

17 December 2024

Design Agreement for custom ReRAM memory test chip with Infineon Technologies and Company Update

4DS Memory Limited (ASX:4DS) (**4DS**) (the **Company**), announces that it has entered into a Design Agreement with Infineon Technologies LLC and provides a Company update.

INFINEON TECHNOLOGIES DESIGN AGREEMENT

On the 17th of December 2024 Infineon Technologies LLC (a USA based subsidiary of Infineon Technologies AG) and 4DS entered into a Design Agreement (“the Agreement”) whereby Infineon Technologies LLC will assign resources to design a custom ReRAM memory test chip for 4DS, based on 4DS requirements.

Under terms of the Agreement, Infineon Technologies LLC will provide technical expertise and resources to design a custom ReRAM memory test chip.

The initial scope of work under the Agreement will be over 15 months for a total of US\$4.5 million payable by 4DS with an upfront payment of US\$1.5 million and the balance payable monthly at varying monthly amounts. Either party may terminate the Agreement under standard terms and conditions in any termination clause and upon termination only Infineon Technologies LLC resources completed to the point of termination are payable by 4DS.

4DS started its memory technology development using simple resistor devices without any access device or write/read circuitry.

The second phase of 4DS development activities was to incorporate Interface Switching ReRAM technology in a megabit Platform with write/read capabilities for performance characterization. The Platform vehicle used was designed to characterize a wide range of emerging memory technologies.

Whilst this Platform vehicle has been useful to 4DS to further develop and characterize 4DS’s technology during 2023 and 2024, the Company is also uncovering shortfalls of using a universal memory Platform vehicle.

To further advance the Company technology, to the path of commercialization, 4DS needs a customized memory macro Platform vehicle that is specifically designed for its unique area-based Interface Switching ReRAM characteristics.

This is a vital and necessary third phase in memory technology development for the Company and Infineon is the ideal party for the implementation of a memory test chip for such a macro Platform strategy.

Commenting on the Agreement, Executive Chairman Mr David McAuliffe said “We are extremely pleased to have been able to engage a large global semiconductor leader in Infineon to take 4DS to the next phase of development. The Design Agreement is a significant step forward and follows on from the successes the Company achieved in 2023/2024.”

COMPANY UPDATE

On 10 October 2024, 4DS Memory Limited announced that imec had successfully completed the manufacturing of the Fifth Platform Lot and shipped the Lot to 4DS’s facilities in Fremont, California.

The main purpose of the Fifth Platform Lot was to optimize the memory stack, specifically to accommodate scalability to 20nm size memory cell array incorporated in the Sixth Platform Lot. Using the proven cell size of 60nm array (demonstrated in the Fourth Platform Lot), the Fifth Platform Lot seeks to uncover any processing adversity that could arise when scaling the memory cell stack necessary for successful construction of 20nm cell array in the Sixth Platform Lot. Both Fifth and Sixth Platform Lots are fabricated with similar scaled memory stacks.

The Fifth Platform Lot analysis to date has been successful in that 4DS has uncovered some processes that can be improved just in time for the Sixth Platform Lot. These process optimizations are currently in progress at imec and will then be used to complete the Sixth Platform Lot.

These interim learnings and optimizations are strategically necessary for the successful processing of the first 20nm cell array of the Sixth Platform Lot with manufacturing expected to be completed in Q1 2025.

Extensive testing and characterization of the Fifth Platform Lot is incomplete and still on-going, and it is expected to continue testing into Q1 2025.

Testing had some delays by various unexpected events due to testing equipment failures and repairs.

Commenting on the update Executive Chairman Mr David McAuliffe said “The Company success in 2023 really highlighted the potential of 4DS Interface Switching ReRAM. The manufacture of an additional 60nm Platform Lot was necessary to ensure that when we scale down to 20nm, which is nine times smaller, we ensure we take the learning from the 60nm cells and incorporate them into the 20nm cells to give the Company the best chance of success.”

Continued Trading Halt

The Company will remain in a trading halt pending an announcement of a capital raising, which is expected no later than opening of trading on Thursday, 19 December 2024. The Company is not aware of any reason why the halt should not continue, nor any other information necessary to inform the market about the trading halt.

4DS Interactive Investor Hub

If you have any questions on this announcement or any past 4DS announcements, check out our Investor Hub. Like, comment, ask a question and view video summaries on important announcements. Shareholders can link through to the Investor Hub via: announcements.4dsmemory.com

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Authorised for release by the Board.

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About 4DS

4DS Memory Limited (ASX: 4DS), with facilities located in Silicon Valley, is a semiconductor technology company bringing high bandwidth, high endurance, persistent non-volatile memory to advanced CMOS process nodes. Its technology, known as Interface Switching ReRAM, features tunable persistence and low energy per bit for today’s most challenging compute intensive and AI processor applications. Established in 2007, 4DS owns a patented IP portfolio, comprising 34 USA patents, and is the first company to develop PCMO ReRAM, on an advanced CMOS processing node. 4DS has a development agreement with Belgium based imec – a world leading research and innovation hub in nano electronics and digital technologies, as well as a joint development agreement with Western Digital subsidiary HGST, a global leader in storage solutions.

For more information, please visit www.4dsmemory.com

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