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.