CREDO

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**
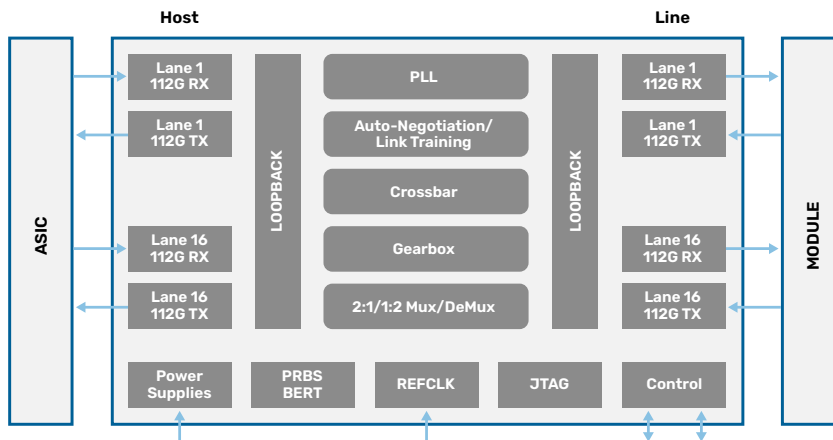

Product Family

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

Key Parameters

Channels (bi-directional)	16
Data Rate (programmable)	10-112 Gbps
Insertion Loss	Up to 40dB LR
Output Voltage (programmable)	100-1,000 mVp-p
Power Supplies	1.5V ± 3% 1.2V ± 3% 0.75V ± 3%
Operating Temp	0 to 105°C
Register Interface	MDIO / I²C / SPI
Process	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 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

- 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

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

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