PITT STREET RESEARCH

Weebit Nano

2nd commercial partner secured

Share Price: A$3.32

ASX: WBT

Sector: Semiconductor Equipment

20 October 2023

There are several companies developing Non-Volatile Memory (NVM) technologies that offer superior performance than Flash memory and at smaller process geometries. Weebit Nano (ASX:WBT) is one such company, but is one of the most advanced, with its technology now commercially available and having passed several technological milestones. Weebit's first commercial partner was NASDAQ-listed semiconductor fab SkyWater Technologies in 2021. The pair signed a licensing deal enabling customers of SkyWater to use WBT's ReRAM in their own technologies once qualification was complete (a step that was finalised in 2023).

DB HiTek is WBT's 2nd foundry partner

Yesterday WBT announced its second partner in South Korean fab DB HiTek, one of the world's top-10 foundries and South Korea's 2nd largest foundry after Samsung. DB HiTek serves chip companies such as Intel, Sony, Mitsubishi, Mediatek, NXP, Samsung, Texas Instruments, Infineon, Analog Devices and Toshiba as well as car maker BYD and fabless chip company Qualcomm. The deal provides for its ReRAM to be made available in DB HiTek's 130nm Bipolar-CMOS-DMOS (BCD) process. We expect Power Management Integrated Circuits (PMIC) to form the bulk of the initial business that WBT and DB HiTek will be doing together. Similar to the arrangement with SkyWater, the deal includes technology transfer, qualification and licensing as well as the option to use WBT's ReRAM for other process nodes, such as 180nm that DB HiTek is strong in.

The most viable Non-TSMC ReRAM

WBT continues to engage with the majority of the world's top fabs and IDM's (Integrated Device Manufacturers), doing technical evaluations with them. Any foundry competing with global leader TSMC (which has its own ReRAM technology) has few other commercially available options. We expect WBT to continue to attract interest from fabs as well as IDMs and fabless chip companies. The company indicated that it expects to sign another deal in 2023.

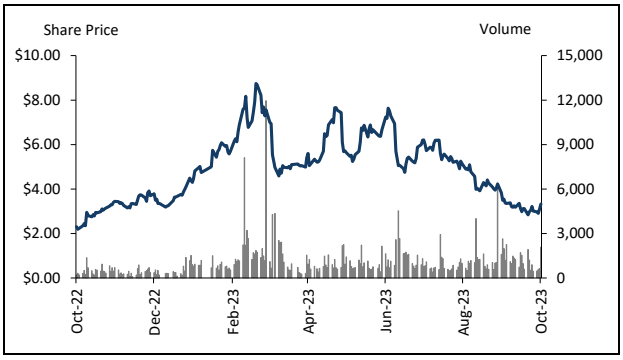
Valuation of A$9.56 per share reiterated

We reiterate our valuation of WBT at A$9.56 per share. We think the gap between the company's current price and our target can close now that the company has a second commercial deal and is close to reporting its maiden revenues. Please see page 7 for more details on our valuation and page 8 for the key risks.

Market cap. (A$m)	622.4
# shares outstanding (m)	187.5
# share fully diluted (m)	204.3
Market cap ful. dil. (A$m)	678.4
Free float	78.4%
12 months high/low	2.00 / 9.03
Average daily volume (x1,000)	1,094.3
Website	www.weebit-nano.com

Source: Company, Pitt Street Research

Share price (A$) and avg. daily volume (k, r.h.s.)



Source: Refinitiv Eikon

Valuation metrics	
Valuation per share (A$)	9.56

Source: Pitt Street Research

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Disclosure: Pitt Street Research directors own shares in Weebit Nano.

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DB HiTek is WBT's second foundry partner

Weebit welcomed onboard its 2nd commercial partner in DB HiTek, a South Korean semiconductor fab that is one of the world's largest.

Ever since the deal with SkyWater was signed (and prior to that), Weebit has been engaging with the majority of the world's tier-1 foundries. This month, it welcomed its 2nd commercial partner in DB HiTek, a South Korean semiconductor fab that is one of the world's largest and listed on the Korean stock exchange (KRX: 000990). Its customers include chip companies such as Intel, Sony, Mitsubishi, Mediatek, NXP, Samsung, Texas Instruments, Infineon, Analog Devices and Toshiba as well as car maker BYD and fabless chip company Qualcomm. The company generated US$1.24bn in annual revenue in 2022 (compared to US$213m for SkyWater).

