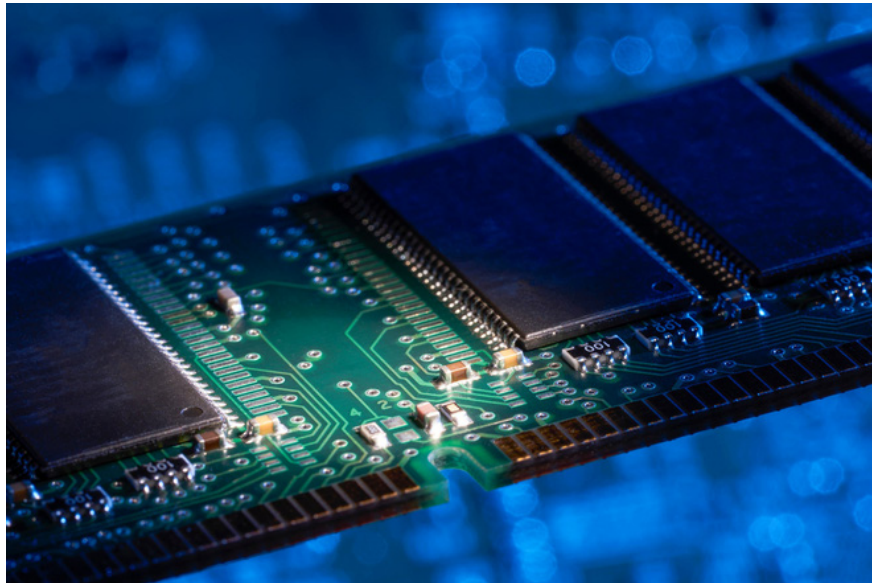


China's memory chip production will go from zero to 5% of the world by the end of next year

Mass memory chip production will begin in 2020, when Beijing officially starts a 'self-sufficient' technology mode.

China's fledgling chip industry is facing a major breakthrough. Specifically, local companies are on a path to produce about 5% of the world's memory chips by the end of 2020, from zero to last year's output.

To achieve this goal, the government has always supported and prioritized the artificial intelligence strategy in Beijing, having pumped billions of dollars to rebuild the semiconductor industry from scratch, over the years. This strategy has become increasingly urgent, following a ban on China using certain US technologies, such as memory chips for military and security equipment.



China wants technological autonomy and has pumped billions of dollars to semiconductor companies.

Yangtze Memory Technologies, the company that makes NAND flash memory chips, is expected to triple production to 60,000 wafer per month, or 5% of the world's output, by the end of next year. The foundation of the back is the new \$ 24 billion factory in Wuhan, which began construction in 2016. Wager is thin silicon wafers that have been implanted with the main materials and materials to produce processing chips. physical.

