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**InHand Networks**



Products & Services

# Industrial IoT



## About Us

InHand Networks is a leading IoT solutions provider founded in 2001, dedicated to driving digital transformation across industries and empowering customers to unlock their full potential and achieve accelerated growth.

We specialize in delivering industrial-grade connectivity solutions for diverse sectors, such as enterprise networks, industrial and building IoT, digital energy, smart commerce, and mobility. Our comprehensive product portfolio and services cater to various applications worldwide, including smart manufacturing, smart grid, intelligent transportation, smart retail, etc. With a global footprint spanning over 60 countries, we serve customers in China, the United States, France, Germany, the United Kingdom, Italy, and beyond.





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# Predictive Maintenance

## Be Prepared and Win from Afar

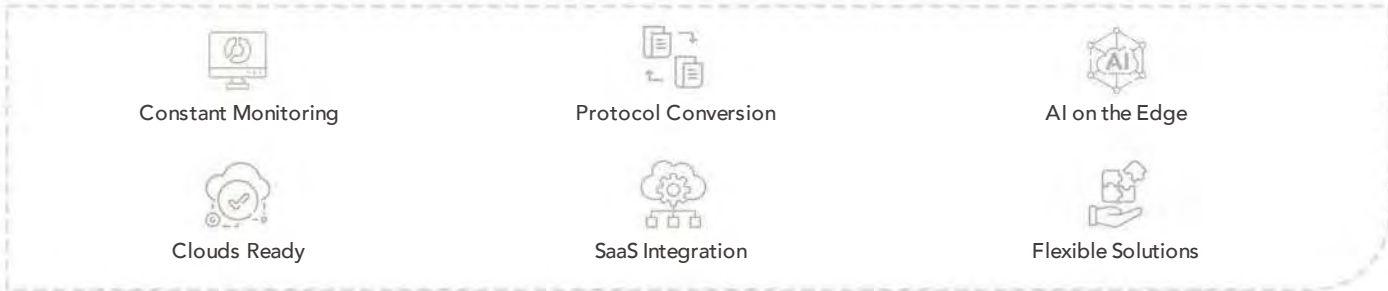
Industries are recovering from the global pandemic. As we look forward to accelerated growth, we must also reflect on the insights the pandemic has offered us, i.e. the adoption of remote work through IoT technologies. Predictive maintenance for industrial and electrical equipment is a remote maintenance approach based on data analysis and machine learning. It aims to monitor and maintain equipment before failures occur, reducing downtime and repair costs, and enhancing equipment reliability and production efficiency.

### Our Solution



InHand Networks offers a “cloud+edge” solution for preventive maintenance. With support for multiple industrial protocols and powerful edge computing capabilities, the IG edge gateways and EC edge computers easily acquire data from various onsite devices, validate data and then upload them to the cloud.

### Our Capabilities



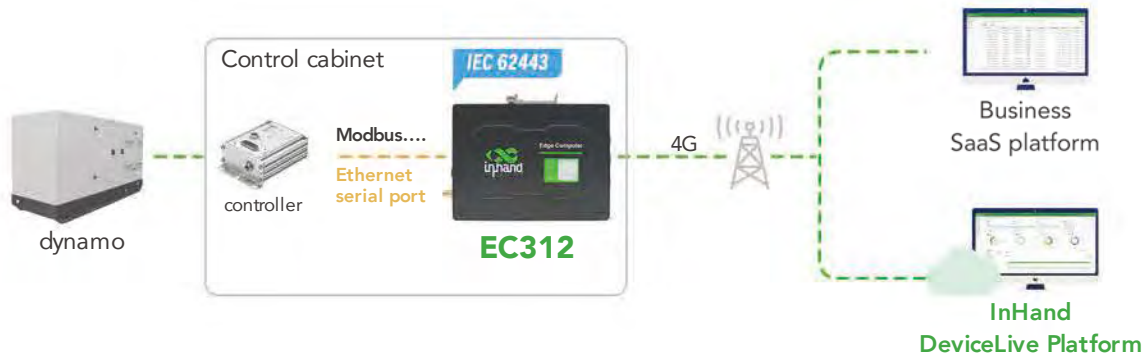
## Remote Monitoring Solution for Industrial Generators

### Customer Requirements

- **Real-time Monitoring:** Real-time monitoring of generator parameters through the sensor network, including temperature, vibration, voltage, current, etc.
- **Local Fault Diagnosis:** Accurate local fault diagnosis for timely response during abnormalities to reduce transmission delay.
- **Predictive Maintenance:** Leverage historical data and machine learning to predict equipment issues, enabling proactive maintenance and reducing downtime and costs.
- **Remote Control:** Ensure safe remote control of generators via the cloud, including start, stop, and power adjustment functions.

### InHand Solution

The EC312 edge computer enables advanced remote monitoring of industrial generators. Integrating seamlessly with sensors, generator controllers, a generator monitoring platform and the InHand DeviceLive cloud, it facilitates real-time status tracking and data preprocessing. Via cellular networks, it reports to the monitoring platform for remote parameter adjustments, enhancing generator reliability. The DeviceLive offers remote management, allowing for efficient batch deployment and upgrades, thus optimizing management efficiency and reducing operational costs for distributed generator systems.



### Benefits

#### Easy for Customization

The EC312, running Debian 11 Linux distribution, supports languages like C/C++, Java, Python, .Net, and JavaScript, enabling customized application development for diverse needs.

#### Extensive Interfaces for Varying

The EC312, with diverse interfaces including serial, Ethernet, DI/DO, CAN and GPS, meets diverse industrial generator data needs, reducing management costs.

#### Multiple Connection Options with Reliability

The EC312 offers Ethernet, Wi-Fi, and cellular connections with network backup, ensuring reliable, uninterrupted Internet access for generators in any location.

#### Remote Management Made Easy

The DeviceLive cloud enables remote edge app management, upgrades, and deployment, significantly reducing project delivery times and operational costs.

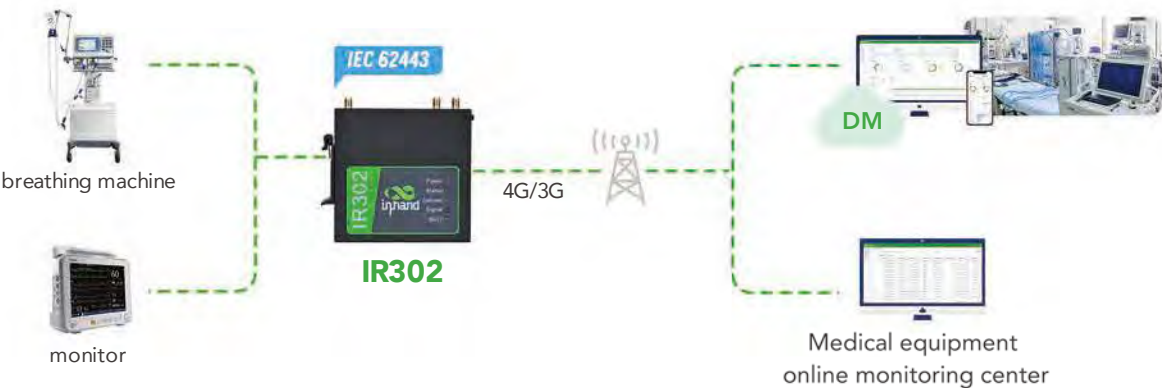
# Remote Maintenance of Medical Equipment

## Customer Requirements

- **Reliable and Uninterrupted Networking:** Reliable networking is very important for medical equipment with large amounts of data continuously transferred.
- **Comprehensive Data Security Mechanisms:** Medical data are sensitive and require strict protection. Data should be encrypted during transmission.
- **Easy Centralized Management:** With many devices deployed across locations, manufacturers expect easy remote management for better maintenance.

## InHand Solution

The IR315 industrial LTE router establishes a high-speed, secure LAN for medical devices via Ethernet or Wi-Fi, transmitting data with robust firewall and VPN encryption for optimal security and integrity. Remote centers gain access to multi-dimensional device status data, facilitating immediate response to any equipment issues and ensuring uninterrupted, stable operation. The Device Manager offers a streamlined interface for easy management of numerous medical devices, enhancing efficiency with comprehensive data insights and effective batch operations for superior network control.



## Benefits

### New Network Experience

The IR315 offers fast network access with high bandwidth and low latency, supporting both SA and NSA modes, enabling efficient network construction for IoT devices on-site.

### Comprehensive Security Strategies

Multi-level security strategies, including various VPNs, firewalls, and device permission management, safeguard sensitive data and core service networks against attacks and threats.

### Comprehensive Network Functions

With its versatile networking capabilities, the IR315 excels in both simple and complex, large-scale network environments.

### Easy-to-use Cloud Management

The Device Manager's centralized cloud platform allows for simple, efficient, and cost-effective monitoring and management of thousands of devices across distributed sites, accessible anytime and anywhere.

# Digital Factory

## Empowering Businesses with Competitive Advantage

Leveraging advanced technologies like AI, Big Data, and the Internet of Things (IoT), we empower industrial enterprises to achieve unprecedented levels of productivity, efficiency, and innovation. Our solutions aim to help improve product quality, meet personalized customer demands, and ensure production safety. With the power of digital technology, unlock the full potential of your digital factory and gain a significant competitive edge.

## Our Solution



InHand Networks offers a "cloud+edge" solution for digital factory. With support for multiple industrial protocols and powerful edge computing capabilities, the solution keeps track everything in the factory, enables real-time view of machine status and remote management.

## Our Capabilities



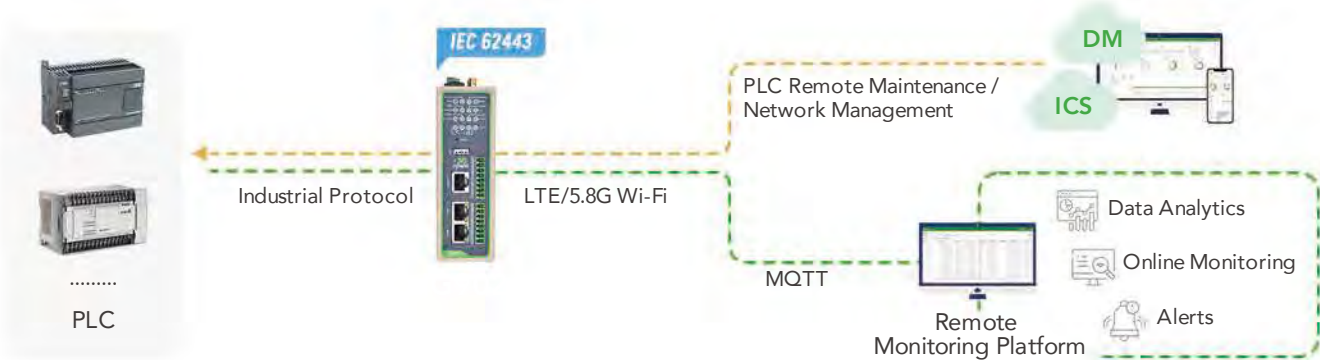
# Remote Monitoring Solution for Digital Factory

## Customer Requirements

- **Visualizing and Remote Managing in Real Time:** Access to equipment status, production metrics and KPIs anytime anywhere to enable timely decision-making and adjustments.
- **Fault Warning and Predictive Maintenance:** Early detection of issues and preventive maintenance reduce downtime, cut costs, and boost equipment reliability and productivity.
- **Data-driven Decision-making and Optimization:** Capture factory equipment data, enabling queries and exports to optimize resource use and support intelligent decisions with timely insights.

## InHand Solution

InHand's remote monitoring solution for digital factories enables seamless IoT transformation, cost-effective maintenance, and improved productivity. The IG902 edge gateway captures real-time data from the PLCs, filters it, and transmits it over 4G networks with proprietary protocols to the remote management platform for analysis. The InConnect remote access service enables remotely configuration, debugging and upgrading of field PLCs. The Device Manager Cloud ensures unified management and remote maintenance of gateways, optimizing operational efficiency and extending device lifespan.



## Benefits

### High Performance Connectivity

Available with LTE, Wi-Fi, and wired connections, along with various link redundancy technologies, the IG902 ensures continuous and reliable network transmission for uninterrupted device operation.

### Simplified Edge-to-Cloud Integration

The IG902 supports major industrial protocols and IoT clouds, making it easy to send device data to the cloud for remote monitoring and preventive maintenance, reducing operational costs.

### Built for Developers

The IG902, with Python programmability and Docker support, empowers developers to easily customize business specific applications and streamline app deployment, enhancing efficiency and scalability.

### Easy Remote Management

The IG902 comes with the InConnect remote access service, enabling remote maintenance of PLCs. Device Manager offers efficient centralized management for distributed gateways.

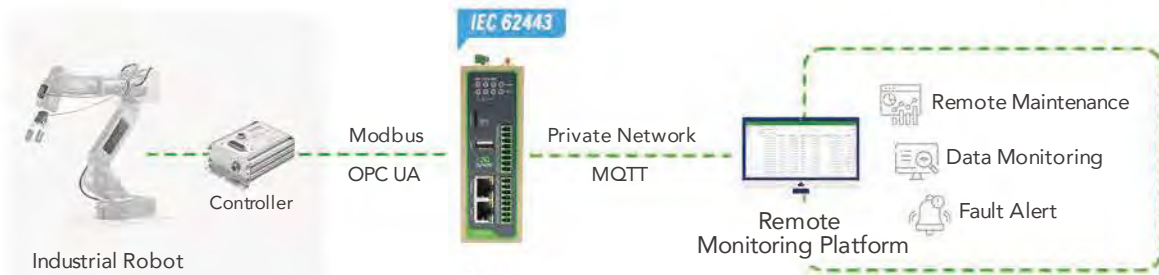
# Remote Monitoring Solution for Robots

## Customer Requirements

- **Real-time Operational Insights:** Instantly monitor industrial robots' status and manage remotely for real-time production insights, enhancing planning and scheduling efficiency.
- **Fault Prediction and Early Warning:** Collect data from industrial robots to identify fault patterns and anomalies, issuing early warnings for prompt action, reducing downtime, and extending lifespan.
- **Safety and Reliability:** Prioritize system security and integrity to protect industrial robots and data, ensuring confidentiality and uninterrupted production line continuity.

## InHand Solution

InHand's Smart Robot Remote Monitoring Solution boosts efficiency with networking and intelligent management for industrial robots. It integrates the IG502 edge computing gateway with robot controllers and a monitoring platform, facilitating data collection and transmission. The IG502's edge computing prowess, supporting numerous industrial protocols and IoT clouds, accelerates project delivery while cutting costs. It pre-processes data to lighten cloud burden and enable swift onsite responses. The platform offers real-time analytics, fault prediction, and remote maintenance, ensuring robust, efficient robot operations.



## Benefits

### Uninterrupted Connectivity

The IG902 ensures always-online devices via 4G LTE, Wi-Fi, and wired connections with redundancy for continuous, reliable network transmission.

### Streamlined Integration

With support for major industrial protocols, the IG902 facilitates easy cloud data transmission and remote monitoring, reducing operational costs.

### Advanced Computing & Customization

The IG902 features powerful ARM Cortex-A8 processor and Python programming, enabling intelligent data processing and tailored functionalities.

### Efficient Management at Scale

With the Device Manager, the solution simplifies large-scale device deployment and monitoring with web interface configuration and centralized management for system integrity.

