



## PRODUCT BRIEF

# 1.6T Retimer / 800G Gearbox Screaming Eagle

## Retimer/Gearbox Supporting 112G PAM4 LR (40dB) serdes

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 1.6T with single-lane 25G, 56G, or 112G connectivity.

The Screaming Eagle CRT88322 is a low-power device which functions as a 1.6T Retimer or 800G Gearbox. It supports LR (Long Reach) insertion loss for channels up to 40dB. It is suitable for both backplane and front panel applications including cloud-scale switches, high density routing platforms, and advanced server NIC cards.

**Screaming Eagle supports  
12.8Tbps, 25.6Tbps, or 51.2Tbps Switches**



## Product Family

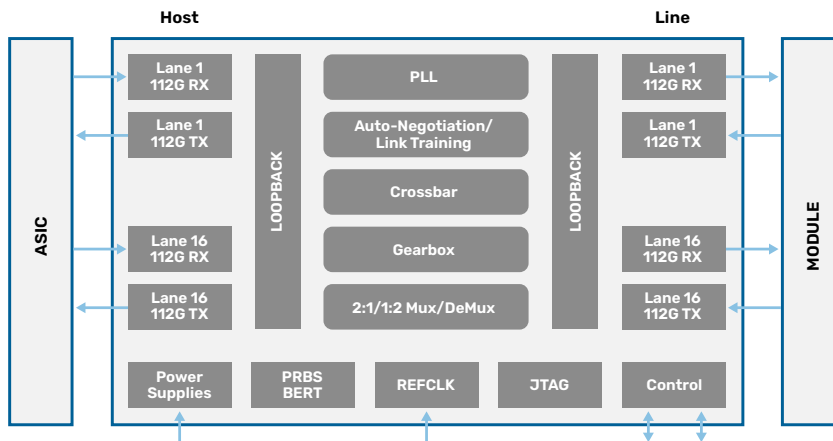
- CRT88322
- Bidirectional / full duplex 1.6G
- LR (Long Reach) 112G serdes (40dB)
- 16 x 112G PAM4  $\Leftrightarrow$  16 x 112G PAM4  
8 x 112G PAM4  $\Leftrightarrow$  16 x 56G PAM  
(25G and 10G NRZ also supported)
- 23mm x 23mm with 0.9mm ball pitch

## Key Parameters

<b>Channels</b> (bi-directional)	16
<b>Data Rate</b> (programmable)	10-112 Gbps
<b>Insertion Loss</b>	Up to 40dB LR
<b>Output Voltage</b> (programmable)	100-1,000 mVp-p
<b>Power Supplies</b>	1.5V $\pm$ 3% 1.2V $\pm$ 3% 0.75V $\pm$ 3%
<b>Operating Temp</b>	0 to 105°C
<b>Register Interface</b>	MDIO / I <sup>2</sup> C / SPI
<b>Process</b>	TSMC 12nm

## Key Features

- Multi-channel bidirectional retimers for 10-112Gbps
- Superior random jitter performance
- Up to 40dB insertion loss
- CEI-112G-LR/MR/VSR PAM4 compliant
- CEI-56G-LR/MR/VSR PAM4 compliant
- CEI-28G-LR and CEI-28G-VSR/SR/MR compliant
- TX equalization with programmable main, pre- and post-cursors
- 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 162,72,92,93,136)
- Input/output polarity switch control
- Register control via I<sup>2</sup>C or standard MDIO interface
- Built-in diagnostic features including PRBS generator and checker, PRBS FEC Analyzer, internal eye monitor and analog test point



## 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](http://www.credosemi.com) or email [sales@credosemi.com](mailto:sales@credosemi.com)

## Supported Standards and Interfaces

- 800G / 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
- 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
- KR4 FEC RS(528, 514) for 50G and 100G Ethernet
- KP4 FEC RS(544,514) for 50G and 100G Ethernet