

## 2022 AGM – Chair Address and CEO Presentation

16 November 2022

**Weebit Nano Limited (ASX:WBT; Weebit or the Company)**, will today address shareholders at its Annual General Meeting, commencing at 10:00am (AEDT).

Attached is a copy of the Address to be delivered by the Chairman, Mr David (Dadi) Perlmutter, and the Presentation to be delivered by the Managing Director and CEO, Mr Jacob Hanoch.

*Authorised for release by David Perlmutter, Chairman.*

- ENDS -

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### About Weebit Nano Limited

Weebit Nano Ltd. is a leading developer of next-generation semiconductor memory technology. The company's ground-breaking Resistive RAM (ReRAM) addresses the growing need for significantly higher performance and lower power memory solutions in a range of new electronic products such as Internet of Things (IoT) devices, smartphones, robotics, autonomous vehicles, 5G communications and artificial intelligence.

Weebit's ReRAM allows semiconductor memory elements to be significantly faster, less expensive, more reliable and more energy efficient than those using existing Flash memory solutions. As it is based on fab-friendly materials, the technology can be quickly and easily integrated with existing flows and processes, without the need for special equipment or large investments.

See [www.weebit-nano.com](http://www.weebit-nano.com) and follow us on <https://twitter.com/WeebitNano>.

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## 2022 ANNUAL GENERAL MEETING

### CHAIRMAN'S ADDRESS

The 2022 financial year and the last couple of months have been an exceptional period for Weebit Nano. A period in which we demonstrated the maturity and suitability of our embedded ReRAM for volume production, entered our first commercial agreement with SkyWater Technologies, successfully qualified our technology with CEA-Leti, and received the first silicon wafers incorporating our ReRAM module from SkyWater Technologies' US production fab.

These achievements have accelerated our engagement with Tier 1 and 2 fabs, and potential customers, and we are now in various stages of discussion and technology evaluation with each of them. Many of you will have heard Coby refer to this dynamic as a 'chicken-and-egg' scenario. Fabs will often wait until a customer requests a new technology before adopting it, while a customer will also want to know a new technology is available at a fab before integrating it into their designs. We are now at the point where we will soon break this deadlock as the market acknowledges the need for ReRAM and we are getting customers and fabs to talk with the goal of a 3-way cooperation.

We are hearing from Tier-1 fabs that customers are asking them about ReRAM, and this is also acknowledged by customers. We are now qualifying the chips manufactured at SkyWater, and SkyWater is already calling on their customers to introduce Weebit's ReRAM to them.

Our progress over the past year would not have been possible without our valuable partnerships with development partner CEA-Leti, and first commercial partner SkyWater Technologies. On behalf of the entire Weebit team, I would like to thank you both and I look forward to our continued collaboration in FY23 and beyond.

I'm incredibly proud of Weebit Nano's achievements to date. The company has consistently delivered against its milestones, and our embedded ReRAM is well-placed to meet the rapidly growing demand for faster, more efficient non-volatile memory (NVM) technologies.

The achievement of several key technical milestones over the past year is a testament to our exceptional team management and the Board. While the memory technology we are commercialising is new, developing and bringing new semiconductor technology to market is a process many of Weebit Nano's team have been through before. Thank you to my fellow Directors and Weebit's entire team for all your hard work and dedication over the past year. I look forward to the year ahead.

And finally, thank you to our loyal shareholders for supporting us on this journey. FY23 is shaping up to be an exciting year, one in which we expect to sign up additional fabs and customers, and also commence volume production of our embedded ReRAM technology.



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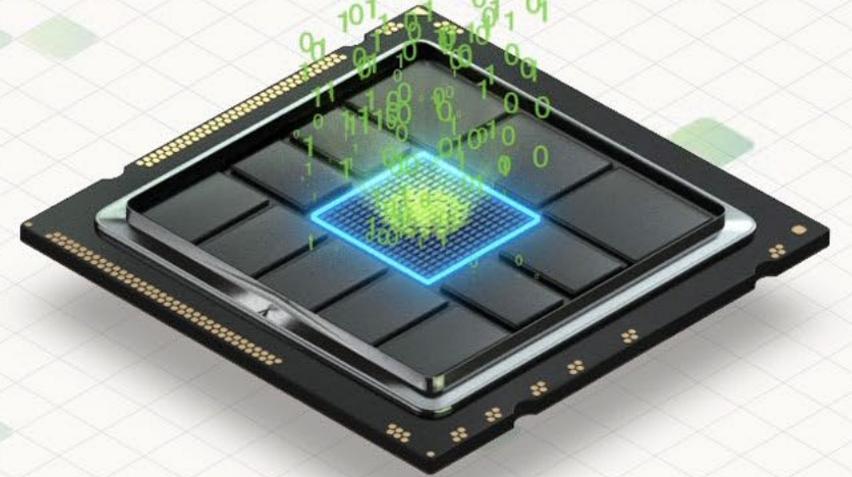