DB HiTek is not the most advanced foundry out there with manufacturing processes starting at 90nm and higher. But this makes it a great partner for WBT that has a qualified 130nm embedded ReRAM solution ready to go.

Not the biggest or most advanced foundry, but ideal 2nd partner for WBT

It churns out approximately 1.7m wafers annually (8 inch equivalent). To put that in perspective, TSMC, the world's largest and most advanced foundry manufactures 15m wafers per year (12 inch equivalent).

As per WBT's announcement, the agreement between WBT and DB HiTek provides for WBT's ReRAM to be licensed by DB HiTek and integrated as embedded non-volatile memory (NVM) in DB HiTek's SoCs (System-on-a-Chip). It will be available in DB HiTek's 130nm Bipolar-CMOS-DMOS (BCD) process – ideal for many analog, mixed-signal and power designs in consumer, industrial, automotive and other IoT devices. As a back-end-of-line (BEOL) technology, which does not require process tuning, ReRAM offers significant advantages over flash for BCD processes. BEOL means ReRAM is added at the later stages of wafer manufacturing, which means it is easier and, therefore, cheaper, to manufacture than a front-end-of-line (FEOL) technology, like embedded Flash memory.

Weebit ReRAM also provides higher density and endurance than conventional Multi-Time Programmable (MTP) technologies. The deal provides for technology transfer, qualification and licensing as well as for the option for WBT's ReRAM to be used for other process nodes.

Further validation of WBT's technology

Granted, it will take some time before WBT's ReRAM will be commercially available to DB HiTek's customers, given testing and qualification requirements. But we believe this deal is another substantial validation for WBT, proving that there is an industry need for, and interest in its technology.

We expect more foundries and IDM's to come board soon

For semiconductor companies wanting to incorporate ReRAM technology in their products, WBT's ReRAM seems to be the only other practical alternative to TSMC's ReRAM in the market right now – at least one that is available in the market, i.e. not counting the likes of UMC. Unless of course, TSMC allows competing foundries to use its own technology – a prospect we consider unlikely.

We believe WBT's ReRAM makes sense for IDM's and fabless chip companies as well

We think Weebit is also likely to attract interest from IDMs, such as Intel, STMicro and Texas Instruments as well as fabless chip companies, like Qualcomm, Broadcom and NVIDIA.

In a recent interview we conducted with WBT CEO Coby Hanoch, it was indicated that the company expects to sign multiple additional agreements with foundries and/or IDM's in the coming months, potentially before the end of 2023.

WBT's commercialisation collaborations

WBT now has two commercial partnerships in place. The first is with US pure-play foundry, SkyWater Technologies. This deal has enabled WBT to bring its ReRAM technology to market and will likely have expedited the second deal with DB HiTek, which we will come to shortly. Weebit's ReRAM IP is an embedded module with collateral that is compatible with industry leading design flows for smooth integration into SoC design processes.

US-based SkyWater

SkyWater has been the ideal first commercial partner for Weebit as it has catapulted the latter's embedded ReRAM into production and supported engagement and commercial discussions with customers. Its service model has streamlined the path to production for customers with development services, volume production and heterogeneous integration solutions in its world-class US facilities.

In late June 2023, nearly two years after the deal was first signed, Weebit successfully qualified its embedded ReRAM IP in SkyWater's 130nm CMOS manufacturing process. The qualification was conducted on demo chips produced by SkyWater, which were embedded with Weebit's ReRAM IP.

This qualification was performed in accordance with Joint Electron Device Engineering Council (JEDEC) industry standards for NVMs. Post the conducted tests, Weebit's ReRAM IP was qualified for high endurance (with 10K flash equivalent cycles), data retention (10 years at industrial grade temperatures), robust lifetime performance and 3x solder reflow cycles.

Qualification of Weebit's ReRAM in SkyWater's 130nm CMOS ensures robust quality and reliability of the module.

Weebit's ReRAM in S130 offers a fast, reliable, radiation tolerant, ultra-low power solution suitable for use in challenging environments. The company's embedded NVM ReRAM IP for other foundries and IDMs has largely been de-risked due to the qualification of the technology with SkyWater. We believe, this has further instilled confidence in potential customers and partners looking at embedding WBT's ReRAM.

