

## SFP-10G-DAC-PxM

10G SFP+ Passive Direct Attach Copper Cable (PCC), 0.5~10 meters

### Features

- Support for multi-gigabit data rates up to 10.5Gbps
- Support for 1x, 2x, 4x and 8x Fibre Channel data rates
- Compatible to SFP+ MSA SFF-8431
- Hot-pluggable SFP 20PIN footprint
- I/O Connector designed for high speed differential signal applications
- 360 degree cable braid crimp and enhanced EMI skirt
- Low insertion loss and low crosstalk
- Single 3.3V power supply
- Operating temperature range: 0 to 70°C
- RoHS Compliant and Lead-Free



### Applications

- 1/2/4/8G Fibre Channel and 10GFC
- Infiniband 1X SDR DDR QDR
- High capacity I/O in Storage Area Networks, Network Attached Storage, and Storage Servers
- Switched fabric I/O such as ultra high bandwidth switches and routers
- End of row/Middle of row switching architectures
- Data center cabling infrastructure
- High density connections between networking equipment

### Description

Optcore's SFP-10G-DAC-PxM is a hot-swappable direct attach copper cable assembly (also known as Twinax Cable or DAC) with SFP+ modules at both ends. It is developed specifically as a cost-effective and lower-power alternative to SFP+ transceivers and SFP+ Active Optical Cables (AOC). SFP-10G-DAC-PxM is a passive DAC cable, so there is no signal conditioning circuitry in the SFP+ module.

The DAC cable fully complies with SFP+ Multi-Source Agreement (MSA) standards SFF-8431 and SFF-8432. It is suitable for short-reach links in 10Gbps high-speed interconnect applications such as high-performance computing (HPC), enterprise networking including top-of-rack switching, and network storage servers.

### Ordering information

Part Number	Data Rate	Cable Length	Wire Gauge		
SFP-10G-DAC-P05M	10Gbps	0.5 m	/	/	AWG30
SFP-10G-DAC-P1M	10Gbps	1 m	/	/	AWG30
SFP-10G-DAC-P2M	10Gbps	2 m	/	/	AWG30
SFP-10G-DAC-P3M	10Gbps	3 m	/	AWG28	AWG30
SFP-10G-DAC-P4M	10Gbps	4 m	AWG24	/	/
SFP-10G-DAC-P5M	10Gbps	5 m	AWG24	/	/

SFP-10G-DAC-P6M	10Gbps	6 m	AWG24	/	/
SFP-10G-DAC-P7M	10Gbps	7 m	AWG24	/	/
SFP-10G-DAC-P10M	10Gbps	10 m	AWG24	/	/

**Notes:**

1. Customized 10G SFP+ cables are available in various lengths.
2. The Wire Gauge is available in AWG24, AWG26, AWG28, and AWG30 for customized need.

**Absolute Maximum Ratings**

Parameter	Symbol	Min	Max	Unit	Notes
Maximum Supply Voltage	V <sub>cc</sub>	-0.5	4.0	V	
Storage Temperature	T <sub>s</sub>	-40	85	°C	
Operating Humidity	RH	5	95	%	

**Recommended Operating Conditions**

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Power Supply Voltage	V <sub>cc</sub>	3.13	3.3	3.47	V	
Power Supply Current	I <sub>cc</sub>			120	mA	One side
Case Operating Temperature	T <sub>c</sub>	0		70	°C	
Data Rate		1		10.5	Gbps	
Bit Error Rate	BER			10 <sup>-12</sup>		

**Cable Specifications**

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Cable Diameter	DIA		6.0		mm	AWG 24
			5.2		mm	AWG 26
			4.7		mm	AWG 28
			4.5		mm	AWG 30
Bend Radius		5x Cable Diameter			mm	
Cable Jacket Type		PVC				
Cable Impedance	Z	90	100	110	Ω	
Cable Time delay	T <sub>d</sub>		4.3		ns/m	