# Digitalization of Utilities

## Injecting “Digital Intelligence” into Public Utilities

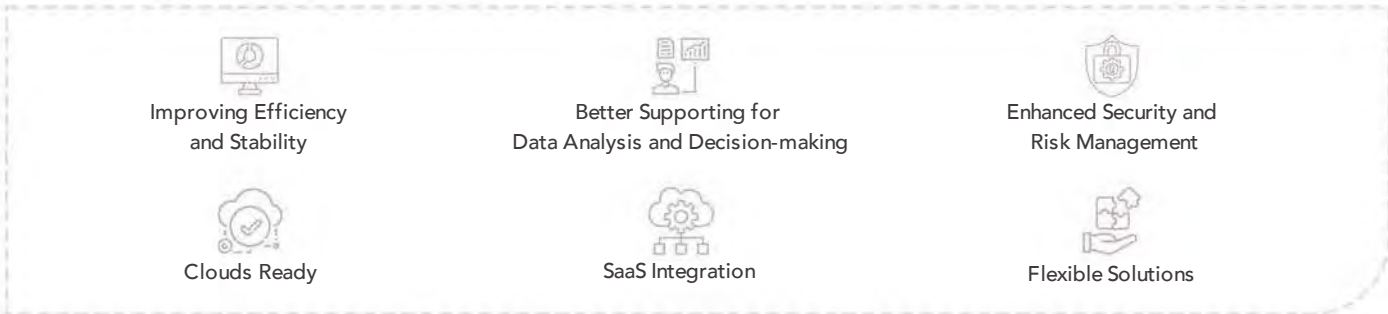
The future of utilities is inextricably linked to digitalization. We harness the power of IoT and cloud computing to empower power, natural gas, water, and heating companies to achieve greater efficiency and service quality, unlocking a path for sustainable growth.

### Our Solution



Through monitoring, control and diagnostics using IoT technologies and devices, we can achieve intelligent management and operation of public utility facilities, making them more reliable and secure with greater service quality. These improvements contribute to better user experience, greater satisfaction and loyalty, and ultimately facilitate sustainability of public utility service providers.

### Our Capabilities



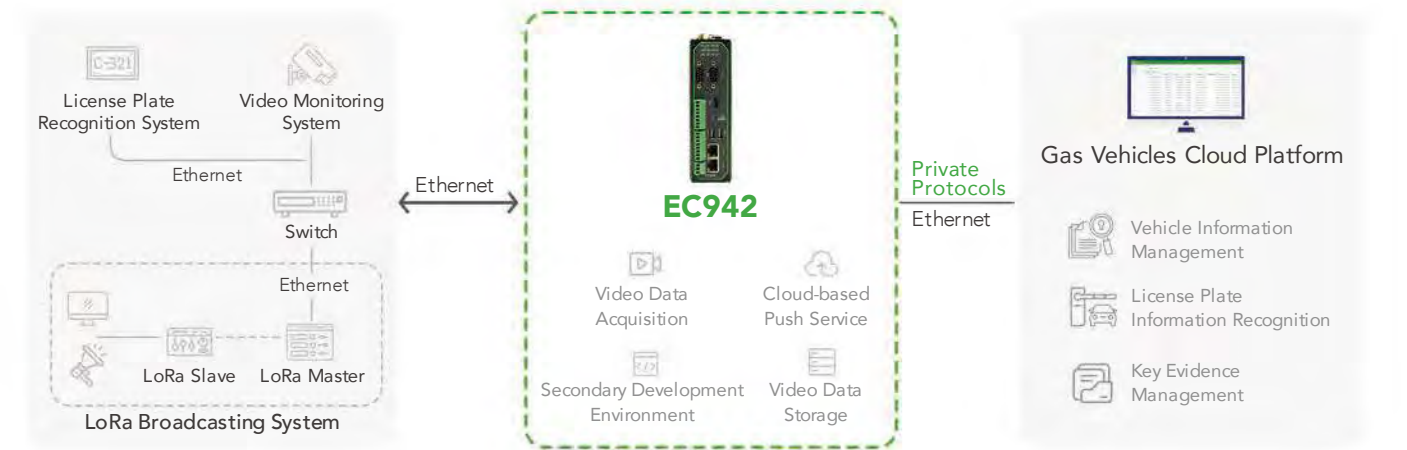
## Safety Monitoring Solution for Vehicle Gas Cylinders

### Customer Requirements

- **Reliable and Uninterrupted Networking:** Stable and reliable LTE network, with multiple interfaces to connect to different field devices.
- **AI Computing Power:** Recognition of license plate information of gas cylinder vehicles.
- **Support for Guest Applications:** A Linux distribution designed to facilitate the running of guest applications
- **Cloud Integration:** An API interface for seamless data exchange with the cloud.

### InHand Solution

The EC942 edge computer automates vehicle gas cylinder safety monitoring at charging stations, reducing labor costs. This integrated system combines license plate recognition, video surveillance, and voice broadcasting of cylinder data, connected via a field switch to a cloud big data platform. The EC942 processes and uploads vehicle information, ensuring compliance and safety in gas refills. If issues arise, it captures and stores video evidence, supported by expandable mSATA storage, streamlining safety operations efficiently.



### Benefits

#### Easy for Customization

The EC942, with Debian Linux 10, supports languages such as C/C++, Java, Python, .Net, and JavaScript, enabling tailored application development for various needs.

#### Large Capacity for Data Storage & Transmission

The EC942, featuring 16GB eMMC FLASH and an mSATA extension interface, is ideal for the substantial video data storage and transmission needs of charging stations.

#### Powerful AI Computing Capabilities

The EC942 offers 1 TOPS AI computing, allowing edge-based AI algorithm execution for license plate extraction from video, reducing the need for AI cameras and cutting project costs.

#### Reliable & Uninterrupted Internet Connectivity

The EC942 offers Gigabit Ethernet, Wi-Fi, and cellular connectivity with redundancy, ensuring continuous Internet access at remote charging stations.

# Remote Metering of Water Utilities

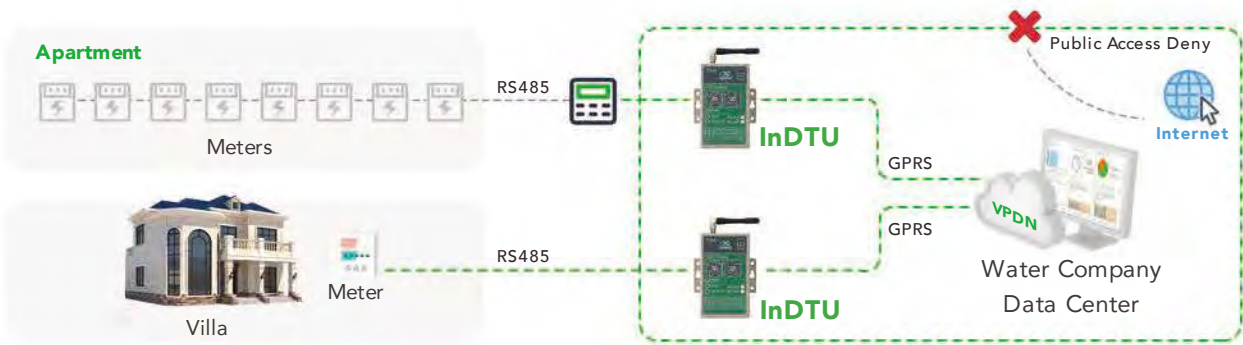
## Customer Requirements

- **Real-time Meter Reading:** On-time and accurate water meters reading in various regions of the city, closely tracking and optimizing water usage, to improve water resource management efficiency.
- **Secure and reliable communication between meters and monitoring center:** Robust communication with redundancy mechanisms ensures uninterrupted data transmission to the central monitoring center.
- **Reliable operation for long periods of unattended environments:** Design durable hardware resistant to environmental factors, coupled with energy-efficient components, for consistent, long-term operation in unattended or challenging settings.

## InHand Solution

The water company provides water supply for both downtown and suburban areas. In the downtown area, water meters were installed in every resident's house; in suburban areas, meters were installed separately at each villa, and usually, the distance between two villas was 500m to 5km.

Based on the requirements of water meter automatic reading, we provided GPRS based solution. For the downtown areas, we used InDTU324 industrial GPRS modem to connected with the concentrator by RS485 bus in each apartment; for suburban areas, we used InDTU324 to connect directly to the meter of each villa. In each GPRS modem, embedded a SIM card provided by local mobile operator. These SIM cards could provide private APN (Private Access Point Network) service which prevented access from public internet and also enabled the access from the water company's data center to a certain remote meter. (You can consult your local mobile operator about private APN and SIM card).



## Benefits

### Easy Deployment

Wireless service makes it easy to build up network and can ensure the network cover all the meters in the specific area.

### Secure and reliable data transmission

The reliable network guarantees data to be transmitted safely from meters to monitoring center.

### Robust design for long-time reliable operation in various environments

The InDTU324 features industrial-grade design, with a temperature range of -40~70°C (-40~158°F), proving quite resilient in harsh unattended sites. Compact size makes installation easy.

### Built for the multiple scenarios

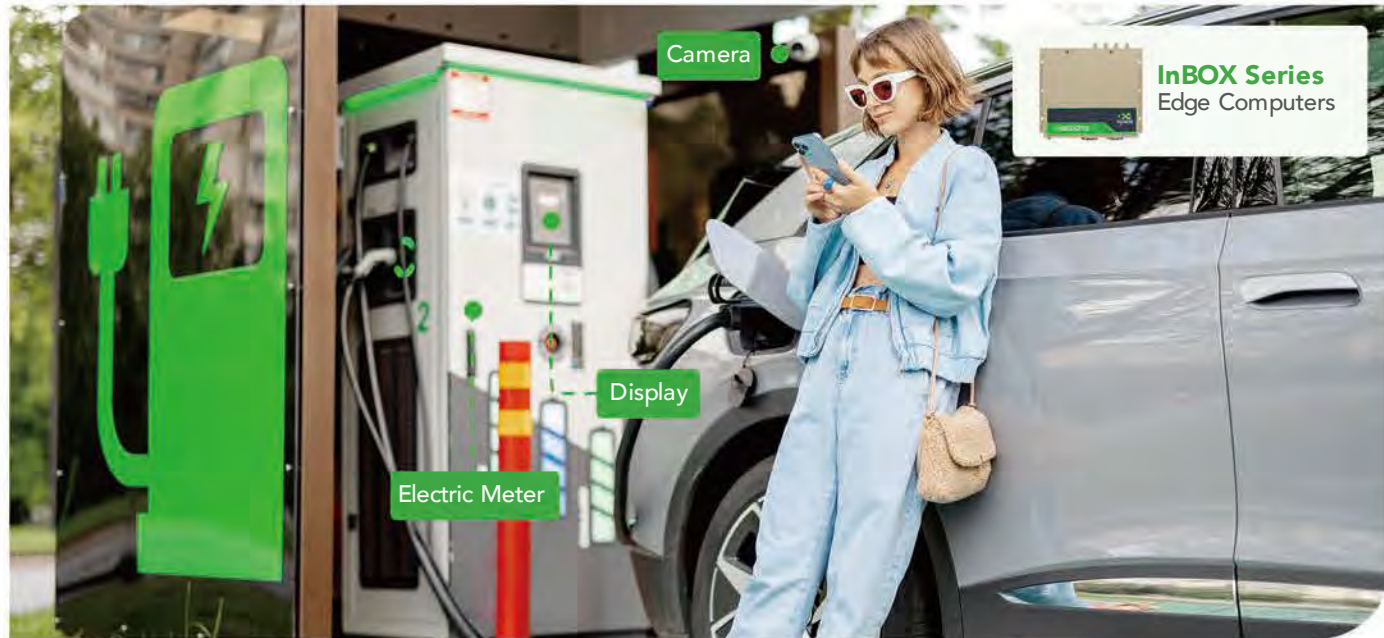
The InDTU324 supports several industrial data protocols including Modbus RTU/Modbus TCP, Transparent TCP, IEC 101 to 104, etc., and also supports customization for customers' requirements.

# IoT Connectivity of Clean Energy

## Driving Energy Transformation

It is our commitment to help customers meet globally growing demand for energy while transitioning to a more sustainable world. We are driving this transformation by leveraging technologies like IoT, big data analytics, and artificial intelligence. From solar power generation to energy storage, from wind turbines to EV charging, digitalization is pervasive.

## Our Solution



We offer a wide range of digital solutions for clean energy, including:

- Interconnection solution for urban microgrids, including PV power generation, smart PV grid-connected circuit breaker solution;
- Solutions of interconnectivity and data collection for battery energy storage cabinets, connecting PCS with control and operation platforms for charging and discharging management;
- Networking, billing, and control solution for EV charging stations;
- Predictive maintenance for wind power generation equipment.

## Our Capabilities



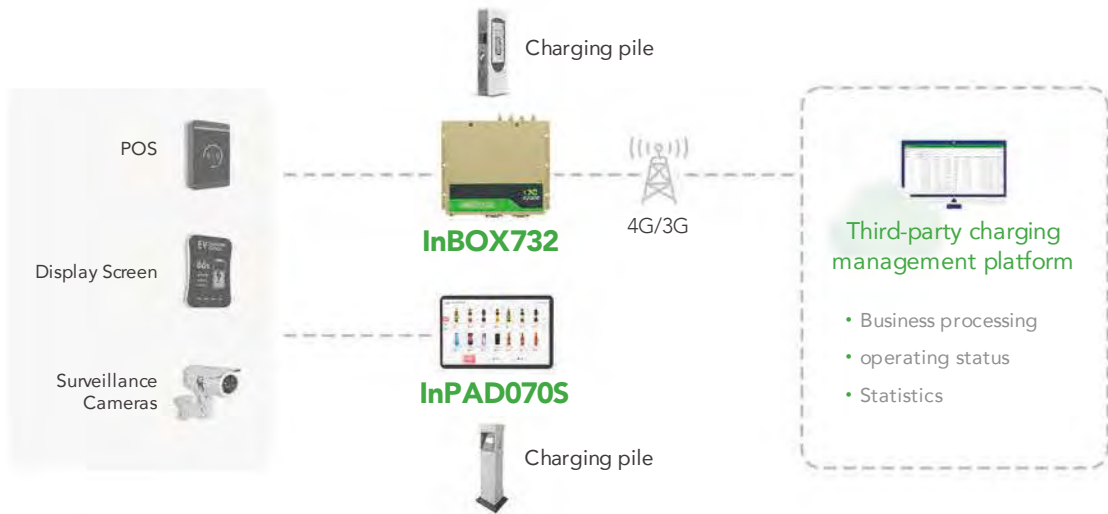
# Smart EV Charging Kiosk

## Customer Requirements

- **Multiple Networks and Stable Transmission:** Supports 4G, Wi-Fi, wired networks for charging piles across areas, offering real-time status and fault data for prompt maintenance response.
- **System and Cost Optimization:** High-capacity, low-cost equipment with strong compatibility, minimal software adaptation, system-level support, and replaces traditional X86+router solutions.
- **Robust Industrial Design:** Engineered for charging piles, it endures harsh EMC and extreme temperatures, ensuring reliability, minimizing downtime, and enhancing user experience.
- **Rich Interfaces:** A robust data system with multiple interfaces for peripherals like screens and cameras, aiding in custom solution development.

## InHand Solution

InHand Networks offers cost-optimizing hardware and network solutions with efficient management. Our devices, compatible with Android and Linux, feature user-friendly interaction and industrial-grade design for EMC protection and wide temperature ranges, ensuring durability in harsh environments. With HDMI, USB, RS485/232, CAN, GPIO, SPK, and MIC interfaces, they meet diverse on-site requirements.