We believe that SkyWater's technology as-a-service approach proves to be a good differentiator for customers developing new IP. SkyWater's S130 process is ideal for military, aerospace, industrial IoT and medical applications, providing a large addressable market for Weebit's ReRAM IP.

South Korean DB HiTek

With the DB HiTek announcement, WBT has welcomed its second commercial partnership. The South Korean-headquartered company is a global top-10 semiconductor foundry with revenues of US$1.24bn in 2022, which is 6x larger than SkyWater.

WBT has welcomed its second commercial partnership with DB HiTek.

Its clients include electronics and chip companies such as chip companies such as Intel, Sony, Mitsubishi, Mediatek, NXP, Samsung, Texas Instruments, Infineon, Analog Devices and Toshiba and Qualcomm.

Under the deal, DB HiTek has licensed Weebit's ReRAM for its customers to integrate as embedded non-volatile memory into their SoC's (System-on-a-chip).

Weebit ReRAM will be available in DB HiTek's 130nm Bipolar-CMOS-DMOS (BCD) process – ideal for many analog, mixed-signal, and power designs in consumer, industrial, automotive, and other IoT devices. For these applications, Weebit ReRAM provides a low-power, low-voltage, cost-effective

NVM that is easy to integrate and has proven excellent retention at high temperatures.

The partnership agreement includes the usual technology transfer, qualification and licensing components. So WBT will now transfer its embedded technology to a DB HiTek production fab and then continue to qualify the technology towards volume production. As is the case with the SkyWater partnership, the main revenues in this commercialisation model will come through royalties based on production volumes, although WBT will receive a license fee and fee for non-recurring engineering (NRE) work related to integrating its IP into customers' products.

WBT to receive a license fee and non-recurring engineering fees, but the main revenue stream will come from production-related royalties

This commercial deal is a major vindication of WBT and its technology and bodes very well for the company's future.

SkyWater and DB HiTek deals will aid negotiations with other foundries and IDM's

As a leading independent provider of ReRAM, Weebit is engaged in different levels of evaluations and negotiations with most of the global tier-1 foundries and IDMs. While most of these discussions are highly complex and seem to take slightly longer than investors hoped for, the qualification processes with SkyWater and CEA-Leti, WBT's development partner, have accelerated these discussions, as will the new partnership with DB HiTek.

We believe that Weebit's conversations with current and future prospective customers are likely to be much easier following everything that has happened in the last 12 months, particularly the DB HiTek deal and the manufacture of demonstration chips in a commercial fab by SkyWater.

SkyWater serves multiple user segments relevant for ReRAM

The various end-user segments served by SkyWater have been summarised below.

Medical (special sensors, implants, consumables, etc.) – This is a broad category that includes ultrasound, CT scanning, MRI, sensors, implants, and consumables. All of these applications require speed, precision, and the ability to do more with less, while ultra-low power consumption is a key requirement for these battery-operated devices. ReRAM is ideal, not just because of its superior performance, but also because of its high tolerance to radiation and electromagnetic fields – both of which are becoming increasingly important in treating a wide variety of conditions.

Industrial IoT (high-temperature sensors etc.) - IoT devices generally are an enormous opportunity for ReRAM, although the IoT markets SkyWater targets will mostly be industrial. Examples include automation systems and high-temperature sensors. They rely on rapid, reliable data to maximise their efficiency.

Aerospace and Defence (A&D) - Applications used in the A&D sector remain operational for a long time without maintenance in harsh conditions. As a result, NVMs used in these applications must have high endurance and reliability. Weebit's ReRAM beats Flash in terms of endurance and immunity

to radiation, while its tolerance to electromagnetic fields is a key advantage vs. MRAM.

DB HiTek customers have notable end user segments too

Power Management likely to be one of the larger opportunities at DB HiTek

The end user segments served by DB HiTek's customers we mentioned above vary widely and include Medical, Consumer Electronics, Mobile and 5G, industrial applications, IoT etc.

The common denominator in all these addressable segments for WBT, however, is DB HiTek's Power Management solutions. Power Management Integrated Circuits (PMIC) are often found in battery-powered devices and devices that require optionality with respect to power source (battery or external power use).

They manage things like battery charging, DC-DC conversion and power source selection, among other things.

