

## **ADD-QCIQDE-ADAC10M**

Cisco® QSFP-H40G-ACU10M to Dell® 462-3637-10MA Compatible TAA Compliant 40GBase-CU QSFP+ to QSFP+ Direct Attach Cable (Active Twinax, 10m)

### **Features**

- Support for multi-gigabit data rates up to 10Gbps
- Hot-Pluggable SFP 20PIN footprint
- Data rates backward compatible to 1Gbps
- Low Power Consumption 0.2W
- Power Supply 3.3V
- Improved Pluggable from Factor (IPF) compliant for enhanced EMI/EMC performance
- Operating Temperature: 0 to 70 Celsius
- MSA Compatible
- RoHS Compliant and Lead-Free



### **Applications**

- High density connections between networking equipment
- Data Center: Switches, Storage, Servers and Routers

### **Product Description**

This Cisco® QSFP-H40G-ACU10M to Dell® 462-3637-10MA dual oem compatible 40GBase-CU QSFP+ to QSFP+ active direct attach cable has a maximum reach of 10.0m (32.8ft). It is 100% Cisco® to Dell® compatible and has been programmed, uniquely serialized, data-traffic and application tested to ensure that it is compliant and functional. This cable will initialize and perform identically to Cisco® and Dell®'s individual cables and is built to meet or exceed OEM 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."



## General Specifications

| Parameter                             | Symbol            | Min.    | Typ. | Max.             | Unit  | Notes |
|---------------------------------------|-------------------|---------|------|------------------|-------|-------|
| Storage Temperature                   | Tstg              | -40     |      | 85               | °C    |       |
| Operating Case Temperature            | Tc                | 0       |      | 70               | °C    |       |
| Power Supply Voltage                  | Vcc               | 3.14    | 3.3  | 3.47             | V     |       |
| Power Dissipation                     | P <sub>DISS</sub> |         |      | 0.2              | W     |       |
| Differential Input Impedance          | ZIN               | 90      | 100  | 110              | Ω     | 2     |
| Differential Output Impedance         | ZOUT              | 90      | 100  | 110              | Ω     | 3     |
| Differential Input Voltage Amplitude  | ΔVIN              | 300     |      | 1100             | mVp-p |       |
| Differential Output Voltage Amplitude | ΔVOUT             | 500     |      | 800              | mVp-p |       |
| Skew                                  | Sw                |         |      | 300              | ps    |       |
| Bit Error Rate                        | BR                |         |      | E <sup>-12</sup> |       |       |
| Input Logic Level - High              | VIH               | 2.0     |      | Vcc              | V     |       |
| Input Logic Level - Low               | VIL               | 0       |      | 0.8              | V     |       |
| Output Logic Level - High             | VOH               | Vcc-0.5 |      | Vcc              | V     |       |
| Output Logic Level - Low              | VOL               | 0       |      | 0.4              | V     |       |

### Notes:

1. BER=10<sup>-12</sup> and PRBS 2<sup>31</sup>-1 @10.3125Gbps.
2. Differential input voltage amplitude is measured between Tx#+ and Tx#-.
3. Differential output voltage amplitude is measured between Rx#+ and Rx#-.

## Systems

| Parameter                                                                     | Media                                                                            | Operating Parameters                                           |
|-------------------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------|
| 10Gbps Line Speed, Full Duplex Bit Error Rate: Better Than 10E <sup>-12</sup> | Hot-Pluggable, Industry-Standard Small Form-Factor Pluggable (SFP+) Copper Cable | Supply Voltage: 3.3V<br>Power Consumption (Per End): Max. 0.2W |

## Optical Characteristics

| Parameter                                                 | Symbol | Min.                                | Typ. | Max. | Unit | Notes |
|-----------------------------------------------------------|--------|-------------------------------------|------|------|------|-------|
| Transmitter                                               |        |                                     |      |      |      |       |
| Center Wavelength                                         | λC     | 840                                 | 850  | 860  | nm   |       |
| RMS Spectral Width                                        | Δλ     |                                     |      | 0.65 | nm   |       |
| Average Launch Power Per Channel                          | POUT   | -7.5                                |      | -2.5 | dBm  |       |
| Difference in Launch Power Between Any Two Lanes (OMA)    |        |                                     |      |      | dB   |       |
| Extinction Ratio                                          | ER     | 3                                   |      |      | dB   |       |
| Peak Power Per Lane                                       |        |                                     |      | 4    | dBm  |       |
| Transmitter and Dispersion Penalty (TDP) Per Lane         | TDP    |                                     |      | 3.5  | dB   |       |
| Average Launch Power of Off Transmitter Per Lane          |        |                                     |      | -30  | dB   |       |
| Transmitter Eye Mask Definition: (X1, X2, X3, Y1, Y2, Y3) |        | (0.23, 0.34, 0.43, 0.27, 0.33, 0.4) |      |      |      | 1     |
| Receiver                                                  |        |                                     |      |      |      |       |
| Center Wavelength                                         | λC     | 840                                 | 850  | 860  | nm   |       |
| Stressed Receiver Sensitivity in OMA Per Lane             |        |                                     |      | -5.4 |      | 2     |
| Maximum Average Power at Receiver Input Per Lane          |        |                                     |      | 2.4  |      |       |
| Receiver Reflectance                                      |        |                                     |      | -12  |      |       |
| Peak Power Per Lane                                       |        |                                     |      | 4    |      |       |
| LOS Assert                                                |        | -30                                 |      |      |      |       |
| LOS De-Assert – OMA                                       |        |                                     |      | 7.5  |      |       |
| LOS Hysteresis                                            |        | 0.5                                 |      |      |      |       |