## Benefits

### Stable Connection Ensures Cloud Integration

The InBOX and InPAD devices support 4G/5G, Wi-Fi and wired connections, excelling in tough environments with seamless network connectivity.

### Compatibility with Multiple Operating Systems

The InBOX computers and InPAD tablets run on optimized Android/Linux for app stability, offering a flexible platform for versatile application development.

### Resilience in Harsh Environments

The InBOX and InPAD provide Level 4 EMC protection, ensuring prolonged and steady operation of charging piles even in harsh environments, delivering consistent value to customers.

### High Performance for Complex Tasks

The InBOX and InPAD boast high-performance processors for complex computations and offer numerous interfaces for expansion, unlocking limitless possibilities.

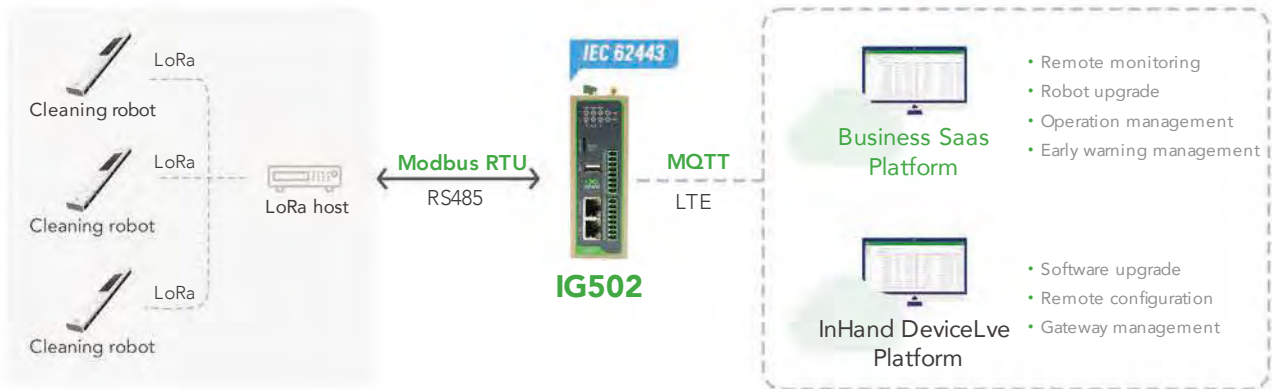
# Photovoltaic Cleaning Robots

## Customer Requirements

- **Remote Operation and Control:** Remotely start, stop, and direct robot cleaning paths with centralized management and multi-robot control.
- **Fault Monitoring and Remote Diagnostics:** Monitor robots' status and performance in real time, with instant alerts for malfunctions, enabling prompt diagnostics and repairs.
- **Data driven Learning and Analysis:** Collect and analyze robot data, e.g. working hours, cleaning efficiency, energy use, etc. to optimize cleaning strategies and enhance support services.
- **Remote Upgrades and Maintenance:** Remotely upgrade firmware, configure robots, and adjust parameters to boost maintenance efficiency, reduce staff workload, and cut costs.

## InHand Solution

InHand Networks offers an integrated solution featuring the IG502 IoT edge gateway and Device Manager cloud, seamlessly integrated with existing robot management platforms for centralized robot monitoring and management. This enables access to real-time operational data, performance metrics, and cleaning progress. By analyzing this data, customers can quickly address malfunctions, refine cleaning tactics, and streamline maintenance schedules, boosting overall efficiency. The Device Manager allows for unified IG502 management, supporting remote batch upgrades and diagnostics, thus minimizing maintenance efforts post-deployment.



## Benefits

### Cost-effective Communication Solution

The IG502 delivers powerful processing and cost-effective performance, connecting to multiple robots for efficient data management and monitoring.

### Flexible Edge Data Processing

The IG502 offers adaptable edge data processing, with customizable functionalities tailored to specific needs and diverse application scenarios.

### Efficient Integration with Devices and Clouds

The IG502 supports multiple industrial protocols and major IoT clouds like AWS and Microsoft, addressing diverse data acquisition needs.

### Ensured Data Reliability and Integrity

8GB eMMC storage and expandable Micro SD card offer ample data storage. Offline data caching helps ensure data integrity and continuity.



# InHand Edge Intelligence Solution

## **InHand Edge Intelligence Solution**

Designed for industrial IoT, the InHand Edge Intelligent Solution empowers industrial enterprises to rapidly establish an intelligent edge network tailored to their business needs, enabling more flexible, efficient, and secure data processing and transmission.

# Trends and Challenges of Industrial Digitalization

Industrial digitization is the process of transforming traditional industrial production and operations through the adoption of digital technologies and information and communication technologies ( ICTs ). Industrial digitalization can not only improve the efficiency and quality of the manufacturing industry, but also create more business opportunities for enterprises, bring higher competitiveness and sustainability. Hence, it is an inevitable choice for the current development of industrial enterprises.

## Trends of Industrial Digitalization



### Penetration of the Internet of Things

The widespread application of Internet of Things (IoT) technology enables industrial equipment and sensors to be connected to each other, enabling real-time monitoring and data exchange, improving production efficiency and quality.



### Rise of Edge Computing

Edge computing enables data processing capabilities to be closer to the data source, reduces latency, adapts to real-time requirements, and plays a positive role in industrial digitalization.



### Application of Artificial Intelligence and Machine Learning

Artificial intelligence (AI) and machine learning (ML) algorithms are increasingly used in industrial digitalization for predictive maintenance, quality control, production optimization, etc., improving the intelligence and efficiency of the system. Adaptability.



### Application of 5G Technology

5G technology provides higher bandwidth and lower latency, enabling industrial equipment to better communicate in real time, supporting large-scale device connections and high-speed data transmission.

## Challenges Facing Industrial Digitalization



### Security and Privacy Issues

As digitization expands, industrial systems face more cybersecurity threats. In addition, the collection and sharing of large amounts of data also raises concerns about privacy protection



### Talent Shortage

Implementing industrial digitalization requires professional technical talents, including Internet of Things experts, data analysts, artificial intelligence engineers, etc. The talent shortage in this area is a challenge



### Technical Standards and Interoperability

Industrial digitalization involves multiple technical fields. Different equipment and systems use different standards and protocols, and interoperability issues have become a constraint



### Data Governance

Processing and managing large-scale data, including storage, cleaning, and analysis, requires effective data governance strategies to ensure data quality and consistency

# InHand Edge Intelligence Solution

In order to better meet the requirements of real-time, privacy and reliability, artificial intelligence applications can be closer to data sources, so as to better adapt to various actual scenarios. InHand edge intelligent solution is designed for the field of industrial Internet of things. InHand edge intelligent hardware and innovative IoT cloud management platform help industrial enterprises to quickly build an intelligent edge network and achieve more flexible, efficient and secure data processing and transmission.

## Solution Architecture



## Why InHand Networks?

### Optimized Network Bandwidth

By processing data at the edge, you can reduce the need for network bandwidth and improve data transmission efficiency and cost-effectiveness



### Real-time Decision-making

By moving computing tasks to the edge of the network, data transmission latency can be reduced to millisecond level for critical services, such as fault detection and predictive maintenance.



### Enhanced Privacy and Security

Data localization preprocessing reduces the risk of transferring sensitive data to the cloud and improves data security.



### Flexible and Scalable

The solution provides a more flexible and scalable computing mode, and can perform customized computing tasks on different devices according to specific requirements.



## Features of the Solution

### 1. With InHand DeviceLive Platform, Remote Management is Really Worry-free



#### Zero-Touch Deployment

With plug-and-play devices, you can implement remote deployment with DeviceLive



#### Easy Configuration

WEB GUI configuration  
Intuitive and simple



#### Unified Management

Batch device configuration  
Scheduled firmware upgrade



#### Alert & Remote Diagnosis

Multiple alarm rules to monitor business, Remote diagnosis to save effort



#### Multiple Security Strategy

Data security encryption  
Multi-role access control and multi-factor identity authentication



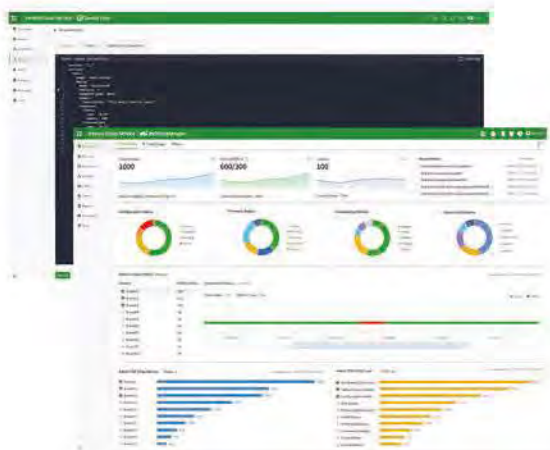
#### Visual Monitoring

Comprehensive insight into device running status, network quality



DeviceLive Cloud Service

### Edge Computing APP Management



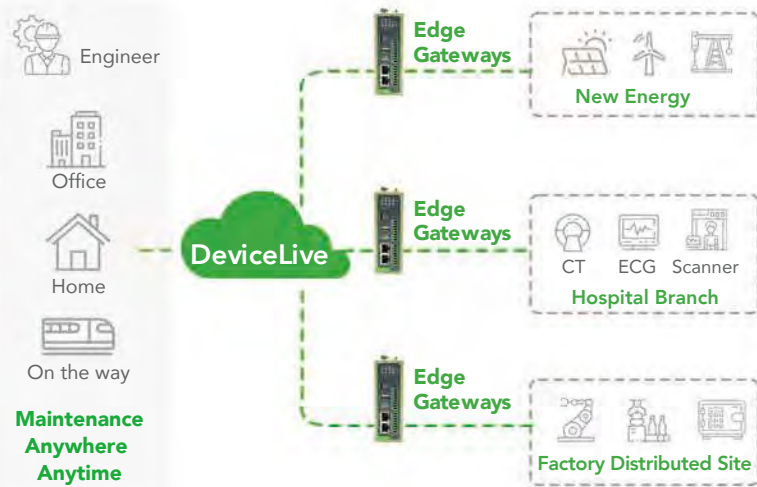
For edge intelligent hardware products, DeviceLive provides management and deployment of edge computing container applications, native applications, etc., without the need for users to build OTA services, providing a one-stop solution.



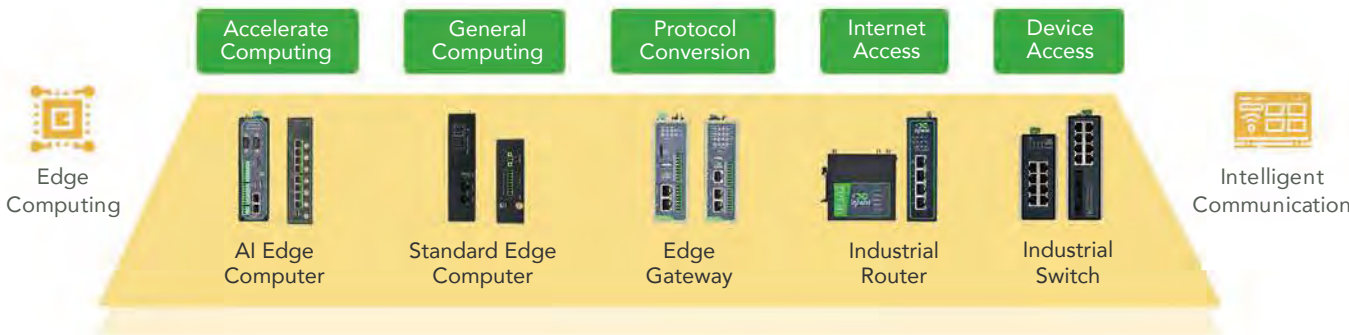
DeviceLive can centrally configure parameters of edge intelligent hardware, manage containers, upgrade edge computing apps, and support unified deployment package policy setting, define deployment rules, and realize centralized upgrade and control of distributed intelligent onsite.

### Remote Control Over Remote Machines

DeviceLive can enable engineers to remotely access the terminal equipment connected to the gateway, achieve remote terminal maintenance, program download, and establish a transmission channel for the terminal data to be continuously reported to the data service center. It is suitable for distributed terminal access in various IoT scenarios, and supports the access of industrial computers, servers, cameras, PLCs, HMIs, controllers and other Ethernet terminal devices.



### 2. Multifunctional Edge Intelligence Hardware, Adaptable to Various IIoT Application Scenarios



#### Multiple CPU Options

from single-core to multi-core ARM processors



#### Multiple Protocols

from simple transparent transmission to industrial protocols to various industry protocols



#### Multiple AI Performance

from 1 to 100 TOPS, suitable for various edge AI scenarios, such as facial recognition, speech recognition, image recognition, etc.



#### Multiple Interface Options

Ethernet, serial port, USB, IO, CAN, HDMI, LVDS, GMSL, etc.

### 3. DeviceSupervisor™ Agent service

DeviceSupervisor Agent is self-developed by InHand and runs in IG&EC to help customers "zero code" to achieve data acquisition, processing and cloud edge intelligence software.

- + "Zero code/low code" easily realizes data collection on the cloud
- + Integrate 100+ mainstream data collection protocols
- + Support data preprocessing
- + Integrated data publishing service, seamless access to public cloud, private cloud, local SCADA, etc.



#### Data Acquisition

- 80+ mainstream protocol driver
- Convenient collection configuration
- Concurrent collection from multiple devices
- Massive collection points
- Multiple polling cycles are set



#### Edge Computing

- Data visualization preprocessing
- Python data preprocessing
- Data edge storage analysis



#### Protocol Conversion

- More than 10 protocol conversions
- Support concurrent conversion



#### Data Cloud

- Customize MQTT themes and payloads
- Connect to multiple MQTT pl atforms simultaneously

#### Data Collection

##### DSA supports more than 80 mainstream protocol drivers

- **Standard industrial protocols:** Modbus , OPC UA , BACnet , etc.
- **Industrial equipment:** PLC , smart instruments, sensors
- **Energy equipment:** power regulations, meters, inverters, building agreements

##### DSA supports custom collection cycles

- Can Set different polling cycles for different controllers
- Can set different polling periods for the various data in controller
- Support millisecond collection of key data, with collection frequency up to 100ms
- Properly utilize the performance resources of gateways and controllers

##### DSA supports editing and configuring collection strategies

- Support Excel import / export
- Support device template function to quickly add devices

#### Standard industrial protocols

ModbusOPC UABACnetEUROMP

#### Industrial equipment

SIEMENSRockwell AutomationMITSUBISHI ELECTRICSchneider Electric  
DELTA INOVANCE FATEK ABB  
OMRON KEYENCE BECKHOFF  
YASKAWA Panasonic Honeywell

#### Energy equipment

IECIECIECDNP3DLT

## Application scenarios

InHand's edge intelligence solution integrates a variety of advanced technologies such as 5G , AI , and the Internet of Things, and can be widely used in multiple fields. The following are some application scenarios for the edge intelligence solution .

**Smart Manufacturing:** In industrial production, edge intelligence solutions can be used to monitor and optimize manufacturing processes in real time, perform equipment health monitoring and predictive maintenance to improve production efficiency and reduce downtime.

**Smart Retail:** Edge intelligence can be used in the retail industry, such as using cameras and sensors in stores for real-time monitoring, customer analytics, and inventory management to provide a smarter shopping experience.