# CEO Presentation ReRAM: The Next NVM is Here

Annual General Meeting of Shareholders 2022

16 November 2022



# Your board of directors

David (Dadi) Perlmutter  
**CHAIRMAN**



Dr. Yoav Nissan-Cohen  
EXEC. DIRECTOR



Atiq Raza  
NON-EXEC. DIRECTOR



Fred Bart  
NON-EXEC. DIRECTOR



Ashley Krongold  
NON-EXEC. DIRECTOR



Coby Hanoch  
CEO



# Who we are

Leading developer of innovative memory technologies

Bringing to market Weebit ReRAM – next-generation NVM technology

Enabling a new era of intelligent connected devices



**Founded: 2015**

Located in Israel & France  
ASX: WBT



**Signed 1st commercial deal**

Ongoing discussions with  
additional fabs and customers



**World-leading team**

50 personnel\* (90%  
engineers/ scientists)



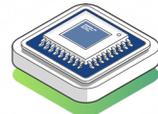
**Business model**

Product & IP licensing to  
semiconductor companies & fabs



**R&D partner**

CEA-Leti, leading micro-  
electronics research institute

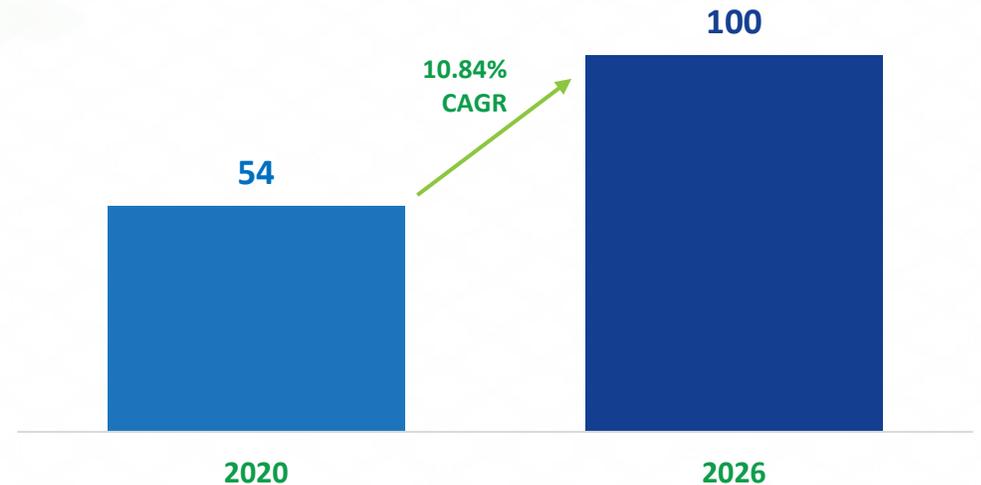


**Fully qualified on 130nm & below**

Proven on >1000 wafers to-date  
Volume production expected 2023

\* Includes employees and full-time contractors

Global NVM Market (US\$B)\*



NVM = Non-Volatile Memory

\* Source: MarketsandMarkets; company data

# Strong and experienced management

**Coby Hanoch**  
CEO



**Ishai Naveh**  
CTO



**Amir Regev**  
VP TECH.  
DEVELOPMENT



**Ilan Sever**  
VP R&D



**Eran Briman**  
VP MARKETING &  
BUSINESS DEV.



**Alla Felder**  
CFO



# Increasing global semiconductor R&D investment

- Geopolitics driving countries to invest locally in semiconductor R&D
  - US CHIPS Act / EU Chips Act to boost new fab construction & advanced R&D in these regions
  - NVM a key area of investment globally
- Semiconductor companies & foundries announce capacity investments over time



US CHIPS Act

Government Investments & Incentives		
United States	\$52B +	8 new fabs
European Union	\$43B +	4 new fabs
China	\$150B +	10 new fabs
Korea	\$260B +	5 new fabs
Taiwan	\$120B +	10 new fabs
Japan	\$6B +	5 new fabs
India	\$10B +	1 new fab
Singapore	\$5B +	1 new fab

