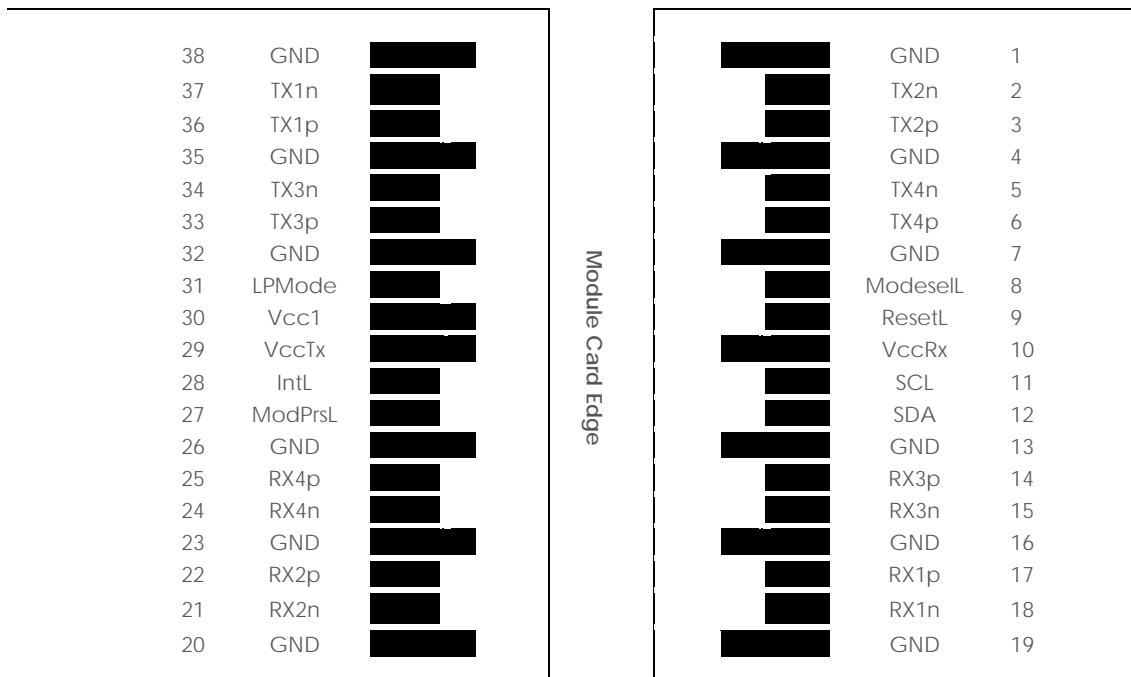


Figure 1. QSFP+ Transceiver Electrical Pad Layout

5.2. SFP+ (4x)

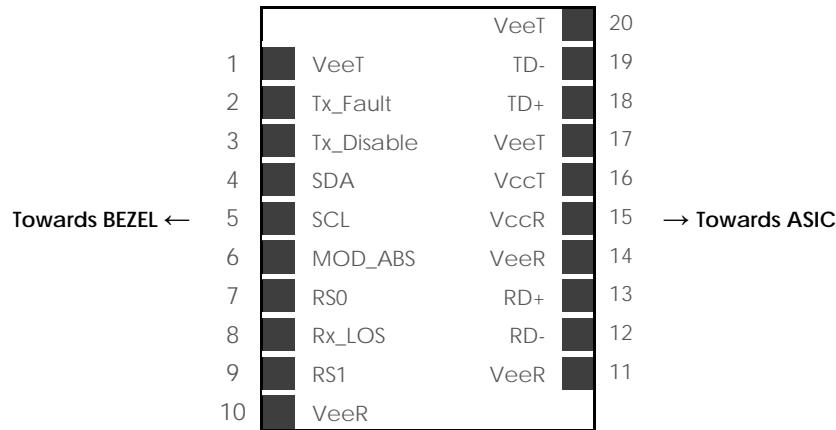


Figure 2. SFP+ Transceiver Electrical Pad Layout

6. Pin Functions Definitions

6.1. QSFP+ (1x)

Pin	Symbol	Description	Pin	Symbol	Description
1	GND	Ground	20	GND	Ground
2	TX2n	Transmitter Inverted Data Input	21	RX2n	Receiver Inverted Data Output
3	TX2p	Transmitter Non-Inverted Data Input	22	RX2p	Receiver Non-Inverted Data Output
4	GND	Ground	23	GND	Ground
5	TX4n	Transmitter Inverted Data Input	24	RX4n	Receiver Inverted Data Output
6	TX4p	Transmitter Non-Inverted Data Input	25	RX4p	Receiver Non-Inverted Data Output
7	GND	Ground	26	GND	Ground
8	ModSelL	Module Select	27	ModPrsL	Module Present
9	ResetL	Module Reset	28	Int	Interrupt
10	VccRx	Receiver Power Supply	29	VccTx	Transmitter Power supply
11	SCL	Two-Wire Serial Interface Clock (SCL)	30	Vcc1	Power supply
12	SDA	Two-wire Serial Interface Data (SDA)	31	LPMODE	Low Power Mode
13	GND	Ground	32	GND	Ground
14	RX3p	Receiver Non-Inverted Data Output	33	TX3p	Transmitter Non-Inverted Data Input
15	RX3n	Receiver Inverted Data Output	34	TX3n	Transmitter Inverted Data Input
16	GND	Ground	35	GND	Ground
17	RX1p	Receiver Non-Inverted Data Output	36	TX1p	Transmitter Non-Inverted Data Input
18	RX1n	Receiver Inverted Data Output	37	TX1n	Transmitter Inverted Data Input
19	GND	Ground	38	GND	Ground