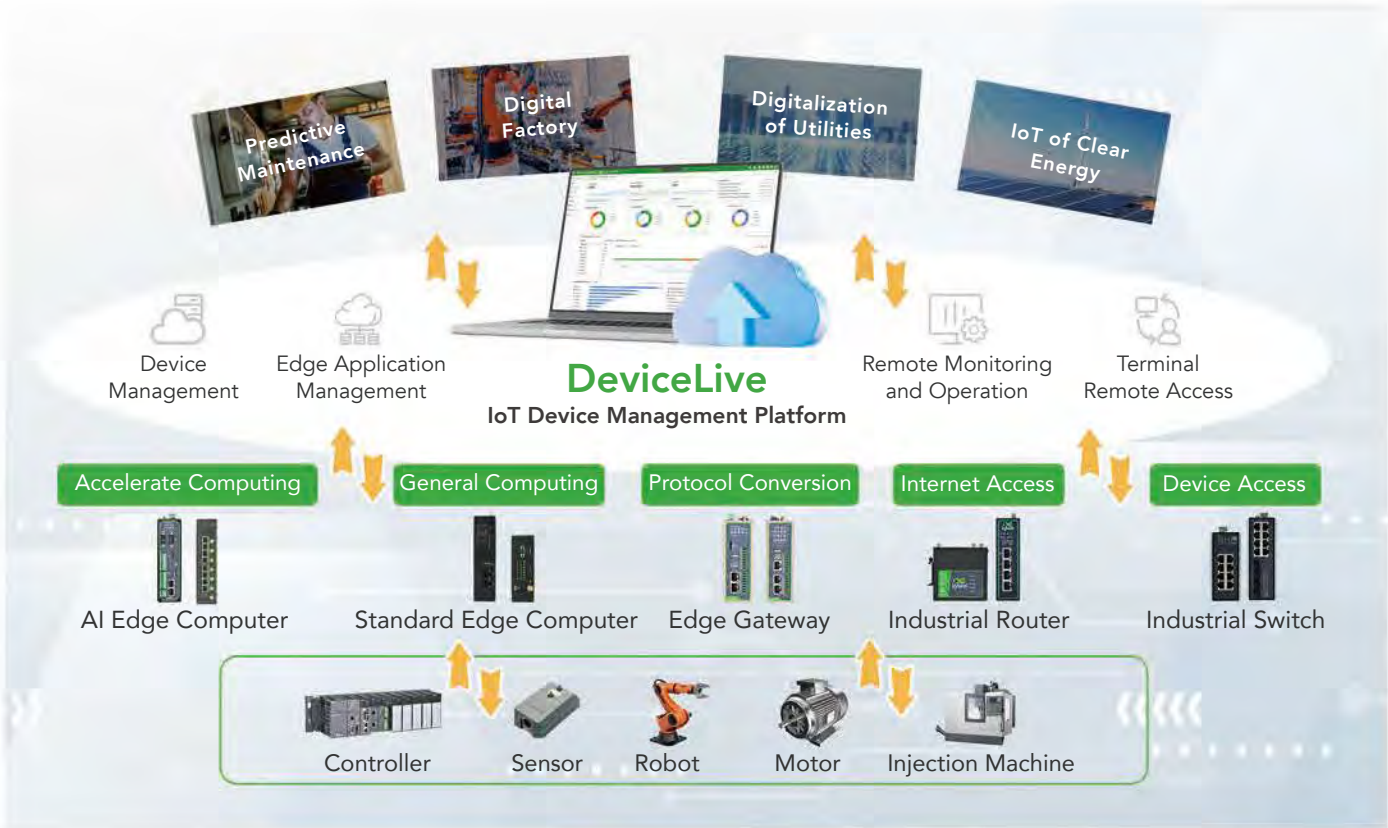
**Public Utilities:** Edge intelligence can be used in public utilities , such as water affairs. Edge intelligence can be used to monitor water quality, water level and pipeline status in real time, improve water resource management efficiency, prevent water quality problems, and reduce water leakage rates.

**Energy Management:** In the energy field, edge intelligence can be used to monitor and optimize energy consumption in real time, such as environmental control in smart buildings, equipment energy efficiency analysis, etc.



# DeviceLive

## IoT Device Management Platform



• **Device Centralized Management**

Zero-touch deployment, remote configuration, predictive alert. Visual monitoring enhances management efficiency



• **Remote Access to On-site Machines**

Remote maintenance, program downloading, parameter adjustment. Establish transmission channels for continuous reporting of terminal data to the business server



• **Edge Computing Management**

DSA, container management, edge computing app upgrade. Centralized upgrade and control of distributed edge sites



# Features and Advantages

Designed for industrial IoT, the DeviceLive enables quick building of intelligent edge networks. Collaborating with edge hardware, DeviceLive helps you deploy and upgrade edge APPs, implement edge data collection and pre-processing, and enable status visual monitoring.

| Features                     | Description                                                                                                                                             |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| Bulk Devices Configuration   | Remotely configure devices through GUI                                                                                                                  |
| Bulk Devices Upgrade         | Remotely upgrade device firmware, support setting upgrade schedule flexibly                                                                             |
| Device Management by Group   | Support device classification according to business needs, making the management more flexible                                                          |
| Remote Control Command       | Remote reboot device, factory reset                                                                                                                     |
| Connection Status Statistics | Monitor device connection status, network type, etc.                                                                                                    |
| Network Status Analysis      | Monitor device interface connection status, link status, and traffic consumption                                                                        |
| Network Quality Monitoring   | Monitor cellular network signals, monitor network delay, jitter, packet loss, and throughput                                                            |
| DSA Management               | DSA remote configuration, upgrade, status overview                                                                                                      |
| Remote Diagnostic Tool       | Diagnostic logs, Ping, Traceroute, packet capture, event analysis                                                                                       |
| Geolocation Management       | Support GPS/base station positioning/manual positioning, overview device distribution on the map                                                        |
| Alert Policy                 | Support a variety of alarm strategies, such as CPU utilization, link status, and cellular traffic monitoring; support SMS, email, and APP notifications |
| Connector                    | Quickly establish a remote channel to support engineers to remotely access and control terminal equipment                                               |
| Edge Computing Management    | Container and Native Application Management, Edge Computing App Upgrade and Deployment                                                                  |
| MFA                          | Account multi-factor authentication, comprehensive security                                                                                             |

Portal Address: [device.inhandcloud.com](https://device.inhandcloud.com)



# Standard Edge Computers

## **EC312 / InBOX732**

Using the ARM architecture, our Standard Edge Computer provides you with a wide range of interface, network, performance and edge application options for seamless edge-to-cloud integration, suitable for today's IoT and edge computing applications.



# EC312

## Compact Edge Computer

### Basic Computility, Open Platform

CPU： TI AM6231, single-core, Cortex-A53@1.4GHz  
1G SDRAM+8G eMMC  
Linux distribution (based on Debian 11)

### High-Security Protection

Linux system security patches and vulnerability remediation services  
Firewall, VPN  
Secure Boot  
TPM 2.0  
TrustZone

### High Reliability

4G/Wi-Fi/FE,etc.  
Independent hardware and software watchdog.  
Multilevel link detection, communication self-healing.  
Fanless design.  
Supercapacitor design, support power off protection

### InHand DeviceLive Cloud Manager

Remote device access  
Remote device batch management  
Remote batch management of edge AI applications  
Remote container management

The EC300 series industrial edge computer is a highly integrated Arm-based Linux platform. It is a compact edge computer, specificallyfor users who need lightweight application design.The EC300 has a built-in Linux distribution and provides long-term support for the Linux kernel, including security patches and troubleshooting, to meet the needs of computing systems in industrial automation applications to extend the life cycle and ensure industrial projects be safe and sustainable.

## Hardware

|                                |                                                                            |                          |                                                         |
|--------------------------------|----------------------------------------------------------------------------|--------------------------|---------------------------------------------------------|
| CPU                            | ARM Cortex-A53@1.4GHz                                                      | TPM(Optional)            | TPM2.0                                                  |
| RAM                            | 1GB DDR4                                                                   | Power input              | DC9-48V                                                 |
| FLASH                          | 8GB eMMC                                                                   | Power failure protection | Hold for 20 seconds after power failure (safe shutdown) |
| Ethernet Port                  | 2*10/100Mbps Ethernet port                                                 | Installation             | Panel, Rail                                             |
| Serial Port                    | 1*RS-232/485, 1*RS-485, expandable up to 4 serial ports , isolation        | Protection Rating        | IP30                                                    |
| Wi-Fi(Optional)                | STA, 802.11ac/a/b/g/n, 2.4G/5G                                             | Housing                  | Metal + Plastic                                         |
| Bluetooth(Optional)            | BLE 4.2                                                                    | Storage Temperature      | -40°C ~ 85°C                                            |
| GPS(Optional)                  | Satellite location GPS, 1*SMA                                              | Operation temperature    | -20°C ~ 70°C                                            |
| USB                            | 1*USB 2.0                                                                  | Ambient humidity         | 5~ 95% (non-condensing)                                 |
| SIM Card                       | Nano SIM*2                                                                 | EMC                      | level 3                                                 |
| TF card                        | MicroSD support, up to 32GB expansion                                      | Certification            | CE、FCC、PTCRB、IC、                                        |
| Interface extension (Optional) | Up to 2*RS232/RS485/4-20mA/CAN FD, isolation<br>Up to 4*DI+4*DO, isolation |                          | Verizon Wireless、AT&T、UL、IEC62443-4-2                   |

## Software

|                                   |                                                                                  |
|-----------------------------------|----------------------------------------------------------------------------------|
| Network format                    | LTE CAT1, CAT6                                                                   |
| Access authentication             | CHAP, PAP                                                                        |
| Secondary development environment | Multi-programming language development platform                                  |
| Access cloud platform             | AWS, Azure, Ali and other cloud platforms                                        |
| Industrial Protocol               | Modbus RTU/TCP, EtherNet/IP, ISO on TCP, OPC UA, DLT645-2007, IEC101/104.etc     |
| LAN protocol                      | ARP, Ethernet                                                                    |
| Network Protocol                  | ICMP, DNS, TCP/UDP, TCPServer, DHCP, Static routing                              |
| Network security                  | VPN, Firewall                                                                    |
| Reliability                       | Link Detection, Dual SIM Failover, Embedded Watchdog                             |
| Data security                     | Secure Boot, TrustZone                                                           |
| Configuration                     | Web, SSH                                                                         |
| Upgrade                           | Web, FOTA, DFOTA                                                                 |
| Log                               | Support local system log, remote log export and important log power-off autosave |
| Remote management                 | InHandDeviceLiveor HTTP, HTTPS, SSH, etc                                         |
| DeviceLive                        | Supports cloud-based parameter configuration, container management,              |
| Cloud                             | application and firmware management                                              |
| OS                                | IEOS pre-installed (InHand Edge linux system: Debian11, Kernel 5.10.168)         |



# InBOX732

## High Performance Edge Computer

### Hardware and Operating System

Six-core high-performance CPU  
maximum frequency 1.8GHz  
supports Android/Linux

### High-security Protection

3G/4G high-speed connection  
Gigabit wired network  
Wi-Fi, Bluetooth

### Rich Peripheral Interfaces

USB2.0/3.0, RS-232/485,  
HDMI2.0, GPIO, CAN, SPK, MIC

### Industrial Grade Product Quality

Wide temperature operating range  
IP40 EMC protection level level3

The InBOX730 series is a high-performance industrial edge computer with a rich variety and quantity of serial ports to meet various peripheral needs. The entire series adopts industrial-grade design and supports 3G/4G, Wi-Fi, and dual Gigabit Ethernet network access., supports wide temperature characteristics, high EMC level and IP40, meets the needs of more scenarios and brings more expansion possibilities

## Hardware

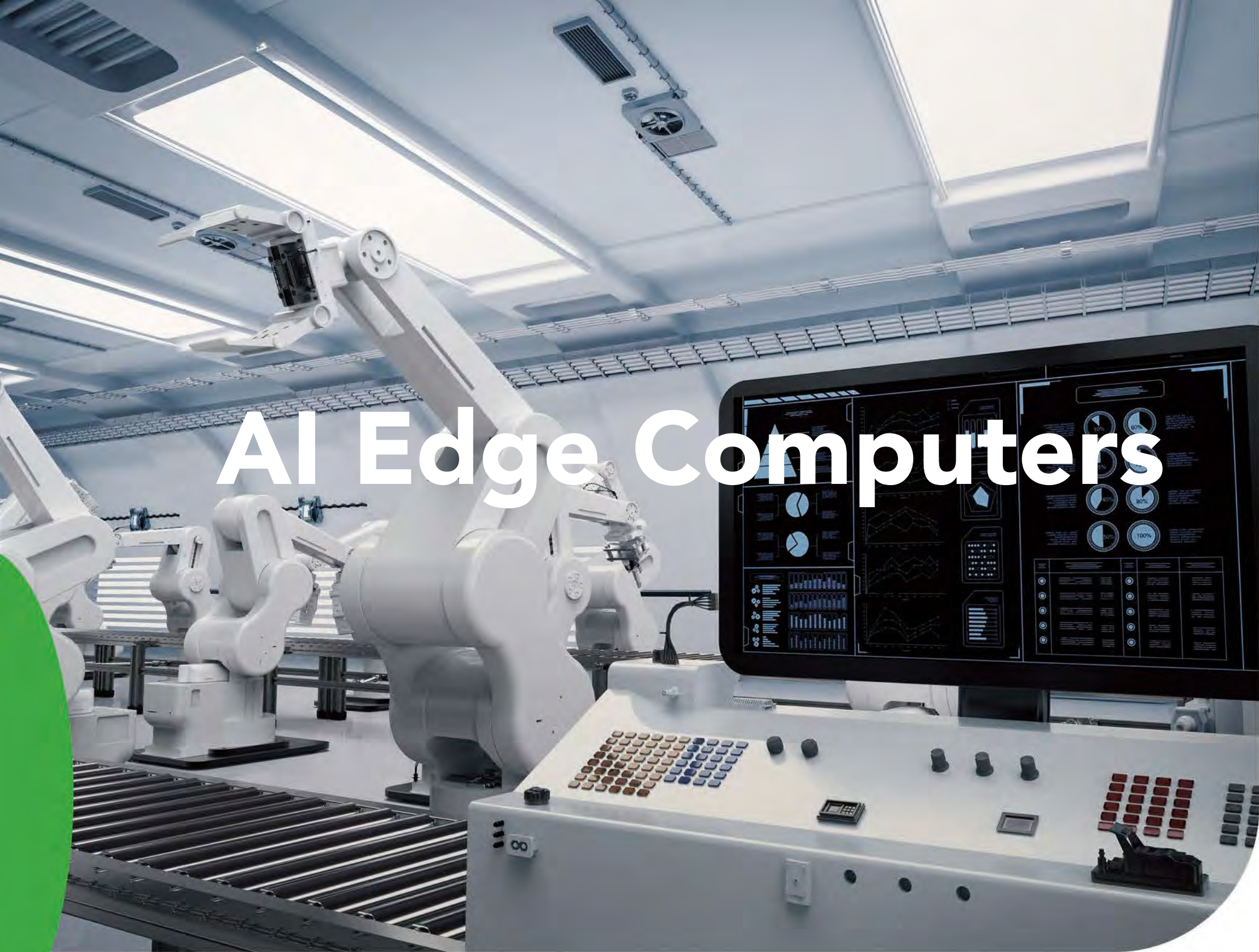
|               |                                                                                                  |                       |                              |
|---------------|--------------------------------------------------------------------------------------------------|-----------------------|------------------------------|
| CPU           | Rockchip six-core processor, maximum frequency 1.8GHz                                            | GPS (optional)        | GPS:1*SMA                    |
| RAM           | 2GB                                                                                              | USB                   | 4*USB 2.0; 1*USB3.0          |
| FLASH         | 16GB eMMC                                                                                        | Power                 | DC9-24V                      |
| Ethernet Port | 2*10/100/1000Mbps, WAN/LAN                                                                       | Installation          | Wall mounting                |
| Serial Port   | 4*RS232, DB9 male connector, 2*RS485<br>(3pin terminal, with flange)                             | Protection Rating     | IP40                         |
| HDMI          | 1*HDMI2.0                                                                                        | Housing               | Metal                        |
| Wi-Fi         | 2*RP-SMA, Support, 802.11a/b/g/n, support Client/AP mode                                         | Storage Temperature   | -40°C ~ 85°C                 |
| GPIO          | 10-pin green terminal*1 (plug-in, screw-free spring type)<br>Definition: IN1~4, GND, OUT1~4, GND | Operating Temperature | -20°C ~ 70°C                 |
| CAN           | 1*CAN                                                                                            | Ambient Humidity      | 5 ~ 95%<br>(no condensation) |
| MIC&SPK       | 1*MIC interface, 3.5 mm standard socket<br>1*SPK interface, two-channel, 4 ohm 3W                | EMC                   | Level 3                      |
|               |                                                                                                  | Certification         | -                            |

