



# GSI TECHNOLOGY

High Performance Components  
for Leading-Edge Technology

*Didier Lasserre, Vice President Sales | December 6, 2017*

# SAFE HARBOR

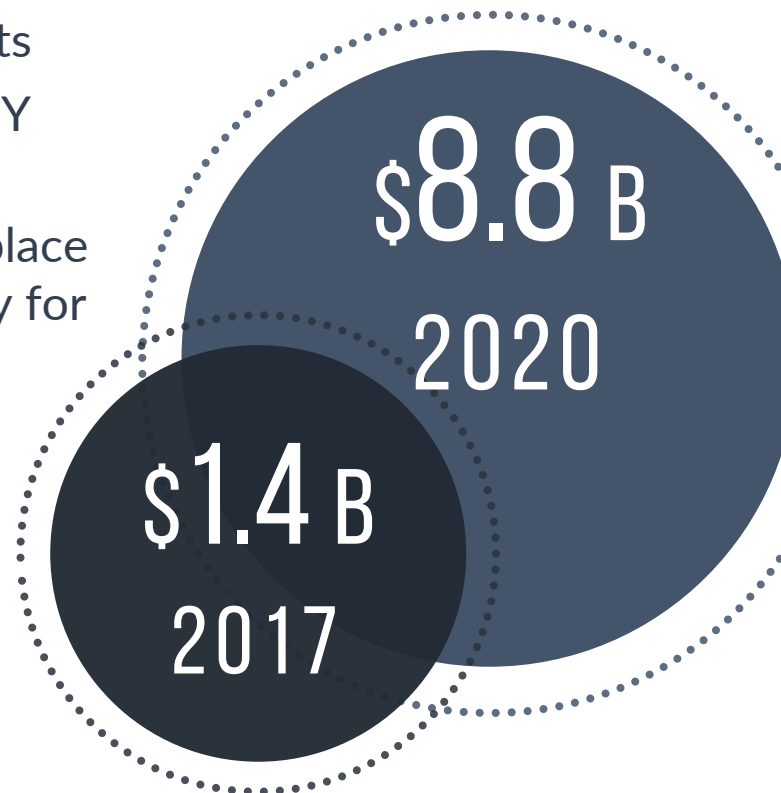
The statements contained in this presentation that are not purely historical are forward-looking statements within the meaning of Section 21E of the Securities Exchange Act of 1934, as amended, including statements regarding GSI Technology's expectations, beliefs, intentions, or strategies regarding the future. All forward-looking statements included in this presentation are based upon information available to GSI Technology as of the date hereof, and GSI Technology assumes no obligation to update any such forward-looking statements. Forward-looking statements involve a variety of risks and uncertainties, which could cause actual results to differ materially from those projected. These risks include those associated with normal quarterly and fiscal year-end closing processes. Examples of other risks that could affect our expectations regarding future revenues and gross margins include those associated with fluctuations in GSI Technology's operating results; GSI Technology's historical dependence on sales to a limited number of customers and fluctuations in the mix of customers and products in any period; the rapidly evolving markets for GSI Technology's products and uncertainty regarding the development of these markets; the need to develop and introduce new products to offset the historical decline in the average unit selling price of GSI Technology's products; the challenges of rapid growth followed by periods of contraction; intensive competition; and delays or unanticipated costs that may be encountered in the development of new products based on our in-place associative processing technology and the establishment of new markets and customer relationships for the sale of such products. Further information regarding these and other risks relating to GSI Technology's business is contained in the Company's filings with the Securities and Exchange Commission, including those factors discussed under the caption "Risk Factors" in such filings.

