an INFINITE brand

Active Optical Cable SFP+ 10Gbps, 20m, MSA Compatible

Active Optical Cables Technical Data Sheet AOCSP10-020

Features

- Up to 11.1Gbps Data rate
- Maximum link length of 100m
- High Reliability 850nm VCSEL technology
- Electrically hot-pluggable
- Electrical interface compliant to SFF-8431
- Case operating temperature range: 0°C to 70°C
- Power dissipation < 1.0W per cable end

Applications

- 10G Ethernet Data center Intra-Rack and Inter-Rack links

Description

The AOCSP10-020 is an active optical cable designed for use in 10 Gigabit Ethernet links. They are electrically compliant with SFF-8431 and mechanically compliant with SFF-8432. The AOCSP10-020 allows for greater link length than direct attach cables with a lower total cost and lower power consumption than transceiver-based solutions.

SFP+ Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Storage Temperature	Ts	-40	-	85	ºC	
Relative Humidity	RH	5	-	95	%	
Power Supply Voltage	VCC	-0.3	-	4	V	
Signal Input Voltage		Vcc-0.3	-	Vcc+0.3	V	

SFP+ Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Case Operating Temperature	Tcase	0	-	70	ºC	Without air flow
Power Supply Voltage	VCC	3.14	3.3	3.46	V	
Power Supply Current	ICC	-		300	mA	per cable end
Data Rate	BR		10.3125		Gbps	

Click the following link (or enter part number in “SEARCH” on website) to obtain additional part information including price, inventory and certifications: Active Optical Cable SFP+ 10Gbps, 20m, MSA Compatible AOCSP10-020

L-com, Inc. • 50 High St., West Mill, 3rd Floor, Suite #30 North Andover, MA 01845
Phone: 1-800-343-1455 • sales@L-com.com

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SFP+ General Product Characteristics

Parameter	Value	Unit	Notes
Module Form Factor	SFP+		
Maximum Data Rate	11.1	Gb/s	
Standard Cable Lengths	3, 5, 7, 10, 50, 100	meters	Other lengths may be available upon request (<= 300m)
Protocols Supported	Typical applications include Infiniband, Fibre Channel, 10G Ethernet		
Electrical Interface and Pin-out	20-pin edge connector		Pin-out as defined by the SFP+ MSA
Standard Optical Cable Type	Multimode ribbon fiber cable assembly		
Maximum Power Consumption per End	1.0	W	per cable end
Management Interface	Serial, I2C-based, 400 kHz maximum frequency		As defined by the SFP+ MSA

SFP+ Electrical Characteristics

Parameter	Symbol	Min	Typ	Max	Unit	NOTE
Supply Voltage	VccT,VccR	3.14	3.3	3.46	V	
Supply Current	Icc			300	mA	
Transmitter						
Differential data input swing	Vin,pp	180		1000	mV	1
Single ended input voltage tolerance	VinT	-0.3		4.0	V	
Receiver						
Differential data output swing	Vout,pp	300		850	mV	2
Single-ended output voltage		-0.3		4.0	V	

Notes:

1. AC coupled internally. Self-biasing 100Ω differential input.
2. AC coupled with 100Ω differential output impedance.

Mechanical Specifications

Length	787.4 in [20 m]
Cable Color	Orange

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Environmental Specifications

SFP+

Temperature (Operational)	+0C to +70C
Temperature (Storage)	-40C to +85C
Relative Humidity	5% to 95%

Compliance Certifications

RoHS Compliant	Yes

Our portfolio includes cable assemblies, connectors, adapters and custom products, as well as their wireless product line which includes antennas, RF amplifiers, coaxial lightning and surge protectors, and NEMA rated enclosures.

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URL: https://www.l-com.com/active-optical-cable-sfp-10gbps-20m-msa-compatible-aocsp10-020-p.aspx

