MBox20 5G Smart Gateway

In today's era where the global industrial field is deeply influenced by the wave of digitalization and intelligence, the 5G industrial smart gateway, as the core equipment in the industrial Internet architecture, is playing a vital role as a bridge and link, injecting a steady stream of power into the transformation, upgrading and innovative development of industrial enterprises.

Mingda Technology independently developed and launched a 5G industrial smart gateway with integrated switch functions, which has become a new generation of industrial tools.

Definition and Function

The MBox20 gateway is an intelligent network device designed for industrial environments. It can not only seamlessly connect various equipment, sensors, control systems, etc. on industrial sites to the 5G network, but also realize comprehensive data collection, efficient transmission, intelligent processing and format conversion. Its core functions include:

Multi-protocol conversion: In the face of equipment produced by different manufacturers in the industrial field and using multiple communication protocols (such as Modbus, PROFINET, OPC UA, etc.), the MBox20 5G industrial smart gateway, with its powerful protocol conversion capabilities, can convert these heterogeneous protocols into standard protocols compatible with the 5G network, ensuring smooth communication and collaborative operation between devices.

Data collection and transmission: Real-time and accurate capture of the operating data, process parameters and status information of industrial field equipment, and use the high-speed transmission characteristics of the 5G network to quickly transmit these data to the cloud platform or the enterprise internal management system.

Edge computing capabilities: The MBox20 gateway can perform preliminary processing, analysis and filtering of the collected data at the edge side close to the data source, such as data cleaning, anomaly detection and simple data analysis model operations, and only upload key data to the cloud. At the same time, real-time control instructions are executed locally according to preset rules to achieve rapid response and automatic control of the industrial site.

Network access and security protection: As a bridge for industrial equipment to access the 5G network, the 5G industrial intelligent gateway provides stable and reliable network access services, supports multiple 5G frequency bands and network formats, and ensures stable connection in complex industrial environments.

Integrated switch function: In addition, the 5G industrial intelligent gateway also integrates switch functions, which can support LAN communication between devices, optimize network topology, and improve data transmission efficiency.

Application scenarios

Smart factory: In smart factories, 5G industrial intelligent gateways connect CNC machine tools, robots, automated production lines and other equipment on the production line to the 5G network to achieve interconnection and collaborative operation between equipment.

Industrial automation control: For industrial automation control scenarios with extremely high requirements for real-time and reliability, such as remote monitoring

and control of power grids and automated control of chemical production processes, 5G industrial intelligent gateways, with their low latency and high reliability, achieve real-time control command transmission and status feedback of remote equipment.

Industrial Internet of Things: In the industrial Internet of Things environment, a large number of sensors, smart meters and other equipment need to be connected to the network to achieve data sharing and interaction. As the core node of the industrial Internet of Things, the 5G industrial intelligent gateway connects these scattered devices and aggregates the massive data collected to the cloud platform for in-depth analysis and mining.

Remote equipment monitoring and operation and maintenance: For many industrial enterprises whose equipment is distributed in different geographical locations, even in remote or harsh environments, traditional on-site operation and maintenance methods are often costly and inefficient. With the help of 5G industrial intelligent gateways, enterprises can achieve real-time monitoring and operation and maintenance of remote equipment.

About IoT Cloud Platform

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