



Weebit completes design and tape-out of embedded ReRAM module

Memory module is integrated within a sub-system, enabling customers to fast-track their development and release new products

14 July, 2021 – Weebit Nano Limited (ASX:WBT), a leading developer of next-generation semiconductor memory technologies, is pleased to announce that it has completed the design and verification stages of its embedded ReRAM module, and taped-out (released to manufacturing) a test-chip that integrates this module. This highly integrated test-chip will be used as the final platform for testing and qualification, ahead of customer production.

Commenting on Weebit's on-schedule achievement of another key milestone, CEO Coby Hanoch said, "We implemented the module in an intelligent way, developing unique patent-pending analog and digital smart circuitry that significantly enhances the array's technical parameters including speed, retention, and endurance. The test chip containing this module will allow Weebit to demonstrate to customers a fully functional ReRAM product that can be readily integrated into their System-on-Chip and enable customers to accelerate their design process."

According to Ross Teggatz, an industry veteran in analog/mixed-signal design and Co-Founder and CTO of Nebula Microsystems, "The engineering team at Nebula is known for its high-performance, highly-efficient analog mixed-signal designs. In various power management designs, ReRAM has the potential to enable tighter system integration and lower power consumption, even at high junction temperatures. We congratulate Weebit on taping out its ReRAM module design, which provides strong validation of the feasibility of this technology for the power domain."

A memory module is a critical component when embedding a memory array in a System-on-Chip (SoC). It acts as the interface between the memory array and the rest of the system and includes the logic that controls the way the array is accessed.

The test chip comprises a full sub-system in which the module is embedded. It also includes a RISC-V microcontroller (MCU), system interfaces, Static Random-Access Memory (SRAM) and peripherals. Potential customers can use it as a development and prototyping platform for new products such as low-energy Internet of Things (IoT) devices.

Weebit's new memory module is easily customisable and provides a foundation for the Company's future ReRAM compiler, which will enable customers to automatically reconfigure the design according to their specific requirements without going through exhaustive manual design and fab qualification processes. The module will also be the basis for other ReRAM modules that Weebit will develop, tape-out and qualify at production fabs based on customer requests starting later this year.

The ReRAM module was designed in the ST 130nm process after interaction with potential customers showed it is the sweet spot for their analog, power, sensor and IoT designs. It includes a 128Kb ReRAM array, control logic, decoders, IOs (Input/Output communication elements) and error correcting code (ECC).

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Weebit expects to have its first silicon of the embedded ReRAM module towards the end of this year. The Company plans to demonstrate the module and report functional testing results in the first quarter of 2022. Qualification of the module is expected by mid-2022.

This announcement has been authorised for release by the Board of Weebit Nano Limited.

Explanation of technical terms

- **Tape-out:** The final phase of the chip design process in which the design is released to manufacturing.
- **System-on-Chip:** As the size of digital elements shrinks, it is common to put a full system, including processor, communication, memory and other dedicated elements on a single piece of silicon.
- **Qualification:** The process in which the fab ensures that a design is ready for mass production and complies with its specifications. This includes ensuring that it is stable, operates reliably as designed and meets yield targets and quality standards.

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For further information please contact:

Investors

Eric Kuret, Market Eye

P: +61 417 311 335

E: eric.kuret@marketeye.com.au

Media – Australia

Tristan Everett

P: +61 403 789 096

E: tristan.everett@marketeye.com.au

Media – US

Jen Bernier-Santarini

P : +1 650-336-4222

E: jen@weebit-nano.com

About Weebit Nano

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. Because 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 or follow us on <https://twitter.com/WeebitNano>.

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