



PRODUCT BRIEF

1.6T Retimer / 800G Gearbox Heron

Retimer/Gearbox Supporting 112G PAM4 and down to 25/10G 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 1.6T with single-lane 25G, 56G, or 112G connectivity.

The CRT88321 is a low power version device which functions as a 1.6T Retimer or 800G Gearbox.. It is suitable for both backplane and front panel applications including cloud-scale switches, high density routing platforms and advanced server NIC cards.

12.8Tbps, 25.6Tbps, or 51.2Tbps Switches



Product Family

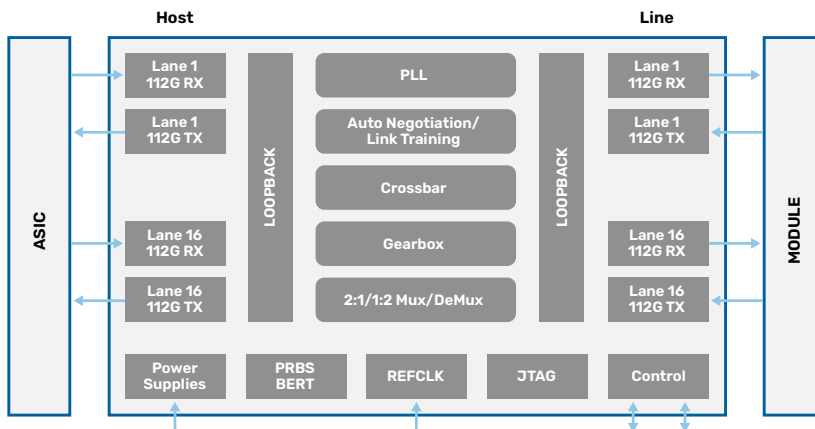
- CRT88321
- Bidirectional / full duplex 1.6G
- 16 x 112G PAM4 \rightleftharpoons 16 x 112G PAM4
8 x 112G PAM4 \rightleftharpoons 16 x 56G PAM
(25G and 10G NRZ also supported)
- 27mm x 23mm with 0.8mm ball pitch

Key Parameters

| | |
|---|---|
| Channels (bi-directional) | 8:16 |
| Data Rate (programmable) | 10-112 Gbps |
| Insertion Loss | Up to 30dB MR+ |
| Output Voltage (programmable) | 100-1,000 mVp-p |
| Power Supplies | 1.8V \pm 5% 1.3V \pm 5% 0.8V \pm 5% |
| Operating Temp | 0 to 105°C |
| Register Interface | MDIO / I ² C |
| Process | TSMC 12nm |

Key Features

- Multi-channel bidirectional retimers for 10 - 112Gbps
- Superior random jitter performance
- Up to 30dB insertion loss
- CEI-112G-VSR/MR PAM4 compliant
- CEI-56G-VSR/MR PAM4 compliant
- CEI-28G-LR and CEI-28G-VSR/SR/MR compliant
- TX equalization with programmable main, pre, and postcursor
- 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

- 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 EthernetEthernet8/400GAUI-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

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
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