TSMC	Intel	Samsung	Micron
\$100B	\$40B	\$345B	\$150B

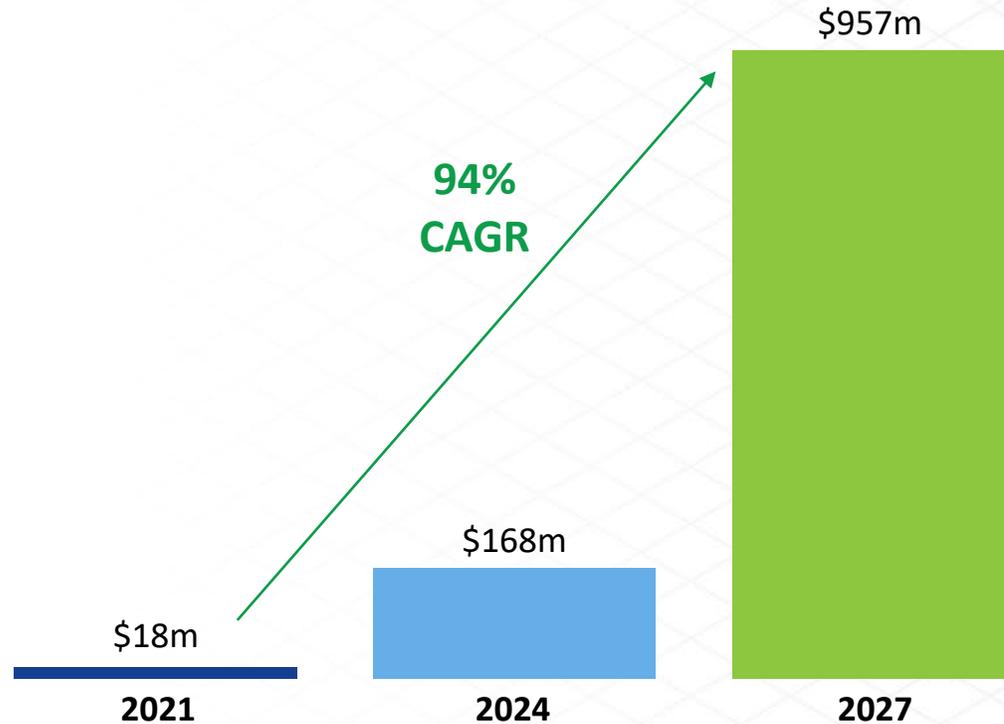
**EE Times** SkyWater to Build \$1.8 Billion Fab  
07.22.2022

**IC Insights** 08.23.2022 First 3-year period of double-digit CapEx growth in semi industry since 1995

- Memory = 35% of fab equipment spending 2022-2023
- Memory + foundry represent most of the capacity increases – SEMI, March 2022

# Embedded ReRAM market – approaching the tipping point

## Embedded ReRAM Market Size 2021 - 2027



Source: Yole Emerging Non-Volatile Memory 2022  
Note: The embedded emerging NVM market size is evaluated based on assumptions of the average chip area occupied by a given memory technology (Yole)

Embedded emerging NVM market expected to reach \$2.9B by 2027

◆ ReRAM expected market share: 33%

Embedded memory is a clear differentiator for semiconductor companies

Electronics Weekly.com

8th July 2022

Nordic to buy its embedded memory supplier, Mobile Semi

Norwegian RF chip maker Nordic Semiconductor is to acquire US embedded memory IP supplier Mobile Semiconductor.

# The evolution of ReRAM: The Next NVM is Here



1960s – 2010s

- ReRAM spent decades in research and development until the industry recognized the limitations of flash



2015 – 2016

- Weebit founded
- Partnering with Leti to drive development of innovative NVM based on 10+ years of research



2017 – 2018

- Weebit's first demonstrations of small ReRAM arrays
- Focus on fab-friendly and easy-to-integrate technology



2019 – 2021

- Weebit's technology matures
- IP productization
- First commercial deal
- Starting to scale technology to smaller process nodes



2022 – onwards

- Customers requesting ReRAM **now**
- Weebit ReRAM is industry-qualified, ready for production
- Multiple fabs considering Weebit ReRAM
- Weebit & Leti continue to innovate

# The Weebit ReRAM advantage



**3-4x**

**Lower added wafer cost vs. flash**

- ✓ 2-mask adder
- ✓ Standard materials



**100x**

**Better endurance vs. flash**

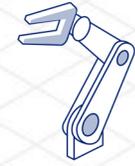
- ✓  $10^5$ - $10^6$  P/E cycles



**~100x**

**More energy efficient vs. flash**

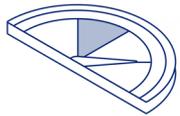
- ✓ Low voltage, low currents
- ✓ Zero standby power



