



40G QSFP+ Direct Attach Cable (DAC) Hot Pluggable, Twinax Copper Cables, Passive 0.5~7M

Part Number: FDAC-40G-QPQP-Pxx-xx



Overview

FDAC-40G-QPQP-Pxx-yy QSFP+ Copper Twinax Direct Attach Cables (DAC) are cost-effective and energy-saving I/O solutions for 40GBASE Ethernet applications. The QSFP+ DAC are suitable for very short distances within racks and across adjacent racks. The Passive DAC has no signal amplification and offer cable lengths reach 0.5m to 7m.

Applications

- 40GBASE Ethernet
- InfiniBand SDR, DDR, QDR, FDR-10
- Data Center & Storage
- Datacom / Telecom Switch & Router

Features

- Compliant with IEEE802.3ba 40GBASE-CR4
- Compliant with SFF-8436 QSFP+ MSA
- Support 40G Ethernet
- Support InfiniBand SDR, DDR, QDR & FDR-10
- 4 Independent Duplex Lanes
- Hot Pluggable
- 2-wire interface for management
- Single +3.3V power supply
- Link distance up to 7m
- Enhanced EMI / EMC performance
- RoHS Compliant

Absolute Maximum Ratings

Parameters	Symbol	Min.	Max.	Unit
Storage Temperature	T _{ST}	-40	+80	°C
Storage Relative Humidity	RH	5	95	%
Supply Voltage	V _{CC}	3.13	3.47	V



Product Specifications

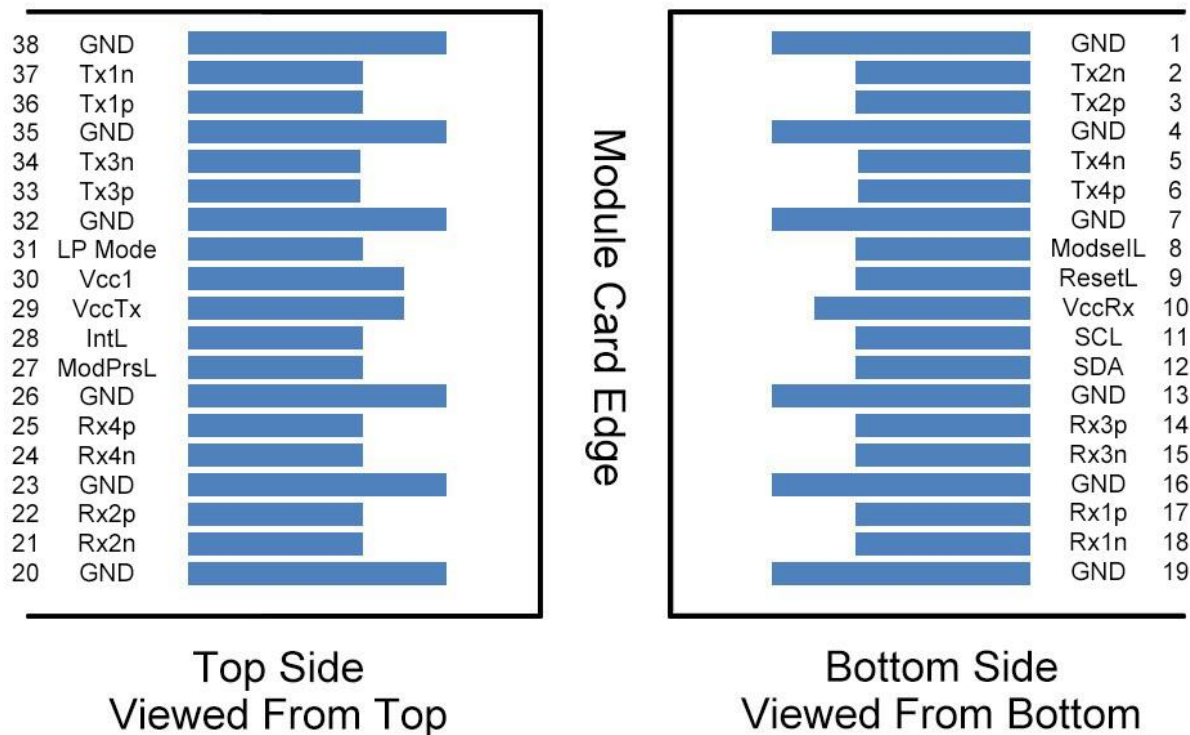
Parameters	Symbol	Min.	Typ.	Max.	Unit
Case Operating Temperature	T _{OP}	0	-	+70	°C
Supply Voltage	V _{CC}	+3.13	+3.3	+3.47	V
Supply Current, per QSFP+	I _{CC}			60	mA
Power Consumption, per QSFP+	P			0.2	W
Operating Data Rate, per Lane	DR	1.0625	10.3125		Gb/s
Minimum Cable Bending Radius		55			mm
Differential Impedance	TDR	90	100	110	Ω
Insertion loss @5.15625GHz	SDD21	-17.04			dB
Differential Return Loss @0.05 to 4.1GHz	SDD11			Note.1	dB
Differential Return Loss @4.1 to 11.1GHz	SDD22			Note.2	dB
Differential to Common-mode Return Loss @0.2 to 11.1GHz	SCD11 SCD22			-10	dB
Common-mode to Common-mode Output Return Loss @0.01 to 11.1Gz	SCC11 SCC22	-3			dB

Note1: Reflection Coefficient given by equation $< -12 + 2 \times \text{SQRT}(f)$, with f in GHz @0.05 to 4.1GHz.

Note2: Reflection Coefficient given by equation $< -6.3 + 13 \times \log_{10}(f/5.5)$, with f in GHz @4.1 to 11.1GHz.



