

EXITECHNOLOGY

High Performance Memory Technology for for Leading-Edge Applications Doug Schirle, CFO Didier Lasserre, VP of Sales and Investor Relations January 2022

Safe Harbor

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GSI Technology Overview

LEVERAGING OVER 25 YEARS OF MEMORY CHIP DESIGN AND DEVELOPMENT TO BRING REVOLUTIONARY CHANGE TO COMPUTING

- Founded 1995 in Silicon Valley; IPO in 2007
- Fabless memory chip company
- Leading provider of "Very Fast" SRAM¹
- Largest portfolio of high-performance memory
- Launching Gemini Associative Processing Unit (APU)
- 35% insider ownership
- **\$112 million** market cap²



LTM Annual Revenue

172 Employees Worldwide









1. Static Random Access Memory (SRAM) operates at speeds less than 10 nanoseconds, as defined by Gartner Dataquest

3. Includes cash and cash equivalents, short-term investments, and long-term investments as of September 30, 2021.



^{2.} Based on closing share price of \$4.60 on January 3, 2022 and common stock outstanding as of October 31, 2021 of 24,353,931.

Capital Efficient Core Business Funds Our Growth

- Cap-ex light semiconductor business model manufacture with TSMC using master die production process
- Strong cash generation historically
- 100% of R&D budget focused on new AI solution
 - \$5+ million quarterly R&D spend to develop Gemini APU and the software and algorithm libraries
- Core business and strong balance sheet provide funding for Gemini APU development and marketing



Leveraging Expertise Into New Product Categories

Legacy SRAM Memory

- Industry leading, largest portfolio of high-performance memory products
- SigmaQuad[™] and SigmaDDR[™] core business growth drivers
- SigmaQuad[™] SRAMs recognized for industry-leading density and speeds
- **3rd and 4th Generation SRAM** fastest off-the-shelf SRAM on market

Radiation Hardened SRAM

- 85%+ gross margin, ~\$30K ASP
- Satellites, missiles, high altitude flights

Gemini Associative Processing Unit (APU)

- Memory-centric parallel processing
- Speed and accuracy for extremely large data sets
- Scalable and customizable

Higher ASP, Higher Margin Products with Larger TAMs



Al Processing Limitations Von Neumann Architecture Greates a Massive IO Bottleneck



- CPU/GPU limited by "von Neumann" bottleneck with large datasets
- Slower computation rates due to throughput limitations
- Significant power consumption
- Not a scalable system



APU Removes Bottleneck ARevolutionary Computing Model





APU on Leda-G Board

- In-memory processing reduces computation time from minutes to seconds, milliseconds, or microseconds
- Significantly reduced power consumption and total cost of ownership
- Massive parallel data processing with **2 million-bit processors** per chip versus 1,000's in a GPU
- Scalable unique feature to Gemini



APU Software and Algorit

Applications

Integrations for specific market applications, e.g. Biovia, Face Recognition, SAR

Algorithms

Custom GSI data science function improving specific computation, e.g. single shot learning, ANN Big Data Clustering

App Libraries

Libraries for specific application acceleration by developers, e.g. Search, DSP, Hash, etc.

Compiler Stack

Stack for algorithm conversion, framework support, and simplified low level code generation



Target Applications Cemini-IExcels in Similarity Search

Search Markets for Gemini-I	Nvidia GPU Google TPU Intel HABANA Graphcore IPU	CPU	FPGA	Gemini-I	
Facial Recognition Drug Discovery & Toxicity					
SAR, ATR					
Signal Classification	V	V	×		
Object Detection	~	$\mathbf{\lambda}$	$\mathbf{\lambda}$	\mathbf{V}	
Cryptography					
Visual & Video Search Elastic, AWS Open Search	Gemini outperforms all current search solutions				



APU TAM/SAM Opportunities across Multiple Search Markets



Targeted SAM Applications

- Computer Vision
- SAR
- Drug Discovery
- Cybersecurity
- NoSQL Search Engine (SaaS)
- Elasticsearch; OpenSearch (SaaS)

Source materials referenced for addressable market analysis and sizes cited on appendix slide 22.



The Power Saving Solution Comparisons for a 5 Kmby 5 KmSARImage in 1 second at 0.5 mResolution



1. "Total Cost of Ownership" reflects hardware systems cost plus power cost calculated at average \$0.13 per kilowatt hour for US-based systems.



Realine Edge Results Traditional Facial Recognition VS APULocal Processing





Gemini APU in Space Radiation Toler ant Onboard Processing

Challenge

Sensor-intensive satellites processing massive datasets

- Insufficient satellite bandwidth for exchanging large amounts of data with ground stations
- Safe satellite constellation navigation requires rapid response

Rad Tolerant Gemini-I Solution

- Onboard AI, multiple data source integration, automatic target recognition, and weather analysis
- Crash avoidance and improved communications



With near real-time response Gemini can avoid costly collisions for the thousands of satellites in space.



Cheminformatic Faster, Lower-Cost Drug Development

Challenge

- Drug discovery requires searching extensive molecular databases for molecules with similar properties to a known drug
- CPU-based systems require several minutes to complete only one molecule similarity search

Gemini-I Solution

 Gemini-I's hyper-scale computational search is many orders of magnitude faster and can perform multiple searches simultaneously, with more frequent exact matches



In the fight against COVID-19, the Weizmann Institute is using Gemini-I in their search for an antiviral medications.



APU Hardware Roadmap





Why Invest Now?

