

# How Does the Industry Integrate Edge Computing? What are its Practical Applications? What Criteria should be Considered when Selecting FSP Edge Computing Products?

In today's technological era, edge computing stands out as a tangible solution to cope with the overwhelming volume of data, particularly within the industrial sector. In the past, cloud computing required data to be transmitted to central cloud centers for storage and computation, which was time-consuming, inefficient, and costly. In contrast, edge computing enables data processing to occur directly at the data source (the local end), eliminating the need to transmit data to central cloud centers. This significantly accelerates data analysis and improves efficiency. FSP recognized the opportunities and trends in edge computing early on, with a strong emphasis on its industrial applications, making it a leader in the industry.



# What are the industrial applications of edge computing?

Edge computing finds applications in the industrial sector. Let's consider "quality control in smart manufacturing factories" as an example. In a smart factory producing automotive components, automated quality inspections were initially reliant on cloud computing systems. Upon detection of a product by the inspection instruments on the production line, data was transmitted to cloud servers for analysis, and a decision to halt the production line was pending until the results were received. However, due to network delays, this approach led to the production of a significant number of defective components before receiving feedback. To address this issue, the factory opted for edge computing. Now, all data analysis takes place directly on the inspection instruments on the production line when an issue arises. When the inspection instruments detect subpar components, they can immediately stop the production line through robots with minimal delay. Consequently, with the assistance of edge computing, the factory greatly improved the real-time and accurate nature of its quality control, reducing the production of defective products and associated costs significantly.

The above case illustrates three industrial applications. First is **factory automation**: As factories move toward automation and intelligence, edge computing plays a crucial role in real-time data analysis and feedback. This allows factories to quickly adjust production processes based on real-time data changes, enhancing production efficiency and reducing costs. Second is **data collection and analysis**: Industrial equipment generates vast amounts of data. Edge computing enables immediate analysis of this data where it's generated, enabling real-time decision-making rather than transmitting all data to central servers. Lastly, there is **robot control**: In advanced manufacturing, robots need to respond promptly and perform precise actions. Edge computing provides real-time analysis capabilities, allowing robots to adapt flexibly to various scenarios.

## The role of edge computing in the industry

As the trends of Industry 4.0 become increasingly clear, the importance of edge computing has also emerged. As seen in the above examples, edge computing can significantly reduce data transmission delays, ensuring that industrial devices receive real-time feedback for rapid and effective decision-making. Additionally, edge computing can further enhance data security and reduce costs. Reducing long-distance data transmission further means lower energy consumption during data transmission, and it also reduces the risk of data theft or malicious software attacks during the data transmission process.

# How does the industry combine edge computing with AI?

AI has become a driving force in the industrial revolution in recent years. When AI meets edge computing, its potential scope and benefits expand significantly. For example, when industrial robots are combined with AI, they can not only execute general commands but also engage in "autonomous learning". By reflecting on previous decisions and their corresponding outcomes, they can automatically optimize processes. FSP has recognized this trend and is prepared to offer a full range of high-stability, high-power, and high-spec power supply products, providing various application devices that combine AI models with edge computing to contribute to the advancement of industrial automation.

## The importance of power supply and power supply solution providers

The effective operation of edge computing relies heavily on a stable power supply. A good power supply not only ensures the proper functioning of equipment but also extends its lifespan and ensures data integrity. As a leading power supply provider in the industry, FSP offers a range of high-quality power products to meet the requirements of industrial edge computing.

## FSP edge computing products

As the industrial demand for stable and high-performance power supplies continues to grow, FSP has introduced two flagship products.

First, the [FSP3000-20FE](#) boasts the following advantages: 1. High capacity supply: This power supply product offers a total power capacity of up to 3,000 watts, providing robust support for various high-demand applications. 2. High safety standards: It complies with the latest safety and EMC standards, ensuring compliance with regulatory requirements worldwide. This means it can operate smoothly globally without safety concerns.

3. High efficiency: With an 80 Plus Platinum efficiency rating, it ensures superior performance under various load conditions. 4. Excellent protection: Designed for altitudes of up to 5,000 meters, it features high reliability, low ripple and noise, and multiple protection functions, including overcurrent protection, over temperature protection, and over voltage protection. Secondly, the [FSP2400-20FM](#) is also worth mentioning. Its key features include a compact structure, ease of integration into various systems, high compatibility, and easy integration with other products.

In summary, FSP's edge computing products are characterized by high product stability, high power density, and high specifications (compliant with 80 PLUS/IEC 62368/IEC 60950 and other safety certifications). These products feature multiple patents and quality certifications, ensuring that customers can obtain the most efficient and optimal power solutions. FSP is a reliable partner in the industrial sector.

## FSP3000-20FE



- Low iTHD
- Working temperature: 0 to 55°C
- Design for 5,000 meters above sea level
- Support OCP, OTP and OVP circuit protection
- Short circuit protection on all outputs
- Resettable power shut down
- MTBF: 250K hours of continuous operation at 40°C, 75% output load

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