CLOS AEC SPECIFICATION

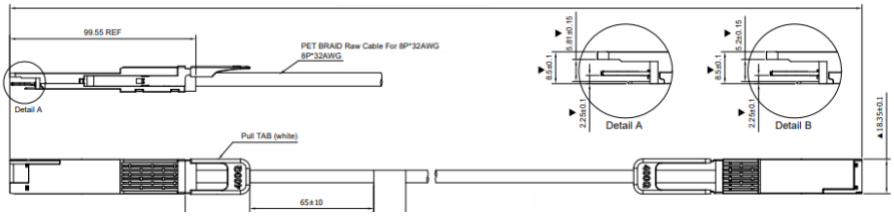
PLUG & PLAY ACTIVE ELECTRICAL CABLE for In-Rack Ethernet Applications in Distributed, Disaggregated Chassis

400G QSFP-DD to 400G QSFP112

Credo's ZeroFlap HiWire™ CLOS Active Electrical Cable (AEC) is 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.

With improved reach and signal integrity, these AECs deliver zero soft link flaps to support the lossless backend RDMA network that AI clusters are built on. The ZeroFlap AEC enables the full host to switch connectivity for leading GPU clusters.

Designed for hyper-scale data center use. It can sustain 4 lanes of 112G-PAM4 signal and 4 lanes of 112G-PAM4 signal. It provides bi-directional 400Gbps traffic per cable. The use and replacement of ZeroFlap AEC is simple and straightforward as it adopts standard QSFP112 form factor and complies to MSA specifications.



Features

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

- Recognizable, purple PET Mesh jacket
- 400G to 400G data rate
- CMIS v5.0 compliant
- Single 3.3V power supply
- QSFP112 connector
- Low power consumption:
  Typ 5W power dissipation
- BER<10^-15 (postFEC)
- Hot pluggable
- RoHS2 compliant
- I²C management interface
- Operating case temperature range: 0° to +70°C

Supported Standards and Interfaces

- QSFP112 MSA v5.0

Key Features

Parameter	Value
Module Form Factor	QSFP112
Number of Data Lanes	4 TX and 4 RX per module (PAM4)
Maximum Aggregate Data Rate	400Gbps
Nominal Data Rate per Lane	112Gbps (PAM4)
Electrical Interface and Pin-out	38 -pin edge connector
Pin Description	Per QSFP112 Hardware Specification
Management Interface	I^2C, serial, timing per Common Management Interface Specification for 8X Pluggable Transceivers
Length of Copper AEC	0.5m – 3.0m
BER (Pre-FEC)*	Typ. $<10^{-8}$ * Tested with QPRBS31 pattern
BER (Post-FEC)*	$<10^{-15}$ * Tested with QPRBS31 pattern

Product Selections

Part Number	Length	Tolerance	CMIS	Weight
CAC41X321M1N-C1-HW	1.0m	±50mm	CMIS 5.0	350g
CAC415321M1N-C1-HW	1.5m	±50mm	CMIS 5.0	375g
CAC42X321M1N-C1-HW	2.0m	±50mm	CMIS 5.0	400g
CAC425321M1N-C1-HW	2.5m	±50mm	CMIS 5.0	425g
CAC427321M1N-C1-HW	2.75m	±50mm	CMIS 5.0	450g
CAC43X321M1N-C1-HW	3.0m	±50mm	CMIS 5.0	475g

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.

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