Product Brief

Alaska® A 1.6T PAM4 DSP for Active Electrical Cable (AEC)

High-performance, low-power 8x200G AEC retimer

P/N MV-CHA1600NV

Overview

The Alaska® A 1.6T (MV-CHA1600NV) is a PAM4 DSP retimer for 1.6T active electrical cable (AEC) applications. It is optimized for AI accelerators, server to top-of-rack links and switch-to-switch interconnects within data center racks to enable short-reach copper interconnect solutions that meet the growing connectivity requirements of high-performance compute and AI infrastructure.

The MV-CHA1600NV is a retimer device which utilizes a 200 Gbps PAM4 DSP SerDes. There are eight 200 Gbps SerDes lanes to the host device and eight 200 Gbps SerDes lanes to the copper cable to provide up to 1.6T (8 x 200G) full-duplex mission-mode traffic.

The MV-CHA1600NV supports multiple industry standard protocols for lane speeds up to 200 Gbps for both host and lines sides. It includes IEEE-compliant auto-negotiation and link training, for automatic tuning of the links, to maximize reach and link margins for high-density AI clusters.

The MV-CHA1600NV is equipped with an industry-leading 200G PAM4 digital signal processing (DSP) core to support 40dB insertion loss with the ability to drive >3m copper cable. The device offers several performance monitoring features including FEC, SNR monitor and eye histogram, for both line-side and host-side interfaces. Additionally, both host and line interface support loopbacks and PRBS generator/checker for diagnostic operations.

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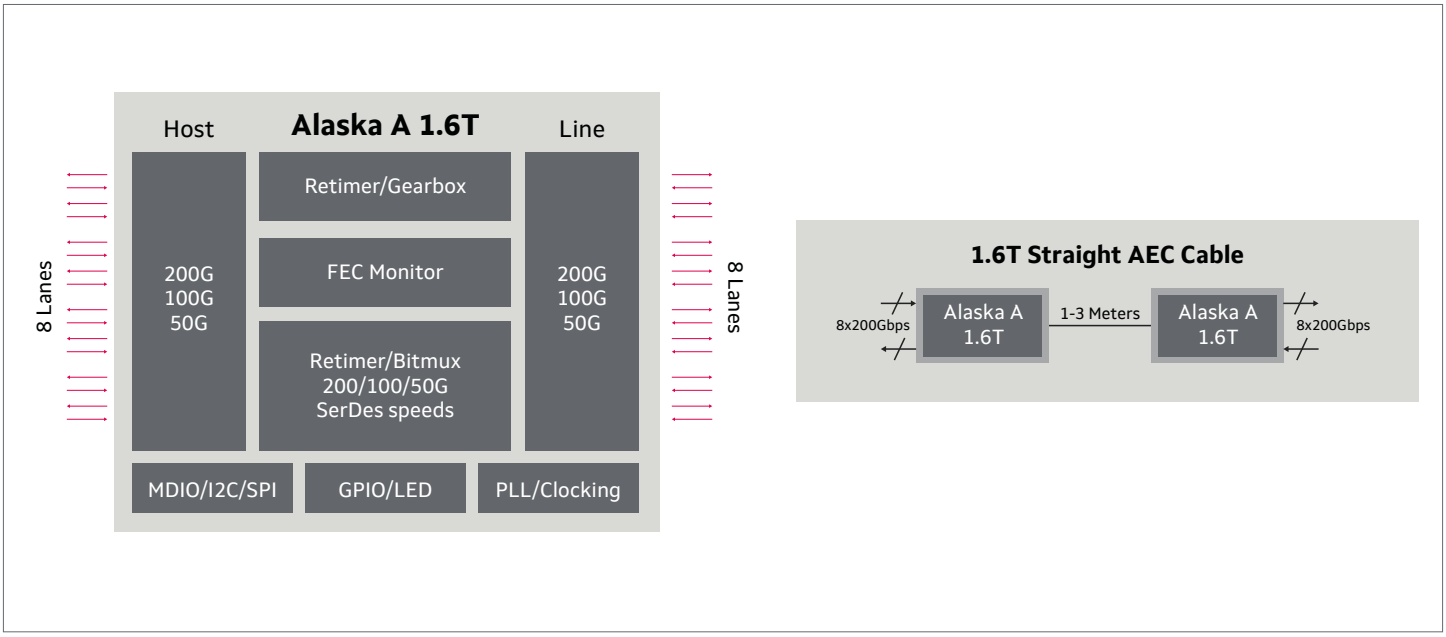
Alaska A 1.6T Block Diagram and AEC Applications



Key Features

Features	Details
Compatibility	• Eight full-duplex host-side lanes, eight full-duplex line-side lanes • All lanes can operate at PAM4 data rates of 200 Gbps, 100 Gbps, and 50 Gbps • Support for gearboxing and legacy interfaces • Optimized for 1.6T active electrical cables in OSFP and QSFP-DD form factors
DSP-based SerDes	• Support for 40dB channel insertion loss • Enables thinner and longer-reach copper cables optimized for 200G/lane applications
IEEE auto-negotiation and link training	• Automatic tuning of SerDes parameters to maximize link margins • Seamless interoperability with standards-compliant devices from other vendors
Debug and diagnostics	• PRBS generation on all high-speed interfaces • Eye monitoring on all high-speed interfaces • Comprehensive test and debug capabilities
Package characteristics	• 12mm x 14mm BGA, 0.5mm pitch

Target Applications

- 1.6T active electrical cable (AEC) with 200 Gbps SerDes I/Os

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