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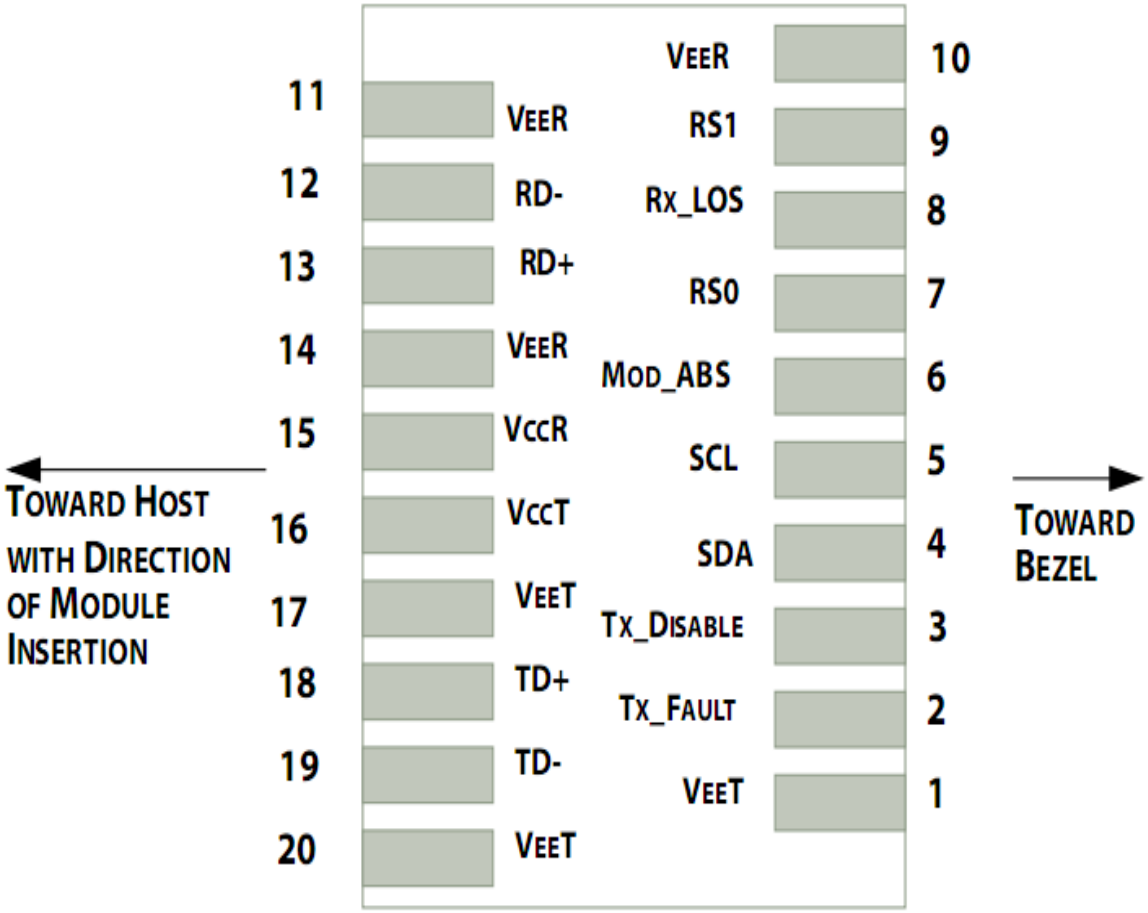
SFP+ Pin Assignment



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SFP+ Pin Assignment Table

Pin	Symbol	Name/Description	NOTE
1	V_{EET}	Transmitter Ground (Common with Receiver Ground)	1
2	T_{FAULT}	Transmitter Fault.	2
3	T_{DIS}	Transmitter Disable. Laser output disabled on high or open.	3
4	SDA	2-wire Serial Interface Data Line	4
5	SCL	2-wire Serial Interface Clock Line	4
6	MOD_ABS	Module Absent. Grounded within the module	4
7	RS0	Rate Select 0	5
8	LOS	Loss of Signal indication. Logic 0 indicates normal operation.	6
9	RS1	No connection required	1
10	V_{EER}	Receiver Ground (Common with Transmitter Ground)	1
11	V_{EER}	Receiver Ground (Common with Transmitter Ground)	1
12	RD-	Receiver Inverted DATA out. AC Coupled	
13	RD+	Receiver Non-inverted DATA out. AC Coupled	
14	V_{EER}	Receiver Ground (Common with Transmitter Ground)	1
15	V_{CCR}	Receiver Power Supply	
16	V_{CCT}	Transmitter Power Supply	
17	V_{EET}	Transmitter Ground (Common with Receiver Ground)	1
18	TD+	Transmitter Non-Inverted DATA in. AC Coupled.	
19	TD-	Transmitter Inverted DATA in. AC Coupled.	
20	V_{EET}	Transmitter Ground (Common with Receiver Ground)	1

Notes:

1. Circuit ground is internally isolated from chassis ground.
2. T_{FAULT} is an open collector/drain output, which should be pulled up with a 4.7k – 10k Ohms resistor on the host board if intended for use. Pull up voltage should be between 2.0V to Vcc + 0.3V.A high output indicates a transmitter fault caused by either the TX bias current or the TX output power exceeding the preset alarm thresholds. A low output indicates normal operation. In the low state, the output is pulled to <0.8V.
3. Laser output disabled on T_{DIS} >2.0V or open, enabled on T_{DIS} <0.8V.
4. Should be pulled up with 4.7kΩ- 10kΩ host board to a voltage between 2.0V and 3.6V. MOD_ABS pulls line low to indicate module is plugged in.
5. Internally pulled down per SFF-8431 Rev 4.1.
6. LOS is open collector output. It should be pulled up with 4.7kΩ – 10kΩ on host board to a voltage between 2.0V and 3.6V. Logic 0 indicates normal operation; logic 1 indicates loss of signal.

AOCSP10-020 CAD Drawing

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