### Notes:

1. Hit Ratio =  $5 \times 10^{-5}$ .
2. Measured with conformance test signal at TP3 for BER =  $10e^{-12}$ .

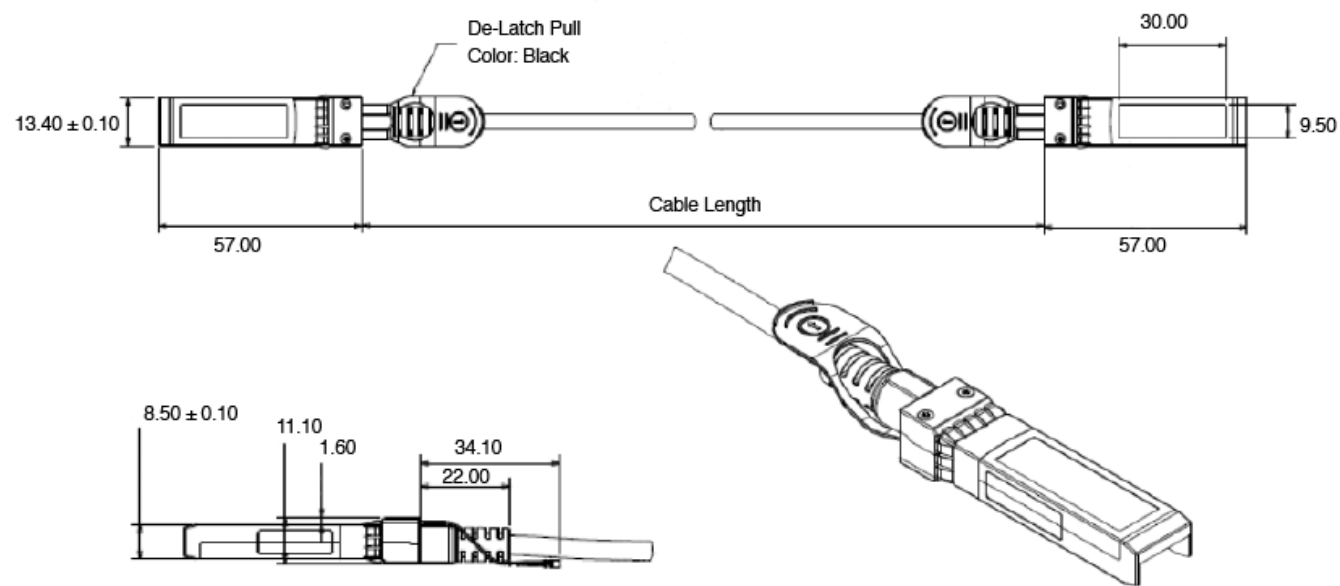
## Pin Descriptions

| Pin | Logic     | Symbol     | Name/Description                       | Notes |
|-----|-----------|------------|----------------------------------------|-------|
| 1   |           | VeeT       | Transmitter Ground.                    |       |
| 2   | LVTTL-O   | Tx_Fault   | N/A.                                   | 1     |
| 3   | LVTTL-I   | Tx_Disable | Transmitter Disable.                   |       |
| 4   | LVTTL-I/O | SDA        | 2-Wire Serial Data.                    |       |
| 5   | LVTTL-I   | SCL        | 2-Wire Serial Clock.                   |       |
| 6   |           | MOD_DEF0   | Module Present. Connected to the VeeT. |       |
| 7   | LVTTL-I   | RS0        | N/A.                                   | 1     |
| 8   | LVTTL-O   | LOS        | Loss of Signal.                        |       |
| 9   | LVTTL-I   | RS1        | N/A.                                   | 1     |
| 10  |           | VeeR       | Receiver Ground.                       |       |
| 11  |           | VeeR       | Receiver Ground.                       |       |
| 12  | CML-O     | RD-        | Receiver Data Inverted.                |       |
| 13  | CML-O     | RD+        | Receiver Data Non-Inverted.            |       |
| 14  |           | VeeR       | Receiver Ground.                       |       |
| 15  |           | VccR       | +3.3V Receiver Supply.                 |       |
| 16  |           | VccT       | +3.3V Transmitter Supply.              |       |
| 17  |           | VeeT       | Transmitter Ground.                    |       |
| 18  | CML-I     | TD+        | Transmitter Data Non-Inverted.         |       |
| 19  | CML-I     | TD-        | Transmitter Data Inverted.             |       |
| 20  |           | VeeT       | Transmitter Ground.                    |       |

### Notes:

1. Signals not supported in SFP+ Copper pulled-down to the VeeT with a 30kΩ resistor.

Mechanical Specifications



## 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 from ranging from NEBS Level 3 to ISO 9001:2005 with every new development while maintaining the signature reliability of its products.



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