PMIC's are often manufactured using BiCMOS (Bipolar Complementary Metal Oxide Semiconductor) processes, which is DB HiTek's bread and butter. The power management chips are typically found as modules in SoC's.

Maiden revenue from initial deals likely in 2023

Weebit's strong balance sheet will help support its research and commercialisation efforts.

Weebit Nano is well-funded to execute the company's development and commercialisation plans through the medium term, after a successful capital raise of A$60m in March 2023. Its robust balance sheet, that included >A$88m per 30 June 2023, enables the company to focus on the commercialisation of its embedded technology. It also enables Weebit to proceed with the development of the discrete (stand-alone) ReRAM chip in the next few years.

In the next 6-12 months, management's primary focus will be on securing initial deals and agreements with foundries and IDM's, building on its deals with SkyWater and DB Hi-Tek. At present, there are several types of deals that Weebit is working on in parallel. The company is targeting to have more foundries on board. In parallel, the company is trying to get some product companies on board as well. These could be customers of either SkyWater or DB HiTek, or customers of other foundries. Additionally, WBT is also in conversations with IDM's looking to integrate ReRAM.

License fees expected in 2023

In 2023, we are likely to see initial licence fee payments from WBT's first two deals that will contribute to initial revenue generation. Specifically, Weebit believes that certain initial payments might start flowing by the end of 2023. These are likely to be in the form of license or NRE fees.

Royalty revenues to kick in when chips go into mass production

To get to mass production, a semiconductor product needs to be tested and qualified first to get to the point where production can be ramped up and royalties secured. This takes some time with royalty revenues typically kicking in 1-2 years later.

The key share price drivers in the near term will be additional commercial deals and the announcement of maiden revenues.

Reiterating valuation at A$9.56 per share

In our June 2023 report, we valued Weebit using a closely comparable company, eMemory (TWO: 3529). Traded on the Taiwan Stock Exchange, eMemory is a 22-year-old company focused on various embedded NVMs, including ReRAM, used in a range of applications. The company is working with a number of foundries, IDMs and fabless chip companies that use eMemory's IP library to design highly secure applications for code storage, anti-cloning, parameter and ID setting, encryption key storage and signal tuning.

While eMemory is a well-established company with a market capitalisation of approximately A$7bn, we think that it is a good example of what Weebit's journey and growth trajectory may look like. We also think that the valuation gap between the two companies should narrow substantially over time, on the back of Weebit's news flow, such as its agreement with DB HiTek. Additionally, eMemory only provides embedded ReRAM solutions, while Weebit is already looking to expand into discrete (standalone) ReRAM solutions.

We are very optimistic about WBT's growth potential and continue to believe that the company's valuation should be around 25-30% of eMemory's valuation. Thus, we reiterate our valuation of of A$9.56 per share, which implies substantial upside from the current share price.

In our view, there are several catalysts that could drive Weebit's share price higher in the next 12 months:

- First commercial customers and revenues for the Weebit/SkyWater S130 process.
- Progress towards qualification with DB HiTek.
- Additional commercial agreements and/or collaborations with large foundries. The company has mentioned on several occasions that it is in discussions with most of the top-10 global foundries.
- In addition to foundries, IDMs and fabless chip companies are interested in Weebit's technology as well, illustrated by the conversations WBT is having with these prospects.
- Wider availability of embedded ReRAM in SkyWater processes, e.g. 90nm. This would expand the commercial potential for Weebit at SkyWater.
- Positive progress reports on Weebit's discrete ReRAM development, initially for lower densities (smaller capacities), i.e. below 64MB.
- Potential M&A discussions involving the acquisition of Weebit or part of its IP. The semiconductor industry is highly acquisitive when it comes to expanding IP portfolios.

