



CLOS AEC SPECIFICATION

Plug & Play AEC for In-Rack Ethernet Applications in Distributed, Disaggregated Chassis

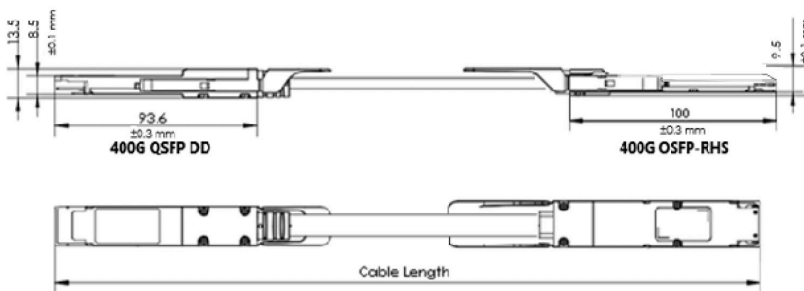
400G (8x56G) QSFP-DD PAM4 to 400G (4x112G) OSFP-RHS

Credo's HiWire™ Low Power CLOS Active Electrical Cable (AEC)

A reliable replacement to Active Optical Cable (AOC) for TOR switch downlink (up to 400Gbps). Powered by Credo's best-in-class signal processing technology, AEC enables low-power, high-reliability, and high-speed interconnections over very thin copper cables without using any optical components.

Credo's CAC4XXXX1N1N-C1-HW Active Electrical Cable

Designed for hyper-scale data center use. It can sustain 8 lanes of 56G-PAM4 signal at the Switch side and 4 lanes of 112G-PAM4 signal at the NIC side. It provides bi-directional 400Gbps traffic per cable. The use and replacement of CAC4XXXX1M1B-C0-HW AEC is simple and straightforward as it adopts standard QSFP-DD type 2 and OSFP-RHS form factor and complies to MSA specifications.



Features

The following are the key features of the HiWire CLOS AEC:

- Recognizable, purple PET Mash jacket
- 400G to 400G data rate
- CMIS v5.0 compliant
- Single 3.3V power supply
- QSFP DD Type 2 connector to OSFP-RHS also called OSFP Flat top Connector
- Low power consumption:
 - Typ 6W power dissipation at OSFP-RHS end
 - Typ 10W power dissipation at QSFP-DD end
- BER 10^{-15} (post FEC)
- Hot pluggable
- RoHS2 compliant
- I²C management interface
- Operating case temperature range: 0 to +70°C

Supported Standards and Interfaces

- QSFP-DD MSA v5.0

Key Features

Parameter	Value
Module Form Factor	QSFP-DD type 2 and OSFP-RHS
Number of Data Lanes	8 TX and 8 RX per module (QSFP-DD end) 4 TX and 4 RX per module (OSFP end)
Maximum Aggregate Data Rate	400Gbps
Nominal Data Rate per Lane	53.125Gbps (QSFP-DD end) 112.16Gbps (OSFP end)
Electrical Interface and Pin-out	76-pin edge connector (QSFP-DD) 60-pin edge connector (OSFP-RHS)
Pin Description	Per QSFP-DD Hardware Specification Per OSFP-RHS Hardware Specification
Management Interface	I ² C, serial, timing per Common Management Interface Specification for 8X/16X Pluggable Transceivers
Length of Copper AEC	1m - 2.5m
BER (Pre-FEC)*	Typ. <10 ⁻⁸
BER (Post-FEC)*	<10 ⁻¹⁵

* Tested with QPRBS31 pattern

Product Selections

Part Number	Length	AWG	CMIS	Weight
CAC41X321M1B-C0-HW	1.0m	32	CMIS 5.0	350g
CAC415321M1B-C0-HW	1.5m	32	CMIS 5.0	375g
CAC42X321M1B-C0-HW	2.0m	32	CMIS 5.0	400g
CAC425321M1B-C0-HW	2.5m	32	CMIS 5.0	425g

Mechanicals

Parameter	Cable Type	Typical	Length
Diameter	8P 32AWG	6.8mm	1-2.5m

About Credo

Credo's mission is to advance high-speed connectivity solutions that deliver optimized performance, reliability, energy efficiency, and security for the next generation of AI driven applications, cloud computing, and hyperscale networks.

Optimized for both optical and electrical applications, our solutions support port speeds up to 1.6Tb. At the core of our technology is our proprietary Serializer/Deserializer (SerDes) IP. Our diverse solutions portfolio includes system-level products such as Active Electrical Cables (AECs), a range of Integrated Circuits, including Retimers, Optical DSPs, SerDes chipsets, and SerDes IP Licensing.

For more information please visit www.credosemi.com
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