Marvell Introduces Industry's First 50G PAM4 DSP Chipset For Next Generation 5G RAN Optical Fronthaul

Expands Marvell's Industry-leading RAN Portfolio to Enable Cloud-Optimized 5G Infrastructure

SANTA CLARA, Calif., Dec. 7, 2021 /PRNewswire/ -- Marvell (NASDAQ: MRVL) today announced the industry's first 50Gbps PAM4 DSP and TIA chipset solution for 5G fronthaul, which enables industry-leading performance for integrated radio access networks (RAN), as well as Open (O-RAN) and virtualized (vRAN) architectures. To meet growing 5G capacity demands, carriers are seeking advanced fronthaul solutions that scale beyond 25G. The Marvell® AtlasOne™ chipset, optimized for superior performance and up to 25% lower power consumption[1], is part of a market-leading electro-optics portfolio that puts Marvell at the forefront of this transition.

5G adoption is accelerating among consumers and expanding into new enterprise and industrial markets. To prepare for the anticipated surge in 5G traffic, carriers are upgrading radio capacity with wider bandwidths – up to 200 MHz – and massive MIMO technology with up to 64 transmit and receive antennas per Radio Unit (RU). In order to realize these capacity gains, the corresponding fronthaul bandwidth needs to be concurrently increased to 50G, which is driving demand for the AtlasOne platform.

O-RAN and vRAN architectures also amplify AtlasOne advantages. O-RAN enables carriers to accelerate capacity upgrades by selecting the best-in-class radio and fronthaul solutions from different vendors as soon as the most advanced solutions become available. With vRAN, baseband capacity instances can be aggregated in a Distributed Unit (DU) and dynamically shared among multiple RUs. When sufficient radio and fronthaul bandwidths are provisioned, carriers can adaptively shift capacity towards unforeseen traffic spikes to improve network efficiency and user experience. Together with OEM partners, Marvell's combination of industry-leading AtlasOne fronthaul, widely deployed OCTEON Fusion® RAN silicon, Prestera® switches and Alaska® Ethernet PHYs, are helping operators push the envelope of 5G network performance.

"We're proud to introduce the AtlasOne chipset, a robust, high-performance solution that is helping to make 50G a reality in 5G infrastructure," said Xi Wang, VP Product Marketing, Optical Connectivity at Marvell. "With this latest addition to our portfolio, we offer telecom carriers access to the same trusted solutions that Marvell has successfully delivered to top hyperscale data center operators."

"Fueled by burgeoning 5G adoption and Internet traffic growth, advances in both radio unit capabilities and system architecture are accentuating the importance of high-speed data interconnect, particularly at the edge, where network efficiency and scalability can be greatly enhanced with new virtualized architectures," said Stéphane Téral, Chief Analyst, LightCounting. "With Marvell's extensive end-to-end RAN experience, its new AtlasOne chipset is well-positioned to become an essential ingredient for the most advanced 5G networks."

Marvell AtlasOne chipset includes:

- Marvell's industry-leading PAM4 digital core for optimal performance across a range of applications.
- Marvell's companion IN5662 TIA to deliver remarkable linearity while maintaining ultra-low noise and power.
- The industry's first PAM4 DSP integrated Direct Modulated Laser driver in mainstream CMOS technology.
- Industrial temperature range support for 5G fronthaul applications.

Availability

The new Marvell AtlasOne chipset is sampling now to select customers.

About Marvell

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 for 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.

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[1] As compared to previous generation solution.

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