



# Everspin<sup>®</sup> MRAM

## Beyond the Spin Zone

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The MRAM Company<sup>™</sup>

# Everspin – Electron Spin is Forever

- **Fab-lite MRAM supplier**

- Leverage standard CMOS FEOL
- Own & operate BEOL for MRAM



- **Industry-first and leading MRAM supplier**

- Over 15 years of design and production experience with MRAM
- **Technology leader in Toggle MRAM and Spin-Torque MRAM**
- Shipped over **3Mpcs** with over **300** active customers to date
- **70+** products (x8, x16 & SPI), **600** active patents and applications
- HQ: Chandler, AZ \* DC: Austin, TX \* 66 Employees
- Spin-off from Freescale 2008; Series A raised \$30.5M

# MRAM Value Proposition

Addressing memory & mass storage needs

RAM

NVM

SSD

Ultra-Low Read & Write Latency  
*<50ns*

Unlimited Cycling Endurance  
*>10e15*

*Primary Working Memory*

Operating Temperature  
*-40°C – 150°C*

*Universal Storage Memory*

Ultra-High Intrinsic Reliability  
*>20yrs @125°C*

Unlimited Data Retention  
*>20yrs @125°C*

Ultra-Low radiation induced SER  
*<0.1FIT/Mb*

Robust Power Fail  
*No Caps or Batteries*

Instant On/Off  
*On <50us  
Off <50ns*

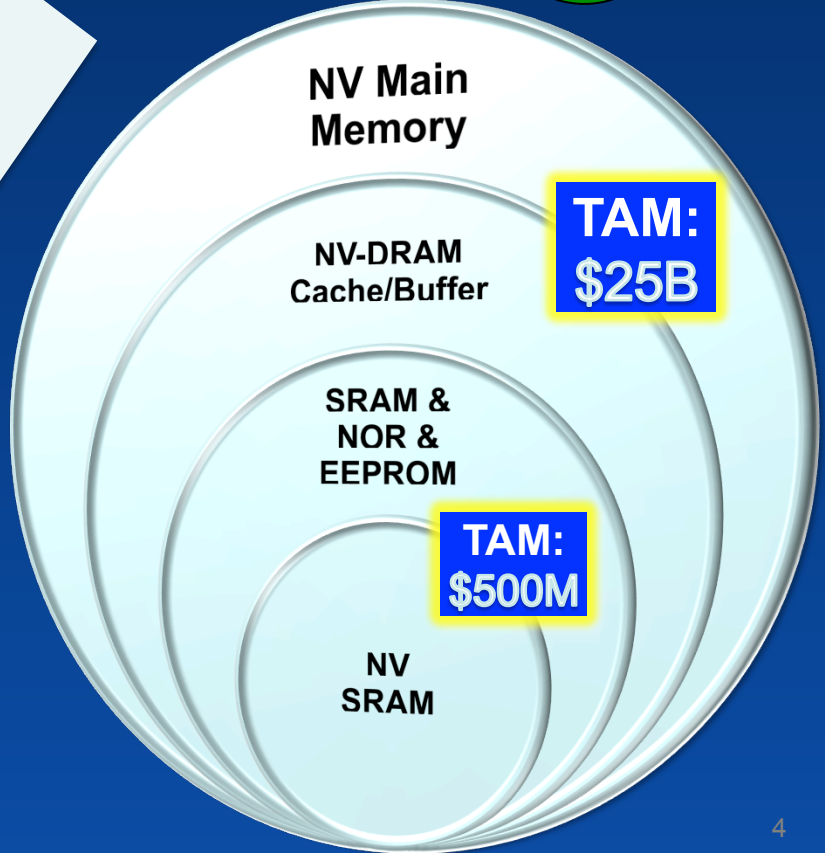
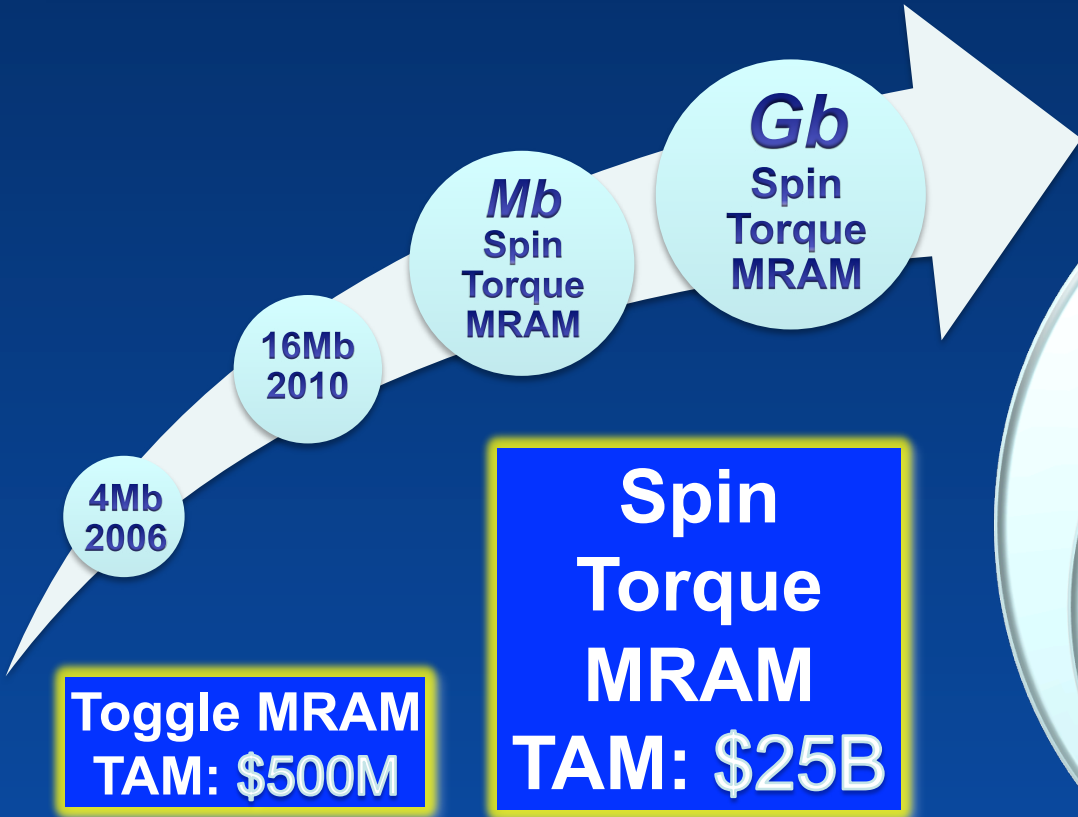
*Storage System Solution*