# EVOLUTION OF OUR BUSINESS

- Market-leading provider of innovative performance memory for 20+ years
- Gross margin increased 1,200 bps in past four years as legacy markets have compressed
- Future products pivot to new growth markets
  - Rad-Hard launch for Aerospace in 1Q CY 2018 – high ASP, high margin
  - Late CY 2018 anticipated launch of in-place associative computing (APU) technology for AI and machine learning applications

***Global machine learning market forecast to grow at CAGR of 44.1% by 2020\****

\* Source: three year CAGR, MarketsandMarkets™, September 2017



# HIGH PERFORMANCE CULTURE

- Largest, high performance memory product portfolio
- Core competency in Very Fast SRAM and LLDRAM
- Fabless manufacturing and master die design model
- Top networking, military, medical, and automotive customers
- Focused team with culture of continuous innovation



*GSI memory products feature very high transaction rates, high density, low latency, high bandwidth, fast clock access times, and low power consumption*

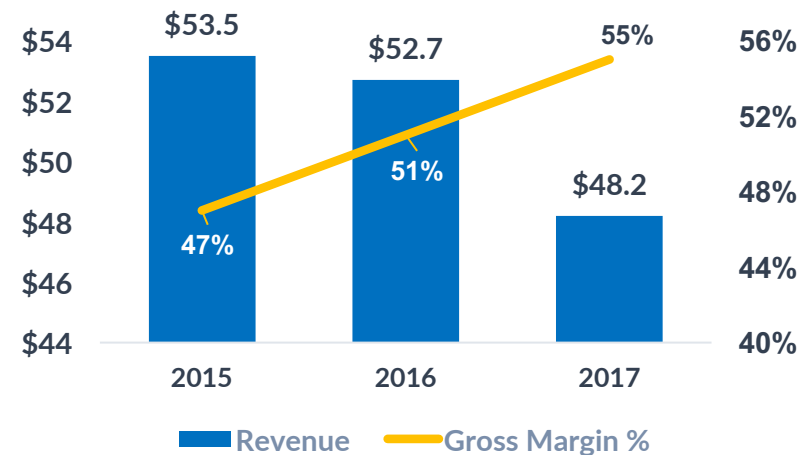
# ROBUST BUSINESS MODEL

- Coming off of an investment cycle
  - \$5 million for APU technology acquisition in CY 2015
  - \$36 million legal fees
  - Purchased HQ building in Sunnyvale, CA
- Achieved gross margin improvement on revenue contraction
- 38 consecutive quarters of profitability until 4Q FY13
- Profitability impacted by R&D, increased to \$4 million per quarter in CY 2017 for APU development
- \$61 million of common stock repurchased year-to-date

## SUMMARY BALANCE SHEET

(\$ in millions)	FY 2018 Q2 09/30/2017	FY 2017 Q4 03/31/2017
Cash	\$37.4	\$33.7
Short Term Investments	\$12.2	\$16.2
Long Term Investments	\$14.6	\$12.9
Debt	\$ 0.0	\$ 0.0

## REVENUE & GROSS MARGIN PERFORMANCE



\*Reflects March 30 fiscal year end



# STRONG CORE COMPETENCIES

## REVENUE GROWTH DRIVERS: SIGMAQUAD™ SIGMADDR™

- Switches, routers and base stations
- Broadest product offering across product categories
- Best industry performance

## NEXT GEN SRAM (3<sup>RD</sup> AND 4<sup>TH</sup> GENERATION)

- Fastest off-the-shelf SRAM on market
- Higher reliability
- Lower power consumption
- Higher ASP and gross margin contribution

## BEST IN CLASS CAPABILITIES

- Performance leader across broadest product availability
- SigmaQuad™ SRAMs acknowledged leader in industry for capacity, performance, and unequaled transaction rates
- LLD RAM performance unmatched by commodity DRAM

# BEST-IN-CLASS CAPABILITIES

## INNOVATION LEADERSHIP

- SQIVe: Fastest SRAM in the market
- SQIIIe: High-end ECC SRAM
- Sole supplier of monolithic 288Mb SQ
- Sole supplier of monolithic 144Mb S.B. and NBT
- Sole supplier: 1.8 V 9Mb/18Mb/36Mb/72Mb/144 Mb synch SRAM

## ADVANCED PROCESS TECHNOLOGY

- TSMC technology partner:
  - 0.13 micron copper
  - 300mm wafers
- 90nm – for legacy products
- 65nm – workhorse since 2010
- 40nm – devices increasing gross margin
- **28nm – will be used for In-Place Associative Processor (APU)**