• Gemini APU expected to deliver significant future value

- **Timing** recognition that a memory-centric processor is the ultimate solution to the "system bottleneck" problem
- **Trends** systems processing data sets approaching 1 billion need a smaller footprint, lower power usage, and lower total cost of ownership
- Validated selected as a partner in AWS Open Search project; among top finalists in Billion-Scale Approximate Nearest Neighbor Search (ANNS) challenge
- Awareness with alpha and beta Gemini customers; expected compiler launch in 2022 expands beta market
- Attractive risk/reward profile:
 - Limited downside given ~40% of the company's market cap is in cash with a low cash burn rate
 - Significant upside given the AI opportunity over three-to-five-year horizon



Thank you!



GSI Technology

High Performance Components for Leading-Edge Technology

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Appendix



Key Takeaways

• Gemini-I targeting multiple applications in similarity search

- k-NN search plug-ins for elastic and AWS Open Search
- Facial Recognition / Computer Vision
- Drug Discovery and Toxicity
- Elasticsearch & OpenSearch
- Signal Classification and Object Detection
- Cryptography
- Executing on building sales pipeline for Gemini-I
- Trading below comparable valuations at 2.3X EV/TTM Sales and 2.4X market cap/total cash
 - Gemini-I potential not reflected in current valuation



Al Processor Overview Cemini-IExcels in Similarity Search

- Visual search requires high processing speeds and accuracy
- Gemini-I speed and accuracy is ideal for visual search
- Gemini-II targeting inference and training (2022)

Application	Nvidia GPU Google TPU Intel NERVANA NPP Graphcore IPU	ASIC	FPGA	Gemini-I
Similarity search	×	×	×	✓+
Training	\checkmark	×	\bigcirc	×
Inference	\bigcirc	\checkmark	\checkmark	\checkmark



Diverse Markets Long Tail Market for AlSearch



NOTE: vertical height is for illustration and not indicative of scaled volume.



APU TAM/SAM Referenced Sources for APUTAM

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- 4. \$U\$86B in 2025
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SAR:

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NoSQL:

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- 3. https://www.imarcgroup.com/nosql-markethttps://www.imarcgroup.com/nosql-market
- 4. https://www.verifiedmarketresearch.com/product/nosql-database-market/https://www.verifiedmarketresearch.com/product/nosql-database-market/

Cybersecurity:

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Income Statement

CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS

(in thousands, except per share data)

(Unaudited)

	Three Months Ended				Six Months Ended					
	Sep <u>20</u>	t. 30, <u>)21</u>	June <u>20</u> 2	30, 2 <u>1</u>	Sep <u>2</u>	ot. 30, <u>020</u>	Sep <u>2</u>	ot. 30, <u>021</u>	Se 2	pt. 30, 2020
Net revenues Cost of goods sold	\$	7,797 3,620	\$	8,791 4,009	\$	6,659 3,547	\$	16,588 7,629	\$	13,280 7,118
Gross profit		4,177		4,782		3,112		8,959		6,162
Operating expenses:										
Research & development Selling, general and administrative Total operating expenses		5,907 2,787 8,694		6,103 3,040 9,143		5,659 2,606 8,265		12,010 5,827 17,837		11,484 5,526 17,010
Operating loss		(4,517)		(4,361)		(5,153)		(8,878)		(10,848)
Interest and other income, net		(8)		(20)		(16)		(28)		90
Loss before income taxes Provision for income taxes Net loss	\$	(4,525) 42 (4,567)	((4,381) (172) (\$4,209)	\$	(5,169) <u>62</u> (5,231)	\$	(8,906) (130) (8,776)	\$	(10,758) 549 (11,307)
Net loss per share, basic Net loss per share, diluted	\$ \$	(0.19) (0.19)		(\$0.17) (\$0.17)	\$ \$	(0.22) (0.22)	\$ \$	(0.36) (0.36)	\$ \$	(0.48) (0.48)
Weighted-average shares used in computing per share amounts:										
Basic Diluted		24,229 24,229		24,095 24,095		23,617 23,617		24,162 24,162		23,529 23,529



Summary Balance Sheet

CONDENSED CONSOLIDATED BALANCE SHEETS

(in thousands) (Unaudited)

	<u>Sept. 30,</u> 2021	<u>March 31,</u> 2021
Cash and cash equivalents	\$40,943	\$44,234
Short-term investments	9,791	9,717
Accounts receivable	3,653	3,665
Inventory	4,449	4,343
Other current assets	1,899	1,487
Net property and equipment	7,335	7,328
Long-term investments	2,759	5,792
Other assets	10,727	11,046
Total assets	\$81,556	\$87,612
Current liabilities	\$7,144	\$7,462
Long-term liabilities	4,491	4,558
Stockholders' equity	69,921	75,592
Total liabilities and stockholders' equity	\$81,556	\$87,612



Experienced Management Team

Name	Title	Years of Experience	Years with GSI	Prior Companies
Lee-Lean Shu	Chairman and CEO	43	26	Sony, AMD
Doug Schirle	Chief Financial Officer	43	22	Cypress, Pericom
Didier Lasserre	VP Sales and IR	33	24	Cypress, Solectron
Avidan Akerib	VP of Associative Computing	41	6	MikaMonu, NeoMagic
Patrick Chaung	SR VP of Memory Design	45	12	Sony, AMD
Robert Yau	VP of Engineering	44	26	Sony, Mosel Vitelic
Bor-Tay Wu	VP of Taiwan Operations	41	25	Atalent, AMD



Thank you!



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