CREDO
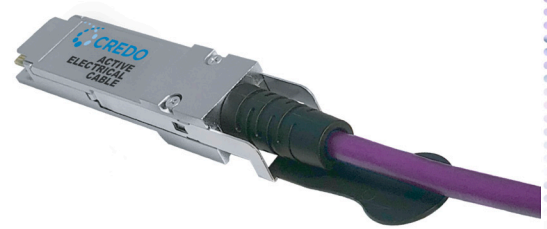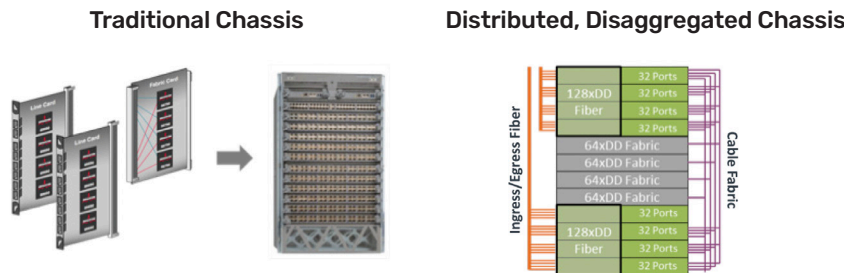we connect.

Plug & Play AEC
Jericho2 & Ramon

Cell Based DDC

Broadcom's Jericho2 and Ramon Cell-based Fabric Routing Platform
Provides deterministic routing capabilities for cloud and 5G network operators. Traditional deployments use a proprietary chassis to provide CLOS connectivity between the line cards and fabric, these can be expensive and typically run proprietary Network Operating Systems (NOS) resulting in high costs and vendor lock in. Increasingly, cloud and 5G network operators are looking to Distributed, Disaggregated Chassis to replace traditional proprietary chassis in order to enable standards based hardware, choice in NOS and to avoid vendor lock in.

Traditional Chassis

Distributed, Disaggregated Chassis

Solving the DDC CLOS Challenge
A chassis uses a backplane to build a CLOS network. A DDC uses standards based 400G cables to build a CLOS network – but legacy interconnect solutions don't deliver. Optics power is too high for this application – resulting in a CLOS fabric that consumes almost as much power as the Jericho2 hardware. But what about DACs?

DACs : Broken Connectors and Broken Dreams
DACs promise a low power and low cost solution to DDC CLOS Connectivity, but at 400G DACs have gotten too fat and to stiff to reliably route at these densities. The result is broken connectors, intermittent signal integrity issues at failed rollouts.

HiWire LP CLOS AECs
Introducing HiWire LP CLOS AECs – specifically designed for DDC applications – with 75% less power than optics and 75% less volume than DACs.

Features

Credo HiWire LP CLOS Active Electrical Cables (AEC) are specifically designed for high density in-rack or HPC rack-to-rack interconnect to support CLOS architectures.

With 75% less power than optical solutions and 75% less volume than DACs, these AECs enable CLOS cabling densities up to 500 cables per rack.

Key Parameters

Lengths	0.5m – 3.0m 0.2m granularity
Cu Gauge	32 AWG
Cable Diameter	6.8mm
Modulation	PAM4 $\rightleftharpoons$ PAM4
Connectors	A-Side QSFP56-DD
	B-Side QSFP56-DD
Link Speeds	28G / 56G
Power	4.5W per end
BER	Pre-FEC BER $1e^{-8}$ Post-FEC BER $< 10^{-15}$

96Tb Jericho2 / Ramon Cluster
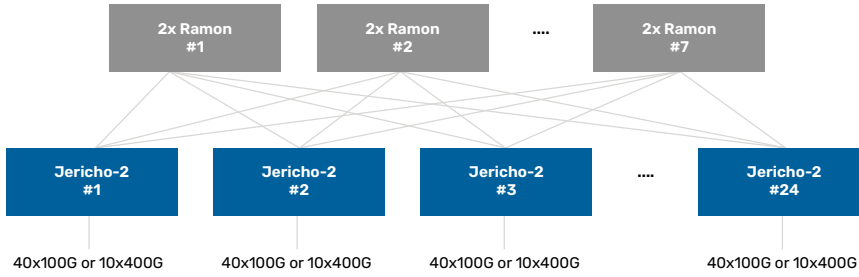
Item	Power (W)	Qty	Ext Power (kW)
Jericho2	450	24	10.8
2U Ramon	550	7	3.9
400G DR4	11 → 9	240	2.6 → 2.2
		Total	**16.8 → 6.4**

CLOS Options

Item	Power (W)	Qty	Ext Power (kW)
AOC	2x11	312	6.8
HiWire LP CLOS AEC	**2x4.5**	**312**	**2.8**

Jericho2 x 12   2U Ramon x 7   Jericho2 x 12

Fiber   HiWire LP CLOS AEC

HPC Routing Saves Power and Cost

Rack-to-rack routing in traditional data centers involves routing all rack-to-rack cables via the tray that is suspended above the racks.

At 400G speeds, distance is the enemy – it means more power, more latency, more weight and more cost – thus the High Performance Computing (HPC) market pioneered lateral routing – minimizing cable lengths by routing laterally across racks rather than to the tray.

HPC routing is the future of the DDC market – it reduces CLOS cable lengths by 50%, CLOS power by 35-40% and CLOS cost by over 50%.

HPC Routing allows for easier maintenance and supports in-situ switch swapping. In short, HPC routing it is the future of DDC.

Jericho2 & Ramon Cluster Size (Tb)	Routing Style	HiWire LP CLOS AEC Fabric			Total System Power (W)
		Cable Length (m)	Cable Mass (kg)	Cable Power (W)	
Small – 16	Single Rack	52	18	0.2	2.8
Medium – 96	HPC Routing	6.5	143	2.8	18.2
Large – 192	HPC Routing	1,564	326	5.6	36.3

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**
or email **sales@credosemi.com**