



10G SFP+ Direct Attach Cable (DAC) Hot Pluggable, Twinax Copper Cables, Passive 0.5~10M

Part Number: FDAC-10G-SPSP-Pxx-xx



Overview

FDAC-10G-SPSP-Pxx-xx SFP+ Copper Twinax Direct Attach Cables (DAC) are cost-effective and energy-saving I/O solutions for 10GBASE Ethernet applications. The SFP+ 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 10m.

Applications

- 1000BASE ~ 10GBASE Ethernet
- 1G/2G/4G/8G Fiber Channel
- InfiniBand SDR, DDR, QDR, FDR-10
- Data Center & Storage
- Datacom / Telecom Switch & Router

Features

- Compliant with 10GBASE-CR
- Compliant with SFF-8431, 8432 SFP+ MSA
- Support 1G~10G Ethernet
- Support 1G/2G/4G/8G Fiber Channel
- Support InfiniBand SDR, DDR, QDR & FDR-10
- Hot Pluggable
- 2-wire interface for management
- Single +3.3V power supply
- Link distance up to 10m
- 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}	-0.5	+3.6	V



Product Specifications

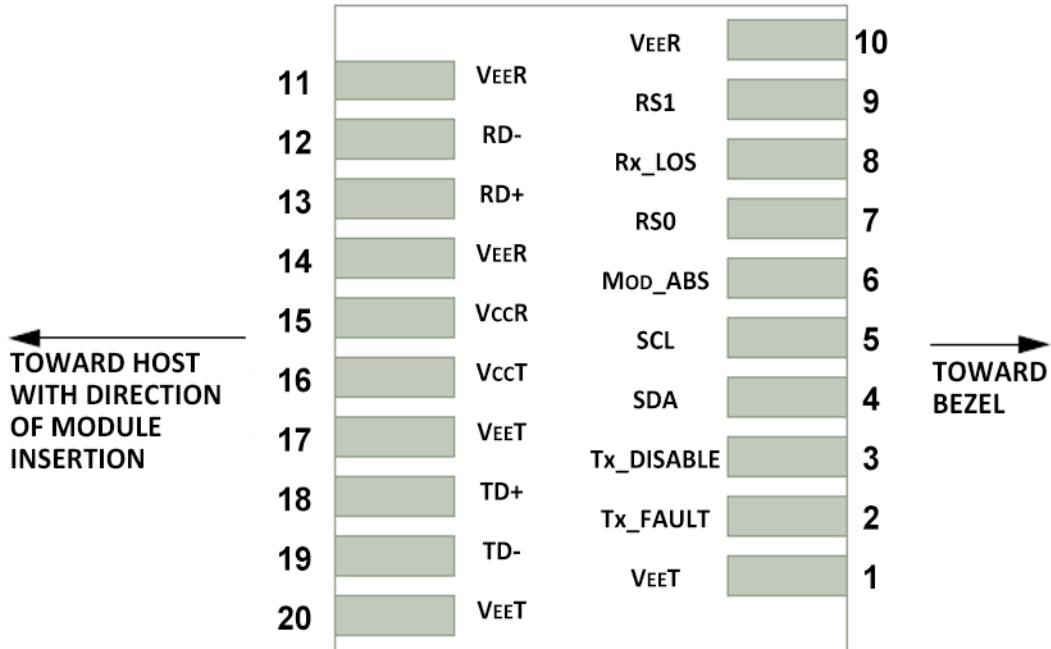
Parameters	Symbol	Min.	Typ.	Max.	Unit
Case Operating Temperature	T _{OP}	0	-	+75	°C
Supply Voltage	V _{CC}	+3.13	+3.3	+3.47	V
Supply Current, per SFP+	I _{CC}			30	mA
Power Consumption, per SFP+	P			0.1	W
Operating Data Rate	DR	1.0625	10.3125		Gb/s
Minimum Cable Bending Radius		30			mm
Differential Impedance	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



Host PCB SFP+ pad assignment top view

Pin Description

Pin	Name	Function / Description
1	VEET	Transmitter Ground
2	Tx_FAULT	Transmitter Fault Indication, No function implemented (1)
3	Tx_DISABLE	Transmitter Disable (2)
4	SDA	2-wire Serial Interface Data Line (SDA: Serial Data Signal)
5	SCL	2-wire Serial Interface Clock (SCL: Serial Clock Signal)
6	MOD_ABS	Module Absent, connected to VEET or VEER in the module
7	RS0	Rate Select 0, No connection required (3)
8	Rx_LOS	Receiver Loss of Signal Indication (2)
9	RS1	Rate Select 1, No connection required (3)
10	VEER	Receiver Ground
11	VEER	Receiver Ground
12	RD-	Receiver Inverted Data output, AC coupled
13	RD+	Receiver Non-Inverted Data output, AC coupled