**<40nm**

**Scales to processes far below limits of flash**

- ✓ Proven @ 28nm
- ✓ Scaling to 22nm & below



**~100x**

**Faster access time than flash**

- ✓ Bit/byte addressable



**175°C**

**Reliability for up to 10 years**

- ✓ Endures 9 SMT reflow cycles



**~350x**

**Better radiation tolerance vs. flash<sup>1</sup>**

- ✓ Also tolerant to EMI

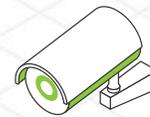


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**Interference w/ analog & power devices**

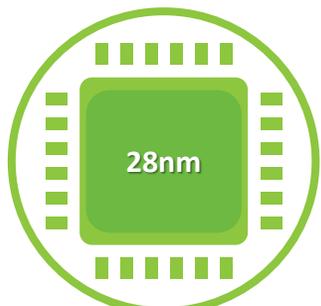
- ✓ Best NVM for PMIC & mixed-signal

# Weebit ReRAM addresses a broad range of application requirements



	Mixed-Signal / Power Mgmt	IoT / MCUs	Edge AI	Automotive	Aerospace & Defense
Back-end-of-line tech for easy analog integration	✓				
Cost-efficiency	✓	✓	✓	✓	
Ultra-low power consumption	✓	✓	✓		
Robustness in high temp / extreme environments	✓	✓		✓	✓
Scaling advantage at 28nm and below		✓	✓	✓	
High Endurance		✓		✓	✓
Small footprint to store very large arrays			✓	✓	
Longevity		✓		✓	✓
Roadmap to neuromorphic computing			✓		

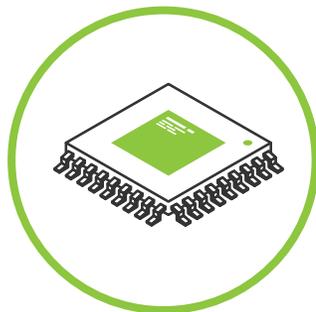
# Significant progress in last 12 months



**OCT 2021**  
Demonstrated 1Mb ReRAM arrays in 28nm FD-SOI



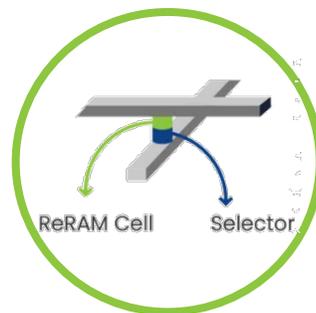
**NOV 2021**  
Raised further A\$35m; well funded to 2024



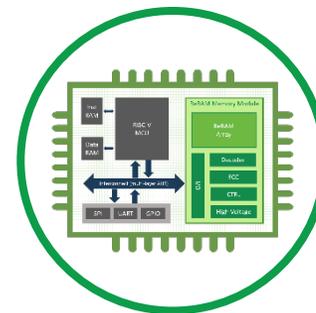
**MAR 2022**  
Started scaling the technology to 22nm FD-SOI



**JUN 2022**  
ReRAM IP module fully functional, live demonstration



**OCT 2022**  
ReRAM selector can achieve high densities needed for discrete & embedded applications



**OCT 2022**  
Final qualification of ReRAM IP module. Industrial-grade temperatures



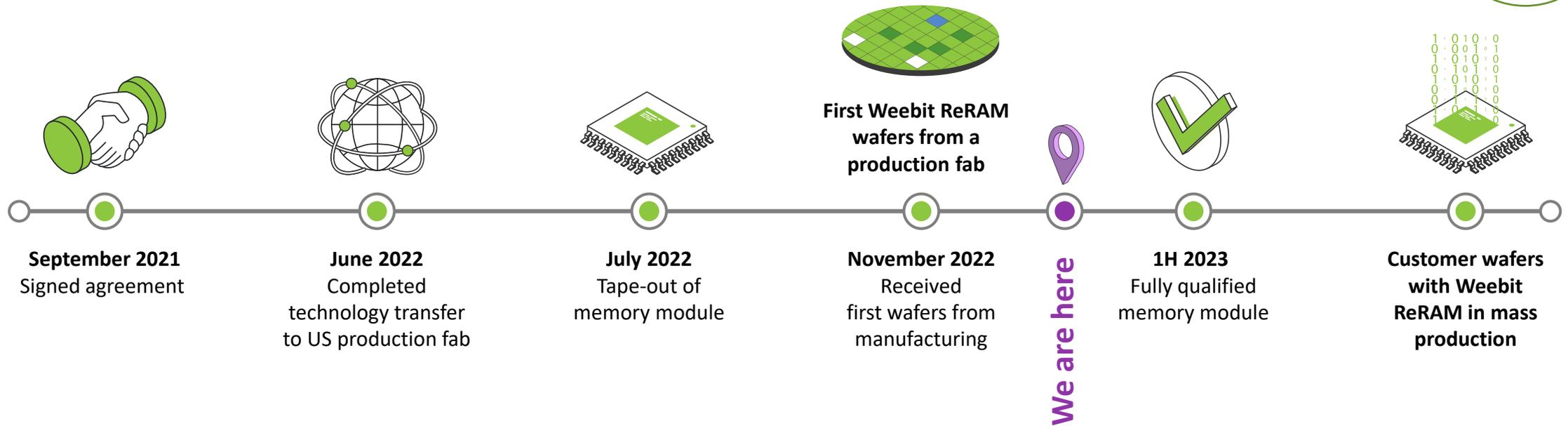
**NOV 2022**  
First production-fab wafers integrating Weebit IP

