



SFP-10G-AOC50M-OPC

MSA and TAA Compliant 10GBase-AOC SFP+ Active Optical Cable (850nm, MMF, 50m)

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 Storage

Product Description

This is an MSA compliant 10GBase-AOC SFP+ to SFP+ active optical cable that operates over multi-mode fiber with a maximum reach of 50.0m (164.0ft). At a wavelength of 850nm, it has been programmed, uniquely serialized, and data-traffic and application tested to ensure it is 100% compliant and functional. This active optical cable is TAA (Trade Agreements Act) compliant, and is built to comply with MSA (Multi-Source Agreement) standards. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

OptioConnect's transceivers are RoHS compliant and lead-free.

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 4.7k Ω to 10k Ω pull-up resistor to the Host_Vcc.
3. This input is internally biased "high" with a 4.7k Ω to 10k Ω 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 4.7k Ω to 10k Ω pull-up resistor to the Host_Vcc.

Pin-Out Connectors



Application Interface Circuit



Mechanical Specifications



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	

OptioConnect

Innovation for the Future of High-Speed Networking

Who We Are

OptioConnect is reshaping the landscape of communication and high-speed networking through intelligent technology. With a core focus on cutting edge technology, we deliver smarter fiber optic solutions for enterprise networks, data centers, and next-gen telecom infrastructures.

What We Do

At OptioConnect, we fuse advanced engineering with intelligent automation to drive the future of networking. Our AI-integrated solutions are designed to optimize performance and streamline operations with:

- Superior Performance
- Network and traffic optimization
- Intelligent energy management
- Seamless OEM compatibility
- Scalable cost-efficiency

Smarter Networks by Design

Innovation isn't just a goal—it's our process. We embed AI and machine learning across our R&D and product lines, enabling adaptive performance, automated tuning, and faster deployment cycles. The result? Networks that don't just work—they learn, evolve, and outperform.

Our Team

Our engineers, data scientists, and network architects bring decades of experience and a future-focused mindset. We provide hands-on support with intelligent insights that turn complex challenges into simple solutions.

Our Mission

To deliver AI-enhanced connectivity that reduces cost, increases speed, and maximizes efficiency—empowering our partners to operate at the forefront of a rapidly evolving digital world.

Let's Connect

Discover how OptioConnect's intelligent infrastructure solutions can power your network's next leap forward.

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