

Data Persistence at Speed

# **Driving the MRAM Revolution**

Investor Presentation August 2019

# Safe Harbor Statement

#### Forward-Looking Statements

This presentation contains "forward-looking statements" that involve risks, uncertainties and assumptions. If the risks or uncertainties materialize or the assumptions prove incorrect, our results may differ materially from those expressed or implied by such forward-looking statements. All statements other than statements of historical fact could be deemed forward-looking statements, including, but not limited to: any estimates of addressable market size and our ability to capture that market, market trends and market opportunities, customer growth, product availability, technology developments, or other future events; any statements about historical results that may suggest future trends for our business; any statements regarding our plans, strategies or objectives with respect to future operations or business performance; any statements regarding future economic conditions; and any statements of assumptions underlying any of the foregoing. These statements are based on estimates and information available to us at the time of this presentation and are not guarantees of future performance. Actual results could differ materially from our current expectations as a result of many factors, including, but not limited to: market adoption of our products; our limited operating history; our ability to raise capital; our history of losses; our rate of growth; our ability to predict customer demand for our existing and future products; our ability to hire, retain and motivate employees; the effects of competition, including price competition; technological, regulatory and legal developments; and developments in the economy and financial markets. We assume no obligation, and do not intend, to update these forward-looking statements, except as required by law.

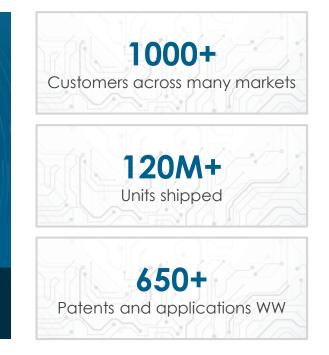


# **Everspin: MRAM Technology Pioneer**

Everspin is a Leading Provider of Non-volatile Memory Technology and Products to Mission-Critical **Data Center**, **Industrial** and **Auto/Transportation** Applications

- Origins in Motorola/Freescale
- Independent since 2008

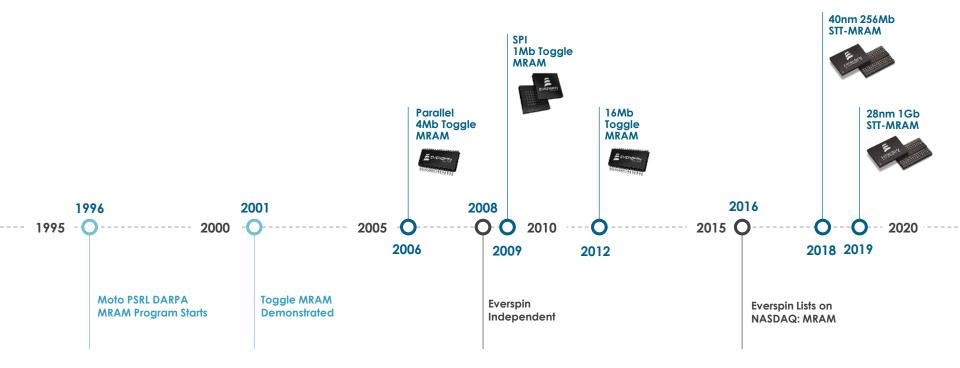
- Publicly traded : MRAM
- Long-served tier-1 customers



Our products bring the unique benefits of MRAM to our customers where Performance, Persistence, Endurance and Reliability are critical



# **MRAM Leadership Through Heritage of Innovation**





## Starts Production of World's First 1Gb STT-MRAM

#### Everspin Enters Pilot Production Phase for the World's First 28 nm 1 Gb STT-MRAM Component

New component expands Everspin's industry-leading STT-MRAM product family and enables new possibilities for customers with its higher density and DDR4-based interface

Chandler, AZ, June 11, 2019 — Everspin Technologies, Inc. (NASDAQ: MRAM), the world's leading developer and manufacturer of Magnetoresistive RAM (MRAM), today announced it has completed development activity and entered the pilot production phase of its 28 nm 1-Gigabit (Gb) Spin Torque Transfer Magnetoresistive Random Access Memory (STT-MRAM) product. Everspin has been in volume production of its 256 Mb STT-MRAM product for more than a year and now adds the ground-breaking 1 Gb capacity product to its lineup, extending Everspin's leadership in STT-MRAM memory component manufacturing.

