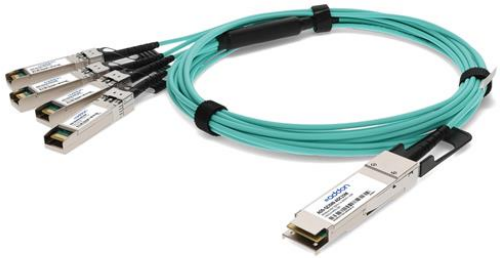
**ADD-QCISIN-AOC15M**

Cisco® QSFP-4X10G-AOC15M to Intel® XAOCBL-15M Compatible TAA Compliant 40GBase-AOC QSFP+ to 4xSFP+ Direct Attach Cable (850nm, MMF, 15m)

**Features:**

- Compliant to Standard SFF-8436 for QSFP+ and Standard SFF-8431 for SFP+
- Reliable VCSEL and PIN Photonic Devices
- High-Speed/High-Density: Supports up to 4x100Gbps Bi-Directional Operation
- Excellent High-Speed Signal Integrity
- Operating Case Temperature: 0 to 70 Celsius
- I2C Standard Management Interface
- RoHS Compliant and Lead-Free



**Applications:**

- Proprietary High-Speed/High-Density Data
- 10G/40G Ethernet
- High Performance Computing, Server and Data Storage

**Product Description**

This Cisco® QSFP-4X10G-AOC15M to Intel® XAOCBL-15M dual OEM compatible 40GBase-AOC QSFP+ to 4xSFP+ active TAA (Trade Acts Agreement) compliant direct attach cable has a maximum reach of 15.0m (49.2ft). It is 100% Cisco® to Intel® compatible and has been programmed, uniquely serialized, and data-traffic and application tested to ensure that it is compliant and functional. This direct attach cable will initialize and perform identically to Cisco® to Intel®'s individual cables and is built to meet or exceed Cisco® to Intel®'s specifications, and comply with MSA (Multi-Source Agreement) standards. 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 | ;;;

**Optical Characteristics**

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Notes |
|---|---|---|---|---|---|---|
| **Transmitter** | | | | | | |
| **Reference Differential Input Impedance** | Zd | | 100 | | Ω | 1 |
| **Optical Return Loss Tolerance** | | | | 12 | dB | |
| **Differential Data Input Swing** | VIN,pp | 180 | | 1200 | mV | |
| **Differential Data Input Threshold** | | | 50 | | mV | 2 |
| **Receiver** | | | | | | |
| **Reference Differential Input Impedance** | Zd | | 100 | | Ω | 1 |
| **Differential Data Output Swing** | VOUT,pp | 0 | | 800 | mV | |
| **Pre-Emphasis Pulse Amplitude Percentage** | | 0 | | | % | 3 |
| | | 10 | | | % | |
| | | 20 | | | % | |
| | | 40 | | | % | |
| **Pre-Emphasis Pulse Duration** | | | 30 | | ps | |
| **Signal Speed** | | | 4*10.3 | | Gbps | |
| **Differential Data Output Swing** | | 150 | | 850 | mV | |
| **Differential Data Output Swing When Squelched** | | | | 50 | mV | |
| **Rise/Fall Time** | | 24 | | | ps | |

**Notes:**

1. AC coupled inside the AOC module.
2. Input swing to trigger Tx_Squelch.
3. User-selectable. Percentage is the ratio of pre-emphasis amplitude to output swing.

