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Marvell Introduces 100GbE Gearbox with MLG Support

Marvell expands its Alaska C family of 100GbE transceivers with Gearbox with CR4 cable and KR4 backplane drive capabilities

SANTA CLARA, Calif., Dec. 14, 2015 /PRNewswire/ -- Marvell (NASDAQ: MRVL) — a worldwide leader in providing complete silicon solutions from storage to Internet of Things (IoT), cloud infrastructure, digital entertainment, in-home content delivery and Kinoma® software enabling the "Smart Life and Smart Lifestyle"— today introduced the Marvell Alaska® C 88X5111, a fully integrated, 100 Gigabit Ethernet (GbE) Gearbox with Multilink Gearbox (MLG) functionality. The device enables 100 Gigabits per second (Gbps) full duplex transmission and performs all physical layer functions required for a variety of media, including single mode and multimode optical modules, copper backplanes, and passive and active copper direct attach cables. The 88X5111 line interface is fully compliant with IEEE 802.3BJ and supports the Reed Solomon Forward Error Correction (RS-FEC) function required for 100G-CR4, 100G-KR4 and 100G-SR4 operation, as well as auto-negotiation and coefficient training protocol required by IEEE 802.3 standards. The 88X5111 currently is sampling to Marvell's global customers and will be sold as a standalone PHY, as well as with Marvell switches.

"The 88X5111 further exemplifies Marvell's commitment to delivering a robust portfolio of solutions for next generation data centers and enterprise networks with comprehensive features, increased integration, and reduced power consumption," said Michael Zimmerman, Vice President and General Manager, Connectivity, Storage and Infrastructure (CSI) Business Unit at Marvell. "As the latest addition to our Alaska C family, the 88X5111 is unique in its support for all 100GbE media types – 100G-LR4 and SR4 optics, 100G-KR4 backplanes, and 100G-CR4 passive copper cables, giving flexibility in deployment that is critical to the end user. In addition, the Multilink Gearbox functionality integrated into the 88X5111 enables next generation switch ASICs with 25G/s I/Os to support 10GbE and 40GbE ports in a power- and cost-efficient manner."

Manufactured with 28 nanometer lithography in a 17mm x17mm package footprint, the 88X5111 is a fully integrated single chip Ethernet transceiver that performs all physical layer functions required for 100Gbps Ethernet Gearbox functionality, and drives 100Gbps full duplex transmission, over a variety of media. Its MLG functionality aligns with OIF MLG 2.0 specifications, enabling aggregation of 10 independent streams of 10Gbps Ethernet or two independent streams of 40Gbps Ethernet to be multiplexed onto a 4x25Gbps stream. The 8X5111 also connects to a Media Access Control (MAC) or switch over a 10x10Gbps CAUI-10 link on its host interface. These transit drive and receiver equalization capabilities significantly exceed CAUI-10 requirements and meet 10GBase-KR specifications. The line interface of the 88X5111 is fully compliant to the IEEE 802.3BJ standard that defines the physical layer specifications for 100Gbps operation over backplanes and copper cables. The device supports the RS-FEC feature, as well as auto-negotiation and coefficient training

protocol required by the 802.3BJ standard. Additionally, internal registers can be accessed via a management data input/output serial management interface, which is compliant with IEEE 802.3 specification. The device includes internal PRBS generators, and Ethernet packet generators and loopbacks to assist with testing and debugging.

Key features of Marvell's 88X5111:

- Long reach line Serializer/Deserializer (SerDes) capable of compensating an Insertion Loss of up to 30dB without FEC
- Integrated Reed-Solomon FEC capable of driving 100G-CR4 cables, 100G-KR4 backplanes and 100G-SR4 optical modules
- MLG 2.0 Gearboxing functionality enabling aggregation of 10 independent 10GbE streams or two independent 40GbE streams to a 4x25G pipe
- Integrated IEEE auto-negotiation and training protocol enabling seamless interoperability with IEEE-compliant devices from other vendors
- Fully autonomous equalizer adaptation

For further information about Marvell's 88X5111 and the rest of the Marvell Alaska family of Ethernet PHY transceivers, visit: http://www.marvell.com/transceivers/.

About Marvell
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