## Software

|                    |                                                                                                                                |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------|
| Network Type       | LTE-TDD/LTE-FDD/WCDMA/CDMA/TD-SCDMA/ UMTS/EDGE/GPRS/GSM                                                                        |
| Graphic Processing | Dual ISP pixel processing capacity is up to 800MPix/s, supports dual camera data input at the same time, and supports high-end |
| Video Codec        | H.265/H.264/VP9 4K@60fps HD video decoding                                                                                     |
| OS                 | Linux (Debian10)/Android10                                                                                                     |
| Timed Switch       | Support                                                                                                                        |
| Upgrade            | Local USB upgrade                                                                                                              |
| Bluetooth          | Bluetooth5.0                                                                                                                   |
| Remote Management  | -                                                                                                                              |
| Reliability        | Support hardware and software watchdog                                                                                         |

# Selection Guide

|                  | Model                 | EC312                                                      | InBOX732                                                    |
|------------------|-----------------------|------------------------------------------------------------|-------------------------------------------------------------|
| Processor        | CPU                   | ARM Cortex-A53, single-core 1.4GHz                         | RK3399, ARM dual Cortex-A72 and quad Cortex-A53 1.8 GHz     |
| Memory           | RAM                   | 1GB on board                                               | 2GB on board                                                |
|                  | FLASH                 | 8GB eMMC                                                   | 16GB eMMC                                                   |
| Graphics         | HDMI                  | /                                                          | 1*HDMI2.0, up to 4096*2160                                  |
| Cellular         | Cellular              | 4G                                                         | 4G                                                          |
| Interface        | Ethernet              | 2*100Mbps Ethernet port, RJ45 connector                    | 2*10/100/1000Mbps, RJ45 connector                           |
|                  | Serial                | 1*RS-232/485+1*RS-485, isolated, terminal-block connector  | 4*RS-232 (DB9)+2*RS-485 (terminal-block connector)          |
|                  | USB                   | 1*USB 2.0                                                  | 4*USB 2.0, 1*USB3.0                                         |
|                  | CAN                   | 2*CAN FD (optional)                                        | 1*CAN                                                       |
|                  | I/O                   | 4*DI+4*DO, isolated, optional                              | 4*DI+4*DO                                                   |
|                  | Wi-Fi                 | STA, 802.11ac/a/b/g/n, 2.4G/5G                             | STA, 802.11ac/a/b/g/n, 2.4G/5G                              |
|                  | Bluetooth             | BT 4.2 On board                                            | BT 4.2 On board                                             |
|                  | GPS                   | YES                                                        | YES                                                         |
|                  | MIC                   | /                                                          | YES                                                         |
|                  | SPK                   | /                                                          | YES                                                         |
|                  | LoRa                  | YES (optional)                                             | /                                                           |
|                  | Button                | 1*Reset, 1*USER                                            | 1*Mode, 1*Power                                             |
| Power            | Power Supply Voltage  | DC input: unregulated 9V to 48V,Reverse voltage protection | DC input: unregulated 9V to 24V, Reverse voltage protection |
| Environment      | Operating Temperature | -20°C~70°C                                                 | -20°C~70°C                                                  |
| Operating System | Operating System      | Linux                                                      | Linux                                                       |
| Mechanical       | Installation          | Panel, DIN-Rail                                            | Panel                                                       |
|                  | Dimensions            | 145*106*36 mm                                              | 190.2*160.2*4.36 mm (Includes mounting parts)               |
|                  | Housing               | Metal + Plastic                                            | Metal                                                       |

A photograph of an industrial manufacturing environment. In the foreground, a white robotic arm is positioned over a conveyor belt. In the background, another robotic arm is visible. A large control panel with a multi-screen display is in the center-right. The display shows various data visualizations including pie charts, bar graphs, and line charts. The text 'AI Edge Computers' is overlaid in large white letters across the center of the image.

# AI Edge Computers

## **EC942 / EC954 / EC3320 / EC5000**

Our AI Edge Computer portfolio provides the best configuration for your application. AI Edge Computer supports mainstream AI applications, including machine vision, video analysis, automatic inspection, and more. We deliver uncompromising performance under the most demanding operating conditions (temperature, shock and vibration, etc.).



# EC942

## Lightweight AI Edge Computer

### Strong Performance Open Platform

CPU：ARM Quad Cortex-A55@2.0GHz  
GPU：Mail-G52 2EE  
NPU：RKNN, 1TOPS  
Linux distribution  
(based on Debian 10)

### High-security Protection

Linux system security patches and  
vulnerability remediation services  
Firewall, VPN  
Secure Boot  
TPM 2.0  
TrustZone

### High Reliability

5G/4G/Wi-Fi/FE,etc.  
Independent hardware and  
software watchdog  
Multilevel link detection  
communication self-healing  
Fanless design

### InHand DeviceLive Cloud Manager

Remote device access  
Remote device batch management  
Remote batch management of  
edge AI applications  
Remote container management

The EC942 series edge computer is a lightweight AI accelerated edge computer developed for industrial IoT applications. With its powerful edge computing capability, 1.0 TOPS AI computing power, comprehensive security, wireless access services and other characteristics, the EC942 can support device networking of up to 10,000 units, providing high-speed data channels for TRUE device informatization.

## Hardware

|                      |                                               |                       |                         |
|----------------------|-----------------------------------------------|-----------------------|-------------------------|
| CPU                  | Arm Quad-core Cortex-A55@2.0GHz               | TF Card               | Supports Micro SD       |
| GPU                  | Mali G52 2EE                                  | I/O (Optional)        | 4*DI, 4*DO              |
| NPU                  | 1.0 TOPS                                      | Expansion Interface   | 1*mSATA                 |
| RAM                  | 4GB DDR4                                      | TPM (Optional)        | TPM2.0                  |
| FLASH                | 16GB eMMC                                     | Power input           | DC12-48V                |
| Ethernet Port        | 2*10/100/1000Mbps Ethernet port               | Installation          | Panel, Rail             |
| Serial Port          | 2*RS-232/485/422, terminal-block              | Protection Rating     | IP30                    |
| CAN (Optional)       | 1*CAN 2.0A/B                                  | Housing               | Metal                   |
| HDMI                 | 1*HDMI 2.0                                    | Storage Temperature   | -40°C ~ 85°C            |
| Wi-Fi (Optional)     | STA, 802.11ac/a/b/g/n, 2.4G/5G                | Operation temperature | -20°C ~ 70°C            |
| Bluetooth (Optional) | BLE 5.0                                       | Ambient humidity      | 5~ 95% (non-condensing) |
| GPS (Optional)       | Supports GPS, Beidou, and GLONASS positioning | EMC                   | level 3                 |
| USB                  | USB 2.0, 2*TypeA, 1*TypeC                     | Certification         | CE, FCC, IC, PTCRB,     |
| SIM Card             | 1.8V/3V, 2*Micro SIM                          |                       | Verizon Wireless, AT&T  |

## Software

|                                   |                                                                                                         |
|-----------------------------------|---------------------------------------------------------------------------------------------------------|
| Network format                    | 5G SA/NSA, LTE CAT4                                                                                     |
| Access authentication             | CHAP, PAP                                                                                               |
| Secondary development environment | Multi-programming language development platform                                                         |
| Access cloud platform             | AWS, Azure, Ali and other cloud platforms                                                               |
| Industrial Protocol               | Modbus RTU/TCP, EtherNet/IP, ISO on TCP, OPC UA, DLT645-2007, IEC101/104.etc                            |
| LAN protocol                      | ARP, Ethernet                                                                                           |
| Network Protocol                  | ICMP, DNS, TCP/UDP, TCPServer, DHCP, Static routing                                                     |
| Network security                  | Open VPN, Firewall                                                                                      |
| Reliability                       | Link Detection, Dual SIM Failover, Embedded Watchdog                                                    |
| Data security                     | Secure Boot, TrustZone                                                                                  |
| Configuration                     | Web, SSH                                                                                                |
| Upgrade                           | Web, FOTA, DFOTA                                                                                        |
| Log                               | Support local system log, remote log export and important log power-off autosave                        |
| Remote management                 | InHandDeviceLiveor HTTP, HTTPS, SSH, etc                                                                |
| DeviceLive Cloud                  | Supports cloud-based parameter configuration, container management, application and firmware management |
| OS                                | IEOS pre-installed (InHand Edge linux system: Debian10, Kernel 4.19)                                    |



# EC954

## Basic AI Edge Computer

### Strong Performance Open Platform

CPU：ARM Quad Cortex-A55@2.0GHz  
GPU：Mail-G52 2EE  
NPU：RKNN, 0.8 Tops, Integrated 1.0 TOPS computing power, expansion up to 26TOPS  
TensorRT/cuDNN/ VisionWorks/OpenCV AI framework supported

### High-Security Protection

Linux system security patches and vulnerability remediation services  
Firewall, VPN  
Secure Boot  
TPM 2.0  
TrustZone

### High Reliability

5G/4G/Wi-Fi/FE,etc.  
Independent hardware and software watchdog  
Multilevel link detection  
communication self-healing  
Fanless design

### InHand DeviceLive Cloud Manager

Remote device access  
Remote device batch management  
Remote batch management of edge AI applications  
Remote container management

The EC954 series edge computer is a High-performance multi-interface edge computer with AI extensions developed for industrial IoT applications. With its powerful edge computing capability, 1.0 TOPS AI computing power(Expandable up to 26TOPS), comprehensive security, wireless access services and other characteristics, the EC954 can support device networking of up to 10,000 units, providing high-speed data channels for TRUE device informatization.

## Hardware

|                |                                                    |                       |                         |
|----------------|----------------------------------------------------|-----------------------|-------------------------|
| CPU            | Arm Quad-core Cortex-A55@2.0GHz                    | TF Card               | Supports Micro SD       |
| GPU            | Mali G52 2EE                                       | I/O                   | 4*DI, 4*DO              |
| NPU            | 1.0 TOPS, extend 8-26 TOPS AI card                 | Expansion Interface   | 1*mSATA                 |
| RAM            | 4GB DDR4                                           | TPM                   | TPM2.0                  |
| FLASH          | 16GB eMMC                                          | Power input           | DC12-48V                |
| Ethernet Port  | 4*10/100/1000Mbps Ethernet port                    | Installation          | Panel, Rail             |
| Serial Port    | 4*RS-232/485/422+8*RS485,Industrial Terminal Block | Protection Rating     | IP30                    |
| CAN (Optional) | 2*CAN 2.0A/B                                       | Housing               | Metal                   |
| HDMI           | 1*HDMI 2.0                                         | Storage Temperature   | -40°C ~ 85°C            |
| Wi-Fi          | STA, 802.11ac/a/b/g/n, 2.4G/5G                     | Operation temperature | -20°C ~ 70°C            |
| Bluetooth      | BLE 5.0                                            | Ambient humidity      | 5~ 95% (non-condensing) |
| GPS            | Supports GPS, Beidou, and GLONASS positioning      | EMC                   | level 3                 |
| USB            | USB 2.0, 2*TypeA, 1*TypeC                          | Certification         | CE, FCC, IC, PTCRB      |
| SIM Card       | 2*Standard SIM                                     |                       |                         |

## Software

|                                   |                                                                                  |
|-----------------------------------|----------------------------------------------------------------------------------|
| Network format                    | 5G SA/NSA, LTE CAT4                                                              |
| Access authentication             | CHAP, PAP                                                                        |
| Secondary development environment | Multi-programming language development platform                                  |
| Access cloud platform             | AWS, Azure, Ali and other cloud platforms                                        |
| Industrial Protocol               | Modbus RTU/TCP, EtherNet/IP, ISO on TCP, OPC UA, DLT645-2007, IEC101/104.etc     |
| LAN protocol                      | ARP, Ethernet                                                                    |
| Network Protocol                  | ICMP, DNS, TCP/UDP, TCPServer, DHCP, Static routing                              |
| Network security                  | Open VPN, Firewall                                                               |
| Reliability                       | Link Detection, Dual SIM Failover, Embedded Watchdog                             |
| Data security                     | Secure Boot, TrustZone                                                           |
| Configuration                     | Web, Telnet, SSH                                                                 |
| Upgrade                           | Web, FOTA, DFOTA                                                                 |
| Log                               | Support local system log, remote log export and important log power-off autosave |
| Remote management                 | InHandDeviceLiveor HTTP, HTTPS, SSH, etc                                         |
| DeviceLive                        | Supports cloud-based parameter configuration, container management,              |
| Cloud                             | application and firmware management                                              |
| OS                                | IEOS pre-installed (InHand Edge linux system: Debian11, Kernel 5.10)             |



# EC3320

## High Performance AI Edge Computer

### Strong Performance Open Platform

CPU:ARM 4\*Cortex-A76 + 4\*Cortex-A55, up to2.4GHz  
GPU:Mali-G610 MC4  
NPU:6TOPS  
Compatible with various AI frameworks  
Support Hailo-8 M.2 module, up to 26TOPS computing power

### High-Security Protection

Linux system security patches and vulnerability remediation services  
Secure Boot  
TPM 2.0

### High Reliability

5G/4G/Wi-Fi/FE,etc.  
Independent hardware and software watchdog  
Multilevel link detection  
communication self-healing  
Fanless design

### InHand DeviceLive Cloud Manager

Remote device access  
Remote device batch management  
Remote batch management of edge AI applications  
Remote container management

With technology advancements, demand for local computing is on the rise, especially in manufacturing, security, and healthcare. Traditional cloud solutions may not meet the need for fast processing and data security. InHand Networks offers the EC3320 AI edge computer, delivering high performance, real-time decision-making, and enhanced data privacy for improved efficiency in manufacturing, security, and healthcare.