**Pin Definitions**

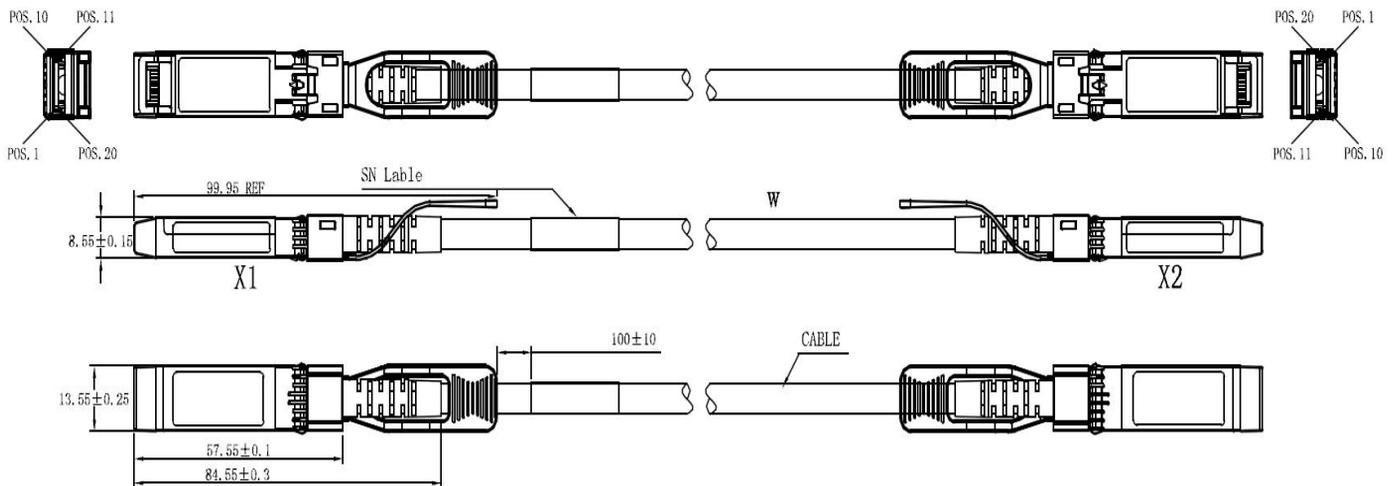
Pin	Logic	Symbol	Name/Description	Note
1		VEET	Transmitter Ground	
2	LV-TTL-O	Tx_FAULT	Transmitter fault	1
3	LV-TTL-I	Tx_DIS	Transmitter Disable. Laser output disabled on high or open	2
4	LV-TTL-I/O	SDA	2-wire Serial Interface Data Line	
5	LV-TTL-I	SCL	2-wire Serial Interface Clock Line	

6		MOD_ABS	Module Absent. Grounded within the module	
7	LV-TTL-I	RS0	Rate select 0	1
8	LV-TTL-O	RX_LOS	Loss of Signal indication. Logic 0 indicates normal operation	2
9	LV-TTL-I	RS1	No connection required	1
10		VEER	Receiver Ground	
11		VEER	Receiver Ground	
12	CML-O	RD-	Receiver Inverted DATA out. AC Coupled	
13	CML-O	RD+	Receiver DATA out. AC Coupled	
14		VEER	Receiver Ground	
15		VCCR	Receiver Power Supply	
16		VCCT	Transmitter Power Supply	
17		VEET	Transmitter Ground	
18	CML-I	TD+	Transmitter DATA in. AC Coupled	
19	CML_I	TD-	Transmitter Inverted DATA in. AC Coupled	
20		VEET	Transmitter Ground	

**Notes:**

1. Signals not supported in SFP+ Copper pulled-down to VeeT with 30K ohms resistor
2. Passive cable assemblies do not support LOS and TX\_DIS

**Mechanical Dimensions**



**⚠ Warnings**

**Process plug**

The transceiver optics is supplied with a dust cover. This plug protects the transceiver optics during standard manufacturing processes by preventing contamination from air borne particles. It is recommended that the dust cover remain in the transceiver whenever an optical fiber connector is not inserted.

**Handling Precautions**

The transceiver optics is susceptible to damage as a result of electrostatic discharge (ESD). A static free environment is highly recommended. Follow guidelines according to proper ESD procedures.

**Laser Safety**

The transceiver optics is a Class 1 laser product per international standard IEC 60825-1. Radiation emitted by laser devices can be dangerous to human eyes. Avoid eye exposure to direct or indirect radiation.

For more product information, visit us on the web at [www.optcore.net](http://www.optcore.net)



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