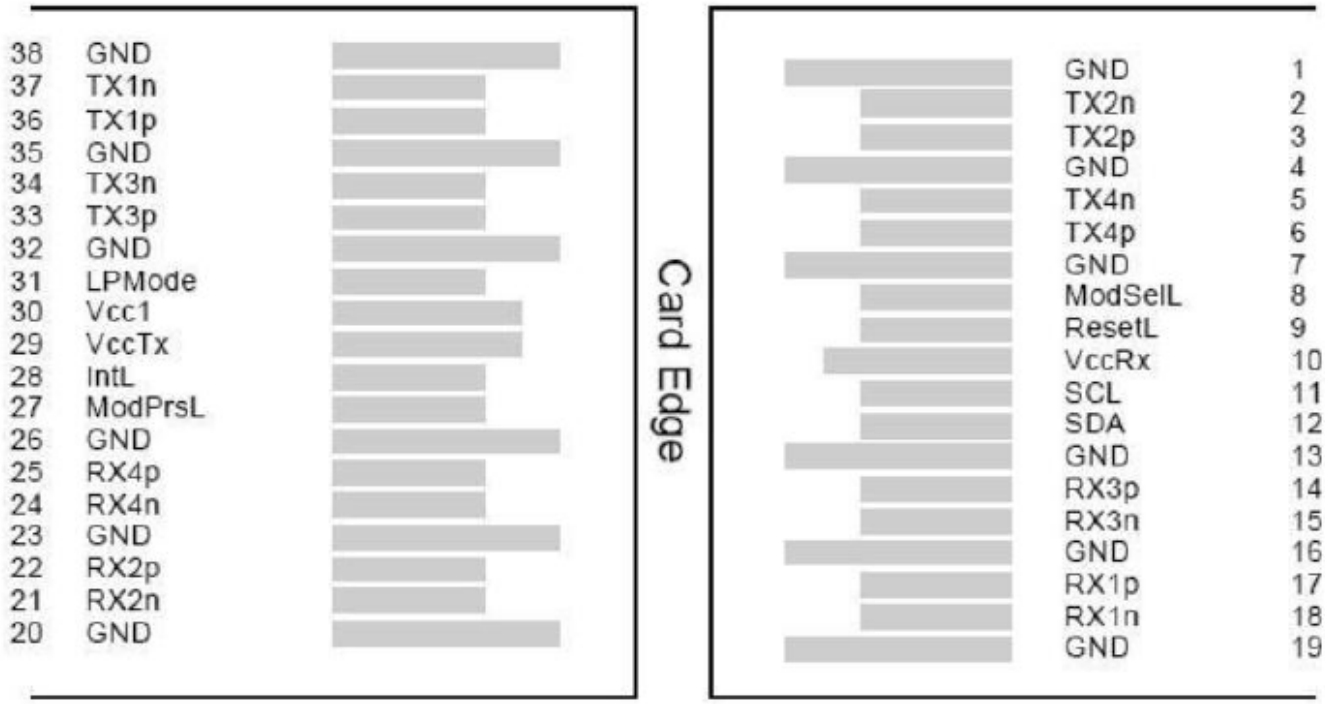
**Pin Descriptions (QSFP+ End)**

| Pin | Symbol | Name/Description | Notes |
|---|---|---|---|
| **1** | GND | Transmitter Ground (Common with Receiver Ground). | 1 |
| **2** | Tx2- | Transmitter Inverted Data Input. | |
| **3** | Tx2+ | Transmitter Non-Inverted Data Input. | |
| **4** | GND | Transmitter Ground (Common with Receiver Ground). | 1 |
| **5** | Tx4- | Transmitter Inverted Data Input. | |
| **6** | Tx4+ | Transmitter Non-Inverted Data Input. | |
| **7** | GND | Transmitter Ground (Common with Receiver Ground). | 1 |
| **8** | ModSelL | Module Select. | 2 |
| **9** | ResetL | Module Reset. | 2 |
| **10** | VccRx | +3.3V Receiver Power Supply. | |
| **11** | SCL | 2-Wire Serial Interface Clock. | 2 |
| **12** | SDA | 2-Wire Serial Interface Data. | 2 |
| **13** | GND | Transmitter Ground (Common with Receiver Ground). | 1 |
| **14** | Rx3+ | Receiver Non-Inverted Data Output. | |
| **15** | Rx3- | Receiver Inverted Data Output. | |
| **16** | GND | Transmitter Ground (Common with Receiver Ground). | 1 |
| **17** | Rx1+ | Receiver Non-Inverted Data Output. | |
| **18** | Rx1- | Receiver Inverted Data Output. | |
| **19** | GND | Transmitter Ground (Common with Receiver Ground). | 1 |
| **20** | GND | Transmitter Ground (Common with Receiver Ground). | 1 |
| **21** | Rx2- | Receiver Inverted Data Output. | |
| **22** | Rx2+ | Receiver Non-Inverted Data Output. | |
| **23** | GND | Transmitter Ground (Common with Receiver Ground). | 1 |
| **24** | Rx4- | Receiver Inverted Data Output. | 1 |
| **25** | Rx4+ | Receiver Non-Inverted Data Output. | |
| **26** | GND | Transmitter Ground (Common with Receiver Ground). | 1 |
| **27** | ModPrs1 | Module Present. | |
| **28** | IntL | Interrupt. | 2 |
| **29** | VccTx | +3.3V Transmitter Power Supply. | |
| **30** | Vcc1 | +3.3V Power Supply. | |
| **31** | LPMode | Low-Power Mode. | 2 |
| **32** | GND | Transmitter Ground (Common with Receiver Ground). | 1 |
| **33** | Tx3+ | Transmitter Non-Inverted Data Input. | |
| **34** | Tx3- | Transmitter Inverted Data Input. | |
| **35** | GND | Transmitter Ground (Common with Receiver Ground). | 1 |
| **36** | Tx1+ | Transmitter Non-Inverted Data Input. | |
| **37** | Tx1- | Transmitter Inverted Data Input. | |
| **38** | GND | Transmitter Ground (Common with Receiver 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.