Everspin's STT-MRAM devices enable enterprise infrastructure and data center providers to increase the reliability and performance of systems where high-performance data persistence is critical by delivering protection against power loss without the use of supercapacitors or batteries. In addition, the larger density 1 Gb part offers more effective management of UO streams, creating a greater level of latency determinism and allowing OEMs to significantly improve quality of service of their products.

"The Everspin team has executed extremely well on completing development of our groundbreaking 1 Gb STT-MRAM devices. This is yet another bellwether milestone on STT-MRAM's march into larger market opportunities delivering a significant increase in density over our previous 256 Mb parts coupled with the more mainstream DDR4-based interface," said Kevin Conley, Everspin's President and CEO. "We are also pleased that progress with both customer qualification and yield maturity continues to be on track with volume production expected to start in the third quarter."

Everspin's 1 Gb product family includes both 8-bit and 16-bit DDR4 compatible (ST-DDR4) interface versions of the device and are available in a JEDEC-compliant BGA package.

#### About Everspin Technologies

Headquartered in Chandler, Arizona, Everspin Technologies, Inc. is the worldwide leader in the design, volume production and distribution of Magnetoresistive RAM (MRAM) into markets and applications where data persistence, performance, and endurance are paramount. Serving applications across the data center, industrial, and transportation markets, Everspin has built the strongest and fastest-growing foundation of MRAM users in the world. For more information, visit www.everspin.com. NASDAQ: MRAM.

- 28nm technology from GLOBALFOUNDRIES JDA
- Shipping since December 2018
- Designed into two OEM Data Center products
- JEDEC standard package
- DDR4 Connectivity
- 10 years data retention



# 5 Global Operation Sites & 8 Regional Offices





# Fab Partnership Expansion to Meet The Growing Demand



#### **GROWTH PLAN FOR TOGGLE**

- Long-term Chandler manufacturing operation continues
- Manufacturing expansion with SilTerra starting in 2020





# **Diversified Top-Tier Customer Base in Significant Markets**

INDUSTRIAL AUTOMATION	AEROSPACE/ TRANSPORT	GAMING	NETWORK/ INFRASTRUCTURE	ENTERPRISE
SIEMENS	AIRBUS		NP	SMART <sup>®</sup> Modular Technologies
Schneider	HoneywellKONAMICOBHRIMQuixant		JAG	DEROADCOM.
	Коуо	MEDICAL	cisco.	
OMRON	DIUS	NIKKISO	<b>※LUTRON</b> 。	
	BOMBARDIER	Canon Medical	SUPERMICR	inspur
	NORTHROP GRUMMAN	GE Healthcare		NetApp"



## **Our Strategic Focus**

## Investing across multiple horizons to drive sustained growth and leadership

NEAR-TERM	MID-TERM	LONG-TERM
Sustain 256Mb STT-MRAM Momentum	Broaden STT-MRAM product family	Innovate for continued market leadership
Expand STT-MRAM with 1Gb	Expand STT-MRAM market penetration	Drive MRAM to higher density and lower bit cost
Grow Toggle MRAM business	Leverage Expanded Toggle MRAM supply	Keep focus on high-growth markets
Build Strength in Large Targeted Applications	Accelerate Growth into Adjacent Markets	Disrupt Mainstream Markets