# On the path towards commercialisation with SkyWater

SkyWater Technology (Nasdaq:SKYT) – the only US-owned pure-play silicon foundry – Taking **Weebit ReRAM** to volume production



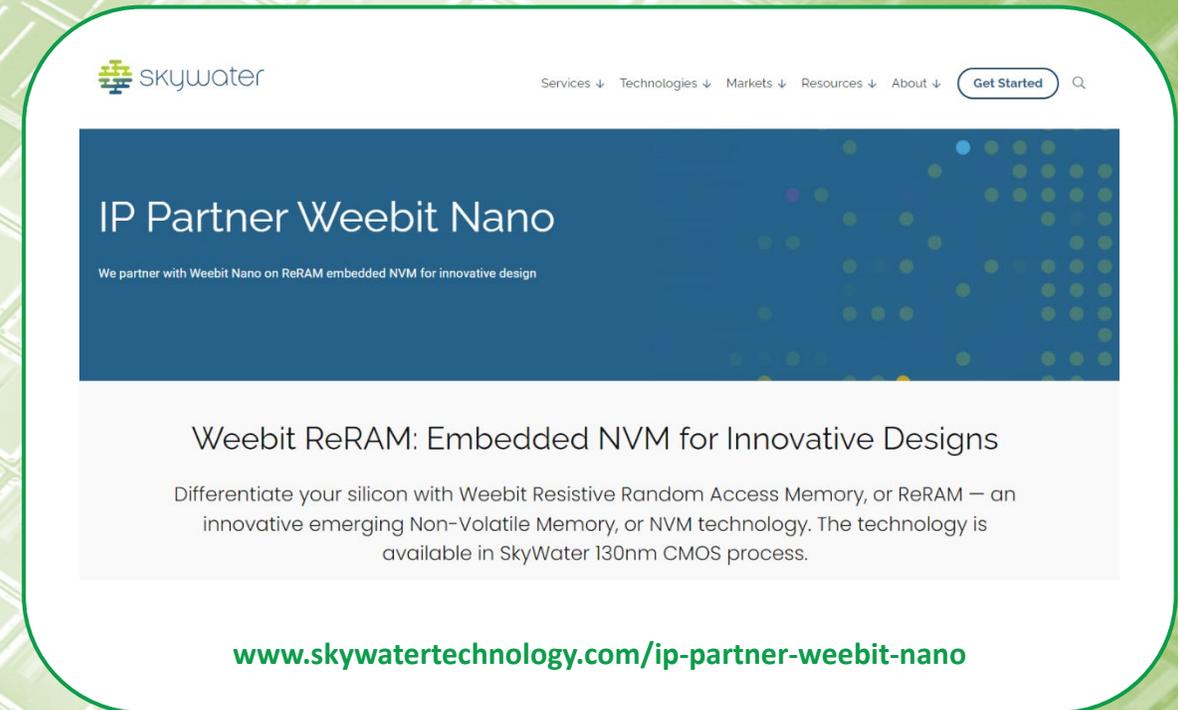
CEO Coby Hanoch holding a SkyWater wafer November 8, 2022



# First silicon wafers integrating Weebit ReRAM received from SkyWater's U.S. production fab

## Major milestone toward commercialisation of Weebit ReRAM at SkyWater

- ❖ Manufactured in 130nm CMOS: a sweet spot for analog/ mixed-signal designs
- ❖ Wafers will now be sliced into chips, packaged, tested and qualified
- ❖ Discussions with potential customers are ramping up as we approach production; strong interest in IoT, power management and mixed-signal ICs
- ❖ SkyWater customers can now use chips for testing and prototyping ahead of qualification; can embed Weebit ReRAM IP in new product designs



