

## SP-CABLE-FS-SFP+5-AO

Fortinet® SP-CABLE-FS-SFP+5 Compatible TAA Compliant 10GBase-CU SFP+ Direct Attach Cable (Passive Twinax, 5m)

### Features

- Up to 10 Gbps bi-directional data links
- Compliant with SFF-8431
- Compliant with 10GFC
- 100 Ohm differential impedance
- Enhanced EMI design
- AC coupled inputs and outputs
- Operating Temperature Range: 0 to 70 Celsius
- Single 3.3V power supply
- RoHS Compliant and Lead-Free



### Applications

- 10G Fibre Channel
- 10G Ethernet
- Serial Data Transmission

### Product Description

This is a Fortinet® Compatible 10GBase-CU SFP+ to SFP+ direct attach cable that operates over passive copper with a maximum reach of 5m. 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.

AddOn's 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."



## General Specifications

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Data Rate	DR		10.3125		Gbps	1
Bit Error Rate	BER			$10^{-12}$		
Operating Temperature	Tc	0		70	°C	2
Storage Temperature	Tstg	-40		85	°C	3
Power Supply Voltage	Vcc	3.14	3.30	3.46	V	4

### Notes:

1. IEEE 802.3ae.
2. Case Temperature.
3. Ambient Temperature.
4. For the electrical power interface.

## Cable Specifications

Parameter	Symbol	Min.	Typ.	Max.	Unit
Wire Gauge			24AWG		AWG
Cable Impedance	Z	90	100	110	$\Omega$
Cable Diameter	OD		6.0		mm
Minimum Bending Radius	R		28		mm
Tolerance Range $\pm$			6		cm

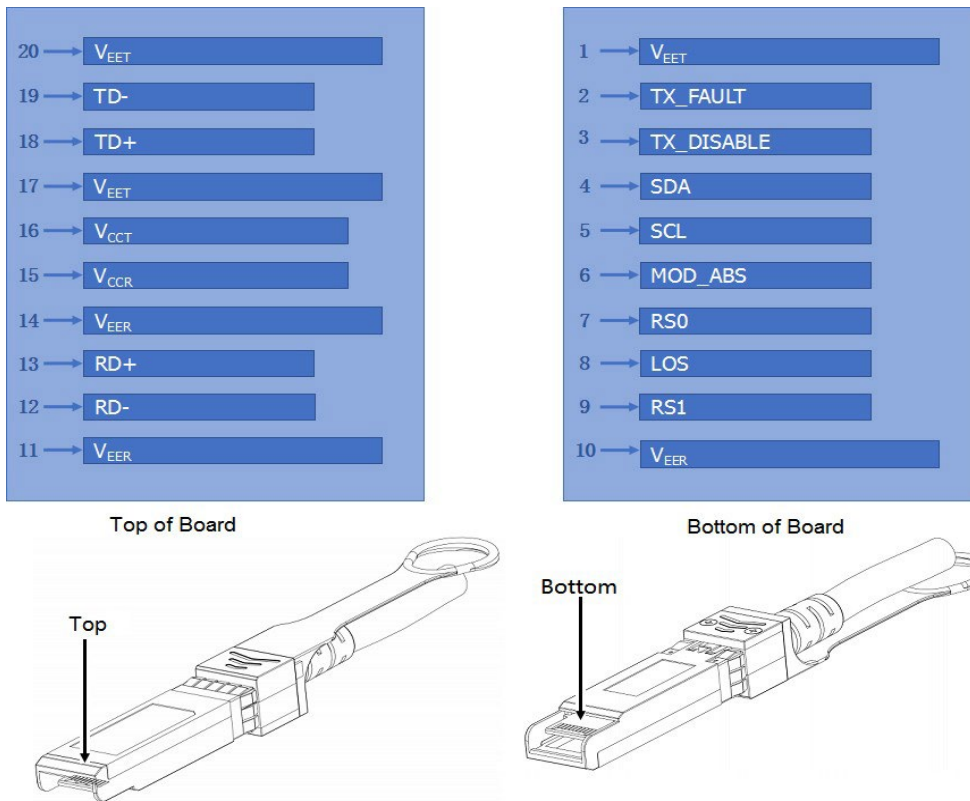
## Pin Descriptions

Pin	Symbol	Name/Description	Notes
1	VeeT	Transmitter Ground (Common with Receiver Ground).	1
2	Tx_Fault	Transmitter Failure Alarm. Not Used.	
3	Tx_Disable	Not Used. The signal turns off the module transmitter when it is "high" or "open."	
4	SDA	Data Line for Serial ID.	2
5	SCL	Clock Line for Serial ID.	2
6	MOD_ABS	Module Absent. Grounded within the module.	2
7	RS0	No Connection Required.	
8	LOS	Loss of Signal Indication. "Logic 0" indicates normal operation.	
9	RS1	No Connection Required.	
10	VeeR	Receiver Ground (Common with Transmitter Ground).	1
11	VeeR	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	VeeR	Receiver Ground (Common with Transmitter Ground).	1
15	VccR	Receiver Power Supply.	
16	VccT	Transmitter Power Supply.	
17	VeeT	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	VeeT	Transmitter Ground (Common with Receiver Ground).	1

