PLUG & PLAY ACTIVE ELECTRICAL CABLE

for In-Rack Ethernet Applications in NIC-TOR

800G OSFP to 2 x 400G OSFP_RHS

Credo's ZeroFlap Family HiWire™ SHIFT Active Electrical Cable
A reliable, plug & play replacement of Active Optical Cable (AOC) for high-speed interconnects (up to 800Gbps). Intended for rack-to-rack connectivity, these cables support up to 7m reach, consume up to 75% less power than optics, cost up to 50% less than optics, and offer a 10-year service life.

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 telecom and data center use. It can sustain 8 lanes of 112G-PAM4 signal in each direction, and provides a breakout function to 2x400G OSFP_RHS connectors with software selectable 4x112G or 8x56G operation. The use and replacement of ZeroFlap AEC is simple and straightforward as it adopts standard OSFP form factor and complies to MSA specifications.

Features

The following are the key features of the ZeroFlap SHIFT AEC:
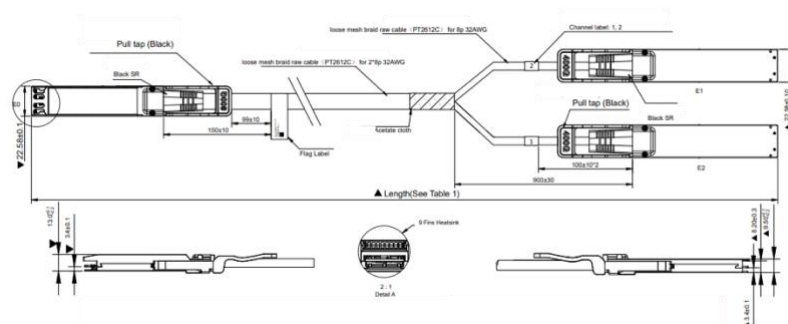
· Recognizable, purple PET Mesh jacket
· 800G to 2x400G data rate
· CMIS 5.1 compliant
· Single 3.3V power supply
· Low power consumption:
· Typ. 10W power dissipation each end
· BER < 10^{-15} (post FEC)
· Hot pluggable
· RoHS2 compliant
· I^2C management interface
· Operating case temperature range: 0° to +70°C

Supported Standards and Interfaces

· Common Management Interface Specification (CMIS) v5.1

Key Features

Parameter	Value
Module Form Factor	OSFP to 2*OSFP_RHS
Number of Data Lanes	2 * (8 TX and 8 RX per module (PAM4))
Maximum Aggregate Data Rate	800Gbps
Nominal Data Rate per Lane	112Gbps (PAM4)
Electrical Interface and Pin-out	60-pin edge connector for OSFP
Pin Description	Per OSFP/OSFP_RHS Hardware Specification
Management Interface	I2C, serial, timing per CMIS v5.1
Length of Copper AEC	1.0m - 7.0m
BER (Pre-FEC)*	Typ. $<10^{-8}$
BER (Post-FEC)*	$<10^{-15}$

* Tested with QPRBS31 pattern

Product Selections

Part Number	Length	Tolerance	CMIS	Weight
CAC81X321A2B-C2-HW	1.0m	±50mm	CMIS 5	300g
CAC815321A2B-C2-HW	1.5m	±50mm	CMIS 5	340g
CAC82X321A2B-C2-HW	2.0m	±50mm	CMIS 5	380g
CAC825321A2B-C2-HW	2.5m	±50mm	CMIS 5	420g
CAC83X321A2B-C2-HW	3.0m	±50mm	CMIS 5	460g
CAC835321A2B-C2-HW	3.5m	±50mm	CMIS 5	500g
CAC84X321A2B-C2-HW	4.0m	±50mm	CMIS 5	540g
CAC845301A2B-C2-HW	4.5m	±50mm	CMIS 5	580g
CAC85X301A2B-C2-HW	5.0m	±50mm	CMIS 5	620g
CAC855281A2B-C2-HW	5.5m	±50mm	CMIS 5	660g
CAC86X281A2B-C2-HW	6.0m	±50mm	CMIS 5	700g
CAC865281A2B-C2-HW	6.5m	±50mm	CMIS 5	740g
CAC87X281A2B-C2-HW	7.0m	±50mm	CMIS 5	780g

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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