## The Executive Team







# Technology/Product

# MRAM: Persistence, Performance, Endurance & Reliability





### PERSISTENCE

Maintains memory contents without requiring power

### PERFORMANCE

SRAM & DRAM-like performance with low latency

### ENDURANCE

Superior durability supports memory workloads without sophisticated management



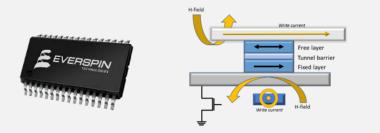
### RELIABILITY

Best-in-class robustness designed and tested for extreme conditions



# Product Technology Portfolio Overview

## **Toggle MRAM as Persistent SRAM**



- Standard SPI and Parallel I/F
- 128 Kb to 32 Mb
- Replacement for nvSRAM, FRAM, BBSRAM and NOR Flash
- Robust operating reliability across extended temperature
- Steadily growing long-term market value

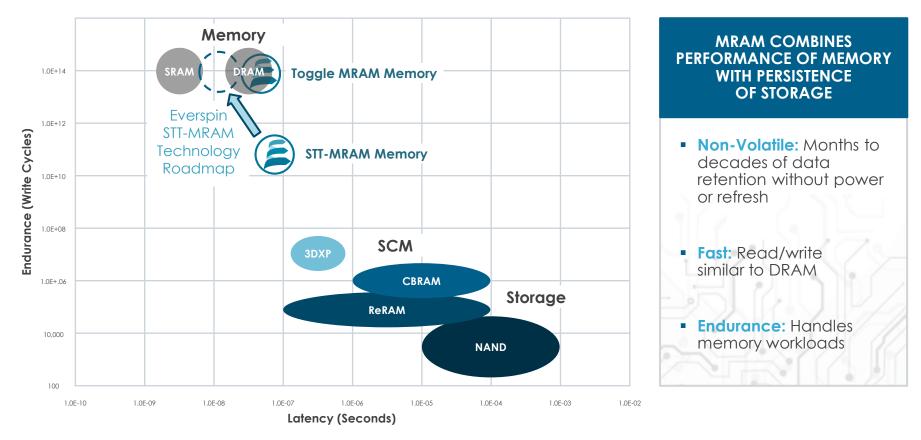
### STT-MRAM As Persistent DRAM



- DDR3 & DDR4 compatible
- 256 Mb to 1 Gb
- Complementary to DRAM & Flash
- High performance NVM with high chip capacity
- Disruptive value as non-volatile write buffer
- New market growth driver



# **MRAM Brings Native Persistence to Memory Workloads**





# **Everspin Product Portfolio**

Technology	Capacity	Interface	Package	2018	2019	2020
Toggle	128kb	SPI	DFN	MP		
6	256kb	Parallel, SPI	DFN, SOIC, BGA, TSOP2	MP		
evener:	1Mb	Parallel, SPI, QSPI	dfn, bga, tsop2, soic	MP		
	4Mb	Parallel, SPI	DFN, BGA, TSOP2	МР		
EVERBOW TRUTHINGUING	16Mb	Parallel	bga, tsop2	MP		
	32Mb	Parallel	bga, tsop2		PRELIMINARY CS	МР
STT-MRAM	256Mb	ST-DDR3	BGA	МР		
	1Gb	ST-DDR4	BGA	ES	CS MP	

