Remote networking solutions for industrial robots

Industrial robot is mainly composed of robot arm body, drive system, control system, human-computer interaction system, etc. Among them, the control system and human-computer interaction system can construct a LAN through Ethernet and IR305. In respect of robot working status data, real-time transmission can be carried out by means of high-bandwidth and low-latency networks.

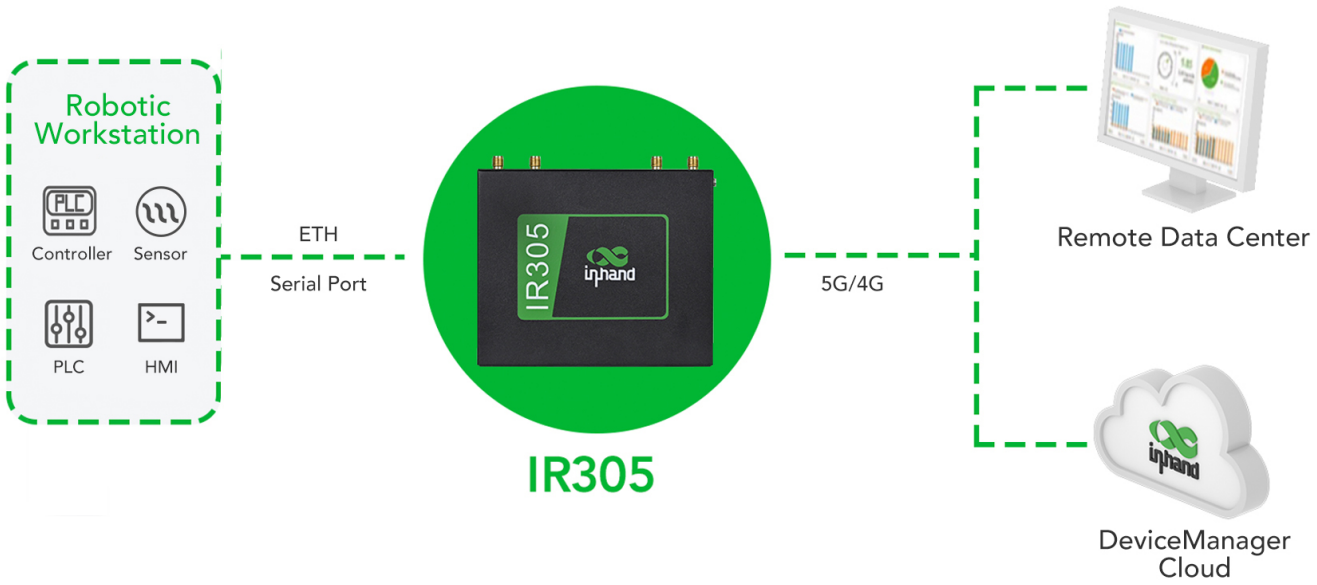
Background

Industrial robots are increasingly used in manufacturing as a result of the progress of industrial automation. As the operating status of industrial robots and robotic arms is key to productivity, their maintenance really matter. Factories and robot manufacturers need to build a digital network of the robotic control system, PLCs, industrial sensors and other devices of assembly line or workstation, so that operation data and alarms are reported to the data center for conducting remote monitoring, prompt troubleshooting and preventive maintenance, which ensures the productivity of enterprises and factories.

But here come the challenges: How to provide a stable network connection for complex and harsh industrial sites and ensure agile data transmission? How to ensure data security? how to efficiently manage a larger number of industrial robots?

In view of this, InHand launches the industrial router IR305, which builds a network for industrial robots, helps collect data remotely, send alerts for maintenance, and conduct remote management.

Remote monitoring system for industrial robot



On-site networking of industrial robots

The Industrial robot is mainly composed of robotic arm body, the drive system, the control system, the human interface, etc. The IR305 can build a LAN with the control system and human interface through Ethernet ports. Operation data of the robots can be transmitted in real time over high-speed LTE networks. Coordinated robots IR305 can also be connected by the IR305 for better efficiency.

The IR305 offers a secure Wi-Fi network for field devices, making it easier for on-site maintenance staff to carry out debugging and diagnosis.

The IR305 has rich interfaces. In this sense, Industrial robots, PLCs, HMI control systems and sensors on the production lines can all be connected to the IR305. The working status data of industrial robots will be transmitted through the secure encrypted tunnel built by IR305, providing the necessary multi-maintenance security mechanism for critical industrial scenarios.

The remote data center for industrial robots

The remote data center for industrial robots receives the working status data of robots in real time for each industrial sites, analyzes the data, and understands

their overall status, production capacity, fault alarm and other information. Thus, the planned maintenance and repair of the industrial robots can be brought off, which improves the production capacity of the robots as well as the efficiency of the enterprises.

As industrial robots are distributed in different sites and the network status needs to be managed synchronously, the IR305 can be accessed and managed by the Device Manager. Thousands of routers across distributed site can be managed in real time on a unified cloud platform, the status of each router monitored anytime and anywhere, which makes management simpler, more efficient and more economical.

Advantages:

- **Fast Internet access anytime, anywhere**
  The IR305 is built with multiple means of network, such as accessing to 3G/4G LTE networks, providing convenient and efficient network access services for on-site IoT devices.
- **Comprehensive security strategies**
  Multi-level security strategies, including multiple VPNS, firewalls, and device permission management, etc., protect sensitive data and main service networks from attacks and threats and provide secure networks.
- **"Always online", ensuring uninterrupted network**
  Provides high quality network services that are always online, ensuring the stability of business network, Link-backups, Dual SIM failover, VRRP hot backup mechanism and Multi-layer link detection mechanism.
- **Abundant industrial ports, covering IoT scenarios**
  The IR305 has rich industrial interfaces, including 5* 100Mbit/s network port, Wireless Wi-FI, Industrial serial ports and Industrial IO, facilitating the access of IoT on-site devices. IR305 can be widely used in highly integrated and diversified IoT scenarios.
- **Industrial-grade design**
  The IR305 adheres to the principles of industrial design and maintains creative attitudes in both product design and components selection, providing high quality products for the unmanned IoT sites, and is adaptive to severe industrial environment.
- **Concise and convenient cloud management**
  The IR305 can be accesses to InHand Device Manager. With a centralized cloud platform, operation status of thousands of thousand of distributed site devices can be monitored and managed anytime anywhere, making management simpler, more efficient and more economical.