# HIGHLY CAPITAL EFFICIENT

- Highly efficient business model – fabless manufacturer and master die production solution
- Primary uses of capital have been share repurchase and R&D investment for APU product development

## SHARE REPURCHASE

- To date returned \$60.6 million in capital to stockholders through 12 million share repurchase
- Outstanding Board authorization to purchase up to an additional \$4.4 million

## R & D INVESTMENT

- \$4 million per quarter since CY 2017
- Quarterly R&D spend will continue at this level through CY 2018
- Developing software libraries and hardware design



# EFFICIENT MANUFACTURING PLATFORM

*Master Die Design Model Beneficial to GSI and Customers*

27 BASIC  
PRODUCT  
DESIGNS  
LEVERAGED

TO CREATE  
> 16,000  
INDIVIDUAL  
PRODUCTS



## GSI BENEFITS

- More profitable cost structure
- Leverage R&D resources
- Enhanced inventory management
- Address total available market

## OEM BENEFITS

- Reduced lead times
- Long product life availability
- Lower qualification costs

# RETURNING TO GROWTH

- Leveraging core competencies in design and manufacturing to enter new product categories
- Two launches over next 12 months of high-growth, high margin product
- 4Q CY 2018 launch of SigmaQuad radiation-hardened (Rad-Hard) SRAM will improve top line and gross margin
- Anticipated late CY 2018 release of APU for AI and machine learning opens large, new markets with high-profile customers

***Anticipate top-line growth and continued strong gross margin in fiscal year 2019***

# NEW CATEGORY OPPORTUNITIES

## AEROSPACE & DEFENSE: RADIATION-HARDENED (RAD-HARD) SRAM

- Leveraging SRAM capabilities into higher ASP, high gross margin product
- Capabilities and technology unique to GSI
- Launch late 4Q CY 2017

## PATENTED IN-PLACE ASSOCIATIVE COMPUTING TECHNOLOGY (APU)

- Massive Parallel Processing (MPP) systems limitations in increasingly complex machine learning and natural language processing applications create an opportunity for new solution
- GSI solution has differentiated capabilities from current AI solutions
- Launch anticipated second half CY 2018

# RAD-HARD AEROSPACE



## PRIMARY APPLICATIONS

- High temperature and pressure
  - Satellites
  - High altitude flights

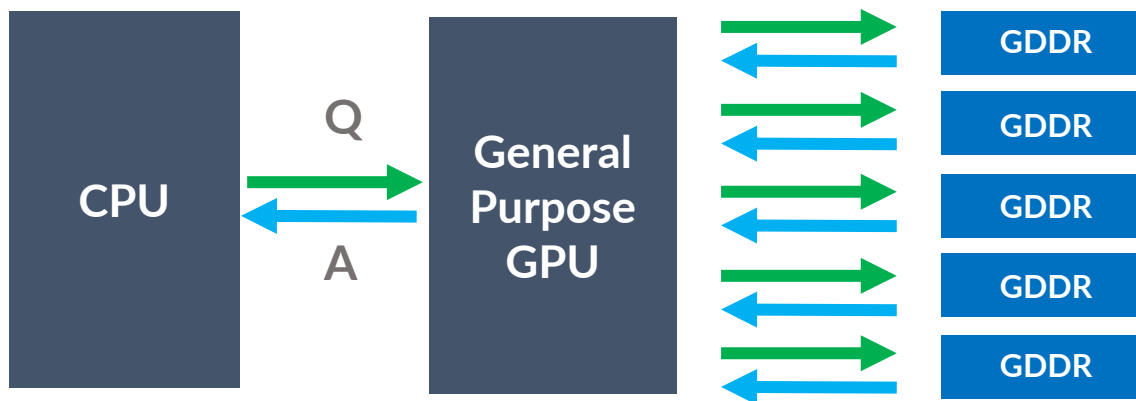
## PRODUCT HIGHLIGHTS

- First product – 288Mb SQII+
- Second product – 144M NBT/SB
- Target products:
  - 144Mb SQIV, 144M SQIII, APU
- 85% gross margin
- Started qualification process
- Ship samples 4Q CY 2017

