**ADD-SBRSDE-AOC20M**

Brocade® (Formerly) 10GE-SFPP-AOC-2001 to Dell® AOC-SFP-10G-20M Compatible TAA Compliant 10GBase-AOC SFP + to SFP+ Active Optical Cable (850nm, MMF, 20m)

**Features:**

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



**Applications:**

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

**Product Description**

This Brocade® (Formerly) 10GE-SFPP-AOC-2001 to Dell® AOC-SFP-10G-20M dual OEM compatible 10GBase-AOC SFP+ to SFP+ active optical cable has a maximum reach of 20.0m (65.6ft). It is 100% Brocade® (Formerly) to Dell® compatible and has been programmed, uniquely serialized, data-traffic and application tested to ensure that it is compliant and functional. This active optical cable will initialize and perform identically to Brocade® (Formerly) and Dell®'s individual cables and is built to meet or exceed Brocade® (Formerly) and Dell®'s specifications. This product complies with MSA (Multi-Source Agreement) standards and is TAA (Trade Acts Agreement) compliant. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

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."

TAA COMPLIANT

**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:$10^{-12}$.

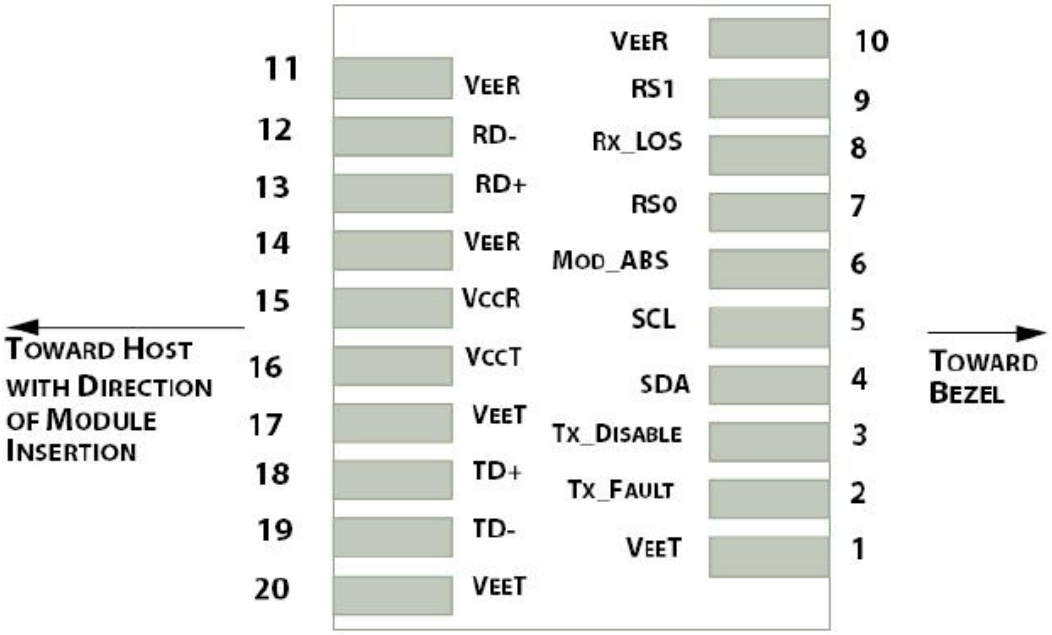
**Pin Descriptions**

| 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 |

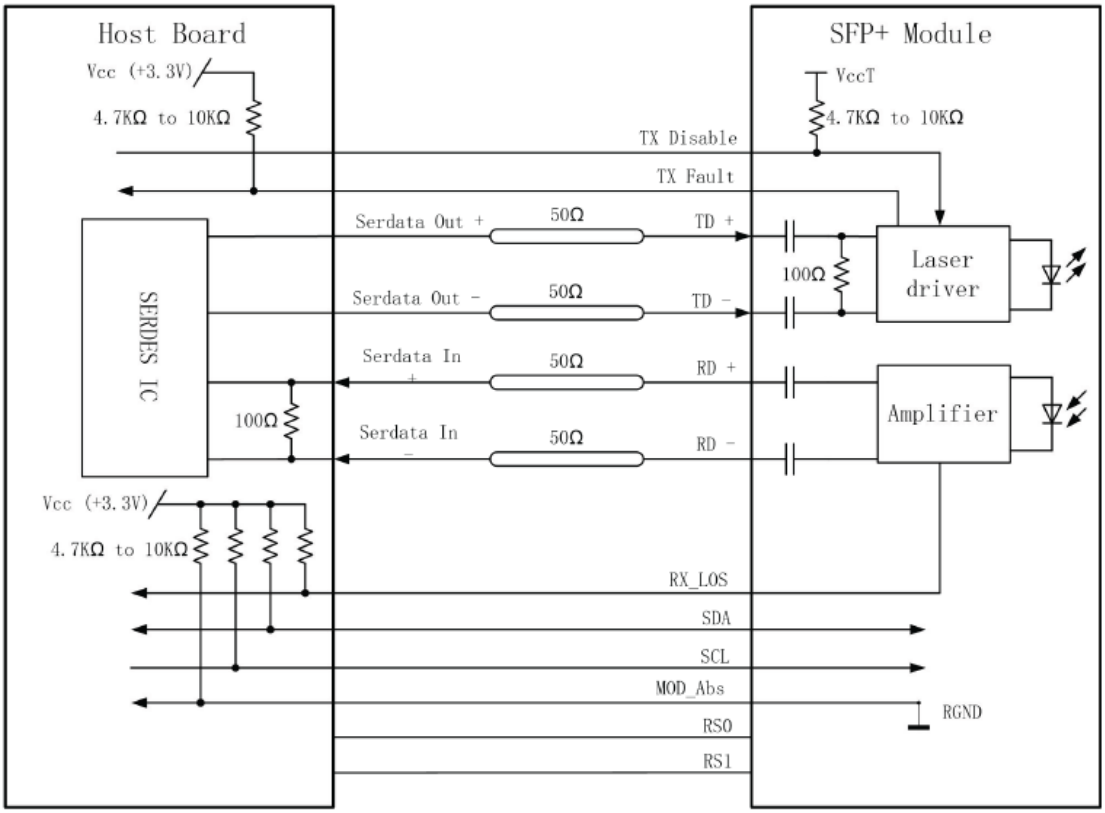
**Notes:**

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.

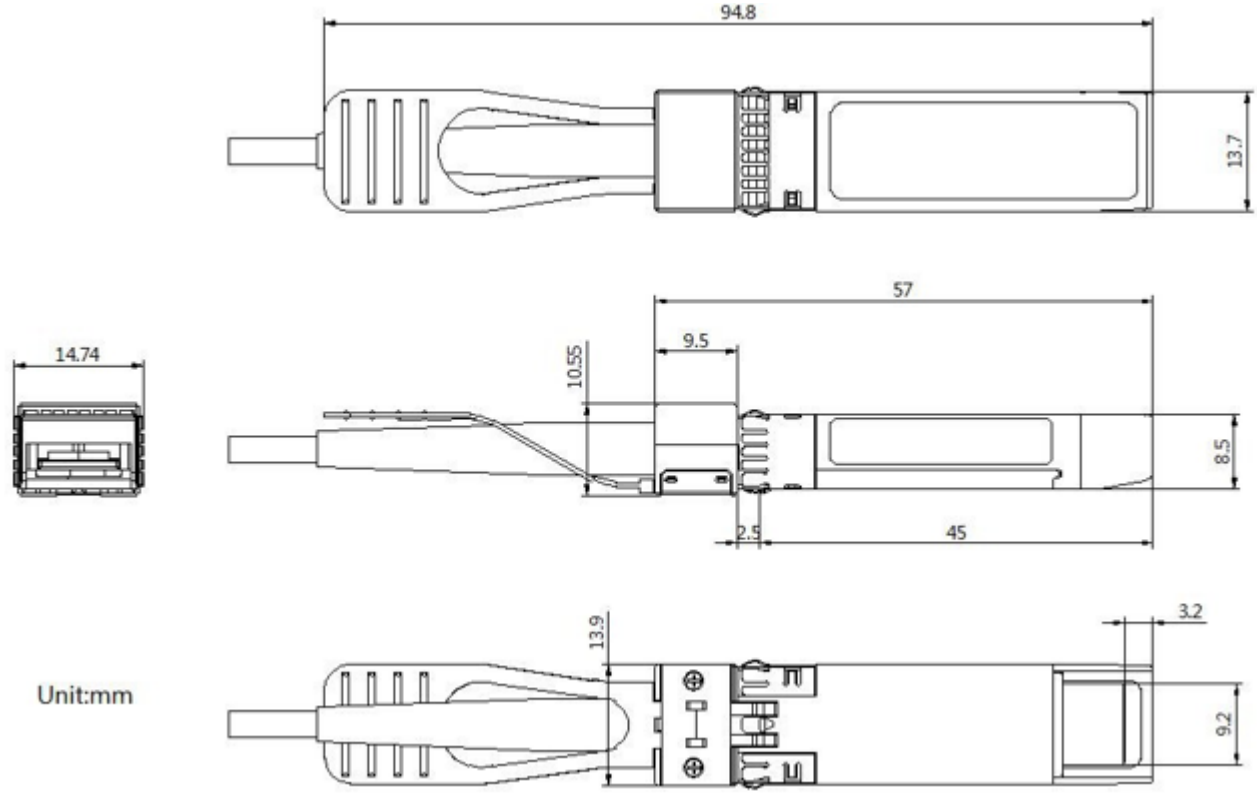
**Pin-Out Connectors**




**Application Interface Circuit**



## Mechanical Specifications




| 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 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 ingrained 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 ranging from NEBS Level 3 to ISO 9001:2015 with every new development while maintaining the signature reliability of its products.




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