BACK TO BUSINESS

Everything you need to know about the semiconductor memory industry, **from legacy technologies to latest innovations.**

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Back to Business
– Back to Memory

It's still summer, but we're entering the final stretch of the year. And while we hope you all had the opportunity to take some time off and wind down a bit, we hate to remind you of the harsh reality our market is currently in.

As AI reshapes hardware architectures and memory demand patterns, DRAM and NAND suppliers are realigning priorities. The dramatic cut down in DDR4 production is shaking up the market, and according to TrendForce, the supply will remain tight for the remainder of the year, and prices will stay at a high level.

What does this mean for you and your designs? DDR4 won't go away any time soon, but it will take some time for the remaining DDR4 manufacturers to ramp up their production capacity. In our webinar on September 10, we outline supplier dynamics and risk mitigation strategies and best practices for future-proofing memory designs. Make sure you sign up for it!

While you might be worrying about your eMMC or DDR3 / DDR4 supply, memory technology evolves. We took a look for you at DDR6 and SOCAMM, as well as DRAM scaling challenges and a new approach to in-NAND self-encryption.

Hope you enjoy this month's newsletter. And if you are attending electronica India in Bengaluru from September 17. – 19., make sure you say hi to our team on-site in Hall H5.B145.

DDR4 and LPDDR4
Supply remains tight

According to TrendForce, the DDR4 market will remain in a persistent state of undersupply and strong price growth through 2H25. The consumer DRAM market is hit hardest. This segment covers applications such as industrial control, networking, TVs, consumer electronics, and controllers. Although it mainly uses DDR4, it's in smaller numbers, and so this segment ranks lower in suppliers' allocation priorities.

TrendForce data shows July consumer DDR4 contract prices have already risen by more than 60–85%, leading to a sharp upward revision for 3Q25 contract prices to a quarterly increase of 85–90%.

Read more here.

A Webinar
you shouldn't miss!

The transition from legacy nodes, such as DDR3 and DDR4, towards newer technologies is happening at a pace previously unthinkable. This evolution brings with it not only technological challenges but also far-reaching implications for the global supply chain, particularly in terms of sustainability, cost structures, and product longevity strategies.

On September 10, we will hold our next webinar in which we will share supplier dynamics, transition opportunities, and recommended best practices for proofing memory designs. Due to the urgency of the topic, we are offering two different slots to accommodate a larger audience.

Register today!

Visit us at
Electronica India

We are exhibiting at electronica India, South Asia's leading trade fair for electronic components, systems, and applications. It's taking place from **September 17-19, 2025**, at the **Bangalore International Exhibition Centre**, and it couldn't happen at a better time!

There is so much going on in the semiconductor and memory industry that staying on top of the developments has never been more critical. If you are in electronics design or purchasing, you should drop by our booth in Hall **H5, B145**.

Claim your free ticket here.
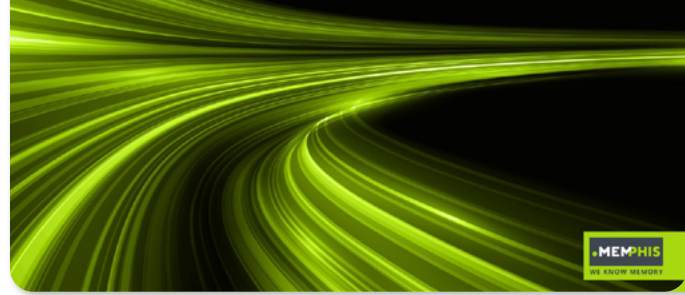
DDR6: The Next Gen in
High-Performance Memory Technology

Expected to enter production in late 2025 or early 2026, DDR6 promises to redefine performance benchmarks across artificial intelligence (AI), cloud infrastructure, high-performance gaming, and enterprise workloads.

We have synthesized available draft specifications, as well as insights from vendors and the JEDEC working group, to provide a comprehensive overview of DDR6 development timelines, architectural innovations, comparative performance metrics, and market adoption trends.