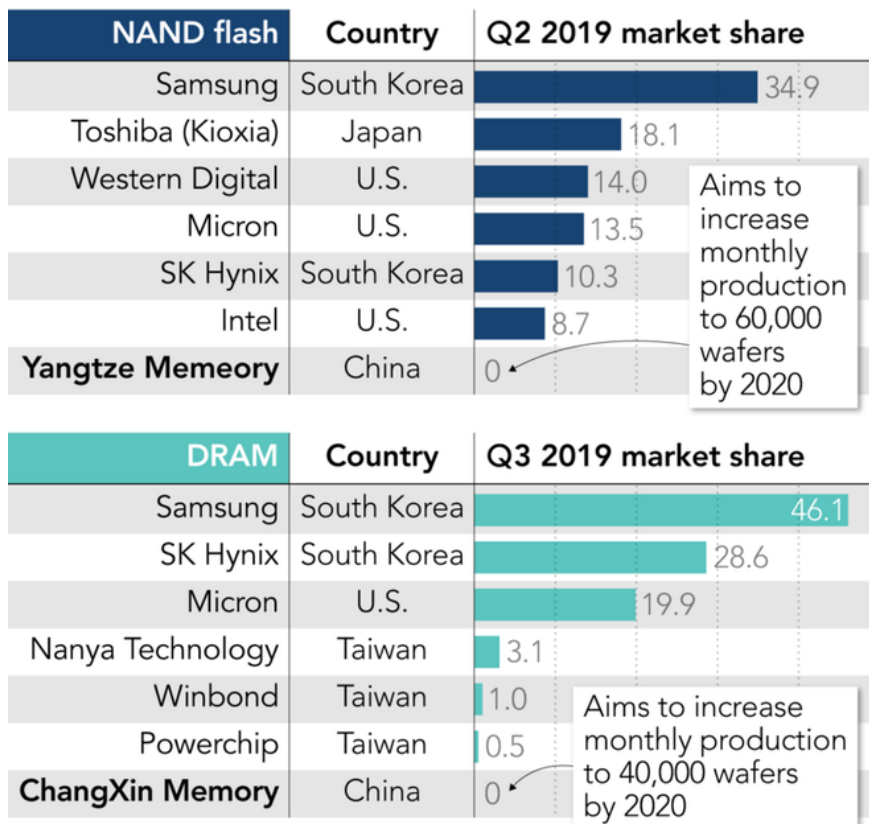
Meanwhile, ChangXin Memory Technologies, which is expected to quadruple DRAM chip production, to 40,000 wafers per month, equivalent to 3% of the world's DRAM output, at its \$ 8 billion facility in Hefei, Anhui province.

The current global output of NAND and DRAM flash chips, which China has not manufactured before, is about 1.3 million wafer per month, per chip. Both markets are dominated by manufacturers from the US, South Korea and Japan such as Samsung Electronics, SK Hynix, Micron and Kioxia (formerly Toshiba Memory).

"Both Chinese projects currently have small-scale production, but the quality is improving," a person familiar with the progress of both projects said. "They are all expanding production from now to next year, for sure."

Yangtze Memory declined to comment on production levels, saying only that it had started manufacturing 64-layer NAND flash memory chips in September and will increase production according to the company's plan. ChangXin Memory declined to comment.

Memory chip market share by revenue (in percent)



Source: Trendforce

Division of memory chip market, by revenue.

NAND flash chips, with a market worth US \$ 56 billion a year and DRAM chips, with a market worth US \$ 95 billion a year, are an essential memory component used in a range of devices from smartphones, data center servers to self-driving cars.

Sources said the order for Yangtze Memory's NAND flash chip came from a number of local and international companies such as Lenovo. The company representative said it expects its product to be used for various applications. "As a global supplier of innovative memory products, Yangtze Memory's goal is to serve the global market," the company representative said.

"Yangtze Memory shipments may look like small peas when compared to big rivals like Samsung Electronics, SK Hynix and Toshiba (now Kioxia). But China is a real threat because of the concept. Their profit-making concept is different from others," said an executive of Lite-On Technology, a joint venture with Yangtze Memory's parent company, Tsinghua Unigroup.

"The next 12 months will be very important," said Mark Li, a senior semiconductor analyst at Bernstein Research. "When these memory products become widely available in the market, people will be able to verify that they violate the intellectual property of other companies."



The trade war with the US will greatly affect China's ambition to lead semiconductors.

However, there is still another challenge regarding the ongoing technological competition between the US and China.

The Washington government has listed more than 200 Chinese companies and organizations on the blacklist of economic bans on US technology. Its influence has led to a number of Chinese chipmakers almost ceasing to function due to cut ties from US suppliers.

"There are challenges and uncertainties ahead, for these new Chinese semiconductor companies. But they will receive strong support from their government, because they are related to the porcelain." The important mission is to reduce the country's dependence on foreign technology, "said Arisa Liu, a semiconductor analyst. "However, it will take about three years for these new Chinese companies to start closing the technology gap with the units that are leading the memory chip market."

References *Nikkei*

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