

QSFP112-400GB-AOC-20M-AO

MSA and TAA 400GBase-AOC QSFP112 to QSFP112 Active Optical Cable (850nm, MMF, 20m, CMIS 5.0)

Features

- 4 Independent Parallel Optical Channels
- Hot-Pluggable
- Each Channel Data Rate Up to 53.12GBaud
- QSFP112 MSA Compliant
- CMIS 5.0 Compliant
- Up to 50m Link Over OM4 Multi-Mode
- Operating Temperature: 15 to 70 Celsius
- LSZH Jacket
- RoHS Compliant and Lead-Free



Applications

- 400GBase Ethernet

Product Description

This is a MSA compliant 400GBase-AOC QSFP112 to QSFP112 active optical cable that operates over multi-mode fiber with a maximum reach of 20.0m (65.6ft). 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.

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."



Absolute Maximum Ratings

| Parameter | Symbol | Min. | Max. | Unit |
|-------------------------------|--------|------|------|------|
| Storage Ambient Temperature | Tstg | -40 | +85 | °C |
| Relative Humidity – Storage | RHs | 0 | 85 | % |
| Relative Humidity – Operating | RHo | 0 | 85 | % |
| Module Supply Voltage | Vcc | -0.5 | 3.6 | V |

Notes:

1. Exceeding the Absolute Maximum Ratings may cause irreversible damage to the device. The device is not intended to be operated under the condition of simultaneous Absolute Maximum Ratings, a condition which may cause irreversible damage to the device. RH is a non-condensing condition.

Recommended Operating Conditions

| Parameter | Symbol | Min | Typ. | Max. | Unit |
|------------------------------|-----------------|------|-------|------|-------|
| Case Operating Temperature | Tc | +15 | +35 | +70 | °C |
| Module Supply Voltage | Vcc | 3.14 | 3.3 | 3.46 | V |
| Single Module Supply Current | I _{IN} | | 2350 | | mA |
| Signaling Speed Per Channel | S | | 53.12 | | GBaud |

Cable Specifications

| Parameter | Symbol |
|--------------------------|-----------|
| Minimum Bend Radius (mm) | 30 |
| Cable Diameter (mm) | 3.0 ± 0.5 |

Electrical Characteristics

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Notes |
|---------------------------------------|--------|------|------|------------|----------|-------|
| Transmitter | | | | | | |
| Tx_Data Differential Input Voltage | VIN | 750 | | | mV | |
| Tx_Data Differential Input Impedance | ZIN | | 100 | | Ω | |
| Receiver | | | | | | |
| Rx_Data Differential Output Voltage | VOUT | | | 845 | mV | |
| Rx_Data Differential Output Impedance | ZOUT | 90 | 100 | 110 | Ω | |
| Link BER | BER | | | $24E^{-4}$ | | 1 |

Notes:

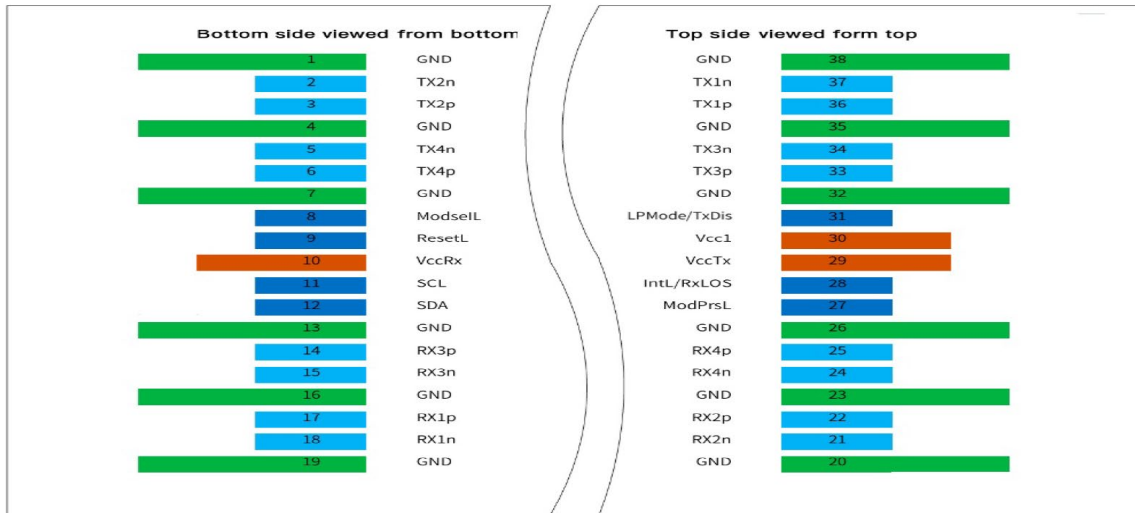
1. Better than $2.4E^{-4}$ @53.12GBaud PRBS31Q.