## Hardware

|                     |                                                                                                                         |                       |                         |
|---------------------|-------------------------------------------------------------------------------------------------------------------------|-----------------------|-------------------------|
| CPU                 | Quad Cortex-A76 + Quad Cortex-A55@ up to2.4GHz                                                                          | SIM Card              | 2*Nano SIM              |
| GPU                 | Quad-core Mali-G610 MC4 high-performance GPU                                                                            | TF Card               | Supports Micro SD       |
| NPU                 | 6.0 TOPS, extend 26 TOPS AI card                                                                                        | I/O                   | 4*DI, 4*DO              |
| RAM                 | 8GB DDR4                                                                                                                | TPM                   | TPM2.0                  |
| FLASH               | 64GB eMMC                                                                                                               | Power input           | DC12-48V                |
| Ethernet Port       | 3*10/100/1000Mbps Ethernet port                                                                                         | Installation          | Panel, Rail             |
| Serial Port         | 2*RS-232+2*RS485, industrial terminal                                                                                   | Protection Rating     | IP30                    |
| CAN (Optional)      | 1*CAN 2.0A/B                                                                                                            | Housing               | Metal                   |
| HDMI                | 2*HDMI 2.0                                                                                                              | Storage Temperature   | -40℃ ~ 85℃              |
| Wi-Fi               | STA, 802.11ac/a/b/g/n, 2.4G/5G                                                                                          | Operation temperature | -20℃ ~ 70℃              |
| Bluetooth           | BLE 5.0                                                                                                                 | Ambient humidity      | 5~ 95% (non-condensing) |
| GPS                 | GPS (cellular module support required)                                                                                  | EMC                   | level 3                 |
| USB                 | USB 3.0, 4*TypeA, 1*TypeC                                                                                               | Certification         | CE、FCC、IC、PTCRB         |
| Expansion Interface | 1*M.2(Supports SATA3.0 SSD, supports 2242 size)<br><br>1*M.2(Supports Hailo-8 M.2 module, up to 26TOPs computing power) |                       |                         |

## Software

|                                   |                                                                                                         |
|-----------------------------------|---------------------------------------------------------------------------------------------------------|
| Network format                    | 5G SA/NSA, LTE CAT6                                                                                     |
| Access authentication             | CHAP, PAP                                                                                               |
| Secondary development environment | Multi-programming language development platform                                                         |
| Network Protocol                  | ICMP, DNS, TCP/UDP, TCPServer, DHCP, Static routing                                                     |
| Network security                  | VPN, Firewall                                                                                           |
| Reliability                       | Link Detection, Dual SIM Failover, Embedded Watchdog                                                    |
| Data security                     | Secure Boot, TrustZone                                                                                  |
| Configuration                     | Web, SSH                                                                                                |
| Upgrade                           | Web, FOTA, DFOTA                                                                                        |
| Log                               | Support local system log, remote log export and important log power-off autosave                        |
| Remote management                 | InHandDeviceLiveor HTTP, HTTPS, SSH, etc                                                                |
| DeviceLive Cloud                  | Supports cloud-based parameter configuration, container management, application and firmware management |
| OS                                | IEOS pre-installed (InHand Edge linux system)                                                           |



# EC5000

## High Performance AI Edge Computer

### Strong Performance Open Platform

Supports NVIDIA Jetson Orin Nano/NX Series  
Support customers to develop and install edge applications  
Docker  
Jetpack: Above 5.1

### High-Security Protection

Linux system security patches and vulnerability remediation services  
Secure Boot  
TPM 2.0

### High Reliability

5G/4G/Wi-Fi/FE,etc.  
Independent hardware and software watchdog  
Multilevel link detection  
communication self-healing  
Fanless design

### InHand DeviceLive Cloud Manager

Remote device access  
Remote device batch management  
Remote batch management of edge AI applications  
Remote container management

The EC5000 comes pre-integrated with NVIDIA® Jetson Orin NX™ or Orin Nano™, making it ideal for industrial AI applications.The EC5000 design includes 2 Gigabit LAN ports, 1 HDMI video display, 4 DI, 4 DO, 2xRS-232/RS-422/RS-485, 6 external USB 3.2 ports, 1 internal Micro USB for system recovery, and 1 CAN FD port.EC5000 is highly scalable, with built-in support for LTE/5G through an M.2 B-Key slot, support for Wi-Fi/Bluetooth through an M.2 E-Key slot, support for storage expansion through an M.2 M-Key slot, and 1 Micro SD card slot for storage devices. It also supports DeviceLive Cloud Management.

## Hardware

| Model               | EC5350                                                    | EC5550                                                  | USB                   | 6*USB 3.2 Gen 2, 1*OTG Type-C |
|---------------------|-----------------------------------------------------------|---------------------------------------------------------|-----------------------|-------------------------------|
| Module              | NVIDIA Jetson Orin Nano 8G                                | NVIDIA Jetson Orin NX 16GB                              | SIM Card              | 2*Standard SIM                |
| Compatibility       |                                                           |                                                         | TF Card               | Supports Micro SD             |
| CPU                 | ARM Cortex-A78AE CPU,<br>6 cores, TDP up to 15 W, 1.5 GHz | ARM Cortex-A78AE CPU,<br>8 cores, TDP up to 25 W, 2 GHz | I/O (Optional)        | 4*DI, 4*DO                    |
| GPU                 | 1024-core NVIDIA Ampere GPU with 32 Tensor Cores          |                                                         | Button                | 1*Recovery, 1*Reset           |
| AI Performance      | 40 TOPS                                                   | 100 TOPS                                                | GMSL                  | 2-ch GMSL2.0 with FAKRA       |
| RAM                 | 8GB                                                       | 16GB                                                    | MIC                   | 3.5 mm microphone audio jack  |
| Storage             | 1*M.2 NVMe M-Key 2242 (128GB built-in)                    |                                                         | Audio                 | 3.5 mm type line-out          |
| Ethernet Port       | 2*10/100/1000Mbps Ethernet port                           |                                                         | TPM                   | TPM2.0                        |
| Serial Port         | 2*RS-232/485/422, DB9                                     |                                                         | Power input           | DC9-36V                       |
| CAN                 | 1*CAN FD                                                  |                                                         | Installation          | Panel, Rail                   |
| HDMI                | 1*HDMI 2.0                                                |                                                         | Protection Rating     | IP30                          |
| Wi-Fi               | RTL8822CE-CG, 802.11b/g/n/ac                              |                                                         | Housing               | Metal                         |
| Bluetooth           | BLE 5.0                                                   |                                                         | Storage Temperature   | -40℃ ~ 85℃                    |
| GPS                 | GPS (cellular module support required)                    |                                                         | Operation temperature | -20℃ ~ 60℃                    |
| Expansion Interface | 1*M.2 B-Key 3042/3052 (LTE/5G)                            |                                                         | Ambient humidity      | 5~ 95% (non-condensing)       |
|                     | 1*M.2 E-Key 2230 (Wifi/BT)                                |                                                         | EMC                   | level 3                       |
|                     | 1*M.2 M-Key 2242 (NVMe 128GB built-in)                    |                                                         | Certification         | CE、FCC、IC、PTCRB               |

## Software

|                                   |                                                                                                         |
|-----------------------------------|---------------------------------------------------------------------------------------------------------|
| Network format                    | 5G SA/NSA, LTE CAT6                                                                                     |
| Access authentication             | CHAP, PAP                                                                                               |
| Secondary development environment | Multi-programming language development platform                                                         |
| Network Protocol                  | ICMP, DNS, TCP/UDP, TCPServer, DHCP, Static routing                                                     |
| Network security                  | VPN, Firewall                                                                                           |
| Reliability                       | Link Detection, Dual SIM Failover, Embedded Watchdog                                                    |
| Data security                     | Secure Boot, TrustZone                                                                                  |
| Configuration                     | Web, SSH                                                                                                |
| Upgrade                           | Web, FOTA, DFOTA                                                                                        |
| Log                               | Support local system log, remote log export and important log power-off autosave                        |
| Remote management                 | InHandDeviceLiveor HTTP, HTTPS, SSH, etc                                                                |
| DeviceLive Cloud                  | Supports cloud-based parameter configuration, container management, application and firmware management |
| OS                                | Linux (Support Jetpack 5.0 above)                                                                       |

# Selection Guide

| Model            |                       | EC942                                 | EC954                                              | EC3320                                                       | EC5350                                                                                   | EC5550                                                                                 |
|------------------|-----------------------|---------------------------------------|----------------------------------------------------|--------------------------------------------------------------|------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| Processor        | CPU                   | RK3568,<br><br>Quad Cortex-A55@2.0GHz | RK3568,<br><br>Quad Cortex-A55@2.0GHz              | RK3588, octa-core processor,<br><br>maximum frequency 2.4GHz | NVIDIA Jetson Orin Nano 8G ARM Cortex-A78AE CPU,<br><br>6 cores, TDP up to 15 W, 1.5 GHz | NVIDIA Jetson Orin NX 16GB ARM Cortex-A78AE CPU,<br><br>8 cores, TDP up to 25 W, 2 GHz |
|                  | GPU                   | Mali G52 2EE                          | Mali G52 2EE                                       | Mali-G610 MC4                                                | 1024 Core NVIDIA Ampere, with 32 Tensor Cores                                            | 1024 Core NVIDIA Ampere, with 32 Tensor Cores                                          |
|                  | NPU                   | 1.0 TOPS                              | 1.0 TOPS, extend 8-26 TOPS AI card                 | 6.0 TOPS                                                     | 40 TOPS                                                                                  | 100 TOPS                                                                               |
| Memory           | RAM                   | 4GB on board                          | 4GB on board                                       | 8GB on board                                                 | 8GB on board                                                                             | 16GB on board                                                                          |
|                  | FLASH                 | 16/32GB eMMC                          | 16/32GB eMMC                                       | 64GB eMMC                                                    | 128GB SSD                                                                                | 128GB SSD                                                                              |
| Graphics         | HDMI                  | 1*HDMI2.0                             | 1*HDMI2.0                                          | 2*HDMI2.0                                                    | 1*HDMI2.0                                                                                | 1*HDMI2.0                                                                              |
| Cellular         | Celullar              | 5G/4G                                 | 5G/4G                                              | 5G/4G                                                        | 5G/4G                                                                                    | 5G/4G                                                                                  |
| Expansion        | mSATA                 | YES                                   | YES                                                | -                                                            | -                                                                                        | -                                                                                      |
|                  | M.2                   | YES                                   | YES                                                | YES                                                          | YES                                                                                      | YES                                                                                    |
| Interface        | Ethemet               | 2*10/100/1000Mbps                     | 4*10/100/1000Mbps                                  | 3*10/100/1000Mbps                                            | 2*10/100/1000Mbps                                                                        | 2*10/100/1000Mbps                                                                      |
|                  | Serial                | 2*RS-232/485/422, DB9                 | 4*RS-232/485/422+8*RS485,Industrial Terminal Block | 2*RS232+2*RS485, terminal-block                              | 2*RS-232/485/422, DB9                                                                    | 2*RS-232/485/422, DB9                                                                  |
|                  | USB                   | USB 2.0, 2*TypeA, 1*OTG TypeC         | USB 2.0, 2*TypeA, 1*OTG TypeC                      | USB3.0, 4*TypeA, 1*OTG TypeC                                 | 6*USB 3.2, 1*OTG TypeC                                                                   | 6*USB 3.2, 1*OTG TypeC                                                                 |
|                  | CAN                   | 1*CAN 2.0A/B                          | 2*CAN 2.0A/B                                       | 1*CAN 2.0A/B                                                 | 1*CAN FD                                                                                 | 1*CAN FD                                                                               |
|                  | I/O                   | 4DI+4DO                               | 4DI+4DO                                            | 4DI+4DO                                                      | 4DI+4DO                                                                                  | 4DI+4DO                                                                                |
|                  | Wi-Fi                 | STA, 802.11ac/a/b/g/n, 2.4G/5G        | STA, 802.11ac/a/b/g/n, 2.4G/5G                     | STA, 802.11ac/a/b/g/n, 2.4G/5G                               | STA, 802.11ac/a/b/g/n, 2.4G/5G                                                           | STA, 802.11ac/a/b/g/n, 2.4G/5G                                                         |
|                  | Bluetooth             | BT 4.2 On board                       | BT 4.2 On board                                    | BT 5.0 On board                                              | BT 5.0                                                                                   | BT 5.0                                                                                 |
|                  | GPS                   | YES                                   | YES                                                | YES                                                          | YES (cellular module support required)                                                   | YES (cellular module support required)                                                 |
|                  | Button                | 1*Reset, 1*USER,1*Power               | 1*Reset, 1*USER, 1*Power                           | 1*Power, 1*Reset                                             | 1*Recovery, 1*Reset                                                                      | 1*Recovery, 1*Reset                                                                    |
| Power            | Power Supply          | DC input: unregulated                 | DC input: unregulated                              | DC input: unregulated                                        | DC input: unregulated                                                                    | DC input: unregulated                                                                  |
|                  | Voltage               | 12V to 48V Reverse voltage protection | 12V to 48V Reverse voltage protection              | 9V to 36V Reverse voltage protection                         | 9V to 36V Reverse voltage protection                                                     | 9V to 36V Reverse voltage protection                                                   |
| Environment      | Operating temperature | -20°C~70°C                            | -20°C~70°C                                         | -20°C~60°C                                                   | -20°C~60°C                                                                               | -20°C~60°C                                                                             |
| Operating System | Operating System      | Linux                                 | Linux                                              | Linux                                                        | Linux                                                                                    | Linux                                                                                  |
| Mechanical       | Installation          | Panel,Rail                            | Panel, Rail                                        | Panel, Rail                                                  | Panel, Rail                                                                              | Panel, Rail                                                                            |
|                  | Dimensions            | 47.3*162.7*148.3mm                    | 200*120*48.6 mm                                    | 180*136*54 mm                                                | 180*160*60 mm                                                                            | 180*160*60 mm                                                                          |
|                  | Housing               | Metal                                 | Metal                                              | Metal                                                        | Metal                                                                                    | Metal                                                                                  |



# ARM Edge Tablets

## **InPAD070S / InPAD3101**

The InPAD series is a reliable intelligent industrial and commercial IoT solution with stable network connection, sufficient interfaces, and good structural design, and can be applied to various application scenarios such as HMI, remote monitoring, and data acquisition, bringing you a more flexible and stable user experience.