MRAM products address a wide array of applications with long design life

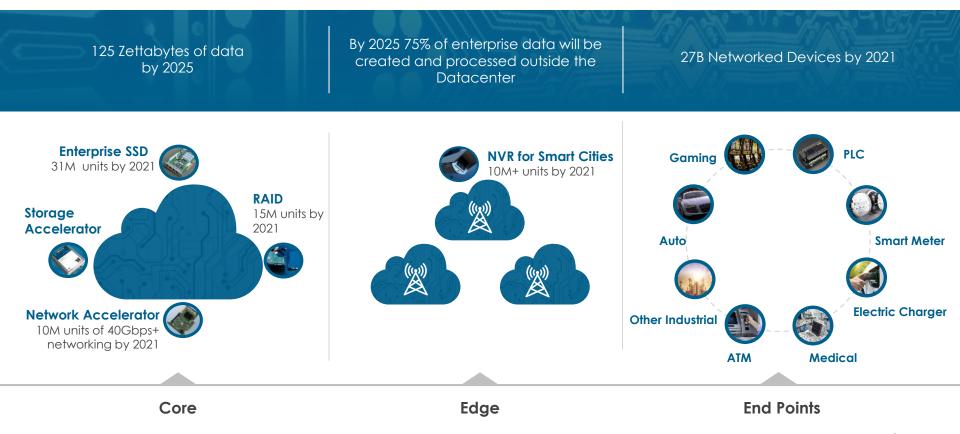




# **Market View**

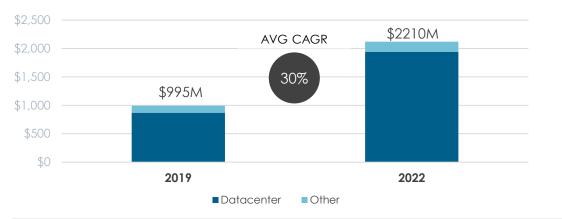
11000

# **MRAM Transforming Datacenter Core to End Points**





# Significant STT Growth: Key Focus on SSD



#### STT TAM (\$M)

#### **KEY SUCCESS FACTORS**

- Expanded SSD/AFA Penetration
- Market validation with IBM engagement
- Value Proposition of persistent write buffer in other segments
- FPGA platform enablement (Short term growth driver)
- Controller ASIC ecosystem enablement (Long term growth driver)

#### CORE FOCUS SEGMENT



**Enterprise PCIe SSD** 

#### **GROWTH OPPORTUNITIES**



\*Everspin internal estimate



# The Cost of Latency

The Importance of Storage Latency QOS



**Amazon** found that every 100ms of latency cost them 1% in sales.

**Google**, if a page takes more than 500ms to load, the site traffic drops by 20%. An additional delay of 400ms in search responses reduces search volume by nearly 1%.

**Akamai** shows that a 1 second delay in page response can result in a 7% reduction in conversions.

A broker could lose as much as \$4 million in revenues per ms if its **electronic trading platform** was only 5ms behind the competition. A 1ms advantage in latency can be worth upwards of \$100 million per year.





# **STT-MRAM** in Enterprise Storage

As announced by:



EXILINX PHISKO Knows What You Need MICROELECTRONIQUE

**More Physical** Optimized Simplified **Enable Higher** Architecture Interleave For Larger Buffer **Space For** No Capacitor Number of Improves QOS **Eliminates Power** Storage Liability Sequential Streams Fail Hardening Capacity Performance 





# **STT-MRAM** in Server Storage Accelerator

In Partnership With:





\*FinTech Logging White Paper available at: https://www.everspin.com/files/accelerating-fintech-applications-lossless-and-ultra-low-latency-synchronous-logging-using



# **STT-MRAM** in Fabric Accelerators



STT-MRAM Bypass Assist Option

#### Higher Performance With Bypass Assist

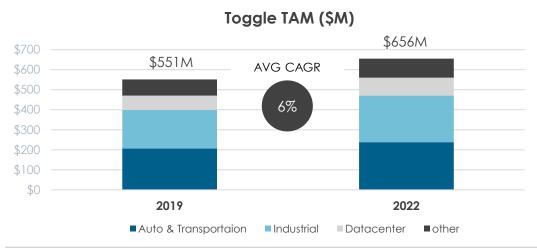
- Acts as power loss protected write burst data buffer on the fabric/network controller card for offload engines
- Providing at point persistent write data completion
- Eliminates the multi-microseconds latency path before data can be committed to a persistent device

