

DAPQSxxxC000 – QSFP28 to 4x SFP28 Passive Direct Attached Copper Cable

0.5m to 3m / 100Gigabit 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

DAPQSxxxC000 is a high performance passive copper cable for 100x Gigabit Ethernet data links. This cable merges a 100x Gigabit Ethernet QSFP28 connector to 4x 25x Gigabit Ethernet SFP28 connectors. Several cable lengths are available, up to 3m.

This transceiver module is compliant with the Quad Small Form-factor Pluggable (QSFP28) 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

- QSFP28 to 4x SFP28 breakout cable
- QSFP28 side (1x)
 - QSFP28 footprint
 - Compliant to SFF-8665 QSFP28 specification
- SFP28 side (4x)
 - SFP+ footprint (Small form-factor, pluggable)
 - Compliant to SFF-8431 SFP+ Specification
- Up to 103.125 Gbps Aggregated Data Rate
- Link Length up to 3m
- 30 AWG Cable (<3m) / 28 AWG Cable (≥3m)
- Very low power consumption < 0.1 W for both sides
- Operating Case Temperature 0°C to 70°C
- RoHS Compliant



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

3. Applications

- 100GBase Ethernet
- Infiniband
- Data centre
- Intra-Racks connection

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			30	mA	QSFP28 terminal
			30	mA	Each SFP28 terminal
Power Dissipation			0.1	W	QSFP28 terminal
			0.1	W	Each SFP28 terminal

4.2. High-speed Electrical Interface, Host to QSFP28 & SFP28

QSFP28 Parameter	Min	Typ	Max	Unit	Notes
Tx Input Impedance	90	100	110	Ω	Differential
Rx Output Impedance	90	100	100	Ω	Differential
SFP28 Parameter	Min	Typ	Max	Unit	Notes
Tx Input Impedance	90	100	110	Ω	Differential
Rx Output Impedance	90	100	100	Ω	Differential

5. Transceiver Electrical Pad Layout

5.1. QSFP28 (1x)

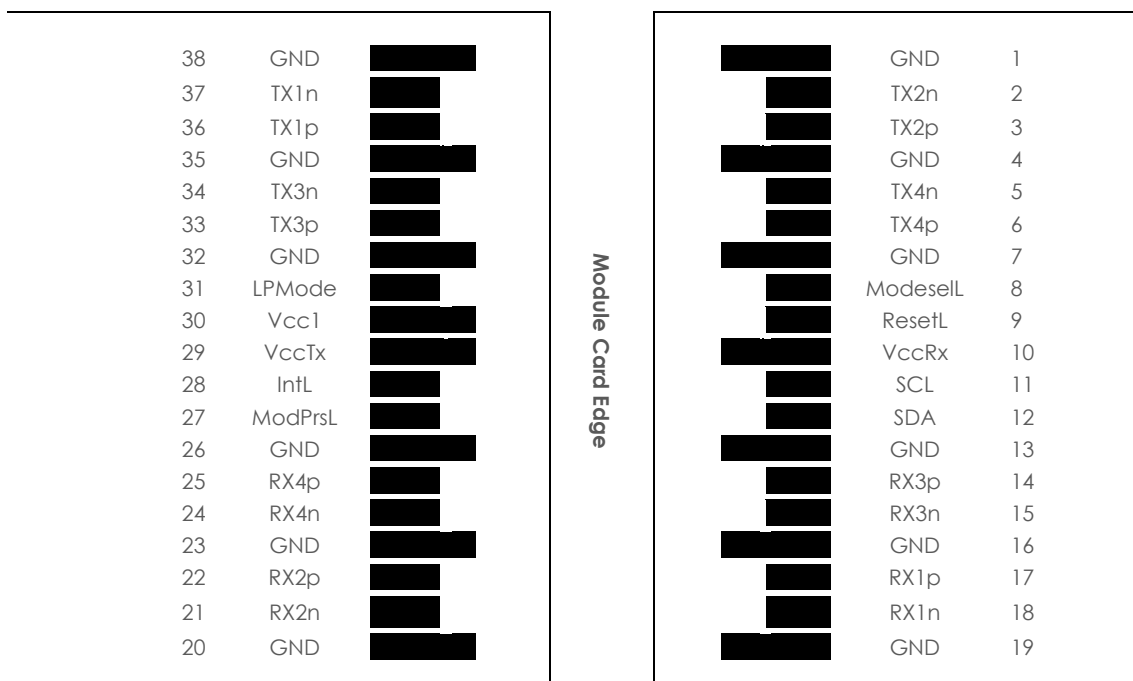


Figure 1. QSFP28 Transceiver Electrical Pad Layout

SFP28 (4x)