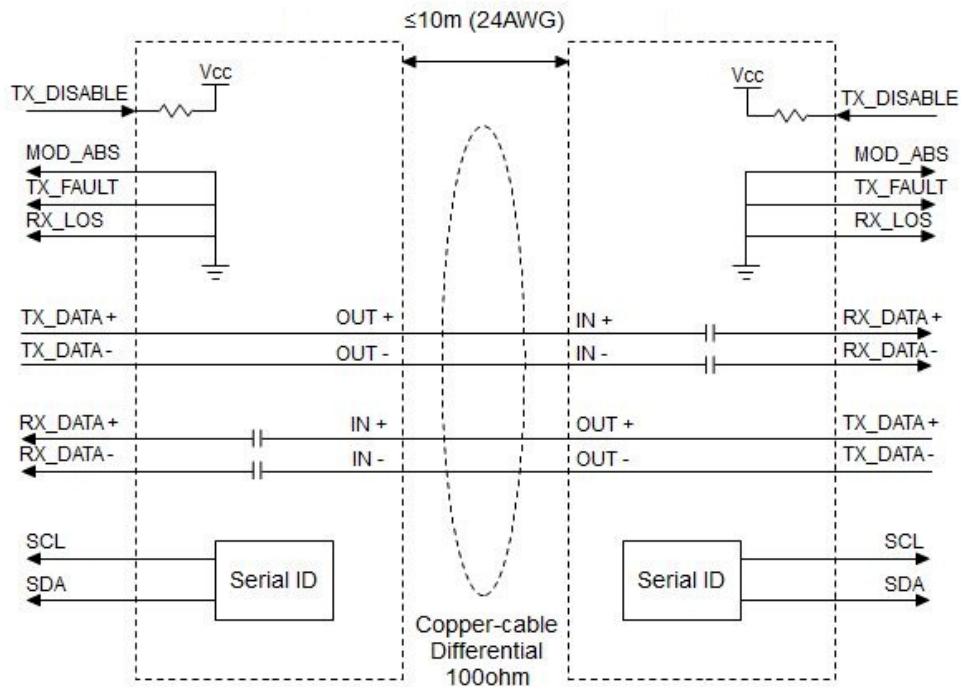
### Notes:

1. The circuit ground is isolated from the chassis ground.
2. Should be pulled up with 4.7k $\Omega$  to 10k $\Omega$  on the host board to a voltage between 2V and 3.6V.

## Electrical Pad Layout



## Block Diagram of Transceiver



## Weight

Parameter	Symbol	Typ.	Unit	Notes
24AWG Product Weight	GD24	96	g/PCS	1
24AWG Cable Weight	GC24	50	g/M	
Dust Cap Weight	GS	0.80	g/PCS	

## Notes:

- For example, the weight of a 6m cable with 24AWG is  $96+50*(6-1) + 0.80*2=347.6g$ .

## Mechanical Specifications



All Dimensions are  $\pm 0.2\text{mm}$  Unless Otherwise Specified  
Unit: mm

## **About AddOn Networks**

In 1999, AddOn Networks entered the market with a single product. Our founders fulfilled a severe shortage for compatible, cost-effective optical transceivers that compete at the same performance levels as leading OEM manufacturers. Adhering to the idea of redefining service and product quality not previously had in the fiber optic networking industry, AddOn invested resources in solution design, production, fulfillment, and global support.

Combining one of the most extensive and stringent testing processes in the industry, an exceptional free tech support center, and a consistent roll-out of innovative technologies, AddOn has continually set industry standards of quality and reliability throughout its history.

Reliability is the cornerstone of any optical fiber network and is engrained in AddOn's DNA. It has played a key role in nurturing the long-term relationships developed over the years with customers. AddOn remains committed to exceeding industry standards with certifications from ranging from NEBS Level 3 to ISO 9001:2005 with every new development while maintaining the signature reliability of its products.



## **U.S. Headquarters**

Email: [sales@addonnetworks.com](mailto:sales@addonnetworks.com)

Telephone: +1 877.292.1701

Fax: 949.266.9273

## **Europe Headquarters**

Email: [salesupportemea@addonnetworks.com](mailto:salesupportemea@addonnetworks.com)

Telephone: +44 1285 842070