



SHIFT AEC SPECIFICATION

PLUG & PLAY ACTIVE ELECTRICAL CABLE for Speed Shifting Ethernet Applications

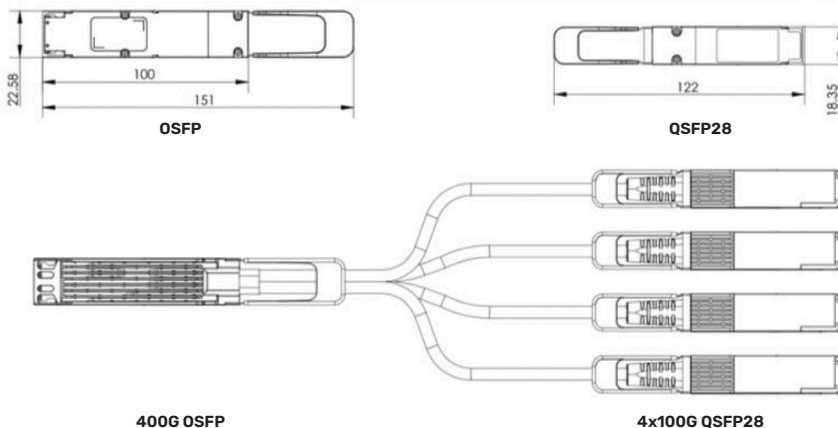
400G OSFP PAM4 to 4x100G QSFP NRZ

Credo's HiWire™ SHIFT Active Electrical Cable (SHIFT AEC)

A lower power, lower cost replacement to Active Optical Cable (AOC) for high speed interconnects (up to 400Gbps). Powered by Credo's best-in-class signal processing technology, this Plug & Play cable provides connectivity between PAM4 and NRZ ports with speed shifting and FEC termination in-cable over thin copper cables without using any optical components.

Credo's CAC4XXXX1A4P-A0-HW HiWire SHIFT AEC

Designed for telecom and data center use. The 400G cable breaks out from one 400G (8x56G-PAM4) OSFP end into four 100G (4x28G-NRZ) QSFP ends with built-in gearbox feature. The use and replacement of CAC4XXXX1A4P-A0-HWAEC is simple and straightforward as it adopts standard OSFP/QSFP form factors and complies to MSA specifications.



Features

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

- Recognizable, purple PVC jacket
- 400G to 4x100G with gear box function
- SFF-8636 compliant (QSFP end)
- Single 3.3V power supply
- Low power consumption:
Typ. 8.5W power dissipation (OSFP end)
Typ 3.5W power dissipation (QSFP 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

- SNIA SFF-8636 Management Interface for 4 Lane Modules and Cables
- SNIASFF-8679QSFP28 Electrical Specification
- Common Management Interface Specification (CMIS) v3.0
- OSFP MSA v2.0 Compliant

Key Features

Parameter	Value
Module Form Factor	OSFP and QSFP
Number of Data Lanes	OSFP 8 TX and 8 RX per Module (PAM4)
	QSFP Line Side: 2 TX and 2 RX per module (PAM4) Host Side: 4 TRX and 4 RX per module (NRZ)
Maximum Aggregate Data Rate	400Gbps
Nominal Data Rate per Lane	OSFP: 53.125Gbps (PAM4), KP4 FEC must be enabled QSFP: 25.78125Gbps (NRZ), KR4 FEC must be enabled
Electrical Interface and Pin-out	60-pin edge connector (OSFP) and 38-pin edge connector (QSFP)
Pin Description	Per OSFP Hardware Specification (OSFP) and per SFF-8679 (QSFP)
Management Interface	I ² C, serial, timing per Common Management Interface Specification for 8X/16X Pluggable Transceivers (OSFP) I ² C, serial, timing per SFF-8636 (QSFP)
Length of Copper AEC	3m, 5m
BER (Pre-FEC)*	Typ. <10 ⁻⁸
BER (Post-FEC)*	<10 ⁻¹⁵

* Tested with QPRBS31 pattern

Product Selections

Part Number	Length	AWG	Weight
CAC43X301A4P-A0-HW	3 meters	30	810g
CAC45X301A4P-A0-HW	5 meters	30	1,210g

Mechanicals

Parameter	Cable Type	Typical
Diameter	4P30AWG	5.3mm
OSFP End		
Minimum bend radius	4P 30AWG x 4	90.0mm
Minimum bend radius	4P 26AWG x 4	tbd mm
QSFP End		
Minimum bend radius	4P 30AWG	54.5mm
Minimum bend radius	4P 26AWG	tbd mm

For more information please visit www.credosemi.com
or email sales@credosemi.com