**Electrical Pin-Out Details (QSFP+ End)**



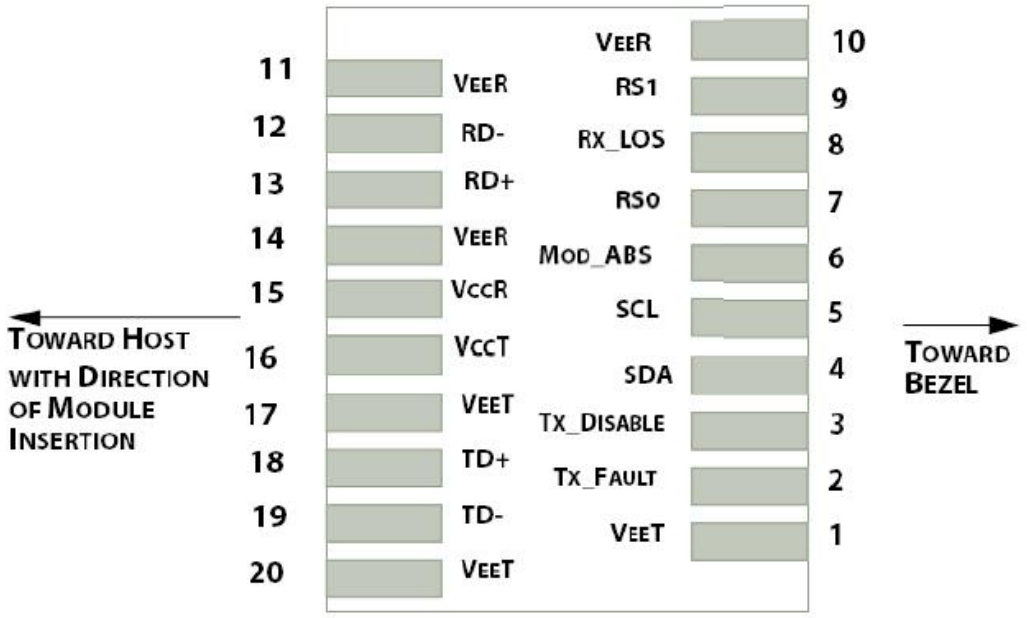
**Pin Descriptions (SFP+ End)**

| 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. LVCMOS-I/O. MOD_DEF2. | 4 |
| **5** | SCL | 2-Wire Serial Interface Clock. 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+ | Receiver 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 |

