Siemens Chooses AMD EPYC™ Embedded 9004 Processors for Industrial Edge Server

Solution Brings Data-Center Quality Servers to Harsh Industrial Environments

PARTNER

Siemens

INDUSTRY

Industrial, Data Center

CHALLENGES

Design a data-center-quality industrial edge server that can withstand harsh industrial environments, such as extreme temperatures, vibration, and electromagnetic interference.

SOLUTION

AMD EPYC™ Embedded 9004 Series processors deliver high computing performance and power efficiency in the new industrial edge server.

RESULTS

AMD technology has enabled the new industrial edge server to meet or exceed Siemens' expectations.

AMD TECHNOLOGY AT A GLANCE

AMD EPYC™ Embedded 9004 Series Processors

Siemens recently launched a new 2U edge rack server designed for use in industrial environments.

The new server, called the SIMATIC IPC RS-828A, developed for hyper-convergent infrastructures and serves a wide range of applications with up to eight drives and a maximum of 6 TB RAM (24 DIMMs). The two 10 GB Ethernet ports on board enable stable data exchange in a wide range of applications. It enables the use of up to two double-width, high-performance AI accelerator cards and three other PCIe® Gen. 5.0 slots provide space for extensions, such as additional network cards.

Key applications for the new server include automotive manufacturing, as well as a basis for telecommunication services and IoT public clouds. The server can also be useful for applications involving AI or heavy computation, such as visual tracking in a retail environment.

CHALLENGE

Recently, Siemens was looking to design a high-performance, data-center-class server that could withstand the rigors of challenging industrial environments. It needed a processing partner that could reliably deliver performance and power efficiency while being able to operate seamlessly in extreme temperatures, or in settings with vibration, or electromagnetic interference—in other words, in places outside a traditionally air conditioned data center.

"We are focusing on making industrial computing products that can be used in more harsh environments," said Wolfgang Lay, marketing manager for high-end servers at Siemens. "We are seeing growing demand for compute—especially in AI and visual computing. This requires really heavy computation and power directly at the production line."

SOLUTION

Siemens' SIMATIC IPC RS-828A server is made to operate in extreme environmental temperatures, ranging from 5 degrees C to 45 degrees C, and has its own filter to keep out dust.

"It's also more resistant to electromagnetic fields," Lay said, adding that "...the machine would continue to reliably operate in a manufacturing facility with strong electromagnetic fields that would otherwise cause a normal server to crash."

"There are very few companies serving this market, but we don't believe anyone else offers such a high computing server in their industrial portfolio," he said.

The new industrial-grade servers take advantage of the massive computing power of two AMD EPYC™ Embedded 9004 series processors. "We were looking for a solution that offered efficient computing power, and EPYC fit the mark," Lay said. "Connectivity is also another big EPYC advantage," he added.

Lay said the dual-socket system can have two high-bandwidth accelerators with the maximum number of

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AMD + Siemens AG Case study

AMD

connections and still have enough processing power available for network cards or hardware rate cards. "The high number of PCIe lines featuring the latest Gen 5 technology was one of reasons we chose AMD EPYC processors," Lay added.

"We did look at other processors, but they did not give us the core count or number of PCIe lanes in this combination. This is why we chose AMD," Lay explained. "We are also seeing AMD gaining more market share in data centers as they continue to offer efficient and cutting-edge technologies. We wanted to start our new venture in industrial servers by giving customers a high-end product with outstanding possibilities. We figured that if AMD is exceptional for data centers, they would probably be great for industrial environments as well."

RESULT

"We are currently at beginning of the test phase, but what we have seen from AMD so far meets or exceeds our expectations," Lay said.

He added that the new server will be available for purchase later this year.

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About AMD **EPYC Embedded 9004 Series Processors**

About **Siemens AG**

About Siemens AG

Siemens AG is a technology company focused on industry, infrastructure, transport, and healthcare. From more resource-efficient factories, resilient supply chains, and smarter buildings and grids, to cleaner and more comfortable transportation as well as advanced healthcare, the company creates technology with purpose adding real value for customers. For more information, please visit: www.siemens.com.

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