Key risks

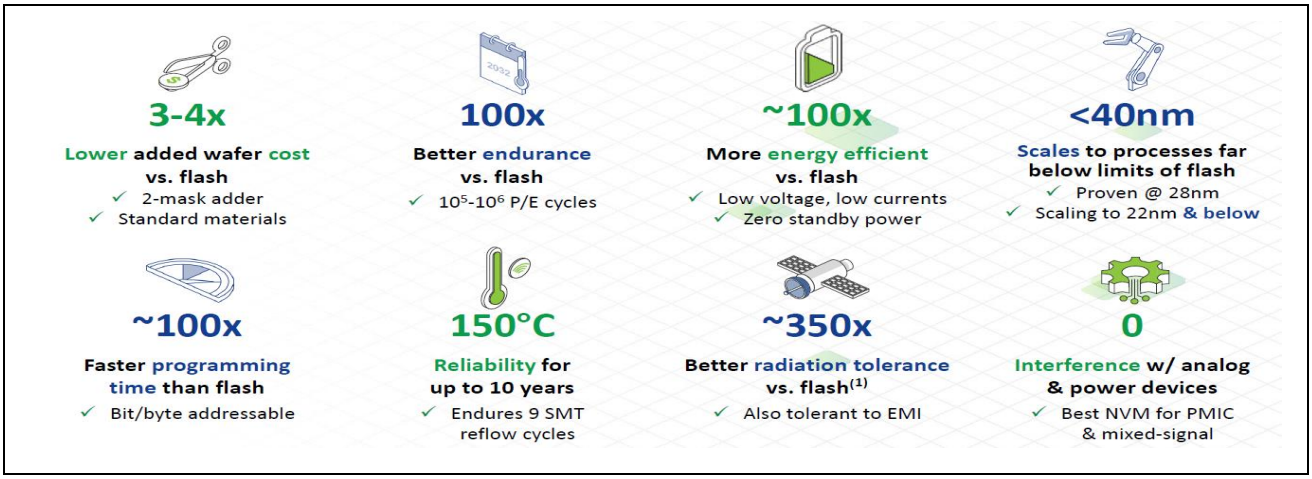
- **Competition risk:** Alternative emerging memory technologies are being developed by Weebit's competitors. These technologies could potentially be superior in nature and/or could be commercialised sooner than Weebit's technology, which could inhibit the company's future growth.
- **Funding risk:** Although Weebit now seems adequately funded for the medium term, the company may need to raise further capital in the medium to longer-term. That may be required, for instance, if development programmes and technology transfers/qualifications take longer than currently anticipated or multiple growth opportunities arise, resulting in dilution for existing shareholders.
- **Macroeconomic and geopolitical risks:** The semiconductor industry is one of the most vulnerable industries to macroeconomic and geopolitical risks – in particular, downturns in the global economy and tensions between China and the West. The prices of semiconductor stocks can fluctuate substantially in response to mere media reports of deteriorating conditions.
- **Operational risks:** Weebit's success is assumed on its ability to successfully produce and market the ReRAM technology. A failure in either regard for whatever reasons, such as supply chain issues or departure of key personnel, may lead to a deterioration in investor sentiment.
- **Investment risks:** Since the stock's inclusion into the ASX300 and ASX200 indices in 2023, we have seen short sellers come into the stock. This has had a substantial negative effect on the share price. Additional short selling may push the share price down further.

Appendix I: A quick refresher on Weebit Nano

ReRAM is a NVM technology that enables electronic devices to store data in a way that is much faster and economical than Flash memory.

- **Who is Weebit Nano?** Weebit Nano is an ASX-listed semiconductor technology company. It is developing Resistive Random Access Memory (ReRAM), a Non-Volatile Memory technology that is at the heart of data storage and processing functions in today's technological devices (ranging from mobile phones to larger industrial applications and even AI applications). The company's ReRAM technology can be easily integrated into existing flows and processes and does not require any special equipment or large investments.
- **Why are WBT's technologies needed?** Simply put, because the world needs memory technology that can scale to smaller and smaller sizes while still doing more. And Flash Technology, has reached the limits to which it can scale to while being commercial viable and without operational faults – such as crosstalk between memory cells that will cause them to lose their stored values.
- In 2022, the world produced and consumed ~94zb (zettabytes, equivalent to 10^{21} bytes) of data. This up nearly 50% from just 2 years ago. As the adoption rate of IoT and AI technologies continues to expand, so will the proliferation of data and consequently the need to gather, store and process the data.
- **What is ReRAM?** ReRAM (Resistive Random Access Memory) is a Non-Volatile Memory (NVM) technology that is similar to today's mainstream Flash memory and enables electronic devices to store large amounts of data in a way that is much faster, efficient on power consumption, and economical than Flash memory.
- **Why is ReRAM so much better than Flash?** ReRAM fulfils the same tasks as Flash memory technology, but it is vastly superior to Flash as it offers a better performance at a smaller process geometry. In other words, it can process more data and can do so much faster while using less power. Weebit Nano's (Weebit's) ReRAM has significant advantages over Flash memory on several parameters including cost, endurance, energy efficiency, power consumption, radiation tolerance, and reliability (**Error! Reference source not found.**1).