# InPAD070S

## 7-inch All-in-one Android Tablet

### Hardware and Operating System

Quad-core RK3288 processor, deeply optimized Android/Linux system

### Stable and High-speed Connection

3G/4G high-speed connection, Wi-Fi 100M wired network, Bluetooth

### Peripheral Interface and Structural Design

USB2.0, RS-232/485-friendly structural design meets any installation scenario

### Industrial Grade Product Quality

Wide temperature operating range,IP65 (screen side), EMC protection design

The InPAD070S series is a new generation of 4G smart terminals, equipped with RK3288 processor, providing higher performance, lower power consumption and more stable hardware and software configurations. It supports 3G/4G, Wi-Fi, and wired networking methods, and is available everywhere Uninterrupted Internet access, the whole machine has wide temperature characteristics, and IP65 protection level on one side of the screen, all designed for industrial applications

## Hardware

|               |                                                          |                       |                                    |
|---------------|----------------------------------------------------------|-----------------------|------------------------------------|
| CPU           | RK3288 quad-core processor, maximum frequency 1.6GHz     | SIM                   | 1.8V/3V, 1*drawer type card holder |
| RAM           | 2GB                                                      | Power                 | DC12V                              |
| FLASH         | 8GB eMMC                                                 | Installation          | Wall mounting                      |
| Screen        | Size: 7" display ,Resolution; 1024x600,                  | Protection Rating     | IP65 (screen side)                 |
|               | Brightness: 450cd/m <sup>2</sup> (typ.) ,Contrast: 800:1 | Housing               | Metal                              |
|               | Viewing angle: full viewing angle                        | Storage Temperature   | -40°C ~ 85°C                       |
| Ethernet Port | 1*10/100Mbps, WAN/LAN                                    | Operating Temperature | -10°C ~ 60°C                       |
| Serial Port   | 2*RS232, 3pin industrial terminal                        | Ambient Humidity      | 5 ~ 95% (no condensation)          |
|               | 2*RS485, 5pin terminal, with flange                      | EMC                   | Level 2                            |
| Wi-Fi         | 1*RP-SMA, 802.11b/g/n, Client/AP mode                    | Certification         | CE                                 |
| USB           | 4*USB 2.0                                                |                       |                                    |

## Software

|                    |                                                                                                                                                                                       |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Network Type       | LTE-TDD/LTE-FDD/WCDMA/CDMA/TD-SCDMA/ UMTS/EDGE/GPRS/GSM                                                                                                                               |
| Graphic Processing | Dual ISP pixel processing capacity is up to 800MPix/s, supports dual camera data input at the same time, and supports high-end processing such as 3D and depth information extraction |
| Video Codec        | Support 4K 10bits H265/H264 video decoding                                                                                                                                            |
| OS                 | Android7.1/Android12                                                                                                                                                                  |
| Timed Switch       | Supported                                                                                                                                                                             |
| Upgrade            | Local USB upgrade                                                                                                                                                                     |
| Bluetooth          | Bluetooth4.2                                                                                                                                                                          |
| Remote Management  | -                                                                                                                                                                                     |
| Reliability        | Support hardware and software watchdog                                                                                                                                                |



# InPAD3101

## 10-inch All-in-one Android Tablet

### Hardware and Operating System

Quad-core RK3288 processor, deeply optimized Android/Linux system

### Stable and High-speed Connection

3G/4G high-speed connection, Wi-Fi 100M wired network, Bluetooth

### Peripheral Interface and Structural Design

USB2.0, RS-232/485-friendly structural design meets any installation scenario

### Industrial Grade Product Quality

Wide temperature operating range,IP65 (screen side), EMC protection design

The InPAD3101 series is a new generation of 4G smart terminals, equipped with RK3288 processor, providing higher performance, lower power consumption and more stable hardware and software configurations. It supports 3G/4G, Wi-Fi, and wired networking methods, and is available everywhere Uninterrupted Internet access, the whole machine has wide temperature characteristics, and IP65 protection level on one side of the screen, all designed for industrial applications.

## Hardware

|               |                                                      |                       |                                    |
|---------------|------------------------------------------------------|-----------------------|------------------------------------|
| CPU           | RK3288 quad-core processor, maximum frequency 1.6GHz | USB                   | 4*USB 2.0                          |
| RAM           | 2GB                                                  | SIM                   | 1.8V/3V, 1*drawer type card holder |
| FLASH         | 8GB eMMC                                             | Power                 | DC12V                              |
| Screen        | Size: 10.1" display ,Resolution; 1280x800            | Installation          | Wall mounting                      |
|               | Brightness: 450cd/m <sup>2</sup> (typ.)              | Protection Rating     | IP65 (screen side)                 |
|               | Contrast: 800:1, Viewing angle: full viewing angle   | Housing               | Metal                              |
| Ethernet Port | 1*10/100Mbps, WAN/LAN                                | Storage Temperature   | -40°C ~ 85°C                       |
| Serial port   | 2*RS232, 3pin industrial terminal                    | Operating temperature | -10°C ~ 60°C                       |
|               | 2*RS485, 5pin terminal, with flange                  | Ambient Humidity      | 5 ~ 95% (no condensation)          |
| Wi-Fi         | 1*RP-SMA, support 802.11b/g/n,                       | EMC                   | Level 2                            |
|               | support Client/AP mode                               | Certification         | CE                                 |

## Software

|                     |                                                                                                                                                                                       |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Network Standard    | LTE-TDD/LTE-FDD/WCDMA/CDMA/TD-SCDMA/ UMTS/EDGE/GPRS/GSM                                                                                                                               |
| Graphics processing | Dual ISP pixel processing capacity is up to 800MPix/s, supports dual camera data input at the same time, and supports high-end processing such as 3D and depth information extraction |
| Video codec         | Support 4K 10bits H265/H264 video decoding                                                                                                                                            |
| OS                  | Android7.1/Android12                                                                                                                                                                  |
| Timer switch        | Support                                                                                                                                                                               |
| Upgrade             | Local USB upgrade                                                                                                                                                                     |
| Bluetooth           | Bluetooth4.2                                                                                                                                                                          |
| Remote management   | -                                                                                                                                                                                     |
| reliability         | Support hardware and software watchdog                                                                                                                                                |

Selection Guide

|                           | Model                       | InPAD070S                                                                | InPAD3101                                                                 |
|---------------------------|-----------------------------|--------------------------------------------------------------------------|---------------------------------------------------------------------------|
| Hardware performance      | CPU                         | RK3288 quad-core processor, maximum frequency 1.6GHz                     |                                                                           |
|                           | RAM                         | 2GB                                                                      |                                                                           |
|                           | FLASH                       | 8GB eMMC                                                                 |                                                                           |
| Screen                    | Screen                      | Size: 7'' display, Resolution; 1024x600, Brightness: 450cd/m² (typ.)     | Size: 10.1'' display, Resolution; 1280x800, Brightness: 450cd/m² (typ.) , |
|                           |                             | Contrast: 800:1, Viewing angle: full viewing angle                       | Contrast: 800:1, Viewing angle: full viewing angle                        |
| Hardware interface        | Ethernet Port               | 1*10/100Mbps, WAN/LAN                                                    |                                                                           |
|                           | Serial port                 | 2*RS-232, 3pin industrial terminal, 2*RS-485, 5pin terminal, with flange |                                                                           |
|                           | IO                          | -                                                                        |                                                                           |
|                           | Cellular                    | 1*SMA                                                                    |                                                                           |
|                           | Wi-Fi                       | 1*RP-SMA, support 802.11b/g/n, support Client/AP mode                    |                                                                           |
|                           | GPS                         | -                                                                        |                                                                           |
|                           | USB                         | 4*USB 2.0                                                                |                                                                           |
|                           | Bluetooth5                  | Bluetooth4.2                                                             |                                                                           |
|                           | LoRa                        | -                                                                        |                                                                           |
|                           | HDMI                        | -                                                                        |                                                                           |
|                           | TF Card                     | 1*TF Card                                                                |                                                                           |
|                           | SIM Card                    | 1.8V/3V, 1*drawer type card holder                                       |                                                                           |
| Working environment       | Operating temperature       | -10°C ~ 60°C                                                             |                                                                           |
|                           | Storage Temperature         | -40°C ~ 85°C                                                             |                                                                           |
|                           | Operating humidity          | 5 ~ 95% (no condensation)                                                |                                                                           |
| Power supply environment  | Power                       | DC12V                                                                    |                                                                           |
|                           | Reverse polarity protection | support                                                                  |                                                                           |
|                           | Overcurrent protection      | support                                                                  |                                                                           |
| Mechanical characteristic | Mounting                    | Wall mount                                                               |                                                                           |
|                           | Dimensions                  | 19.5 * 12.88 * 3.6 cm                                                    | 19.5 * 12.88 * 3.6 cm                                                     |
|                           | Housing                     | Metal                                                                    |                                                                           |
|                           | Protection Rating           | IP65 (screen side)                                                       |                                                                           |
| EMC index                 | EMC                         | level 2                                                                  |                                                                           |

A photograph of a modern industrial factory floor. Several yellow robotic arms are visible, working on a production line. The background shows complex machinery, pipes, and structural elements of the factory. The text 'Edge Gateways' is overlaid in a large, white, sans-serif font.

# Edge Gateways

## **IG101 / IG502 / IG504 / IG532**

The InHand Edge Gateway can break the data barrier of industrial field, quickly establish the connection between industrial field equipment and the cloud, and help you achieve more efficient operation, which is widely used in various fields such as manufacturing, energy, agriculture and healthcare.



# IG101

## Entry-level Edge Gateway

### Convenient Cellular Network

LTE CAT1

### Connection to Multiple Cloud Platforms

Standard modbus RTU to MQTT gateway  
Support for transparent transfer

### Industrial Interfaces

1\*RS232+1\*RS485/\*RS485

### Cloud Management

InHand Device Manager

InGateway101 (IG101) is a small, compact edge gateway. The product leverages 4G wireless networks deployed by mobile operators to provide uninterrupted Internet access anywhere. With its flexible and simple edge computing capabilities, comprehensive security and wireless access services, it realizes data optimization, real-time response, agile connection and intelligent analysis in the edge nodes of the Internet of Things.

## Hardware

|              |                                            |                       |                          |
|--------------|--------------------------------------------|-----------------------|--------------------------|
| CPU          | ARM Cortex-A5                              | Protection Rating     | IP30                     |
| RAM          | 4MB                                        | Housing               | Plastic                  |
| FLASH        | 2MB                                        | Storage Temperature   | -40°C ~ 85°C             |
| Serial Port  | 1*RS232+1*RS485, industrial terminal block | Operation Temperature | -20°C ~ 70°C             |
| TF Card      | MicroSD supported, up to 32GB expansion    | Ambient Humidity      | 5 ~ 95% (non-condensing) |
| SIM Card     | 1*Standard SIM                             | EMC                   | level 3                  |
| Power Input  | DC7-38V                                    | Certification         | CE                       |
| Installation | Panel, DIN-Rail                            |                       |                          |

## Software

|                       |                                               |
|-----------------------|-----------------------------------------------|
| Network Type          | LTE CAT1                                      |
| Access Authentication | CHAP/PAP                                      |
| Access Cloud Platform | Support standard MQTT protocol cloud platform |
| Industrial Protocol   | Modbus RTU                                    |
| LAN Protocol          | ARP, Ethernet                                 |
| Network Protocol      | ICMP, DNS, TCP/UDP, TCP Server                |
| Reliability           | Multi-level link detection, watchdog          |
| Configuration Method  | Configuring tools                             |
| Upgrade Method        | local or remote firmware upgrade              |
| Device Management     | InHand Device Manager                         |
| Network Diagnostics   | Ping                                          |



# IG502

## Cost-effective Edge Gateway

### Multiple Means of Internet Access

4G/Ethernet/Wi-Fi

### Strong Computing Capabilities

ETH, RS232/485, Wi-Fi, DI/DO, GPS, USB, Bluetooth

### Edge-to-cloud Data Acquisition

"Zero code/Low code" easy to achieve data acquisition on the cloud  
Integrate 80+ mainstream data acquisition protocols

### Built for Developers

Python

InGateway502 (IG502) is a cost-effective edge computing gateway for the industrial Internet of Things (IIoT). IG502 supports Modbus TCP/RTU and other mainstream industrial protocols. It can connect to AWS, Azure, Aliyun and other mainstream IIoT cloud platforms. It has an open edge computing platform, supports user secondary development, and easily realizes enterprise equipment informatization.

## Hardware

|                  |                                                                       |                       |                                                                                  |
|------------------|-----------------------------------------------------------------------|-----------------------|----------------------------------------------------------------------------------|
| CPU              | ARM Cortex-A8 600MHz                                                  | Power Input           | DC12-48V                                                                         |
| RAM              | 512MB DDR3                                                            | Installation          | Panel, Rail                                                                      |
| FLASH            | 8GB eMMC                                                              | Protection Rating     | IP30                                                                             |
| Ethernet Port    | 2*10/100Mbps, 1WAN/LAN+1*LAN                                          | Housing               | Metal                                                                            |
| Serial Port      | 1*RS232+1*RS485, industrial terminal block                            | Storage Temperature   | -40°C ~ 85°C                                                                     |
| Wi-Fi (Optional) | STA, 802.11ac/a/b/g/n, 2.4G/5G                                        | Operation Temperature | -20°C ~ 70°C                                                                     |
| GPS (Optional)   | Support GPS and BeiDou                                                | Ambient Humidity      | 5 ~ 95% (non-condensing)                                                         |
| SIM Card         | 2*Micro SIM                                                           | EMC                   | level 3                                                                          |
| I/O (Optional)   | 4*Digital/pulse input DI, 3*Digital/pulse output DO, 1*Digital output | Certification         | CE, UKCA, FCC, PTCRB, UL, UL C1D2, Verizon Wireless, AT&T, IC, RCM, NBTC, ANATEL |
| USB              | 1*USB 2.0                                                             |                       |                                                                                  |

## Software

|                                   |                                                                                                                                                                     |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Network Type                      | LTE-TDD/LTE-FDD/WCDMA/CDMA/TD-SCDMA, UMTS/EDGE/GPRS/GSM                                                                                                             |
| Access Authentication             | CHAP/PAP                                                                                                                                                            |
| Secondary Development Environment | Python                                                                                                                                                              |
| Access Cloud Platform             | AWS, Azure and other cloud platforms                                                                                                                                |
| Industrial Protocol               | Modbus RTU/TCP, EtherNet/IP, ISO on TCP, OPC UA, DLT645-2007, IEC101/104, etc.                                                                                      |
| LAN Protocol                      | ARP, Ethernet                                                                                                                                                       |
| Network Protocol                  | Ping, Traceroute, DHCP Server/Relay/Client, DNS Relay, DDNS, Telnet, SSH, HTTP, HTTPS, TFTP, FTP, SFTP, Static Routing                                              |
| Network Security                  | IPSecVPN, GRE, L2TP, OPENVPN, CA (may auto apply), Firewalls                                                                                                        |
| Reliability                       | Backup, Link Detection, Embedded Watchdog                                                                                                                           |
| Configuration Method              | Local or remote HTTP, HTTPS, SSH                                                                                                                                    |
| Upgrade Method                    | Local or remote WEB, DM, TFTP, FTP, SFTP server                                                                                                                     |
| Log                               | Local or remote log export, power-down log saving                                                                                                                   |
| Device Management                 | InHandDevice Manager network management platform, batch management gateway<br>InConnectcloud connection platform for remote access to on-site PLC and other devices |
| Network Diagnostics               | Ping, Traceroute, Sniffer (network packet capture tool)                                                                                                             |



# IG504

## Multi-port Edge Gateway

### Multiple Means of Internet Access

4G/Ethernet/Wi-Fi

### Strong Computing Capabilities

4\*ETH, RS232/485, Wi-Fi, DI/DO, GPS, USB, Bluetooth

### Edge-to-cloud Data Acquisition

"Zero code/Low code" easy to achieve data acquisition on the cloud  
Integrate 80+ mainstream data acquisition protocols  
Integrated data publishing services, public cloud, private cloud, local SCADA and other seamless access

### Built for Developers

Python

InGateway504 (IG504) is a Multi-port edge computing gateway for the industrial Internet of Things (IIoT). IG504 supports Modbus TCP/RTU and other mainstream industrial protocols. It can connect to AWS, Azure, Aliyun and other mainstream IIoT cloud platforms. It has an open edge computing platform, supports user secondary development, and easily realizes enterprise equipment informatization.

