

Nova 2[™] 1.6T PAM4 DSP for Optical Transceiver Applications

Part No.

MV-CD433

Product Type

200Gbps PAM4 DSP

Market Segments

Inside Data Centers

Applications

- 1.6T OSFP
- Single-Mode Fiber Transceivers

Features

- 8x200Gbps <-> 8x.200Gbps PAM4
- Integration of enhanced optical modulator drivers
- Support for 1x1.6T, 2x800G, 4x400G, 8x200G Ethernet traffic
- All lanes independent to support breakout applications
- Full data & clock cross-bars on Egress and Ingress for network flexibility
- 5nm process enabling <28-watt 1.6T using 8-optical channels/ lambdas

Description

The Marvell Nova PAM4 DSP is a next generation solution for cloud datacenter, high-performance computing, and AI/ML optical transceivers. Nova 2 features eight 200Gbps/channel PAM4 host electrical interfaces, and an octal 200Gbps/lane PAM4 optical interface with integrated EML, silicon photonics, and standard drivers.

Nova 2 is manufactured with advanced 5nm process technology that delivers time to market with power efficiency while doubling the total bandwidth of the module to 1.6Tbps within the same OSFP/QSFP-DD form factor.

The direct drive capabilities of the DSP further simplify manufacturing complexity while saving additional power and cost making Nova 2 ideal for 1.6T DR8/DR4.2/2xFR4/FR8/LR8 modules.

The DSP also integrates advanced diagnostic features including performance monitoring of SNR, histogram, and FFE-taps. The DSP also adds PRBS generators and supports shallow loopback for both the line and host interfaces.

Nova 2 supports multiple industry standard protocols up to 200Gbps on the electrical host and incorporates Concatenated Forward Error Correction (FEC) to provide additional pre-FEC bit error rate (BER) margin for high-volume deployment within the data center.



To deliver the data infrastructure technology that connects the world, we're building solutions on the most powerful foundation: our partnerships with our customers. Trusted by the world's leading technology companies over 25 years, we move, store, process and secure the world's data with semiconductor solutions designed for our customers' current needs and future ambitions. Through a process of deep collaboration and transparency, we're ultimately changing the way tomorrow's enterprise, cloud, automotive, and carrier architectures transform—for the better.