Figure 1: Weebit has progressed well on its technology milestones

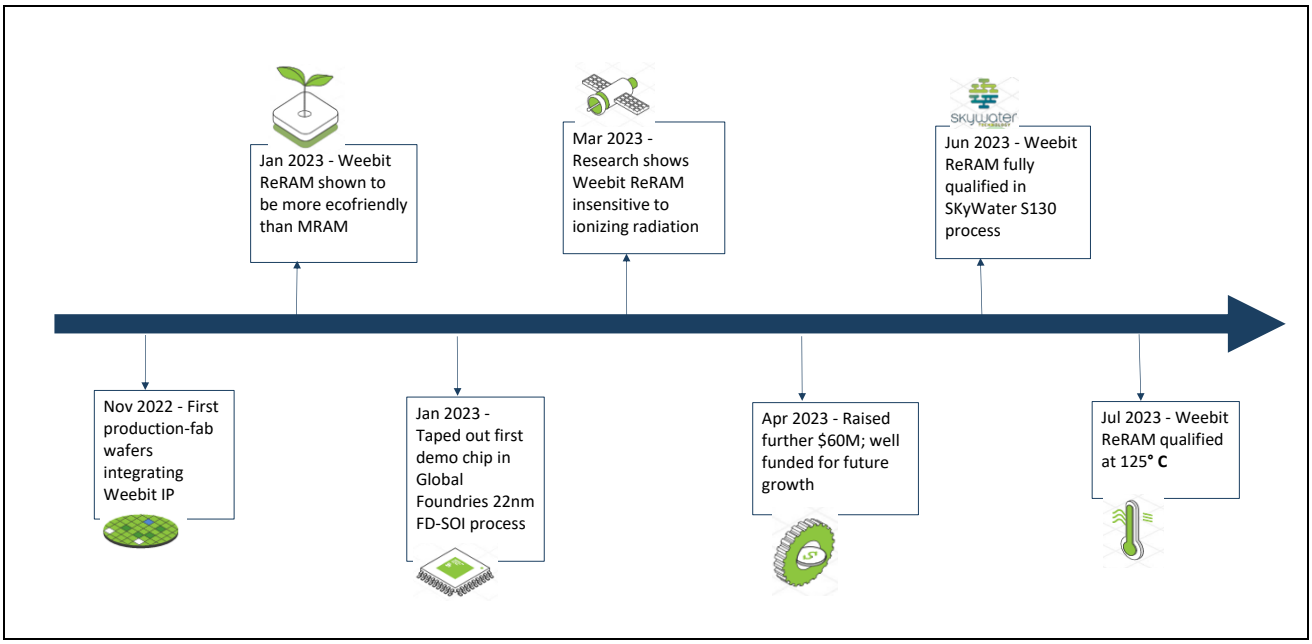


[1]Refers to ReRAM cell array
Source: Company, Pitt Street Research

Where Weebit and its ReRAM technology are at right now

- Over the last few years, Weebit has developed its ReRAM technology and has brought it to market (Figure 2) through its first customer, US-listed semiconductor foundry SkyWater (NASDAQ: SKYT). Foundries offer intellectual property (IP) to customers, collect up-front use fees from customers, and pay royalties based on percentage of the wafer price.
- SkyWater signed a deal in mid-2021 to license Weebit's technology for embedded applications, integrate it into customer designs, and commercialise it. Over the past two years, SkyWater and Weebit have transferred the technology to the SkyWater foundry, manufactured wafer lots, and started qualifying the technology. The qualification proved that the technology can work in the context of SkyWater's chips.

Figure 2: Weebit has progressed well on its technology milestones



Source: Company

- Weebit's ReRAM is available in SkyWater's 130nm CMOS (S130) technology process, enabling SkyWater's customers to integrate it in their system-on-a-chip (SoC) designs. Weebit's business model (at least while it is exclusively focussing on the embedded memory market) is to license out the technology and generate revenues through upfront license fees and ongoing royalties based on production volumes. As time advances, embedded ReRAM will be made available in smaller geometries, i.e. Weebit has been working on FDSOI (Fully Depleted Silicon-on-Insulator) applications at 28nm and 22nm for a while, and we expect it will likely scale this technology down below 20nm in the near future.

