Micron Ships World's First 1γ (1-Gamma)-Based LPDDR5X, Enabling Rich Mobile AI Experiences

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Designed for flagship smartphones, Micron LPDDR5X memory delivers top speed grades and dramatic power savings in industry's thinnest package

BOISE, Idaho, June 03, 2025 (GLOBE NEWSWIRE) -- Micron Technology, Inc. (Nasdaq: MU), announced today that it is shipping qualification samples of the world's first 1γ (1-gamma) node-based low-power double data rate 5X (LPDDR5X) memory, designed to accelerate AI applications on flagship smartphones. Delivering the industry's fastest LPDDR5X speed grade of 10.7 gigabits per second (Gbps), combined with up to a 20% power savings,[1] Micron LPDDR5X transforms smartphones with faster, smoother mobile experiences and longer battery life — even when executing data-intensive workloads such as AI-powered translation or image generation.

To meet the industry's increasing demand for compact solutions for next-generation smartphone designs, Micron's engineers have shrunk the LPDDR5X package size to offer the industry's thinnest package of 0.61 millimeters, [2] making it 6% thinner compared to competitive offerings,[3] and representing a 14% height reduction from the previous generation.[4] The small form factor unlocks more possibilities for smartphone manufacturers to design ultrathin or foldable smartphones.

"Micron's 1-gamma node-based LPDDR5X memory is a game-changer for the mobile industry," said Mark Montierth, corporate vice president and general manager of Micron's Mobile and Client Business Unit. "This breakthrough technology delivers lightning-fast speeds and remarkable power efficiency — all within the industry's thinnest LPDDR5X package — paving the way for exciting new smartphone designs. This solution demonstrates our commitment to empowering the ecosystem to create extraordinary mobile experiences."

A Media Snippet accompanying this announcement is available by clicking on this link.

The company's 1γ-based LPDDR5X enables dramatic leaps in performance for mobile users by enabling faster AI insights. For example, Micron evaluated mobile AI response times from large language model Llama 2, based on 1γ LPDDR5X's 10.7 Gbps bandwidth compared to 1β (1-beta) LPDDR5X's 7.5 Gbps bandwidth, [5] finding:

- Responses are 30% faster when asking for location-based restaurant recommendations.
- Results are more than 50% faster when translating a voice inquiry in English to text in Spanish to ask for directions.
- Responses can be up to 25% faster when requesting car purchase recommendations based on vehicle type, affordability and certain infotainment and safety features.[6]

Now ramping in Micron's mobile portfolio, Micron's 1γ-based LPDDR5X is the company's first mobile solution to leverage advanced EUV lithography — providing customers with early access to the latest performance and power efficiency advancements, based on the industry's most advanced memory node technology. This milestone builds on Micron's February sampling of 1γ-based DDR5 memory for next-generation CPUs in the data center and client segments. Micron's optimized 1γ DRAM node leverages CMOS[7] advancements like next-generation high-K metal gate technology for improved transistor performance and incorporates leading-edge EUV lithography for enhanced bit density.

As energy-intensive mobile AI workloads are increasingly processed on-device rather than only in the cloud, low-power chips are crucial for devices like smartphones, tablets and laptops, which need to conserve power while performing AI computations.

Micron's 1γ-based LPDDR5X's significant 20% power savings will allow mobile users to enjoy their favorite AI applications, games and video content longer on a single charge. In addition, as AI intensifies the need for powerful, energy-efficient compute, data center servers, intelligent vehicles and AI PCs may also increasingly adopt LPDDR5X for its unique blend of optimized power efficiency and high performance.

Micron is currently sampling 1γ-based LPDDR5X 16 gigabyte (GB) products to select partners and will offer a wide range of capacities from 8GB to 32GB for use in 2026 flagship smartphones.

Additional Resources

- Mobile solutions page: Mobile Memory and Storage for Phones
- Product page: LPDDR5X
- Technology page: 1-Gamma DRAM technology

About Micron Technology, Inc.
We are an industry leader in innovative memory and storage solutions transforming how the world uses information to enrich life for all. With a relentless focus on our customers, technology leadership, and manufacturing and operational excellence, Micron delivers a rich portfolio of high-performance DRAM, NAND and NOR memory and storage products through our Micron® Hand Crucial® brands. Every day, the innovations that our people create fuel the data economy, enabling advances in artificial intelligence (AI) and compute-intensive applications that unleash opportunities

— from the data center to the intelligent edge and across the client and mobile user experience. To learn more about Micron Technology, Inc. (Nasdaq: MU), visit micron.com.

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[1] Compared to Micron's previous generation LPDDR5X

[2] Package thickness varies based on capacity; 0.61mm thickness for Micron's 8GB and 16GB 1γ-based LPDDR5X 496-ball packages.

[3] Based on Micron's competitive market research and intelligence, with competitive offerings measuring at 0.65 mm thick

[4] Based on a thickness of 0.71mm for Micron's 1β-based LPDDR5X for 16GB

[5] Examples below are based on extrapolation of data from devices using LPDDR5X running at 9.6 Gbps and 7.5 Gbps.

[6] Based on a test asking Llama 2 to recommend 10 SUVs while prioritizing user requirements such as affordability, Apple CarPlay and essential safety features such as emergency braking, blind spot monitoring, parking sensors and all-wheel drive. Recommendations given were within a budget of $23,000 to $37,000.

[7] Complementary metal-oxide semiconductor

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