6.2. SFP+ (4x)

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

7. EEPROM

7.1. QSFP+ (1x) MSA[SFF-8436]

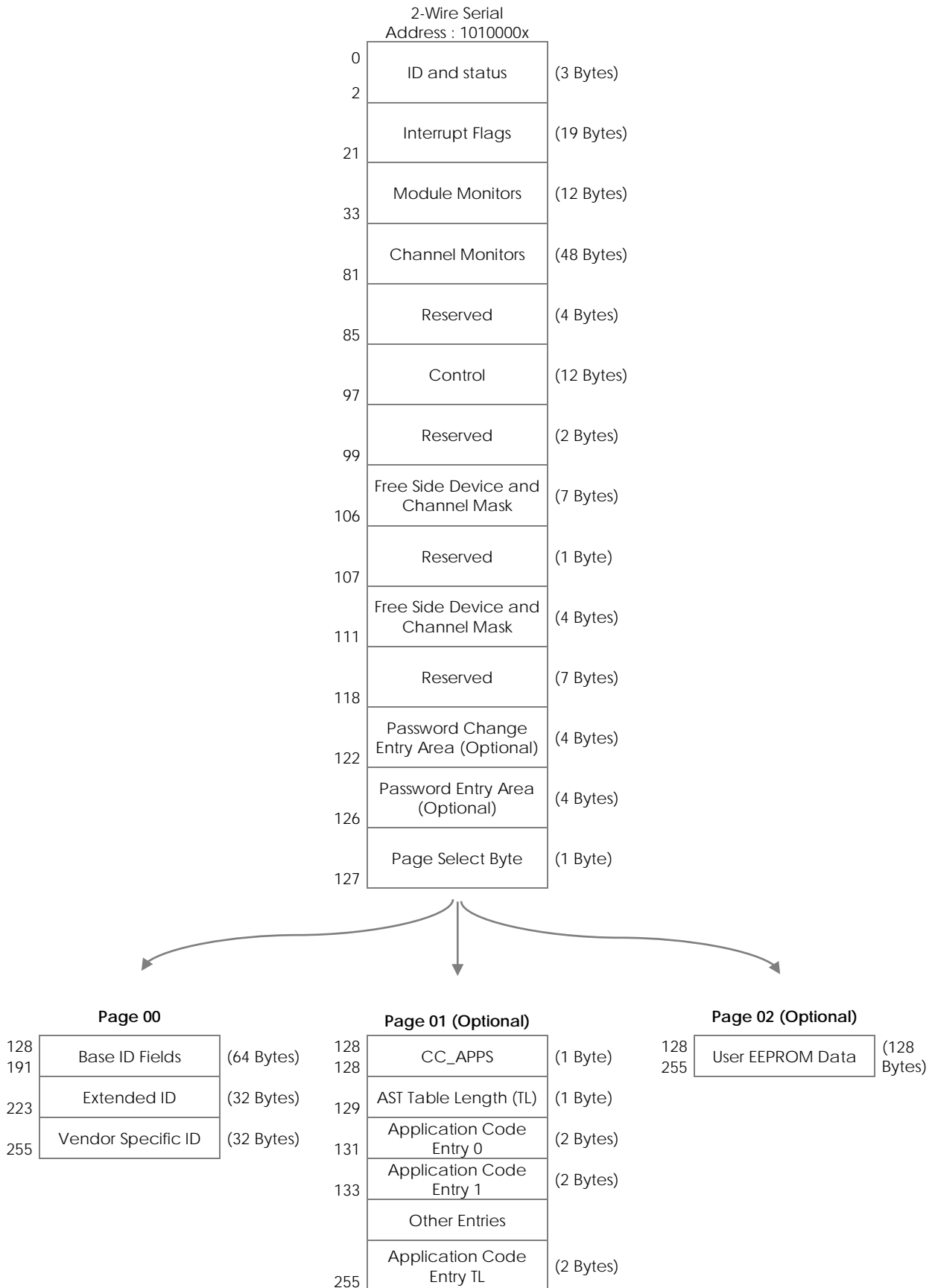


Figure 4. EEPROM of a QSFP+

7.2. SFP+ (4x) MSA[SFF-8431]

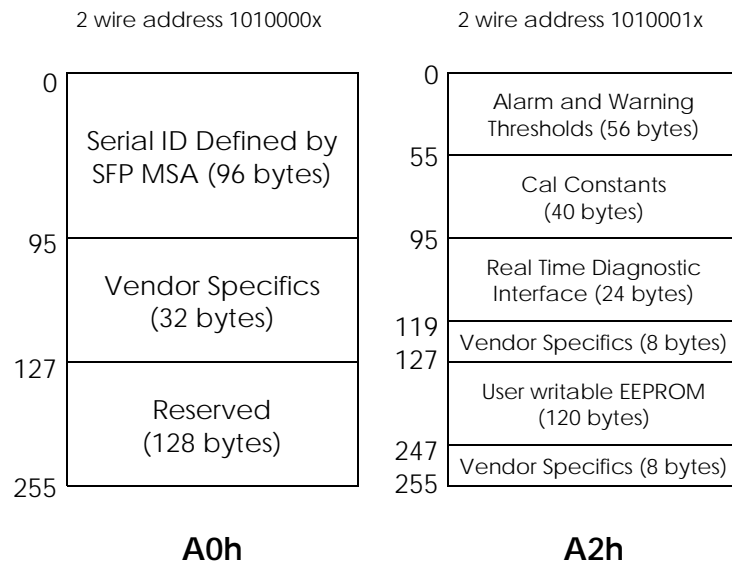


Figure 5. EEPROM of a SFP+

8. Ordering information

Part Number	Description
DA PQSC504000	QSFP+ to 4x SFP+ passive cable, 40x Gigabit Ethernet, 50cm , 0 to 70°C
DA PQSM014000	QSFP+ to 4x SFP+ passive cable, 40x Gigabit Ethernet, 1m , 0 to 70°C
DA PQSM024000	QSFP+ to 4x SFP+ passive cable, 40x Gigabit Ethernet, 2m , 0 to 70°C
DA PQSM034000	QSFP+ to 4x SFP+ passive cable, 40x Gigabit Ethernet, 3m , 0 to 70°C
DA PQSM054000	QSFP+ to 4x SFP+ passive cable, 40x Gigabit Ethernet, 5m , 0 to 70°C

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

