Marvell Unveils OCTEON 10 Fusion Processor Family To Advance 5G Networks

Industry-First 5nm Baseband Processors Enable Best-in-Class Performance and Energy Efficiency for Integrated and Virtualized RAN

SANTA CLARA, Calif., Feb. 23, 2023 /PRNewswire/ -- Marvell Technology, Inc. (NASDAQ: MRVL), a leader in data infrastructure semiconductor solutions, today launched its next generation OCTEON® 10 Fusion family of baseband processors for 5G base stations—the industry's first in 5nm process technology. Built on the Marvell® OCTEON® 10 platform, this new family of wireless processors offers enhanced 5G feature support, energy efficiency and performance, including twice the system capacity as the previous generation. The OCTEON Fusion processors power networks that connect more than half of the world's mobile subscribers. This innovative platform, adopted by major OEMs, also includes comprehensive inline Layer 1 hardware accelerators that bring Marvell's proven performance of established 5G networks into open, virtualized Radio Access Networks (vRAN).

The OCTEON 10 Fusion processors are optimized for both high-performance and energy efficiency to address the growing demands of 5G applications. The product family features industry-leading Arm® Neoverse™ N2 CPU cores, a series of programmable DSP cores, and a wide range of hardware accelerators for 5G baseband, networking and security. One of the new hardware accelerators is an integrated inline AI/ML engine that enables efficient edge inferencing for RAN applications such as AI-enhanced massive MIMO beamforming.

"Samsung and Marvell have been working closely to deliver multiple generations of advanced radio access networks for leading operators worldwide," said June Moon, Executive Vice President and Head of R&D, Networks Business at Samsung Electronics. "The companies' commitment to expanding the vRAN ecosystem helps accelerate network transformation. In collaboration with Marvell, we are providing operators with outstanding 5G performance and power efficiency for both existing and open vRAN architectures."

"Marvell's innovative 5nm OCTEON 10 Fusion processors extend the performance and features of the Dell 5G Open RAN accelerator card to enable carrier-grade RAN virtualization at cloud scale," said Andrew Vaz, Vice President, Product Management, Dell Technologies Telecom Systems Business. "We look forward to our continued work with Marvell to deliver advanced 5G capabilities to operators and cloud service providers on Dell PowerEdge or any other x86 server."

"As carriers deploy more complex radio features to enhance 5G coverage and capacity, optimized silicon with comprehensive hardware acceleration and 5nm technology are critical to scale system performance, power, and cost efficiency beyond the capabilities of existing solutions based on general-purpose CPU or FPGA technologies," said Raghib Hussain, President of Products and Technologies at Marvell. "OCTEON 10 Fusion is uniquely designed to enable open and scalable vRAN with feature, performance, and power parity as compared to traditional 5G networks."

"Mobile operators need to scale their networks to meet consumer demand for more bandwidth and emerging opportunities like fixed wireless access. At the same time, they must remain within tight cost and energy envelopes," said Prakash Sangam, Founder of Tantra Analyst. "Processors optimized for specific 5G functions like Marvell's OCTEON 10 Fusion, provide the performance and headroom needed for today and future networks. As an open platform, Fusion also lets operators take advantage of software from a wide ecosystem of developers."

Marvell is working with the leading cloud orchestration and management software providers to validate and pre-integrate these platforms for vRAN systems powered by OCTEON 10 Fusion processors. This will simplify the deployment and management of 5G networks for Marvell's customers and accelerate time-to-market for carriers.

"Red Hat and Marvell share a common vision that delivering a more consistent, flexible foundation for accelerated 5G RAN deployments relies on transforming compute architecture based on open source innovation," said Honoré LaBourdette, Vice President, Telco, Media, Entertainment & Edge Ecosystem, Red Hat. "The validation of Red Hat OpenShift on Marvell's new OCTEON 10 Fusion Open RAN accelerator enables best-in-class 5G RAN virtualization for cloud orchestration and management software allowing service providers to scale into the future."

"Operators are looking towards a cloud-native future and searching for flexible and cost-effective solutions to reduce deployment complexities and ongoing maintenance and grow new services for future networks," said Avijit Sinha, Chief Product Officer, Wind River. "Wind River Studio delivers mature production-ready technology

that is live in deployment with operators globally. Our collaboration will further help operators deploy and simplify the introduction of new services and efficiently manage a physically distributed, cloud native vRAN infrastructure with performance that matches existing 5G networks based on Marvell's inline acceleration technology."

"Mobile network operators face a challenge in the transition from traditional to Cloud RAN that requires proven carrier-grade performance in an open and virtualized architecture," said Lakshmi Mandyam, Vice President of service provider product management and partner ecosystem at VMware. "Our work with Marvell brings together Marvell's history of baseband leadership and their latest OCTEON 10 Fusion innovations with VMware Telco Cloud Platform RAN. This combination provides CSPs a common foundation for deploying 5G and traditional services in a multi-cloud environment and scalability that optimizes the revenue and efficiency of each RAN site."

To deliver sustainability without compromise, the OCTEON 10 Fusion design combines these innovations with advanced power management for best-in-class RAN performance per watt across a wide range of demanding 5G use cases:

- Distributed Unit (DU) and Radio Unit (RU) applications
- Wide bandwidth Massive MIMO beamforming to 64T64R and beyond
- Conventional and virtualized RAN (vRAN) architectures
- Open RAN with support for all L1 split options

Availability
The OCTEON 10 Fusion family of 5G baseband processors are currently in production. Additional resources can be found on the media kit page.

Visit us at Mobile World Congress 2023 in Barcelona at booth 2F34 in Hall 2.

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 over 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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