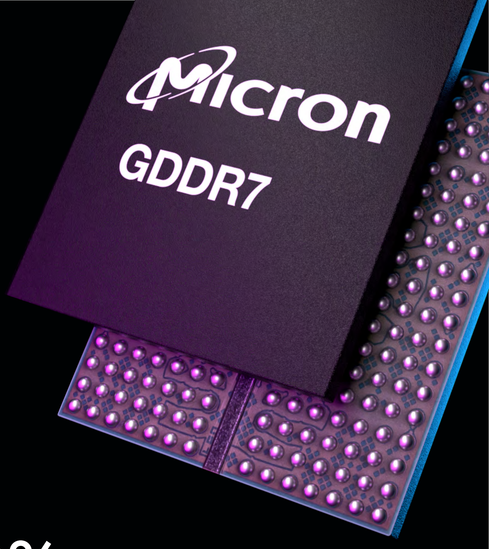
GDDR7

Optimized for performance, power, play

Micron GDDR7 represents the next generation of high-performance graphics memory, combining PAM3 signaling and 1ß (1-beta) DRAM technology to deliver a performance- and power-optimized design capable of fueling today's most data-intensive workloads.



Innovation to the power of 7
Industry's highest bit density GDDR7[1]

60%
higher bandwidth than GDDR6[2]

>50%
improvement in power efficiency over GDDR6[3]

Performance as far as the AI can see

High performance in gaming and AI comes down to one thing: moving more data more quickly than ever before. Micron GDDR7 delivers over 1.5TB/s[4] system bandwidth — the industry's highest graphics memory bandwidth — to support evolving gaming and AI requirements such as AI-enhanced gameplay and edge AI inference workloads.

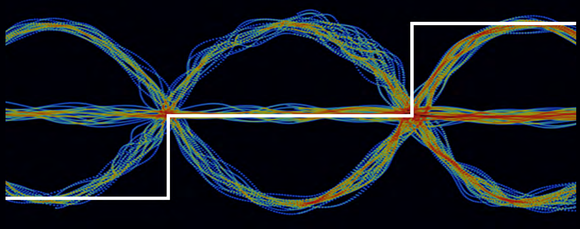
Greater than
30%
improvement in frames per second[5]

Up to
33%
throughput increased for various inference workloads[6]

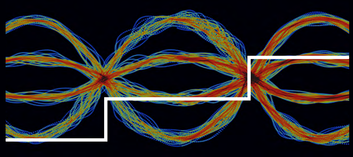
Up to
20%
reduction in response time for inference workloads[7]

PAM3
A wide margin of improvement

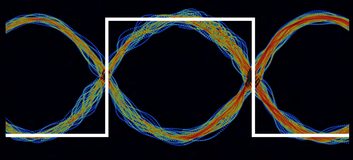
To optimize performance and energy efficiency while improving data integrity, Micron has applied industry-standard PAM3 signaling technology to GDDR7, resulting in significantly improved signal and timing margins over the prior generation. This opens the door to even further power savings as well as reduces design complexity and improves performance scaling (up to 40Gb/s and beyond) versus PAM4.



50% improved signal margin over GDDR6X (PAM4)[8]



100% improved timing margin over GDDR6 (NRZ)[8]



Leadership technology from a technology leader

As a global leader in high-performance graphics memory, Micron has the design and test experience to accelerate adoption of GDDR7 while continuing to innovate future generations of graphics memory solutions.

- Proven engineering innovation with the introduction of PAM4 signaling on GDDR6X, providing the foundation for our leadership GDDR7 portfolio with PAM3
- With over five years of successful high-volume manufacturing of GDDR6X, Micron has consistently delivered world-class performance and quality
- Manufacturing and testing leadership enabling high-quality product to help accelerate GDDR7 adoption
- Measurement of industry's first 40Gb/s PAM3 data eye, cementing Micron's leadership in maximizing performance of future-generation products

Sources

[1] Bit density extrapolated based on Gb per wafer across GDDR7 vendors
[2] Component pin-speed between GDDR7 and GDDR6 specification
[3] Burst read power efficiency comparison between GDDR7 and GDDR6
[4] 1.5TB/s bandwidth is based on a 384-bit memory bus width
[5] GDDR7 expected FPS for rasterization and ray tracing benchmarks
[6] GDDR7 inference workload expected improvements from higher bandwidth
[7] GDDR7 inference workload expected improvements from higher bandwidth
[8] GDDR7 PAM3 specification improved margin over GDDR6/6X

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