# PROCESSING CHALLENGE FOR AI

- Proliferation of AI task learning – recognizing images and language translation – requires analyzing vast amounts of data
- Current solutions use graphic processing units (GPU) originally designed for video games
- Machine learning is pushing the limits for Massive Parallel Processing (MPP)

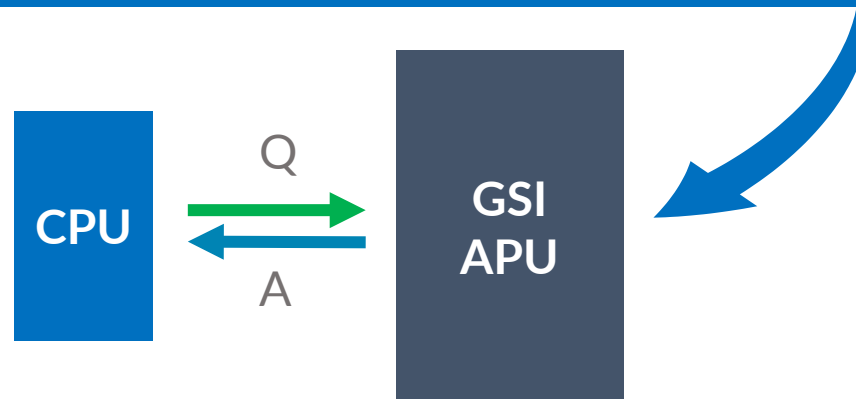
CREATES MASSIVE IO BOTTLENECK



Long query response times | High power consumption and system cost

# IN-PLACE ASSOCIATIVE PROCESSING

GSI SOLUTION MIMICS BRAIN BY COMPUTING IN-PLACE WITHIN APU



- Computation and search occur inside the GSI Associative Processor (APU)
- Responses provided directly by APU
- Removes IO bottleneck
- Improves performance, reducing query response times from hours to seconds
- Significantly reduces power, and reduces system cost



# STRONG IP PORTFOLIO

## ACQUIRED MIKAMONU GROUP, PATENT PORTFOLIO, AND IP IN CY 2015

- U.S.-based patent portfolio - 16 granted and 10 pending
- Future patents will extend to China and Korea
- All related to associative processing for compute and search
- Application libraries to enable hardware functions
- Seamless integration into existing software platforms
- Applications include image processing, Big Data analytics, security, machine learning

# MULTIPLE APU MARKET OPPORTUNITIES

## AI - BIG DATA MARKET GROWING 30% CAGR\*

- Cloud computing applications of data analytics, machine learning, SQL/NoSQL used by recommender systems, data mining, search engines and NLP



## COMPUTER VISION MARKET GROWING 42% CAGR\*\*

- Safety based automotive applications - Advanced Driver Assistance Systems (ADAS) lane departure warning, collision warning, blind-spot monitoring
- Warehouse robotics, missile guidance
- Amazon, Bosch, Continental, military contractors, Mobileye (Intel)

## CYBER SECURITY

- Firewall, antivirus, encryption, web filtering, IDS/IPS, DPI
- Check Point, Cisco, Fortinet, Palo Alto Networks

Sources: \*Goldman Sachs; \*\* Tractia;

# BALANCE SHEET TO FUND GROWTH

(\$ IN MILLIONS)		AS OF 09/30/2017
<b>Liquidity:</b> cash, cash equivalents, short-term investments and long-term investments		\$64.2
Total assets		\$101.1
<b>Debt</b>		\$0.0
Shareholder Equity		\$85.6
BALANCE SHEET METRICS:		
Working capital		\$56.3
Current ratio		6.9

# PATH TO FUTURE GROWTH

- Leveraging leadership in performance memory chips to enter new product categories
- New products will drive top line growth and further gross margin improvement
- Return to top line growth anticipated in second half of CY 2018 with launch of Rad-Hard
- Enter large, high growth markets in late CY 2018 with anticipated launch of in-place associative computing (APU)



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