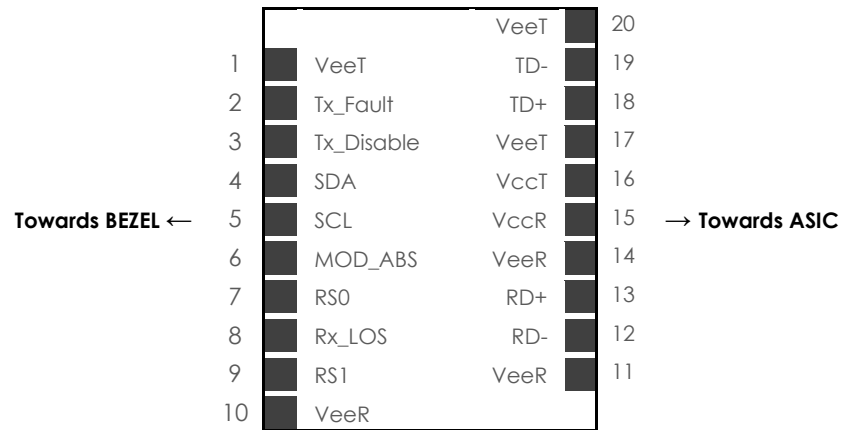


Figure 2. SFP28 Transceiver Electrical Pad Layout

6. Pin Functions Definitions

6.1. QSFP28 (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	VccI	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. SFP28 (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. QSFP28 (1x) MSA[SFF-8636]

