10GB-F10-SFPP-C
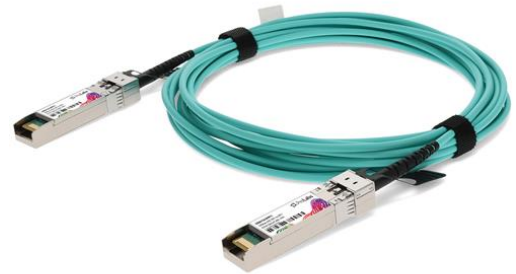
Extreme Networks® 10GB-F10-SFPP Compatible TAA Compliant 10GBase-AOC SFP+ Active Optical Cable (850nm, MMF, 10m)

Features:

- High Speed/ High Density: Supports up to 10Gbps bi-directional operation
- Compliant to SFP MSA Standards
- Reliable VCSEL and PIN photonic devices
- I2C Standard Management Interface
- Excellent High Speed Signal Interface
- Operating Temperature: 0 to 70 Celsius
- RoHS Compliant and Lead-Free

Applications:

- 10G Ethernet
- High Performance Computing, Server, and Data Starage

Product Description

This is a Extreme Networks® 10GB-F10-SFPP Compatible 10GBase-AOC SFP+ to SFP+ active optical cable that operates over active fiber with a maximum reach of 10m. It has been programmed, uniquely serialized, and data-traffic and application tested to ensure it is 100% compliant and functional. We stand behind the quality of our products and proudly offer a limited lifetime warranty. This cable is TAA (Trade Agreements Act) compliant and is built to comply with MSA (Multi-Source Agreement) standards.

ProLabs' transceivers are RoHS compliant and lead-free.

TAA refers to the Trade Agreements Act (19 U.S.C. & 2501-2581), which is intended to foster fair and open international trade. TAA requires that the U.S. Government may acquire only "U.S. – made or designated country end products."

Rev. 080624

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Storage Temperature	Tstg	-40		85	°C	
Operating Temperature	Tc	0	25	70	°C	
Relative Humidity	RH	5		85	%	
Maximum Supply Voltage	Vcc	0		3.6	V	
Data Rate			10.3		Gbps	

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Supply Voltage	Vcc	3.135	3.3	3.465	V	
+3.3V Supply Current	Icc			290	mA	
Transmitter Fault (Tx_Fault)	VOH	2.0		Vcc	V	1
Loss of Signal (LOS)	VOL	0		0.8	V	1
Transmitter Disable (Tx_Disable)	VIH	2.0		Vcc	V	2
MOD_DEF1, MOD_DEF2	VIL	0		0.8	V	2
Clock Rate-I2C						3

Notes:
1. For all control input pins: Tx_Disable.
2. For all status output pins: Rx_LOS, Tx_Fault.
3. For the management interface.

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Reference Differential Input Impedance	ZD		100		Ω	1
Signal Speed			10.3		Gbps	2
Differential Data Input Swing	VIN,pp	180		700	mV	
Receiver						
Reference Differential Input Impedance	ZD		100		Ω	1
Signal Speed			10.3		Gbps	2
Differential Data Output Swing		150		850	mV	
Differential Data Output Swing When Squelched				50	mV	
Rise/Fall Time (20-80%)		24			ps	

Notes:
1. AC coupled inside the AOC module.
2. Tested with PRBS $2^{31}-1$ and BER:10^{-12}.

Pin Descriptions

Pin	Symbol	Name/Description	Notes
1	VeeT	Transmitter Ground.	1
2	Tx_Fault	Transmitter Fault (LVTTL-O). "High" indicates a fault condition.	2
3	Tx_Disable	Transmitter Disable (LVTTL-I). "High" or "open" disables the transmitter.	3
4	SDA	2-Wire Serial Interface Data Line. LVCMOS-I/O. MOD_DEF2.	4
5	SCL	2-Wire Serial Interface Clock Line. LVCMOS-I/O. MOD_DEF1.	4
6	MOD_ABS	Module Absent (Output). Connected to the VeeT or VeeR in the module.	5
7	RS0	Rate Select 0. Not Used. Presents high input impedance.	
8	Rx_LOS	Receiver Loss of Signal. LVTTL-O.	2
9	RS1	Rate Select 1. Not Used. Presents high input impedance.	
10	VeeR	Receiver Ground.	1
11	VeeR	Receiver Ground.	1
12	RD-	Inverse Received Data Out (CML-O).	
13	RD+	Received Data Out (CML-O).	
14	VeeR	Receiver Ground.	
15	VccR	+3.3V Receiver Power.	
16	VccT	+3.3V Transmitter Power.	
17	VeeT	Transmitter Ground.	1
18	TD+	Transmitter Data In (CML-I).	
19	TD-	Inverse Transmitter Data In (CML-I).	
20	VeeT	Transmitter Ground.	1

Notes:

1. The module signal grounds are isolated from the module case.
2. This is an open collector/drain output that, on the host board, requires a 4.7kΩ to 10kΩ pull-up resistor to the Host_Vcc.
3. This input is internally biased "high" with a 4.7kΩ to 10kΩ pull-up resistor to the VccT.
4. 2-Wire Serial Interface Clock and Data Lines require an external pull-up resistor dependent on the capacitance load.
5. This is a ground return that, on the host board, requires a 4.7kΩ to 10kΩ pull-up resistor to the Host_Vcc.

Pin-Out Connectors

Application Interface Circuit

Mechanical Specifications

Unit:mm

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Module Retention		90		170	N	
Module Insertion		0		18	N	
Module Extraction		0		25	N	
Cable Pull Strength – Apply Load at 0°		25			N	
Cable Pull Strength – Apply Load at 90°		20			N	
Cable Bending Radius		50			mm	
Insertion/Removal Cycles		50			Cycles	

About ProLabs

Our experience comes as standard; for over 15 years ProLabs has delivered optical connectivity solutions that give our customers freedom and choice through our ability to provide seamless interoperability. At the heart of our company is the ability to provide state-of-the-art optical transport and connectivity solutions that are compatible with over 90 optical switching and transport platforms.

Complete Portfolio of Network Solutions

ProLabs is focused on innovations in optical transport and connectivity. The combination of our knowledge of optics and networking equipment enables ProLabs to be your single source for optical transport and connectivity solutions from 100Mb to 400G while providing innovative solutions that increase network efficiency. We provide the optical connectivity expertise that is compatible with and enhances your switching and transport equipment.

Trusted Partner

Customer service is our number one value. ProLabs has invested in people, labs and manufacturing capacity to ensure that you get immediate answers to your questions and compatible product when needed. With Engineering and Manufacturing offices in the U.K. and U.S. augmented by field offices throughout the U.S., U.K. and Asia, ProLabs is able to be our customers best advocate 24 hours a day.

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