The screenshot shows the SkyWater website with the following content:

- Navigation: Services ↓, Technologies ↓, Markets ↓, Resources ↓, About ↓, Get Started, Search icon
- Header: skywater logo
- Section: IP Partner Weebit Nano
- Text: We partner with Weebit Nano on ReRAM embedded NVM for innovative design
- Section: Weebit ReRAM: Embedded NVM for Innovative Designs
- Text: Differentiate your silicon with Weebit Resistive Random Access Memory, or ReRAM — an innovative emerging Non-Volatile Memory, or NVM technology. The technology is available in SkyWater 130nm CMOS process.
- Link: [www.skywatertechnology.com/ip-partner-weebit-nano](http://www.skywatertechnology.com/ip-partner-weebit-nano)

# Successfully completed ReRAM memory module qualification

Qualification is a key step for every semiconductor product on each new target process

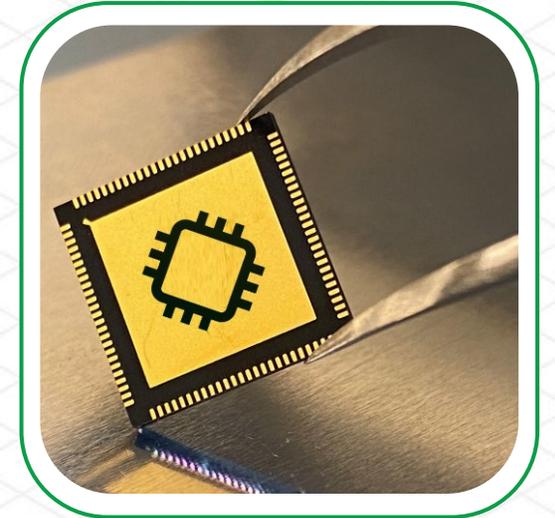
Qualified wafer lots met JEDEC microelectronics standards for endurance, retention, and SMT reflow at industrial temperatures

Results show repeatability, uniformity, and maturity of Weebit's embedded ReRAM  
Significant/relevant for other foundries and potential customers

Based on results, Weebit is in various stages of discussion & evaluation with several Tier-1 fabs and potential customers

Weebit and Leti are now qualifying ReRAM module at even higher temperatures and endurance levels – required for some advanced applications

**Major milestone  
using ReRAM  
memory module  
produced  
at CEA-Leti**



# ReRAM selector further enhanced to increase target applications

## Weebit ReRAM selector now suitable for both embedded and discrete applications

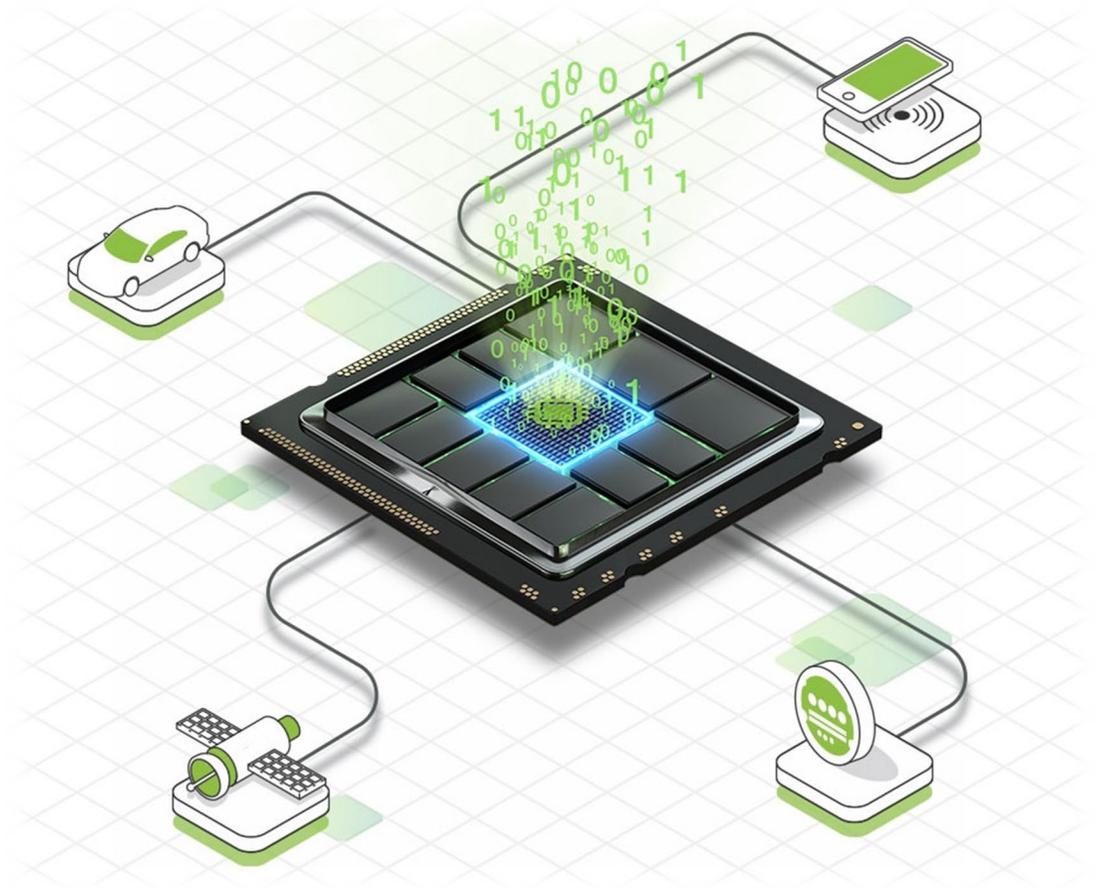
Significantly increases number of target applications

