AI startup Soteria to mass-produce AI semiconductors through Samsung's 4nm process

Taemin Roh | Approved 2024.01.22 16:21

> NTV design capable of running accelerator at 0.3V
> Badcore Management and Heat Dissipation Shortest Path Technical Support
> Received $1.7 million upfront payment from the customer for mass production

Soteria CEO Kim Jong-man explains the ultra-low-power HPC accelerator 'Artemis'. <Photo = Roh Tae-min>

Soteria, a Korean artificial intelligence (AI) semiconductor company, will begin mass production of semiconductors using Samsung's 4nm process. The company plans to put wafers into service at the end of April this year and supply semiconductors to customers in the fourth quarter. To this end, the company also received some upfront money from customers.

Soteria CEO Kim Jong-man recently said in an interview with Dielec, "We have succeeded in securing data infrastructure customers in North America and Europe based on technologies such as ultra-low power and bad core management," and added, "We are the first fabless company in Korea to mass-produce Samsung Electronics through the 4nm process." He continued, "We have secured a stable source of revenue because we work with our customers to make ASICs," adding, "In the future, we plan to market to small and medium-sized data center companies together with our customers."

Soteria was founded in 2018 by former Georgia Tech professor Kim Jong-man and researchers from Samsung Electronics and SK Hynix. Currently, the company is focusing on the development of ultra-low-power AI semiconductors and Compute ExpressLink (CXL)-based Near Data Processing (NDP) memory solutions. It has about 20 employees and operates research institutes in Pangyo and Silicon Valley in the United States.

Soteria's focus is on ultra-low-power, high-end computing (HPC) accelerators. In the case of the 'Artemis' chip, which will begin mass production in the first half of this year, the NTV (Near Threshold Voltage) design that can drive the accelerator at 0.3V is applied. It also supports heat dissipation shortest path technology for heat dissipation and a bad core management system for core management during immersion cooling.

"As companies such as Meta, Microsoft (MS), and Google advocate net-zero data centers, it has become important to make low-power chips," Kim said, adding, "Customers have asked us to make chips optimized for immersion cooling, and we have designed ASICs with technologies such as NTV." He continued, "In the case of bad core management technology, it is a technology that monitors the cores and distributes the workload," and he was confident that "even if 2~3 (cores) go out, 121~122 cores will run well, so there is no problem in ASIC operation."

The company also received an upfront payment of $1.7 million (2.3 billion won) from the customer for mass production. This is more than 30% of the total contract amount. In addition, the company received a letter of intent (LOI) worth 200 billion won. CEO Kim said, "We are showing interest in immersion cooling technology in the Middle East," adding, "Recently, we have received inquiries about chips from companies in the Middle East."

Lastly, CEO Kim said, "We have a plan to convert Artemis to a 2nm chip in the future," and "We will start development at the end of this year." He added, "We will also work on developing CXL-based NDP memory solutions."

Meanwhile, Soteria is aiming to raise 30 billion won in Series B investment this year. The donation amount will be used for the purchase and development of wafers and masks for the single run.

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