Check it out here.
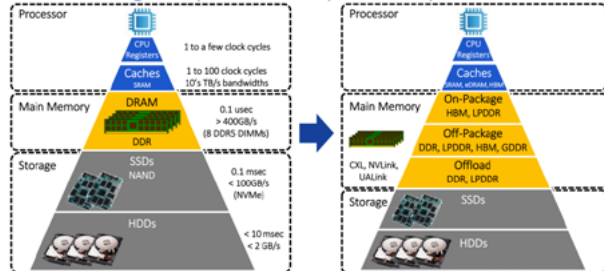
DRAM Scaling Challenges
and Opportunities

AI models are continuing to grow, pushing the capacity and bandwidth requirements of DRAMs. Simply scaling with historical techniques will no longer achieve the required characteristics due to physical challenges, limits of process scaling and system architecture constraints including thermals and power delivery.

Semiengineering has published a tutorial on DRAM architecture, specifically looking at design tradeoffs and subsequent impact to the overall system performance, power, cost and reliability.

Find it here
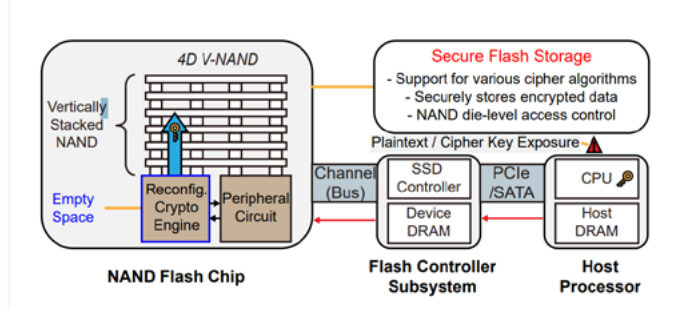
FlashVault:
Versatile In-NAND Self-Encryption

Researchers at DGIST, Georgia Tech, POSTECH, Samsung Electronics, Virginia Tech, and Korea University have presented an in-NAND self-encryption architecture that embeds a reconfigurable cryptographic engine into the unused silicon area of a state-of-the-art 4D V-NAND structure. They call the architecture FlashVault, and it supports not only block ciphers for data encryption but also public-key and post-quantum algorithms for digital signatures, all within the NAND flash chip.

Their results show that FlashVault outperforms both CPU-based encryption and near-core processing architecture, demonstrating its effectiveness as a secure SSD architecture.

Find the paper here
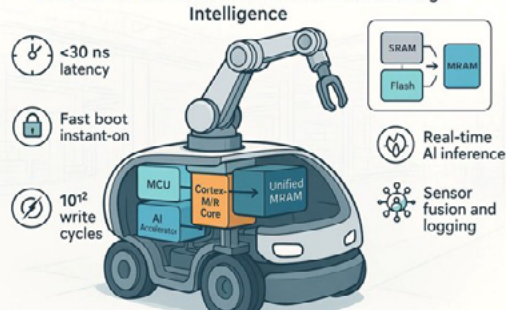
Why Edge AI Architectures
Demand Smarter Memory

AI is one of the biggest growth drivers in the semiconductor industry today, but today only a few companies currently benefit from this trend. However, we see a trend to "AI Everywhere", where intelligence is shifting to the edge. In this new reality, real-time inference, local decision-making, and data privacy are essential.

For Wevolver, we explore how three edge AI architectures; robotics, system-on-modules (SoMs), and medical devices, are driving this shift, and how MRAM and FeRAM are enabling smarter, more resilient memory at the edge.

Read it here

SOCAMM:
The New Memory Kid on the AI Block

The continued evolution of artificial intelligence (AI), particularly in energy-sensitive edge inference and dense AI server workloads, demands radical innovation in system memory. SOCAMM (Small Outline Compression Attached Memory Module) emerges as a purpose-built memory architecture designed by NVIDIA and developed in partnership with Micron, Samsung, and SK Hynix to bridge a critical performance and efficiency gap in AI-centric platforms.

In this paper, we explore the SOCAMM architecture and compare it to HBM, GDDR7 and DDR5 RDIMM.

Read it here.

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