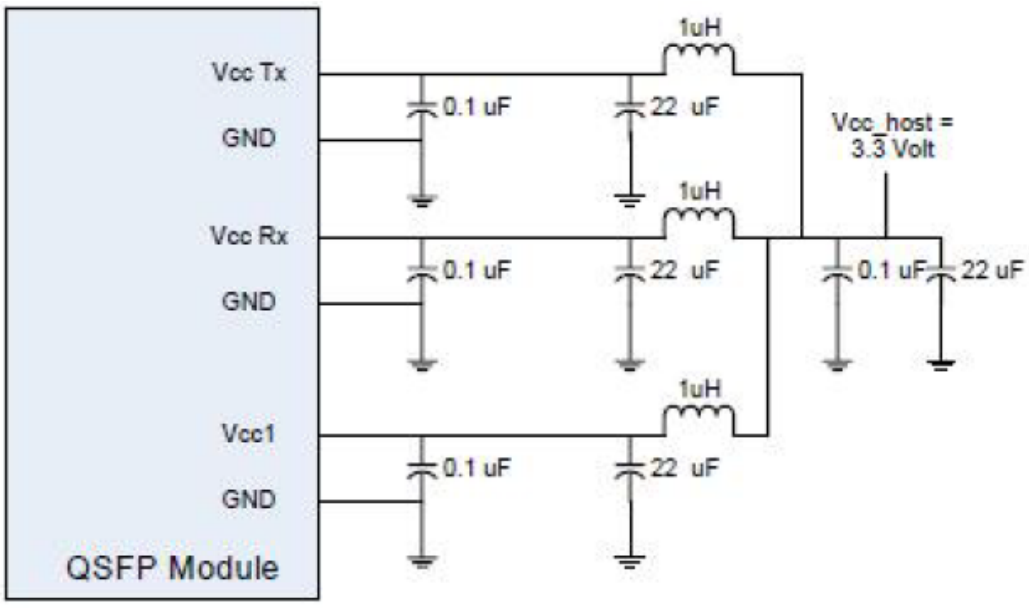
**Notes:**

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.