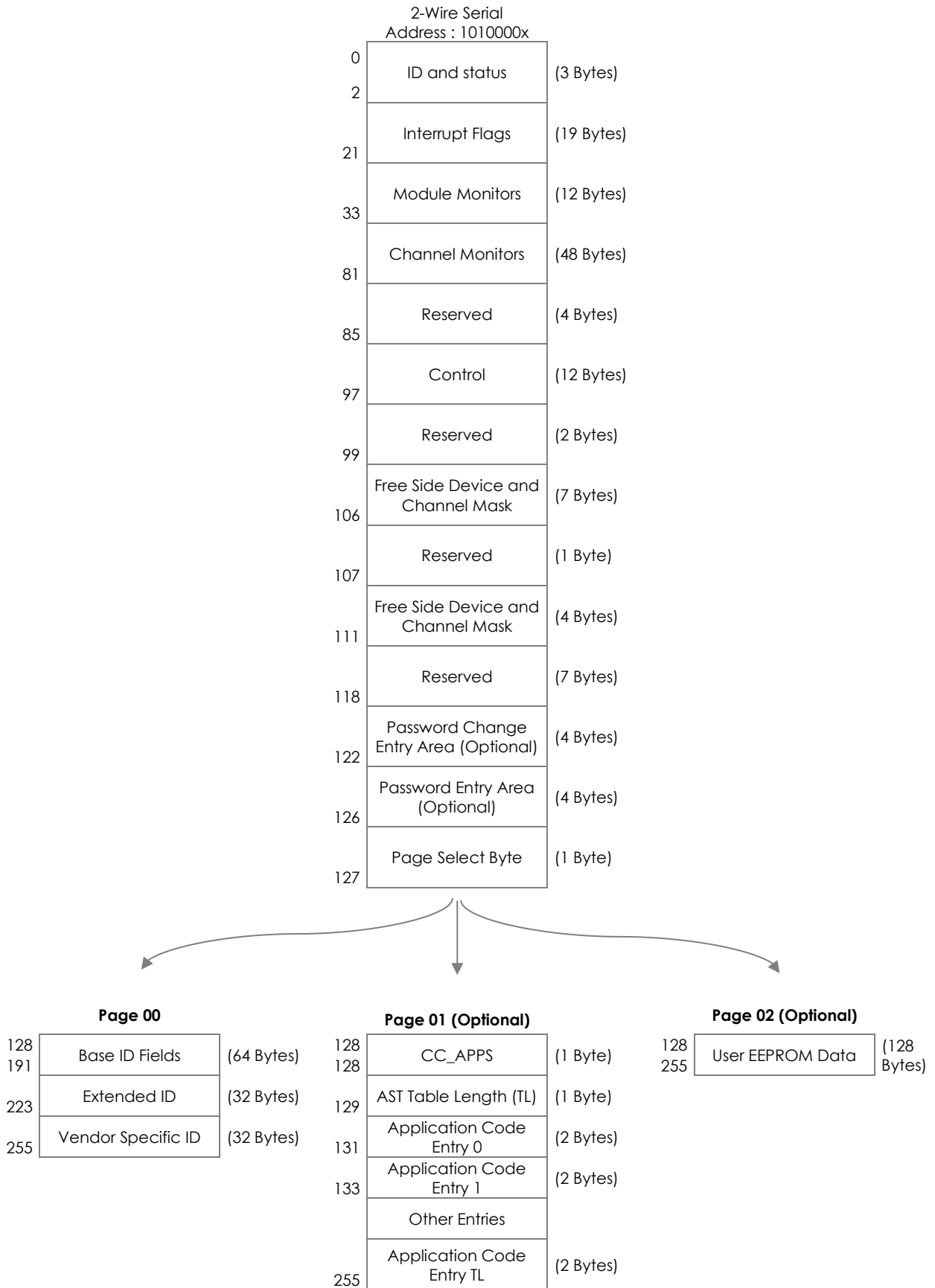


Figure 4. EEPROM of a QSFP28

7.2. SFP28 (4x) MSA[SFF-8431]

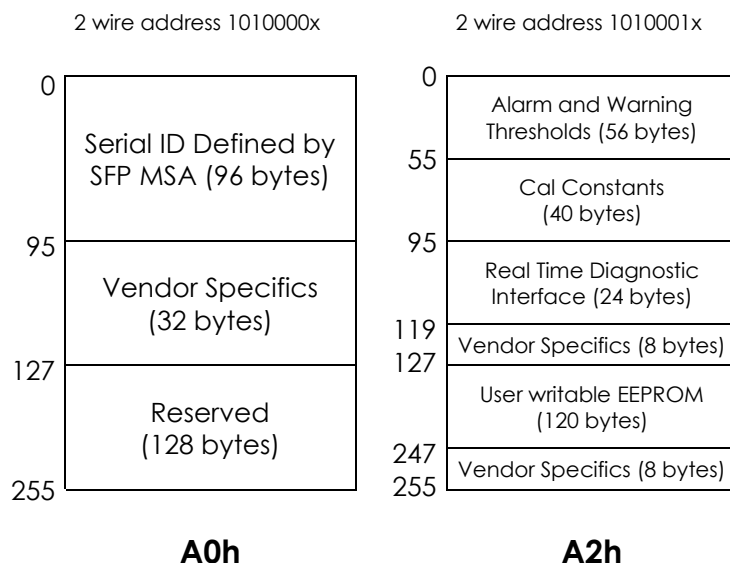


Figure 5. EEPROM of a SFP28

8. Ordering information

Part Number	Description
DAPQSC50C000	QSFP28 to 4x SFP28 passive attached copper cable, 100x Gigabit Ethernet, 50cm , 0 to 70°C
DAPQSM01C000	QSFP28 to 4x SFP28 passive attached copper cable, 100x Gigabit Ethernet, 1m , 0 to 70°C
DAPQSM02C000	QSFP28 to 4x SFP28 passive attached copper cable, 100x Gigabit Ethernet, 2m , 0 to 70°C
DAPQSM03C000	QSFP28 to 4x SFP28 passive attached copper cable, 100x Gigabit Ethernet, 3m , 0 to 70°C

9. 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

Performing
Smartly

Reliable
Alliance