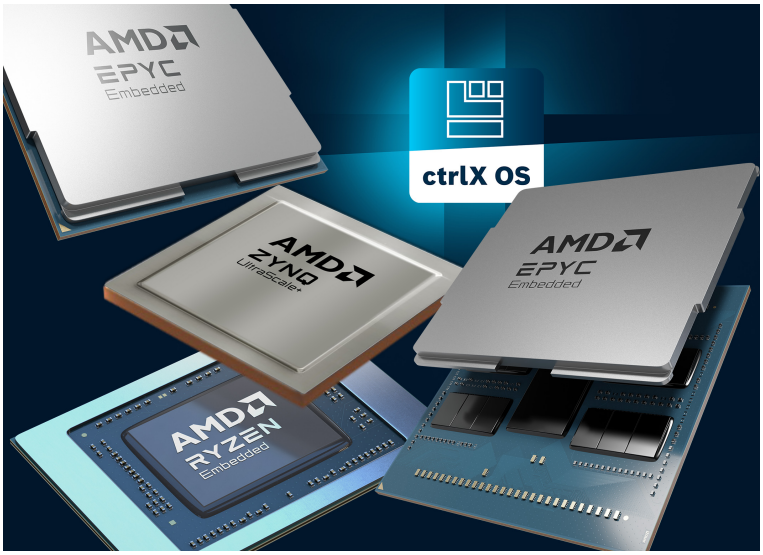
PRESS INFORMATION

Bosch Rexroth and AMD bring industrial AI directly to the machine

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- Bosch Rexroth extends the ctrlX OS Ecosystem together with AMD
- AMD embedded platforms combine CPU, GPU, and NPU resources for local AI applications
- With ctrlX OS, AI agents can be run directly on the machine – without additional accelerator cards or cloud infrastructure



The operating system ctrlX OS supports a wide range of embedded processors from AMD. (Image source: Bosch Rexroth AG)

Bosch Rexroth and AMD are working together to advance software-defined automation and industrial AI based on the ctrlX OS Ecosystem. The operating system ctrlX OS supports a wide range of AMD embedded processors. The combination of the open, Linux-based operating system and modern AMD hardware lays the necessary foundations to run even demanding AI applications directly on machines and systems. Several AI agents can work completely locally and access machine knowledge as well as engineering and process data.

While ctrlX AUTOMATION deeply integrates Agentic AI into the automation platform, ctrlX OS is an open industrial operating system that enables AI applications to be run directly on the machine on different hardware platforms.

The AMD Ryzen™ AI embedded platform combines CPU, GPU, and NPU resources in one system, providing computing power for classic automation tasks, graphics processing, and AI inference. When used in conjunction with ctrlX OS, users can selectively utilize the appropriate computing resources for different automation and AI applications.

"With Industrial AI, the demands on the processing power available directly on the machine are increasing considerably. At the same time, users want to remain open and decide for themselves which hardware, software, and AI models they use. Together with AMD, we are creating a powerful foundation for this: ctrlX OS connects the automation world with modern computing and AI resources," says Steffen Winkler, Senior Vice President Sales, Business Unit Automation & Electrification Solutions at Bosch Rexroth.

AI agents work locally with the machine

Bosch Rexroth and AMD demonstrated that this approach can already be implemented in practice at the AMD Advancing AI 2026 conference in July: Several AI agents and the large

language model (LLM) ran completely locally on AMD edge hardware with ctrlX OS and used CPU, GPU, and NPU resources for local inference.
The AI agents access machine knowledge, engineering data, and current process data via the ctrlX Data Layer and a central Model Context Protocol (MCP) server. The MCP server runs on ctrlX OS and connects all relevant interfaces at Bosch Rexroth and end customers. Artificial intelligence thus obtains the necessary industrial context directly from the automation environment. This means that AI agents can be used directly where the relevant data originates.

AI with no additional accelerator cards or cloud dependency

Local inference offers tangible benefits for machine manufacturers and operators: Production and machine data can remain within their own infrastructure, constant cloud inference costs are eliminated, and fast response times become possible. No additional accelerator cards or cloud infrastructure are required.

More options for software-defined automation

The collaboration with chip manufacturer AMD is in line with the core philosophy of ctrlX OS: Software and hardware are consistently decoupled from each other. This gives machine manufacturers and OEMs additional options for selecting hardware and computing power to match the respective application, while at the same time benefiting from a uniform software basis.
"The next generation of AMD embedded processors are optimized for demanding edge applications. For machine manufacturers, the key factor is how quickly they can leverage this performance for specific applications. With ctrlX OS, they obtain direct access to a growing ecosystem of industrial applications and functions on platforms based on AMD embedded processors. This allows them to implement new applications without having to develop a separate software stack for each hardware platform," says Amey Deosthali, Head of Robotics, Industrial, and Healthcare at AMD.
The collaboration benefits both sides of the automation chain: Device manufacturers can more easily deploy ctrlX OS on powerful AMD hardware and develop their own solutions. Users, in turn, gain access to high, flexible computing power for demanding automation, vision, and AI applications.

Basic Information Bosch Rexroth

As one of the world’s leading suppliers of drive and control technologies, Bosch Rexroth ensures efficient, powerful and safe movement in machines and systems of any size. The company bundles global application experience in the market segments of Mobile and Industrial Applications as well as Factory Automation. With its intelligent components, customized system solutions, engineering and services, Bosch Rexroth is creating the necessary environment for fully connected applications. Bosch Rexroth offers its customers hydraulics, electric drive and control technology, gear technology and linear motion and assembly technology, including software and interfaces to the Internet of Things. With locations in over 80 countries, around 31,900 associates generated sales revenue of 6.5 billion euros in 2025.

Basic Information Bosch

The Bosch Group is a leading global supplier of technology and services. It employs roughly 413,000 associates worldwide (as of December 31, 2025). The company generated sales of 91 billion euros in 2025. Its operations are divided into four business sectors: Mobility, Industrial Technology, Consumer Goods, and Energy and Building Technology. With its business activities, the company aims to use technology to help shape universal trends such as automation, digitalization, electrification, and artificial intelligence. In this context, Bosch’s broad diversification across regions and industries strengthens its innovativeness and robustness. Bosch uses its proven expertise in hardware, software, and services to offer customers cross-domain solutions from a single source. It also applies its expertise in connectivity and artificial intelligence in order to develop and manufacture intelligent, user-friendly products. With technology that is “Invented for life,” Bosch wants to help improve quality of life. The Bosch

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