Suitable for future embedded applications that will benefit from higher densities

- ◆ e.g., edge AI and automotive

Able to achieve high densities needed for discrete chips while using fab-friendly materials and standard tools

- ◆ Paves the way for selector to be easily integrated into any CMOS fab
- ◆ Reduces manufacturing costs, complexity
- ◆ Can enable high-capacity memory arrays while keeping size and power requirements to a minimum
- ◆ Will enable 3D ReRAM in the future



# Scaling Weebit ReRAM to 22nm

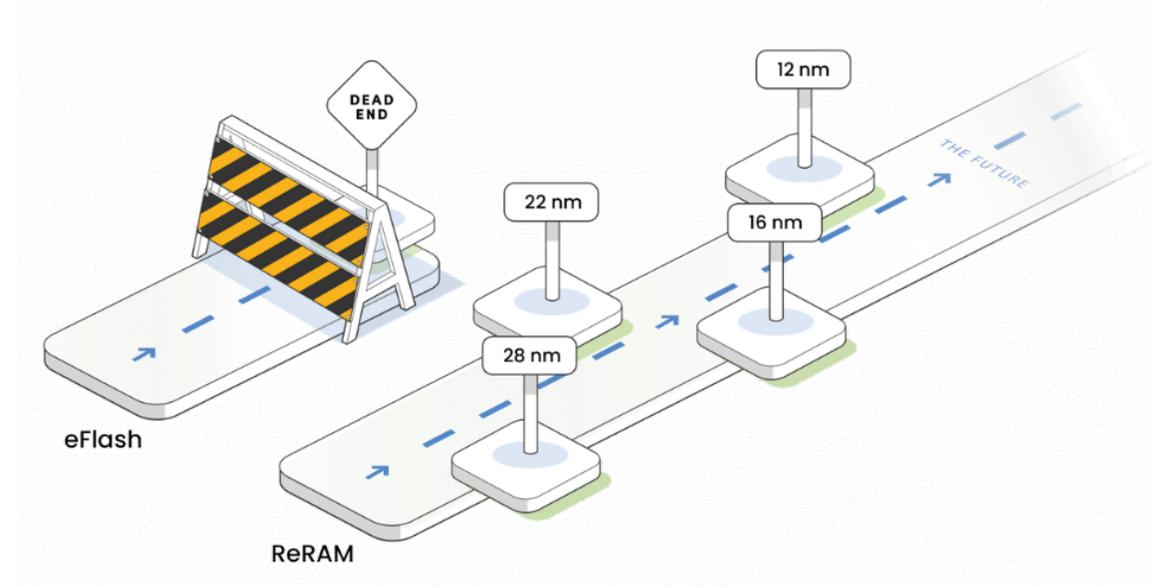
Addresses the need for new NVM at one of the industry's most common process nodes

Designing a full IP memory module targeting an advanced 22nm FD-SOI process

- ◆ FD-SOI: high performance at very low voltage/ low leakage; broadly adopted by the industry
- ◆ Weebit ReRAM + FD-SOI is ideal for low-power embedded devices

Rapidly accelerating plans to scale Weebit ReRAM to advanced nodes

- ◆ Where existing embedded flash technology is no longer a viable option
- ◆ Serving applications including IoT, 5G and AI
- ◆ Weebit is already discussing smaller geometries with Tier-1 fabs