14	VEER	Receiver Ground
15	VCCR	Receiver 3.3V Power Supply
16	VcCT	Transmitter 3.3V Power Supply
17	VEET	Transmitter Ground
18	TD+	Transmitter Non-Inverted Data Input, AC coupled
19	TD-	Transmitter Inverted Data Input, AC coupled
20	VEET	Transmitter Ground

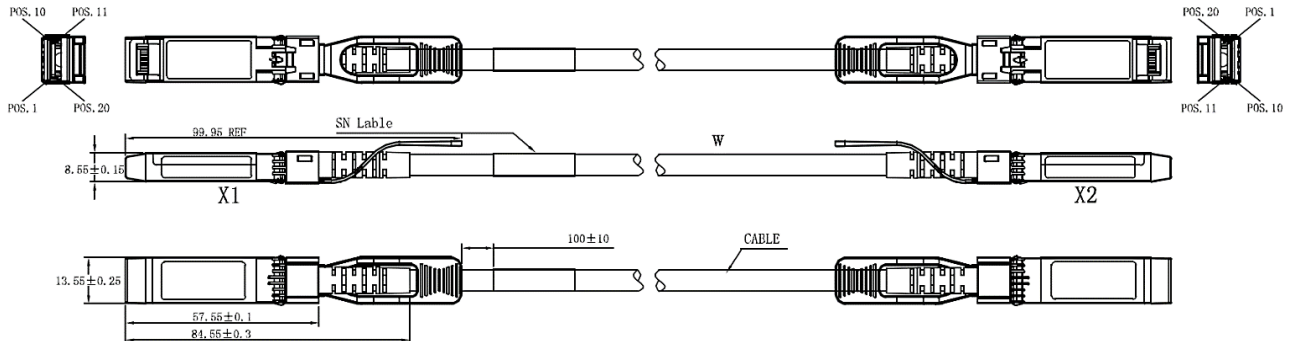
Note1: Signal not supported in SFP+ DAC module, pulled-down to VEET with 20K ohms resistor.

Note2: The passive DAC cable do not support Rx_LOS and Tx_Disable functions.

Note3: Tied to ground through a 30K ohm resistor.



Mechanical Dimensions



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

Ordering Information

Part No.	Product Description	Length Tolerance
FDAC-10G-SPSP-PX5-30	10GBASE-CR, Twinax PVC cable, 30AWG, 0.5m, Passive	± 10 mm
FDAC-10G-SPSP-P01-30	10GBASE-CR, Twinax PVC cable, 30AWG, 1.0m, Passive	± 25 mm
FDAC-10G-SPSP-P1X-30	10GBASE-CR, Twinax PVC cable, 30AWG, 1.5m, Passive	± 30 mm
FDAC-10G-SPSP-P02-30	10GBASE-CR, Twinax PVC cable, 30AWG, 2.0m, Passive	± 35 mm
FDAC-10G-SPSP-P2X-30	10GBASE-CR, Twinax PVC cable, 30AWG, 2.5m, Passive	± 35 mm
FDAC-10G-SPSP-P03-30	10GBASE-CR, Twinax PVC cable, 30AWG, 3.0m, Passive	± 45 mm
FDAC-10G-SPSP-P03-24	10GBASE-CR, Twinax PVC cable, 24AWG, 3.0m, Passive	± 45 mm
FDAC-10G-SPSP-P04-24	10GBASE-CR, Twinax PVC cable, 24AWG, 4.0m, Passive	± 50 mm
FDAC-10G-SPSP-P05-24	10GBASE-CR, Twinax PVC cable, 24AWG, 5.0m, Passive	± 65 mm
FDAC-10G-SPSP-P07-24	10GBASE-CR, Twinax PVC cable, 24AWG, 7.0m, Passive	± 75 mm
FDAC-10G-SPSP-P07-24	10GBASE-CR, Twinax PVC cable, 24AWG, 8.0m, Passive	± 75 mm
FDAC-10G-SPSP-P07-24	10GBASE-CR, Twinax PVC cable, 24AWG, 9.0m, Passive	± 75 mm
FDAC-10G-SPSP-P07-24	10GBASE-CR, Twinax PVC cable, 24AWG, 10.0m, Passive	± 75 mm