Appendix II - Weebit's technology

ReRAM technology: Striking the right balance between flash memory and DRAM

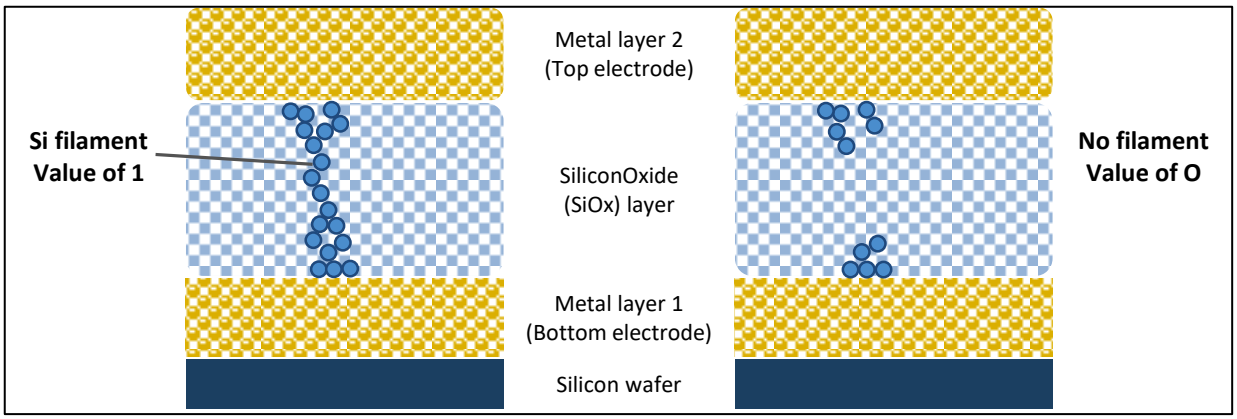
ReRAM is a fast, cost-effective and energy-efficient non-volatile memory (NVM) technology. It can be considered a hybrid memory technology, as it is non-volatile like flash memory and nearly as fast as DRAM, which is volatile, i.e. a DRAM cell will lose the value (1 or 0) that is stored if the power is switched off. Weebit is developing SiOx ReRAM, which, in terms of performance metrics, will sit right between flash and DRAM.

How does it work?

ReRAM is based on resistance rather than electrical charge.

Generally, in case of NAND flash memory, the values of 1 and 0 are attributed on the basis of the trapped electrical charge present in the memory cell's floating gate. However, in case of a ReRAM cell, the values (1 and 0) are attributed based on the resistance level of the cell material sandwiched between the two electrodes (Figure 3). A value of 1 is attributed to a state of low resistivity, while a value of 0 is attributed to a state of high resistivity.

Figure 3: Cell switching by forming and breaking a silicon filament in a SiOx switching layer



Source: Pitt Street Research

There are two ways of changing the resistance level of a ReRAM cell:

i) through interface switching, which changes the resistivity of the entire layer between the electrodes or

ii) by creating a filament that connects the two electrodes. Weebit uses the latter.

The technology Weebit is developing is based on the forming of a conductive channel between the two metal electrodes of a ReRAM cell. These electrodes are typically made of metals, such as titanium, tungsten, aluminium or copper. The conductive channel is formed inside a non-conductive SiOx layer.

SiOx has typically been used as an insulating component in semiconductor manufacturing. However, by applying a certain voltage to one of the electrodes, a switchable conductive pathway of silicon nanowires (filament) can be formed within the SiOx layer (Figure 3). In this high-conductivity, low-resistance state, the cell value is 1. By subsequently applying a reverse voltage to the electrode, the filament can be broken down again, effectively switching the memory cell back to the original state of 0.

The actual filament is formed as the applied electrical voltage strips away some of the oxygen atoms in the SiOx layer, leaving the silicon atoms to cluster and form a conductive silicon pathway to the other electrode. The filament is approximately 5nm to 7nm in diameter.

Weebit uses SiOx in its ReRAM cells, a material that is well understood by the semiconductor industry and has been used in the industry for decades.