Easy BEOL Integration with CMOS Embedded

# Roadmap to Gigabit MRAM

More IOPS/W @ lower latency & Instant On/OFF

New Low-Power Storage System Architectures



# MRAM Applications and Customers



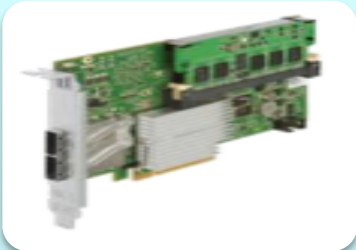
## Industrial, Datacom, POS, Energy

Single-Board Computer, Routers, Gaming  
SmartGrid, SmartMeter, Solar, Wind ...



## Automotive and Transportation

- Power Train, Brakes, Safety, Data Logging
- MultiMedia, Navigation, Camera, Black Box



## Storage and Server

- RAID, NAS, SAN & DAS Storage
- Rack & Blade Servers

## Customers





## Everspin MRAM – Summary

- MRAM will revolutionize compute architectures
  - Enables Instant-On & OFF (Performance @ Power)
  - Enables more IOPS/\$/W/in<sup>3</sup> @ lower latencies
  - Improved reliability & endurance reducing TCO
- Everspin is the leader in MRAM technology
  - Proven track record – Shipped a total of 3Mpcs+
  - Top Tier 1 customers – Fortune 500 & Fortune 50
  - Deployment in many apps with exemplary quality

**Everspin is on track to commercialize the  
Industry's First Spin-Torque MRAM**