Vega 400G PAM4 DSP for Electrical Retimer/Gearbox Applications

Part No.

Vega

Product Type

50G PAM DSP

Market Segments

Inside Data Centers

Applications

- Front Panel Retimer/Gearbox
- Back Panel Retimer/Gearbox
- Active Copper Cables
- Hitless Switching Y-Cable

Features

- 8x50Gbs PAM4 Retimer
- All lanes independent to support breakout applications
- Full data & clock cross-bars on Egress and Ingress for ease of system layout
- 1:2 Reverse Gearbox in egress path, and 2:1 Gearbox on ingress path
- Lanes can be configured in, 8x25, 2x40, 8x50, 4x100, 2x200 or 1x400 bundles
- Full DSP Host/Line Receivers for maximum performance
- Hardware supported KP FEC statistics monitor that can be used on Egress or Ingress
- 8x100Gbs PAM4 Retimer variant supported by dual-die package

Description

The Marvell Vega PAM4 DSP is an Octal port bi-directional CDR device, with each receiver port being able to recover 56Gbps PAM4 signal or 28Gbps NRZ signal and transmit to partnered TX, thus providing an aggregate of 400G full duplex data rate. Additionally, it supports the redundancy in system by providing a Hitless MUX function which is switching between a normal mode line card and redundant line card when pre-defined criteria is met, in the egress path and a Broadcast function on ingress path.

Vega is equipped with an industry leading PAM4 digital core for optimal performance across a range of applications. Vega includes several performance monitoring features including SNR, histogram, FFE-tap view for both line and host side interfaces. Both host and side interface support shallow loopback and PRBS generation/checking for diagnostic operations. Additionally, Vega has a hardware assisted KP FEC statistics monitor that can report counts for correctable code-words uncorrectable code-words and the full FEC 'histogram' for errors from 1/code-word, up to 7/code-word.

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