SiOx ReRAM's technical parameters validate its commercial use

The endurance and retention levels demonstrated by Weebit's technology open up many commercial opportunities.

The key parameters for any non-volatile memory are retention and endurance. As demonstrated in the tests conducted by Weebit's research partner Leti in May 2019, the company's ReRAM technology is at the forefront of the ReRAM market. The tests demonstrated resistance of over 10 years at 130–150°C, and endurance of a million cycles. Notably, these endurance levels are significantly higher than the state-of-the-art flash memory performance.

Moreover, the retention levels that were achieved at these high temperatures have broadened the scope of potential commercial applications wherein Weebit's technology can be used. One of the most notable addressable markets is automotive.

This achievement builds on Weebit's ReRAM technology's previous successes of attaining market-level retention, as well as endurance and voltages. Previously, in January 2019, Weebit's ReRAM cells had demonstrated array-level endurance above 100k cycles, an important milestone for the company in its transition to 28nm. Similarly, in October 2018, Weebit had announced successful data retention results (of 10 years) for tests conducted on its scaled down 40nm array.

Appendix III – Glossary

CMOS: Complementary Metal-Oxide Semiconductor, a popular semiconductor technology used to manufacture most chips in the semiconductor industry.

Data retention: Amount of time the data stored in memory will retain its value without any power supply.

Discrete/Standalone NVM: A chip which contains only memory.

DRAM: Dynamic Random Access Memory, a type of volatile memory which is used in computer processors as the main memory.

Embedded NVM: Memory that is embedded on an SoC.

Endurance: Number of times a block of memory can be programmed and erased before the memory wears out and becomes unreliable.

Fabless: Companies which design chips for customers.

Fabs/Foundries: Companies which manufacture chips for customers.

IC: Integrated Circuit, a set of semiconductor components connected on a single semiconductor wafer.

IDM: A company which designs and manufactures its own brand of chips.

MPU: Micro Processing Unit, a device that implements the core elements of a computer system on a single integrated circuit, or as a few integrated circuits operating as a cohesive unit, designed for the processing of digital data.

MRAM: A non-volatile random access memory technology that uses magnetic charges to store data instead of electric charges. It is a low power technology that does not require power to maintain data unlike other memory technologies

nm: Nanometre, equals one billionth of a metre, or a millionth of a millimetre.

NVM: Non-volatile memory, a type of memory which retains data even when the power supply is disconnected.

NRE: Non-recurring engineering costs, a one-time cost which is incurred in the R&D and design phase of a product.

Scaling geometry: Achieving a reduction in the size of a chip (measured in nanometres/nm) in the fab manufacturing process.

SNN: Spiking Neural Networks, are artificial neural networks which mimic the brain's neural networks.

SoC: System-on-a-Chip, is a chip which integrates a computer system on it.

SRAM: Static Random Access Memory, a type of volatile memory which is used to store local data and machine code.

Synapses: Structures in the human body which facilitate communication between two neurons.

Wafer: A thin slice of semiconductor material.

zb: Zettabyte, a unit for measuring computing memory. It equals 10^{21} bytes. For reference, an mb equals 10^{6} bytes.

Appendix IV – Analyst certification

Marc Kennis has been an equities analyst since 1996.

- Marc obtained an MSc in Economics from Tilburg University, Netherlands, in 1996 and a postgraduate degree in investment analysis in 2001.
- Since 1996, he has worked for various brokers and banks in the Netherlands, including ING and Rabobank, where his focus has been on the technology sector, including the semiconductor sector.
- After moving to Sydney in 2014, he worked for several Sydney-based brokers before setting up TMT Analytics Pty Ltd, an issuer-sponsored equity research firm.
- In July 2016, with Stuart Roberts, Marc co-founded Pitt Street Research Pty Ltd, which provides issuer-sponsored research on ASX-listed companies across the entire market, including technology companies.

Nick Sundich is an equities research analyst at Pitt Street Research.

- Nick obtained a Bachelor of Commerce/Bachelor of Arts from the University of Sydney in 2018. He has also completed the CFA Investment Foundations program.
- He joined Pitt Street Research in January 2022. Previously he worked for over three years as a financial journalist at Stockhead.
- While at university, he worked for a handful of corporate advisory firms.

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