# Increasing market engagement

## Progressing with Tier-1 fabs and customers

### Tier-1 fabs experiencing increasing demand for advanced NVM; actively looking for suitable solutions

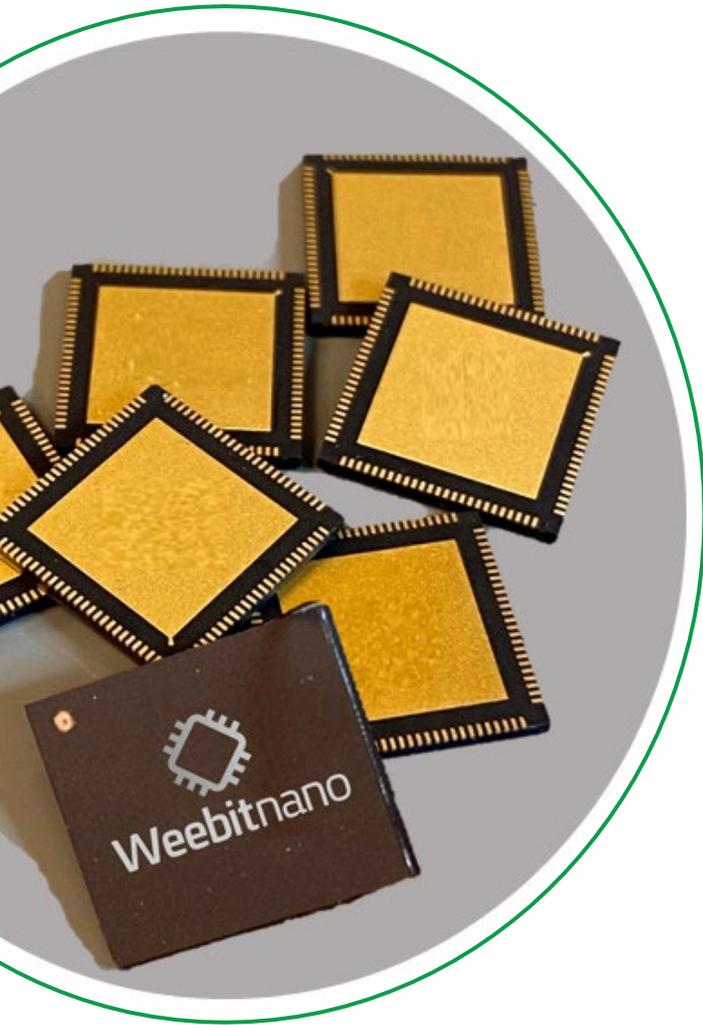
- ◆ Evaluation engagements very detailed and require significant work, but present real potential for expanding Weebit's commercial activities

### Weebit exhibited and spoke at the Flash Memory Summit (FMS) 2022 – largest global conference for the NVM ecosystem

- ◆ Featured two live demonstrations of Weebit ReRAM



# | Weebit Nano key targets for FY23



## SkyWater

Conclude qualification of embedded ReRAM module at SkyWater



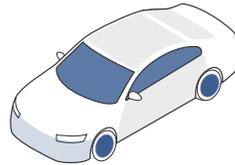
## Fab Partners

Sign an agreement with a Tier-1 fab



## Customers

Close initial customer agreements



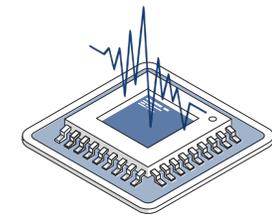
## Automotive

Qualify the technology also for automotive operating conditions



## Continue R&D

Further technical enhancements to the ReRAM cell and selector technologies



## Scaling 22nm

Continue scaling down the technology to 22nm and beyond

# Key takeaways

## Weebit ReRAM: The Next NVM is Here!



The industry needs a new Non-Volatile Memory solution



Weebit ReRAM has unique advantages; is well positioned to replace flash in various markets



Making strong tech progress: 1<sup>st</sup> wafers from a production fab; qualified based on JEDEC standards

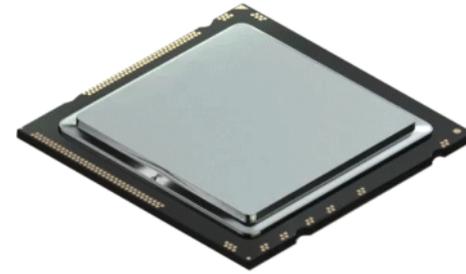


Board & mgmt. have extensive semiconductor commercialisation experience



Weebit is on track to deliver a production solution across a range of high-growth markets

# | ReRAM IS HERE



# Disclaimer

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# Thank You!

[www.weebit-nano.com](http://www.weebit-nano.com)



 **Weebitnano**  
THE NEXT NVM IS HERE