



Everspin: MRAM Breaks Through

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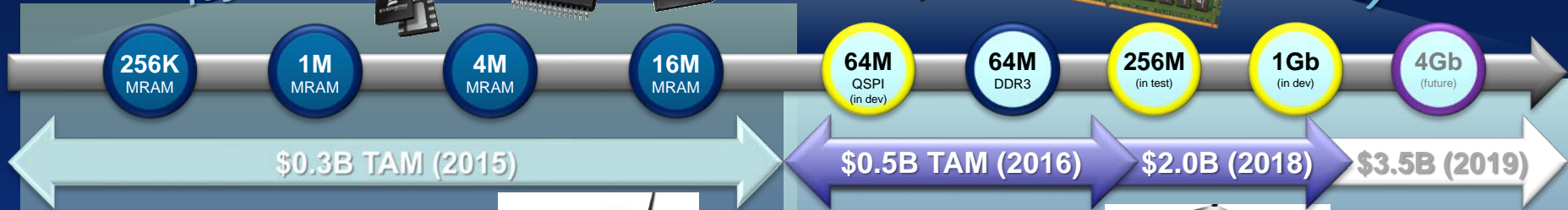
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"Persistent SRAM"
Toggle MRAM (Field-Switched)





"Persistent DRAM"
ST-MRAM (Spin Torque)





Instantly Recoverable Transportation Systems 


Power Fail Safety for HDD and RAID 

Fault-Recoverable Industrial Automation 

Secure & Reliable Smart Grid 

More Reliable Storage, File, & Backup Systems 

Rapid, Low Latency Enterprise Storage & Networks 

Mainstream Persistent DRAM in Consumer Applications 

MRAM is Proven and Shipping



300mm Wafer Production of Everspin MRAM Products
ST-MRAM process transfer successful
Initial 256Mb 40nm product is functional
Acceleration of pMTJ based products in 28nm and smaller
Versatile embedded memory with eMRAM



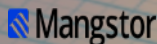
Strategic Investment



DDR3 and DDR4 controller optimization
NVMe and storage protocol optimization
Evaluation platforms and technology demos



Meeting the quality and supplier excellence needs of
leading storage, industrial, and automotive customers



One Million IOPs

Instantly Stored, Instantly Available

The Fastest Non-Volatile Memory combined with Controller and NVMe Optimization



ULTRA HIGH ENDURANCE NO wear leveling algorithms or translation tables



BYTE ADDRESSABILITY NO garbage collection algorithms



ST-MRAM BANDWIDTH NO caches or elasticity buffers are needed



INSTANT STORE NO BIOS enhancements or power fail recovery firmware

Stop by the Everspin booth #844 for a demonstration

Scalability & Versatility: Build the SoC you really want!

Versatility by Design:

eMRAM is unique in that the bit cell design can be modified for optimization as a replacement for embedded FLASH, DRAM, SRAM or a combination up to all three.

As Embedded FLASH:

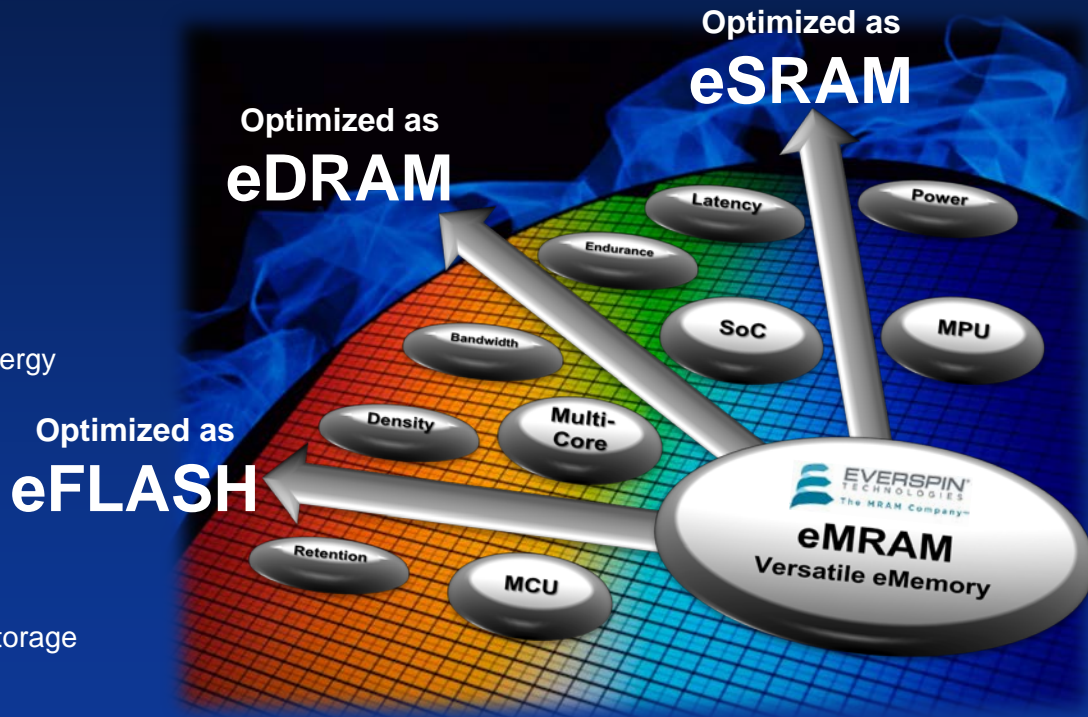
eMRAM offers better endurance, bandwidth, and energy while scaling below 28nm

As Embedded SRAM, DRAM:

eMRAM is smaller than SRAM, with non-volatility

As Embedded Flash + SRAM:

eMRAM replaces program code + execute code + storage space with one memory



MRAM Breaks Through

- Proven technology – Proven Company
 - Established production
 - ST-MRAM ramping
 - Multiple MRAM product families in production today
 - Field switched, in-plane and perpendicular MTJ matched to products
- World class partners
- Breadth of solutions: Persistent SRAM, Persistent DRAM, eMRAM
- Breakthrough system performance demonstrated