Micron Readies World's First Multichip Package With LPDDR5 DRAM for Mass Production

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High-performance memory and storage in a single, tightly designed package accelerate 5G applications for smartphones

BOISE, Idaho, Oct. 20, 2020 (GLOBE NEWSWIRE) -- Micron Technology, Inc. (Nasdaq: MU), today announced the launch of uMCP5, the industry's first universal flash storage (UFS) multichip package with low-power DDR5 (LPDDR5) DRAM. Now ready for mass production, Micron's uMCP5 combines high-performance, high-density and low-power memory and storage in one compact package, equipping smartphones to handle data-intensive 5G workloads with dramatically increased speed and power efficiency. The multichip package uses Micron's LPDDR5 memory, high-reliability NAND and leading-edge UFS 3.1 controller to power advanced mobile features previously only seen in costly flagship devices using discrete products, such as stand-alone memory and storage. Now available on other high-end phones, these emerging technologies — such as image recognition, advanced artificial intelligence (AI), multicamera support, augmented reality (AR) and high-resolution displays — are becoming accessible to more consumers.

"Moving 5G's potential from hype to reality will require smartphones that can support the immense volumes of data flowing through the network and next-gen applications," said Raj Talluri, senior vice president and general manager of Micron's Mobile Business Unit. "Our uMCP5 combines the fastest memory and storage in a single package, unleashing new possibilities for 5G's disruptive, data-rich technologies right at consumers' fingertips."

Micron uMCP5 brings unparalleled speed and efficiency to the 5G ecosystem

This launch builds on Micron's March announcement of its sampling of uMCP5 and sets a new standard for the mobile market as the first multichip package to use the latest generations of UFS NAND storage and low-power DRAM. The vast volumes of data that smartphones must store and process today are pushing memory bandwidth to its limits with LPDDR4-based midtier chipsets. The result is lowered video resolution, frustrating lags and limited features.

With LPDDR5, Micron has significantly increased memory bandwidth from 3,733 to 6,400 megabits per second (Mb/s), enabling seamless, instant experiences for mobile users, even when using data-heavy features.

"5G provides smartphones with unprecedented multigigabit speeds to connect with the cloud," said Ziad Asghar, vice president of product management at Qualcomm Technologies, Inc. "We're excited that uMCP5 is now available, bringing memory on par with 5G speeds to a new generation of phones and enabling best-in-class gaming, differentiated camera and AI experiences, and ultrafast file transfers."

Designed specifically for next-generation 5G devices, uMCP5 can easily and quickly process and store massive amounts of data without compromising performance or power usage. High-performance memory and storage capabilities provide uMCP5 with the ability to fully support 5G download speeds and more applications running at once.

Micron uMCP5 features include:

- **Dramatically extended battery life:** Building on its success with uMCP4, Micron taps LPDDR5 memory for uMCP5 to enable complete utilization of 5G networks, providing a nearly 20% power efficiency boost compared to LPDDR4. In addition, Micron's UFS 3.1 consumes about 40% less power than Micron's UFS 2.1 predecessor. For smartphone users, this means extended battery life — even when consuming power-draining multimedia applications or data-intensive features such as AI, AR, image recognition, gaming, immersive entertainment and more.

- **Fast download speeds:** Unlocking the full potential of 5G performance, Micron's uMCP5 provides users with 20% faster sustained download speeds, as compared to Micron's previous UFS 2.1-based solutions.

- **Boosted endurance:** Micron's uMCP5 NAND boasts an improved endurance by around 66% to 5,000 program/erase cycles, exponentially increasing the cycles and volume of data that devices can program and erase without degrading device performance — extending a smartphone's life span even for the heaviest of users.

- **Industry-leading bandwidth:** Devices with uMCP5 will support a maximum DRAM bandwidth of up to 6,400 Mb/s, a 50% increase compared to the previous LPDDR4x generation, which runs at a bandwidth of 4,266 Mb/s. This allows mobile users to multitask on many applications without diminishing experience. The increased bandwidth also enables higher-quality image processing for AI-powered computational photography in smartphones, putting professional photography capabilities in users' hands. Micron is the first vendor in the industry to support full-speed LPDDR5.

- **Latest flash performance:** Micron's uMCP5 also draws on the fastest UFS 3.1-based storage interface, providing twice the sequential read performance and 20% faster write speeds compared to Micron's previous generation of UFS 2.1 products.

- **Tight, space-saving design:** Micron designed uMCP5 in the most compact form factor possible, using its multichip package expertise and known manufacturing and packaging techniques — enabling slimmer, more agile smartphone

designs. Devices using Micron's package can save 55% of printed circuit board space compared to discrete solutions, meaning stand-alone versions of LPDDR5 and UFS. This space savings enables phone manufacturers to maximize battery size or add features, such as cameras, gesture devices or sensors. Micron offers a broad range of capacity configurations up to 12 gigabytes (GB) of LPDDR5 and 512 GB NAND.

Availability of Micron uMCP5

Now ready for mass production, uMCP5 is available in four distinct density configurations: 128+8 GB, 128+12 GB, 256+8 GB and 256+12 GB. To learn more, visit https://www.micron.com/products/multichip-packages/ufs-based-mcp.

About Micron Technology, Inc.

We are an industry leader in innovative memory and storage solutions. Through our global brands — Micron® and Crucial® — our broad portfolio of high-performance memory and storage technologies, including DRAM, NAND, 3D XPoint™ memory and NOR, is transforming how the world uses information to enrich life *for all*. Backed by more than 40 years of technology leadership, our memory and storage solutions enable disruptive trends, including artificial intelligence, 5G, machine learning and autonomous vehicles, in key market segments like mobile, data center, client, consumer, industrial, graphics, automotive, and networking. Our common stock is traded on the Nasdaq under the MU symbol. To learn more about Micron Technology, Inc., visit micron.com.

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