Pin Descriptions

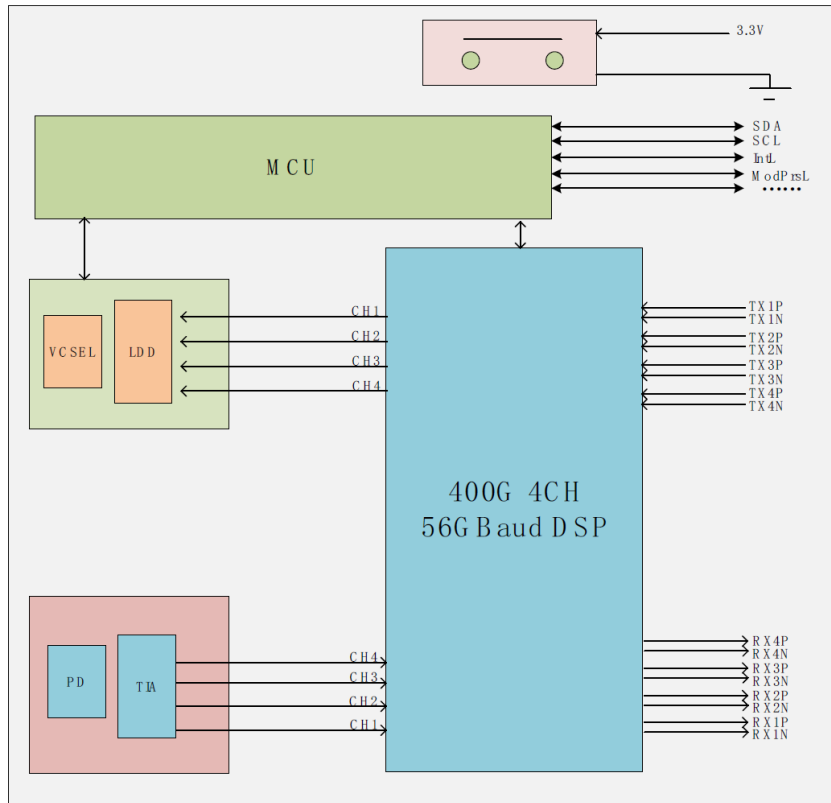
| Pin | Symbol | Name/Description | Notes |
|-----|--------------|--------------------------------------|-------|
| 1 | GND | Module Ground. | |
| 2 | Tx2n | Transmitter Inverted Data Input. | |
| 3 | Tx2p | Transmitter Non-Inverted Data Input. | |
| 4 | GND | Module Ground. | |
| 5 | Tx4n | Transmitter Inverted Data Input. | |
| 6 | Tx4p | Transmitter Non-Inverted Data Input. | |
| 7 | GND | Module Ground. | |
| 8 | ModSelL | Module Select. | |
| 9 | ResetL | Module Reset. | |
| 10 | VccRx | +3.3V DC Receiver Power Supply. | |
| 11 | SCL | 2-Wire Serial Clock. | |
| 12 | SDA | 2-Wire Serial Data. | |
| 13 | GND | Module Ground. | |
| 14 | Rx3p | Receiver Non-Inverted Data Output. | |
| 15 | Rx3n | Receiver Inverted Data Output. | |
| 16 | GND | Module Ground. | |
| 17 | Rx1p | Receiver Non-Inverted Data Output. | |
| 18 | Rx1n | Receiver Inverted Data Output. | |
| 19 | GND | Module Ground. | |
| 20 | GND | Module Ground. | |
| 21 | Rx2n | Receiver Inverted Data Output. | |
| 22 | Rx2p | Receiver Non-Inverted Data Output. | |
| 23 | GND | Module Ground. | |
| 24 | Rx4n | Receiver Inverted Data Output. | |
| 25 | Rx4p | Receiver Non-Inverted Data Output. | |
| 26 | GND | Module Ground. | |
| 27 | ModPrsL | Module Present. | |
| 28 | IntL/RxLOS | Interrupt/Optional RxLOS. | |
| 29 | VccTx | +3.3V DC Transmitter Power Supply. | |
| 30 | Vcc1 | +3.3V DC Power Supply. | |
| 31 | LPMoDe/TxDis | Low-Power Mode/Optional TxDisable. | |
| 32 | GND | Module Ground. | |
| 33 | Tx3p | Transmitter Non-Inverted Data Input. | |
| 34 | Tx3n | Transmitter Inverted Data Input. | |
| 35 | GND | Module Ground. | |