# Provide bigger working persistent memory region

#### Enables product differentiation



# Above Market Toggle Growth in Broad Applications



# KEY SUCCESS FACTORS Focus on high value segments that need higher performance and reliability

- Leverage expanded supply
- Gain further traction in the Auto segment



#### \*Everspin internal estimate

# **Toggle MRAM** in RAID Controller Journal Memory

#### No Stored Charge Liability

# × ×

Simplified Architecture Eliminates Power Fail Hardening



Solid Reliability







# in Gaming Machine Data Log

#### **MRAM Ensures Data Retention**

Persistent Memory ensures data retention

Ensures accuracy of data logging applications

#### No Stored Charge Liability

# × ×

#### Extended Temperature Operation



#### Solid Reliability

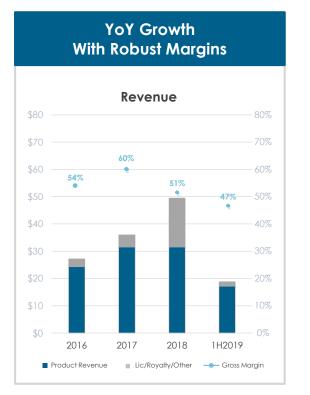


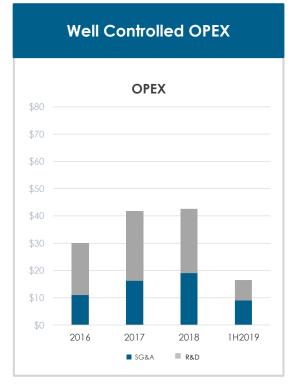




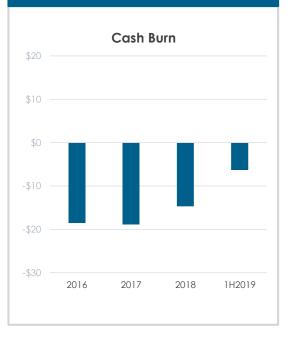
# **Financial Data**

# **Key Financial Indicators**





#### Moving Toward Profitability





# **Income Statement**

Income Statement (\$M)	2017	2018	1Q19	2Q19	1H19
Revenue	\$35.9	\$49.4	\$10.0	\$8.6	\$18.7
Gross Profit	\$21.5	\$25.3	\$4.8	\$4.0	\$8.8
R&D	\$25.4	\$23.6	\$4.0	\$3.5	\$7.5
SG&A	\$16.3	\$19.0	\$5.0	\$4.1	\$9.0
Operating Income	(\$20.2)	(\$17.3)	(\$4.3)	(\$3.7)	(\$7.9)



# **Balance Sheet**

Balance Sheet (\$M)	2017	2018	1Q19	2Q19
Cash & Equivalents	\$13.0	\$23.4	\$18.5	\$15.3
Assets	\$31.4	\$45.0	\$42.2	\$30.6
Debt	\$12.2	\$12.3	\$11.0	\$9.3
Liabilities	\$20.6	\$20.1	\$20.8	\$18.8
Equity	\$10.9	\$24.9	\$21.4	\$18.6

Signed revised loan agreement with Silicon Valley Bank in Aug 2019 that pushes out principal payments for a year, significantly reducing debt service costs



# **Target Operating Model**

	1H19 Actual	Long-Term Target @\$100M
Total Revenue	\$18.7M	100%
Gross Margin	47%	>50%
R&D	\$7.5M	20%
SG&A	\$9.0M	17%
Operating Income	(\$7.9M)	13%

Our focus is on building a sustainable business



## **Investment Summary**



MRAM products have differentiated value proposition that deliver performance, persistence and endurance while reducing safety and reliability concerns



Sole supplier of Toggle MRAM and STT-MRAM to Tier-1 customers in important stable and growing markets



Growing IP portfolio of over 650 patents and applications generating licensing and royalty revenue



Management team and Board with experience commercializing technology in our target markets

Solid track record of revenue growth, strong margins and consistent cost control building increasing financial stability



Strategic manufacturing, distribution and customer engagement relationships



Solid Toggle customer base with growing design wins and growing market opportunity for STT-MRAM with large potential



# Thank you.



Data Persistence at Speed