

EdgeCortex cuts AI processing costs by a quarter compared to other semiconductor chips

EdgeCortex, which designs and develops semiconductor chips, has developed a new semiconductor chip specialized for arithmetic processing of generated AI (Artificial Intelligence). Utilizing unique design technology, the company has reduced the power consumption per processing capacity to one-fourth that of typical competing products. The chip combines high-speed computation with low cost to meet the needs of a wide range of AI-related companies.

A semiconductor chip is one of the core components built into an electronic circuit board. They control electrical signals and perform arithmetic processing in computers. Advanced arithmetic operations used in generative AI and other applications consume large amounts of power when processing large amounts of information at a time. Because it costs a lot of money, there is a need to achieve both low power consumption and high-speed operations.

EdgeCortex will release an electronic board incorporating chips and connecting terminals to companies inside and outside of Japan by the end of 2024. In May, the company began pre-orders on its website. They will outsource chip production to a factory in Taiwan owned by Taiwan Semiconductor Manufacturing Company (TSMC) and begin mass production and sales by the end of the year. If the facilities are ready, the company plans to manufacture the chips at its Kumamoto plant.

It consumes less than 10 watts in operation and is capable of 60 trillion operations per second. The selling price starts at \$249 per piece (about 39,000 JPY). A typical competing product with the same computing capacity is said to consume as much as 40 watts of power during operation and cost nearly \$1,000. The company has increased the power efficiency per processing capacity by up to four times and reduced the cost of the same by 75%.

The size of the chip has also been reduced. A single chip can be implemented on an electronic board measuring 22 mm in length and 80 mm in width and is adaptable to the "M.2" board-type electronic board project, which is expanding its adoption due to the miniaturization of end products. The number of components involved in memory and operation has been efficiently reduced.

They utilized proprietary technology in their development that allows a wide range of different calculation engines to be properly connected and efficiently computed. EdgeCortex is a startup founded in 2019, with strengths in design technology, including the software that runs semiconductor chips.

The CEO and founder, Sakyasingha Dasgupta emphasizes, *"This will be a key product that will support a wide range of AI applications around the world, including next-generation telecommunications and space-related applications."* The company plans to develop new products specialized for servers for power-saving and generation AI, such as large electronic substrates with multiple new semiconductor chips for much higher performance.

- Translation prepared by EdgeCortix.
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