| | | | |
|----|------|--------------------------------------|--|
| 36 | Tx1p | Transmitter Non-Inverted Data Input. | |
| 37 | Tx1n | Transmitter Inverted Data Input. | |
| 38 | GND | Module Ground. | |

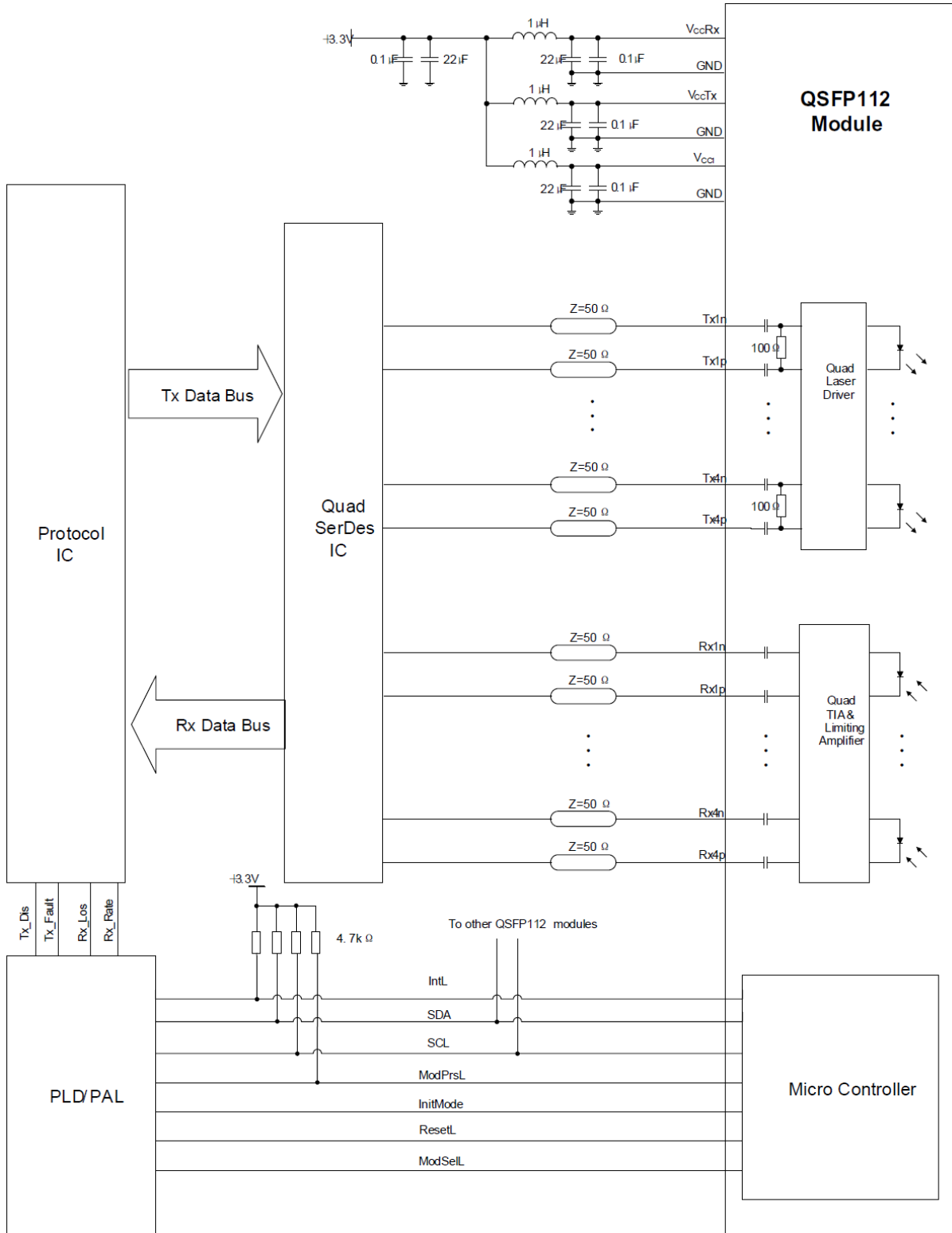
Pin Assignments



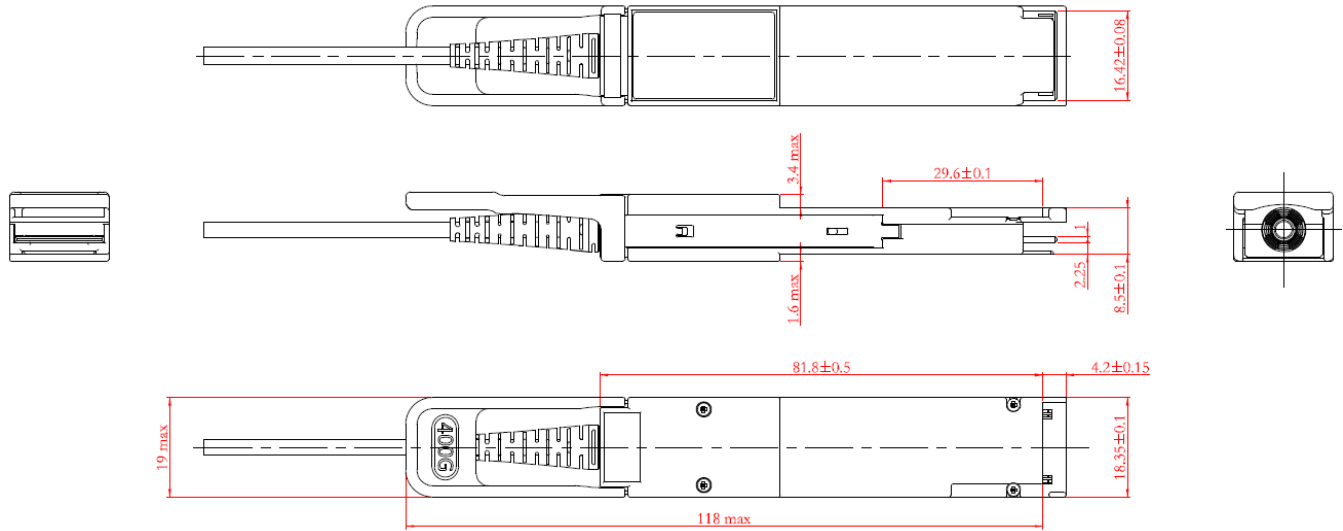
Block Diagram



Electrical Interface

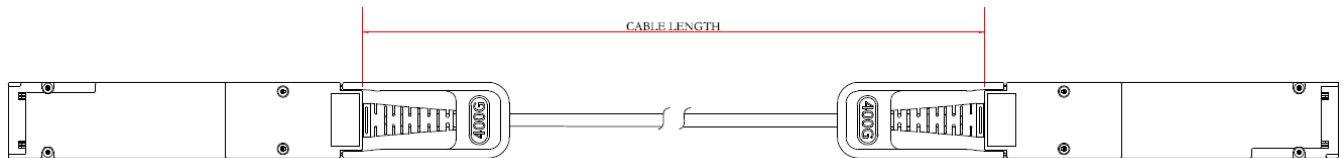


Mechanical Specifications



Notes:

1. Tolerance: $\pm 0.1\text{mm}$.
2. Others according to QSFP112 MSA or customer specifications.
3. Light port according to fiber connector specifications.



Notes:

1. Cable tolerance: $+4\%/-0\%$.

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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