

800G Retimer/ 400G Gearbox


56G SerDes

Black Hawk Low-power Retimer/Gearbox Supporting 56G PAM4 and 28G NRZ

Credo is a leading provider of high performance/low power semiconductor solutions for the data center, enterprise networking and high performance computing markets. Our innovative Serializer-Deserializer (SerDes) technology delivers the bandwidth, scalability and end-to-end signal integrity needed to meet the demands of advanced networks up to 800G with single-lane 28G, 56G, or 112G connectivity.

Device	Power / 400G RT
Bald Eagle (CRT50216)	7W
Black Hawk (CRT55321)	3.25W

The **CRT55321** is a low power version of the Credo Bald Eagle and functions as an 800G Retimer or 400G Gearbox. It is suitable for both backplane and front panel applications including cloud-scale switches, high density routing platforms and advanced server NIC cards.


 12.8, 25.6 Tbps
Switch

Product Family

CRT55321

Bidirectional / full duplex 800G

 16x56G PAM4
(28G NRZ also supported)

23mm x 23mm with 0.8mm ball pitch

Key Parameters

Channels (bi-directional)	16
Data Rate (programmable)	10-56 Gbps
Insertion Loss	up to 35dB LR
Output Voltage (programmable)	100-1,000 mVp-p
Power Supplies	1.8V +/- 5% 1.5V +/- 5% 0.8V +/- 5%
Operating Temp	-10 to 105°C
Register Interface	MDIO / I ² C
Process	TSMC

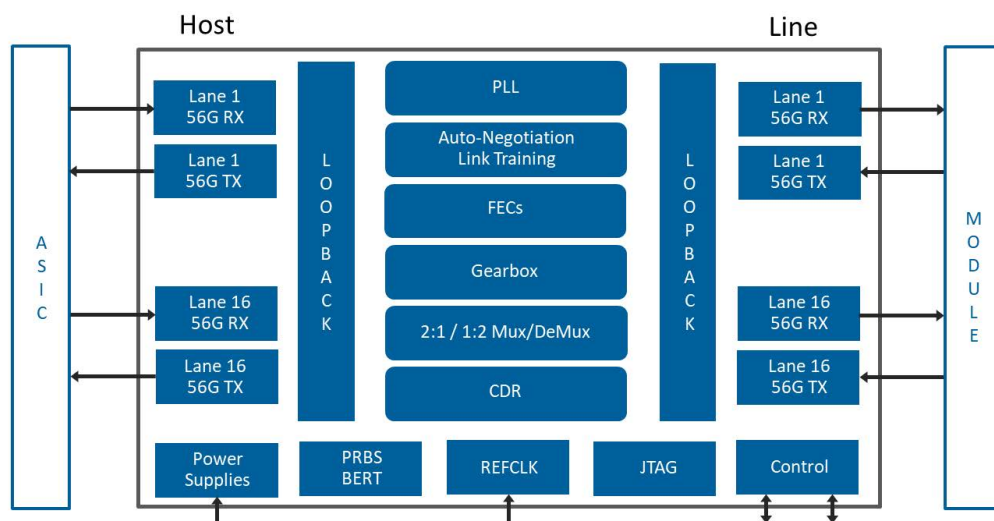
Key Features

- Multi-channel bidirectional retimers for 10 - 56Gbps
- Superior random jitter performance
- Up to 35dB insertion loss
- CEI-56G-VSR/MR/LR-PAM4 compliant
- CEI-28G-LR and CEI-28G-VSR/SR/MR compliant
- TX equalization with programmable main, pre, and post-cursor
- Fully adaptive and programmable RX equalization with CTLE, FFE, and DFE
- Auto negotiation between the link partners on both sides of the retimer (IEEE 802.3 clause 73)
- KR back-channel training (IEEE 802.3 clause 72,92,93,136)
- Input/output polarity switch control
- Register control via I²C or standard MDIO interface
- Built in diagnostic features including PRBS generator and checker, PRBS FEC Analyzer, internal eye monitor and analog test point

Supported Standards and Interfaces

- 400G / 200G / 100G / 50G / 40G / 25G / 10G Ethernet
- 400GBASE-SR16/FR8/LR8
- 200GBASE-KR4/CR4/SR4/DR4/FR4/LR4
- 100GBASE-KR2/CR2/SR2
- 100GBASE-CR4/KR4/SR4/LR4/ER4/KP4
- 100GBASE-CR10/SR10
- 50GBASE-CR/KR/SR/FR/LR
- 40GBASE-CR4/KR4/SR4/LR4/ER4
- 25GBASE-CR/CR-S/KR/KR-S/SR
- 10GBASE-KR/CR/SR/LR/ER
- XLAUI
- 25GAUI
- 50GAUI-2/50GAUI-1/LAUI-2
- CAUI-4/CAUI-10/100GAUI-4/100GAUI-2
- 200GAUI-4/200GAUI-8
- 400GAUI-8/400GAUI-16
- CEI-56G-VSR/MR/LR-PAM4
- CEI-28G-VSR/SR/MR
- CEI-25G-LR
- CEI-11G-SR/MR/LR
- KR4 FEC RS(528, 514) for 50G and 100G Ethernet
- KP4 FEC RS(544,514) for 50G and 100G Ethernet

Functional Block Diagram



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