



PRODUCT BRIEF > OPTICAL

OPTICAL DSP Dove 850

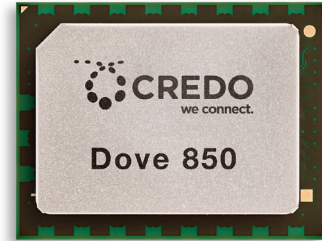
800Gbps TX Only DSP (8:8)

The Dove 850 is a uni-directional 8 x 112Gb/s Digital Signal Processor (DSP) IC that is optimized for Linear Receive Optics (LRO), also known within the industry as Half-retimed Linear Optics (HALO). In an LRO transceiver or Active Optical Cable (AOC), only the transmit path from the electrical input to the optical line side output includes a DSP for signal retiming and equalization.

As hyperscale data center AI deployments grow rapidly, high-speed optical transceivers and AOCs are critical to connecting thousands of GPUs. Given the huge volume of these optical components, improvements in energy efficiency are essential. Dove 850 reduces DSP power by 50% and optimizes cost while providing customers with an easy to use, robust, and interoperable solution. Transceiver vendors can further optimize the module cost with Dove 850 by employing a variety of optics, including VCSELs, silicon photonics, EML or thin-film lithium niobate as dictated by the application requirements.

A Dove 850 based optical transceiver addresses the inherent weakness of a Linear Pluggable Optics (LPO) implementation by facilitating IEEE compliant optical transmit signaling and easing the deployment burden on system operators by eliminating manual, per port tuning. The result is lower bit error rates, enhanced sensitivity, reduced performance variation, and improved resilience to different switch ASICs, PCB traces, optical components, and environmental conditions.

The Dove 850 features independent PLL's for each lane to support breakout applications, an OIF CEI-112G-MR compliant host interface, and numerous integrated diagnostic features to accelerate time to market and aid with system debug.



Applications

- Hyperscale data centers
- Cloud and AI networks
- 800GbE optical transceivers and AOCs
- 2x400GbE optical transceivers and AOCs
- Breakout applications

Key Parameters

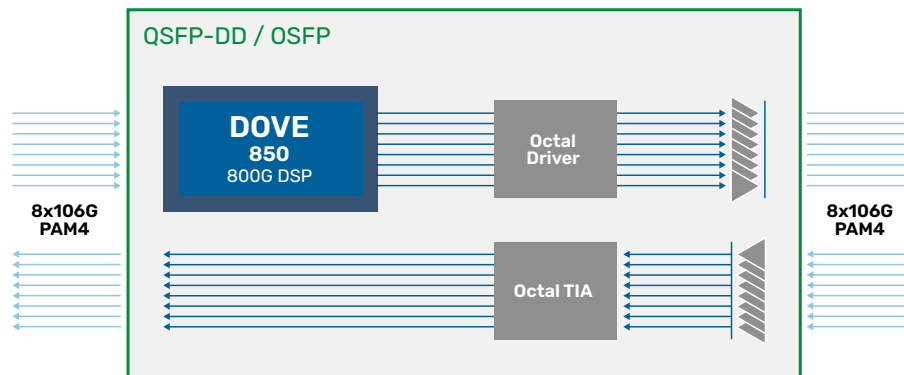
Host Side	8x106G PAM4
Line Side	8x106G PAM4
Operating Temp	0° to 85°C

Key Features

- Powerful copper optimized DSPs on the electrical host side deliver industry leading sensitivity and BER performance.
- High-performance transmitters come with multi-tap FIR filters and non-linear cancellation, allowing precision optimization at the optical interface.
- Host side interface supports VSR or extended MR PCB reach, connecting seamlessly with different length switch interfaces without need for customized per-channel settings.
- Independent phase locked loops per channel support flexible breakout configurations including 2x400GbE, 4x200GbE and 8x100GbE.
- Full suite of test features simplifies lab bring-up, production testing and reduces time-to-market.
- Low power dissipation enables higher rack utilization and lower thermal cooling requirements.

Supported Standards and Interfaces

- 800G-SR8/DR8/FR8/LR8
- 2x400G-SR4/DR4/FR4/LR4
- 4x200G-SR2/DR2/FR2/LR2
- 8x100G-SR/DR/FR/LR
- 100GAUI-1, 400GAUI-4, 800GAUI-8
- OSFP and QSFP-DD800
- CMIS 4.x and 5.x



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