**Electrical Pin-Out Details (SFP+ End)**



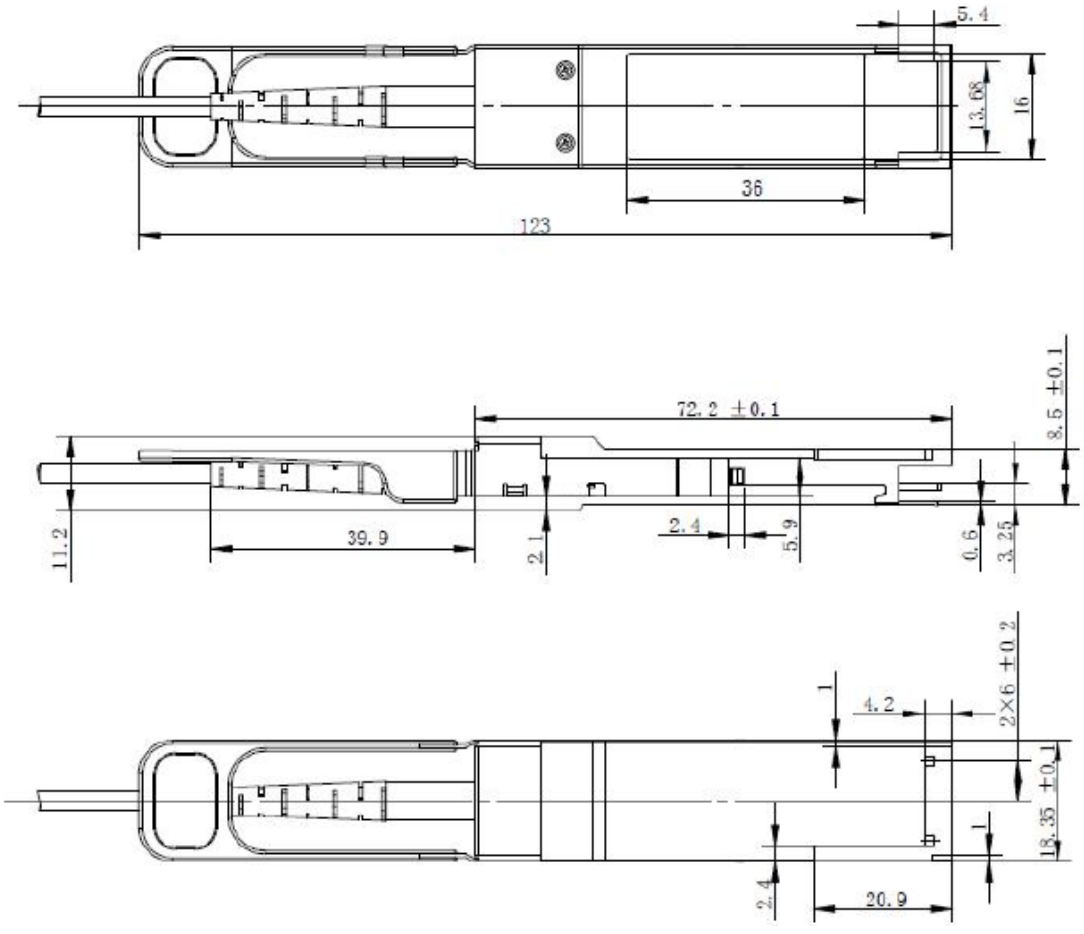

**Application Interface Circuit**



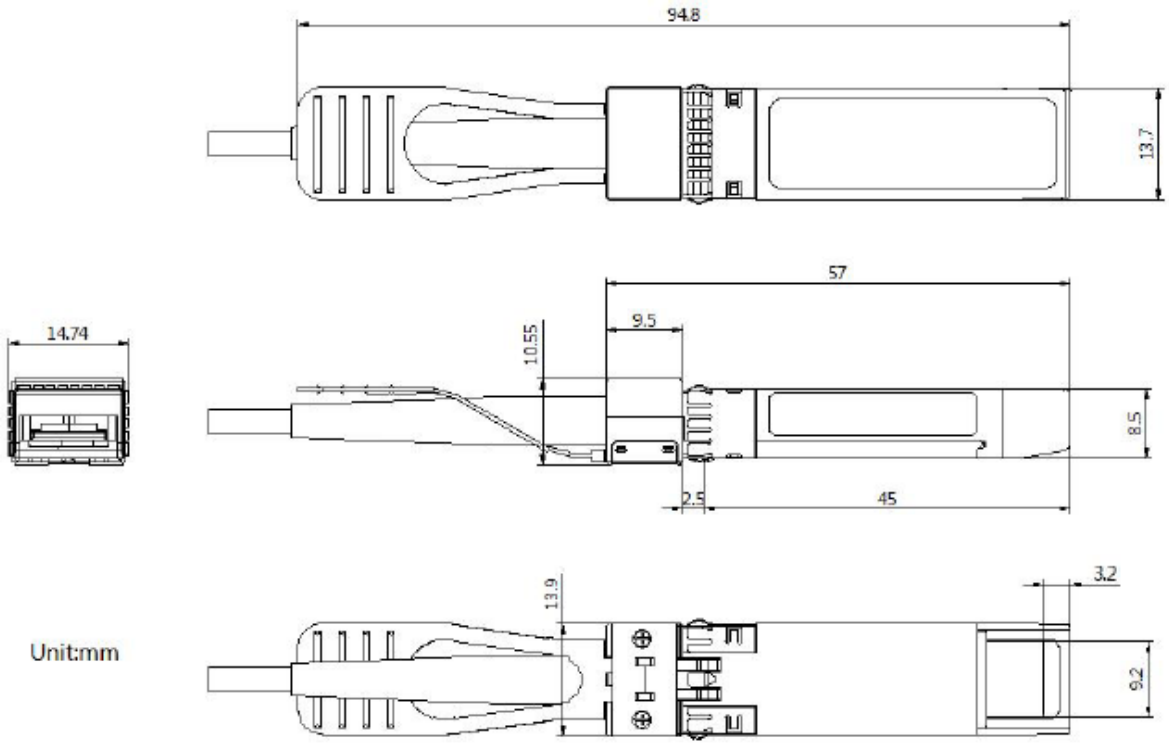
## Active Optical Cable Specifications

| Parameter | Symbol | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|
| **AOC Cable Length (L1 ≤ 5m)** | L1 | L – 0.06 | L | L + 0.06 | M |
| **AOC Cable Length (L1 > 5m)** | L1 | L*95% | L | L*105% | M |
| **AOC Cable Length of Branch (L2 ≤ 3m)** | L2 | L – 0.06 | L | L + 0.06 | M |
| **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** | | 30 | | | mm |
| **Insertion/Removal Cycles** | | 50 | | | cycles |

## Mechanical Specifications




**QSFP+ End**




**SFP+ End**

**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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