Pin Assignment



Pin Description

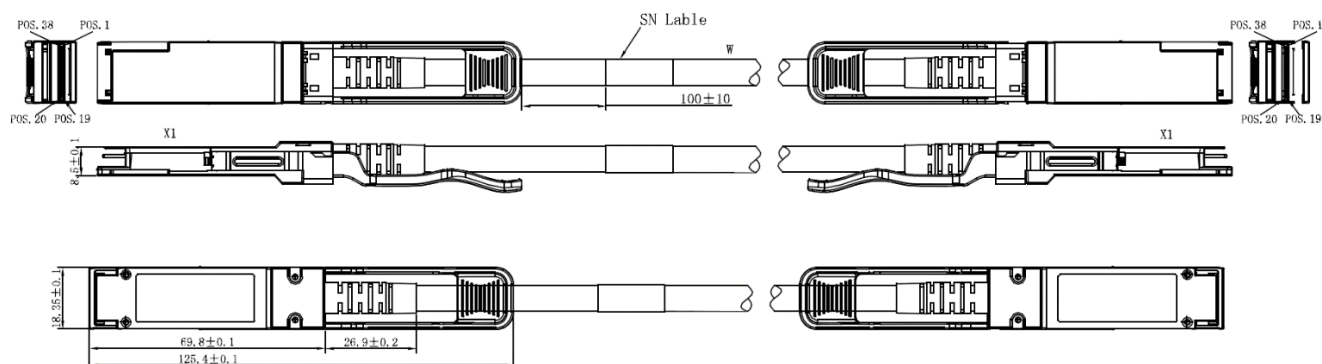
Pin	Logic	Name	Function / Description
1		GND	Module Ground
2	CML-I	Tx2n	Transmitter Inverted Data Input
3	CML-I	Tx2p	Transmitter Non-Inverted Data Input
4		GND	Module Ground
5	CML-I	Tx4n	Transmitter Inverted Data Input
6	CML-I	Tx4p	Transmitter Non-Inverted Data Input
7		GND	Module Ground
8	LVTLL-I	ModSelL	Module Select
9	LVTLL-I	ResetL	Module Reset
10		VccRx	+3.3V Power Supply Receiver
11	LVCMOS-I/O	SCL	2-Wire Serial Interface Clock
12	LVCMOS-I/O	SDA	2-Wire Serial Interface Data



13		GND	Module Ground
14	CML-O	Rx3p	Receiver Non-Inverted Data Output
15	CML-O	Rx3n	Receiver Inverted Data Output
16		GND	Module Ground
17	CML-O	Rx1p	Receiver Non-Inverted Data Output
18	CML-O	Rx1n	Receiver Inverted Data Output
19		GND	Module Ground
20		GND	Module Ground
21	CML-O	Rx2n	Receiver Inverted Data Output
22	CML-O	Rx2p	Receiver Non-Inverted Data Output
23		GND	Module Ground
24	CML-O	Rx4n	Receiver Inverted Data Output
25	CML-O	Rx4p	Receiver Non-Inverted Data Output
26		GND	Module Ground
27	LVTLL-O	ModPrsL	Module Present
28	LVTLL-O	IntL	Interrupt
29		VccTx	+3.3V Power Supply Transmitter
30		Vcc1	+3.3V Power Supply
31	LVTLL-I	LPMODE	Low Power Mode
32		GND	Module Ground
33	CML-I	Tx3p	Transmitter Non-Inverted Data Input
34	CML-I	Tx3n	Transmitter Inverted Data Input
35		GND	Module Ground
36	CML-I	Tx1p	Transmitter Non-Inverted Data Input
37	CML-I	Tx1n	Transmitter Inverted Data Input
38		GND	Module Ground

Note1: GND is the symbol for signal and supply (power) common for QSFP+ modules. All are common within the QSFP+ module and all module voltages are referenced to this potential unless otherwise noted. Connect these directly to the host board signal common ground lane.

Mechanical Dimensions



(All Dimensions are ± 0.20 mm Unless Otherwise Specified, Unit: mm)

Ordering Information

Part No.	Product Description	Length Tolerance
FDAC-40G-QPQP-PX5-30	40GBASE-CR4, Twinax cable, 30AWG, 0.5m, Passive	± 10 mm
FDAC-40G-QPQP-P01-30	40GBASE-CR4, Twinax cable, 30AWG, 1.0m, Passive	± 25 mm
FDAC-40G-QPQP-P1X-30	40GBASE-CR4, Twinax cable, 30AWG, 1.5m, Passive	± 30 mm
FDAC-40G-QPQP-P02-30	40GBASE-CR4, Twinax cable, 30AWG, 2.0m, Passive	± 35 mm
FDAC-40G-QPQP-P2X-30	40GBASE-CR4, Twinax cable, 30AWG, 2.5m, Passive	± 35 mm
FDAC-40G-QPQP-P03-30	40GBASE-CR4, Twinax cable, 30AWG, 3.0m, Passive	± 45 mm
FDAC-40G-QPQP-P04-26	40GBASE-CR4, Twinax cable, 26AWG, 4.0m, Passive	± 50 mm
FDAC-40G-QPQP-P05-26	40GBASE-CR4, Twinax cable, 26AWG, 5.0m, Passive	± 65 mm
FDAC-40G-QPQP-P06-26	40GBASE-CR4, Twinax cable, 26AWG, 6.0m, Passive	± 75 mm
FDAC-40G-QPQP-P07-26	40GBASE-CR4, Twinax cable, 26AWG, 7.0m, Passive	± 75 mm