Rising Stars: Top 5 Pangyo Semiconductor Startups Poised for Global Market Leadership

PANGYO, SUNGNAM, SOUTH KOREA, December 5, 2023 /EINPresswire.com/ -- Semiconductors are divided into a memory semiconductor to store information data and a system semiconductor to process and calculate data.

A view of Pangyo Techno Valley, where semiconductor startups are gathered (Image source: Pangyo Techno Valley website)

'Super Gap Project 1000+,' Kickoff (image courtesy of Ministry of SMEs and Startups)

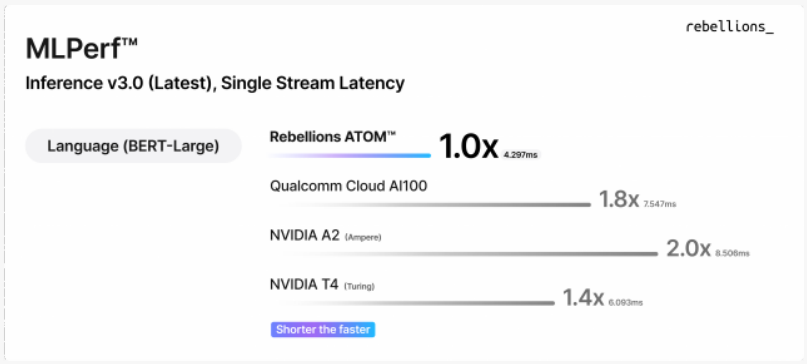
According to the report from Invest Korea, an investment attraction body under KOTRA(Korea Trade□Investment Promotion Agency), the Korean-made semiconductor's global market share recorded 17.7%, keeping the second place for the tenth consecutive year since 2013.

Korean semiconductors take up 60.5% of the total market share in the memory semiconductor market. The system semiconductor sector, however, showed a meager 3% market share while D Ram is 70.5% and NAMD 52.6% of the market share.

Realizing a need for support to foster the system semiconductor field, the Korean government is preparing relevant policies. For one thing, the Ministry of SMEs and Startups has arranged the so-called 'Super Gap Project 1000+,' whose aim is to foster 1,000 startups and more for the next five years to create a super gap. In detail, the private and public sectors run this project, which selects startups from 10 new industries and provides them with KRW 2 trillion won in grants for five years.

In the system semiconductor sector, 25 different companies were selected. Among them are artificial intelligence (AI) semiconductor fabless Rebellions (CEO Park Sung-Hyun), wireless data transmission solution Uniqconn (CEO Kim Young-dong), automotive semiconductor BOS Semiconductor (CEO Park Jae-hong), LiDAR sensor fabless SolidVUE (CEO Choi Jae-hyuk), and specialized IP for high-speed data communication Alpha Solutions (CEO Kim Wook).

Employees pose for a photo at the BOS Semiconductor office in Pangyo.(Image courtesy of BOS Semiconductor)



The result of the MLPerf (Image courtesy of Rebellions)

BOS Semiconductor, a semiconductor startup that designs high-performance system-on-chip (SoC) semiconductors for vehicles, has attracted more than KRW 10 billion in investment in the first year since its establishment in 2023. Notably, in June 2023, Hyundai Motor Company and Kia Motors invested in the form of a Simple Agreement for Future Equity (SAFE) through the open innovation platform Zero One 2 Fund. With this investment, the company plans to strengthen strategic collaboration with Boss Semiconductor to develop customized automotive semiconductors that can be partially applied to electric vehicles and autonomous vehicles, demonstrating the collaborative ecosystem between large companies and startups.

SolidVUE, a LiDAR sensor IC fabless startup, was founded by Prof. Jae-Hyuk Choi of Sungkyunkwan University's Department of Semiconductor Systems Engineering, along with Prof. Jeong-Hoon Jeon and Prof. Sung-Jin Kim of UNIST's Department of Electrical and Electronic Engineering. SolidView's lidar sensors can be utilized in the fields of autonomous driving and robotics and are attracting attention as a future technology company. In addition, in August 2023, the Ministry of Trade, Industry and Energy selected 20 stars fabless through the 'Global Fabless Launch Ceremony' at the Gyeonggi Enterprise Growth Center in Pangyo Techno Valley, and SolidView was recognized for its technology as the only lidar sensor developer of the Rising Star Fabless.

Rebellions won the MLPerf, an AI semiconductor technology verification competition, outperforming NVIDIA and Qualcomm. Rebelion's AI semiconductor 'Atom' performance was more than 1.5x to 2x ahead of Qualcomm's latest AI semiconductor' Cloud AI100' and Nvidia's

equivalent GPU (Graphics Processing Unit) ‘A2-T4’. In addition, KT’s investment of 30 billion won in 2022 has been recognized.

In 2023, Uniconn, a developer of ultra-high-speed semiconductor connectivity, attracted KRW 4.5 billion in Pre-A series investment, proving its technology within a year of its establishment. Uniconn plans to use the investment to focus on product commercialization and revitalize its China operations.

Alpha Solutions is a semiconductor IP company for high-speed data communication, and Alpha Solutions’ HDMI/DisplayPort Combo IP was prototyped in Samsung Foundry’s 8LPP process. Alpha Solutions is a SAFE IP partner of Samsung Electronics’ Foundry Division, developing and supplying various IPs using Samsung Foundry’s superior processes.

In March 2023, the Ministry of Trade, Industry and Energy held the ‘Export and Investment Strategy Conference in the System Semiconductor Sector’ and announced an implementation strategy to become a leading country in system semiconductors. Among them, to promote fabless growth, the ministry aims to create 10 companies with KRW 1 trillion in sales by 2035 and intensively foster them as global companies by collectively supporting company-led dedicated R&D, design tools, IP, development, prototypes, and sales. In addition, the ministry plans to support the prototyping of advanced processes with high costs for fabless at twice the level of existing general processes.

Pangyo Techno Valley is Korea’s leading R&D cluster, with many semiconductor-related startups concentrated in Pangyo 1 and Pangyo 2. In addition, the Global Biz Center in Pangyo 2 has been designated as a priority space for companies in the semiconductor industry. In addition, Gyeonggi-do has allocated about 33,000□ of the total area of Pangyo 3, which will be built in 2024, as a dedicated semiconductor space out of the 583,000□ self-sufficient facility land. It plans to create a semiconductor startup and nurturing space by first attracting investment in R&D facilities for fabless, foundry, parts, material and equipment, which are the core of the system semiconductor industry. We expect startups to grow and lead the global system semiconductor market based on various supports and infrastructure to foster the system semiconductor industry centered on Pangyo Techno Valley.

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