## Hardware

|                  |                                                                       |                       |                                                                                  |
|------------------|-----------------------------------------------------------------------|-----------------------|----------------------------------------------------------------------------------|
| CPU              | ARM Cortex-A8 600MHz                                                  | Power Input           | DC12-48V                                                                         |
| RAM              | 512MB DDR3                                                            | Installation          | Panel, DIN-Rail                                                                  |
| FLASH            | 8GB eMMC                                                              | Protection Rating     | IP30                                                                             |
| Ethernet Port    | 2*10/100Mbps, 1WAN/LAN+3*LAN                                          | Housing               | Metal                                                                            |
| Serial Port      | 1*RS232+1*RS485, industrial terminal block                            | Storage Temperature   | -40°C ~ 85°C                                                                     |
| Wi-Fi (Optional) | STA, 802.11ac/a/b/g/n, 2.4G/5G                                        | Operation Temperature | -20°C ~ 70°C                                                                     |
| GPS (Optional)   | Support GPS and BeiDou                                                | Ambient Humidity      | 5 ~ 95% (non-condensing)                                                         |
| SIM Card         | 2*Standard SIM                                                        | EMC                   | level 3                                                                          |
| I/O (Optional)   | 4*Digital/pulse input DI, 3*Digital/pulse output DO, 1*Digital output | Certification         | CE, UKCA, FCC, PTCRB, UL, UL C1D2, Verizon Wireless, AT&T, IC, RCM, NBTC, ANATEL |
| USB              | 1*USB 2.0                                                             |                       |                                                                                  |

## Software

|                                   |                                                                                                                                                                     |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Network Type                      | LTE-TDD/LTE-FDD/WCDMA/CDMA/TD-SCDMA/UMTS/EDGE/GPRS/GSM                                                                                                              |
| Access Authentication             | CHAP/PAP                                                                                                                                                            |
| Secondary Development Environment | Python                                                                                                                                                              |
| Access Cloud Platform             | AWS, Azure, Ali and other cloud platforms                                                                                                                           |
| Industrial Protocol               | Modbus RTU/TCP, EtherNet/IP, ISO on TCP, OPC UA, DLT645-2007, IEC101/104.etc                                                                                        |
| LAN Protocol                      | ARP, Ethernet                                                                                                                                                       |
| Network Protocol                  | Ping, Traceroute, DHCP Server/Relay/Client, DNS Relay, DDNS, Telnet, SSH, HTTP, HTTPS, TFTP, FTP, SFTP, Static Routing                                              |
| Network Security                  | IPSecVPN, GRE, L2TP, OPENVPN, CA (may auto apply), Firewalls                                                                                                        |
| Reliability                       | Backup, Link Detection, Embedded Watchdog                                                                                                                           |
| Configuration Method              | Local or remote HTTP, HTTPS, SSH                                                                                                                                    |
| Upgrade Method                    | Local or remote WEB, DM, TFTP, FTP, SFTP server                                                                                                                     |
| Log                               | Local or remote log export, power-down log saving                                                                                                                   |
| Device Management                 | InHandDevice Manager network management platform, batch management gateway<br>InConnectcloud connection platform for remote access to on-site PLC and other devices |
| Network Diagnostics               | Ping, Traceroute, Sniffer (network packet capture tool)                                                                                                             |



# IG902

## High Performance Edge Gateway

### Multiple Means of Internet Access

Cellular/Ethernet/2.4G & 5G dual concurrency Wi-Fi  
Global cellular network access

### Strong Computing Capabilities

ARM Cortex-A8 1GHz  
512MB/1GB DDR3  
8GB eMMC

### Edge-to-cloud Data Acquisition

Zero code/Low code" easy to achieve data acquisition on the cloud  
Integrate 80+ mainstream data acquisition protocols  
Integrated data publishing services, public cloud, private cloud, local SCADA and other seamless access

### Built for Developers

Python  
Docker

InGateway902 (IG902) is a high-performance edge computing gateway for the IoT. IG902 provides a network with global coverage and supports the parsing of industrial protocols such as Modbus,It also connects to mainstream cloud platforms such as AWS. It supports secondary development and Azure IoT Edge and AWS IoT Greengrass, which is safer and faster to respond to field business at the edge of the Internet of things.

## Hardware

|                  |                                                                         |                       |                                                                              |
|------------------|-------------------------------------------------------------------------|-----------------------|------------------------------------------------------------------------------|
| CPU              | ARM Cortex-A8 1GHz                                                      | Power Input           | DC12-48V                                                                     |
| RAM              | 512MB/1GB DDR3                                                          | Installation          | Panel, DIN-Rail                                                              |
| FLASH            | 8GB eMMC                                                                | Protection Rating     | IP30                                                                         |
| Ethernet Port    | 2*10/100/1000Mbps, 1*WAN/LAN+1*LAN                                      | Housing               | Metal                                                                        |
| Serial Port      | 1*RS232+1*RS485, industrial terminal block                              | Storage Temperature   | -40°C ~ 85°C                                                                 |
| Wi-Fi (Optional) | STA, 802.11ac/a/b/g/n, 2.4G/5G                                          | Operation Temperature | -20°C ~ 70°C                                                                 |
| GPS (Optional)   | Support GPS and BeiDou                                                  | Ambient Humidity      | 5 ~ 95% (non-condensing)                                                     |
| SIM Card         | 2*Standard SIM                                                          | EMC                   | Level 3                                                                      |
| I/O (Optional)   | 4*Digital/pulse input DI,3*Digital/pulse output DO,<br>1*Digital output | Certification         | CE, FCC, PTCRB, RCM, IC,<br>IMDA, AT&T, MIC&JATE, MSIP,<br>EAC, ANATEL, UKCA |
| USB              | 1*USB 2.0                                                               |                       |                                                                              |

## Software

|                       |                                                                                                                                                                     |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Network Type          | LTE-TDD/LTE-FDD/WCDMA/CDMA/TD-SCDMA/UMTS/EDGE/GPRS/GSM                                                                                                              |
| Access Authentication | CHAP/PAP                                                                                                                                                            |
| Secondary Development | Python, Docker                                                                                                                                                      |
| Environment           |                                                                                                                                                                     |
| Access Cloud Platform | AWS, Azure and other cloud platforms                                                                                                                                |
| Industrial Protocol   | Modbus RTU/TCP,EtherNet/IP,ISO on TCP,OPC UA,DLT645-2007,IEC101/104.etc                                                                                             |
| LAN Protocol          | ARP,Ethernet                                                                                                                                                        |
| Network Protocol      | Ping, Traceroute, DHCP Server/Relay/Client, DNS Relay, DDNS, Telnet, SSH, HTTP, HTTPS, TFTP, FTP, SFTP, Static Routing                                              |
| Network Security      | IPSecVPN, GRE, L2TP, OPENVPN, CA (may auto apply), Firewalls                                                                                                        |
| Reliability           | Backup, Link Detection, Embedded Watchdog                                                                                                                           |
| Configuration Method  | Local or remote HTTP, HTTPS, Telnet, SSH                                                                                                                            |
| Upgrade Method        | Local or remote WEB, DM, TFTP, FTP, SFTP server                                                                                                                     |
| Log                   | Local or remote log export, power-down log saving                                                                                                                   |
| Device Management     | InHandDevice Manager network management platform, batch management gateway<br>InConnectcloud connection platform for remote access to on-site PLC and other devices |
| Network Diagnostics   | Ping, Traceroute, Sniffer (network packet capture tool)                                                                                                             |

Selection Guide

|                                   | Model                             | IG101                                   | IG502                                                                                                                                                                                                                       | IG504                                                                                                                                                                                                                       | IG902                                                                                                                                                                                                                    |
|-----------------------------------|-----------------------------------|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hardware Platform                 | CPU                               | ARM Cortex-A5                           | ARM Cortex-A8                                                                                                                                                                                                               | ARM Cortex-A8                                                                                                                                                                                                               | ARM Cortex-A8 1GHz                                                                                                                                                                                                       |
|                                   | RAM                               | 4MB                                     | 512MB                                                                                                                                                                                                                       | 512MB                                                                                                                                                                                                                       | 512MB/1GB DDR3                                                                                                                                                                                                           |
|                                   | FLASH                             | 2MB                                     | 8GB eMMC                                                                                                                                                                                                                    | 8GB eMMC                                                                                                                                                                                                                    | 8GB eMMC                                                                                                                                                                                                                 |
| Interfaces                        | Ethernet Port                     | /                                       | 2*10/100Mbps,(1*WAN/LAN + 1*LAN)                                                                                                                                                                                            | 4*10/100Mbps, (1*WAN/LAN + 3*LAN)                                                                                                                                                                                           | 2*10/100/1000Mbps (1*WAN/LAN + 1*LAN)                                                                                                                                                                                    |
|                                   | Serial Port                       | 1*RS-232, 1*RS-485                      | 1*RS-232, 1*RS-485 or 2*RS-485                                                                                                                                                                                              | 1*RS-232, 1*RS-485 or 2*RS-485                                                                                                                                                                                              | 1*RS-232 , 1*RS-485                                                                                                                                                                                                      |
|                                   | IO                                | /                                       | 4*Digital/pulse input DI,<br>3*Digital/pulse output DO, 1*Digital output                                                                                                                                                    | 4*Digital/pulse input DI,<br>3*Digital/pulse output DO, 1*Digital output                                                                                                                                                    | 4*Digital/pulse input DI,<br>3*Digital/pulse output DO, 1*Digital output                                                                                                                                                 |
|                                   | Cellular                          | CAT1                                    | CAT1, CAT4                                                                                                                                                                                                                  | CAT1, CAT4                                                                                                                                                                                                                  | CAT4, CAT6                                                                                                                                                                                                               |
|                                   | Wi-Fi                             | /                                       | STA/AP, 2.4G (802.11 b/g/n)                                                                                                                                                                                                 | STA/AP, 2.4G (802.11 b/g/n)                                                                                                                                                                                                 | STA/AP, 2.4G&5G (802.11 a/c/a/b/g/n)                                                                                                                                                                                     |
|                                   | GPS                               | /                                       | GPS, 1*SMA                                                                                                                                                                                                                  | GPS, 1*SMA                                                                                                                                                                                                                  | GPS, 1*SMA                                                                                                                                                                                                               |
|                                   | USB                               | /                                       | 1*USB 2.0                                                                                                                                                                                                                   | 1*USB 2.0                                                                                                                                                                                                                   | 1*USB 2.0                                                                                                                                                                                                                |
|                                   | Bluetooth                         | /                                       | BLE4.0                                                                                                                                                                                                                      | BLE4.0                                                                                                                                                                                                                      | /                                                                                                                                                                                                                        |
|                                   | TF Card                           | MicroSD                                 | MicroSD                                                                                                                                                                                                                     | Micro SD                                                                                                                                                                                                                    | MicroSD                                                                                                                                                                                                                  |
|                                   | SIM Card                          | 2*Standard SIM                          | 2*Micro SIM                                                                                                                                                                                                                 | 2*Standard SIM                                                                                                                                                                                                              | 2*Micro SIM                                                                                                                                                                                                              |
| Environment                       | Button                            | 1*Pinhole reset button                  | 1*Pinhole reset button                                                                                                                                                                                                      | 1*Pinhole reset button                                                                                                                                                                                                      | 1*Pinhole reset button                                                                                                                                                                                                   |
|                                   | Operation Temperature             | -20~70°C                                | -20~70°C                                                                                                                                                                                                                    | -20~70°C                                                                                                                                                                                                                    | -20~70°C                                                                                                                                                                                                                 |
|                                   | Storage Temperature               | -40~85°C                                | -40~85°C                                                                                                                                                                                                                    | -40~85°C                                                                                                                                                                                                                    | -40~85°C                                                                                                                                                                                                                 |
| Power                             | Ambient Humidity                  | 5~ 95% (non-condensing)                 | 5~ 95% (non-condensing)                                                                                                                                                                                                     | 5~ 95% (non-condensing)                                                                                                                                                                                                     | 5~ 95% (non-condensing)                                                                                                                                                                                                  |
|                                   | Power Input                       | DC 7~38V                                | DC 12~48V                                                                                                                                                                                                                   | DC 12~48V                                                                                                                                                                                                                   | DC 12~48V                                                                                                                                                                                                                |
|                                   | Power Interface                   | Industrial terminal block               | Industrial terminal block                                                                                                                                                                                                   | Industrial terminal block                                                                                                                                                                                                   | Industrial terminal block                                                                                                                                                                                                |
| Mechanical                        | Installation                      | Panel, DIN-Rail                         | Panel, DIN-Rail                                                                                                                                                                                                             | Panel, DIN-Rail                                                                                                                                                                                                             | Panel, DIN-Rail                                                                                                                                                                                                          |
|                                   | Dimensions                        | 76*108*37.5mm                           | 35*127*109.7mm                                                                                                                                                                                                              | 113*133*45mm                                                                                                                                                                                                                | 45*140.6*122.6mm                                                                                                                                                                                                         |
|                                   | Housing                           | Plastic                                 | Metal                                                                                                                                                                                                                       | Metal                                                                                                                                                                                                                       | Metal                                                                                                                                                                                                                    |
|                                   | Protection Rating                 | IP30                                    | IP30                                                                                                                                                                                                                        | IP30                                                                                                                                                                                                                        | IP30                                                                                                                                                                                                                     |
| EMC                               | Static                            | EN61000-4-2, level 3                    | EN61000-4-2, level 3                                                                                                                                                                                                        | EN61000-4-2, level 3                                                                                                                                                                                                        | EN61000-4-2, level 3                                                                                                                                                                                                     |
|                                   | Radiation Electric Field          | EN61000-4-3, level 3                    | EN61000-4-3, level 3                                                                                                                                                                                                        | EN61000-4-3, level 3                                                                                                                                                                                                        | EN61000-4-3, level 3                                                                                                                                                                                                     |
|                                   | Pulsed Electric Field             | EN61000-4-4, level 3                    | EN61000-4-4, level 3                                                                                                                                                                                                        | EN61000-4-4, level 3                                                                                                                                                                                                        | EN61000-4-4, level 3                                                                                                                                                                                                     |
|                                   | Surge                             | EN61000-4-5, level 3                    | EN61000-4-5, level 3                                                                                                                                                                                                        | EN61000-4-5, level 3                                                                                                                                                                                                        | EN61000-4-5, level 3                                                                                                                                                                                                     |
|                                   | Conducted Disturbance Immunity    | EN61000-4-6, level 3                    | EN61000-4-6, level 3                                                                                                                                                                                                        | EN61000-4-6, level 3                                                                                                                                                                                                        | EN61000-4-6, level 3                                                                                                                                                                                                     |
|                                   | Power Frequency                   | EN61000-4-8,                            | EN61000-4-8,                                                                                                                                                                                                                | EN61000-4-8,                                                                                                                                                                                                                | EN61000-4-8,                                                                                                                                                                                                             |
|                                   | Magnetic Field Resistance         | horizontal / vertical 400A/m (>level 2) | horizontal / vertical 400A/m (>level 2)                                                                                                                                                                                     | horizontal / vertical 400A/m (>level 2)                                                                                                                                                                                     | horizontal / vertical 400A/m (>level 2)                                                                                                                                                                                  |
|                                   | Shock Wave Resistance             | EN61000-4-12, level 3                   | EN61000-4-12, level 3                                                                                                                                                                                                       | EN61000-4-12, level 3                                                                                                                                                                                                       | EN61000-4-12, level 3                                                                                                                                                                                                    |
| Physical Specs                    | Shockproof                        | IEC60068-2-27                           | IEC60068-2-27                                                                                                                                                                                                               | IEC60068-2-27                                                                                                                                                                                                               | IEC60068-2-27                                                                                                                                                                                                            |
|                                   | Free Fall                         | IEC60068-2-32                           | IEC60068-2-32                                                                                                                                                                                                               | IEC60068-2-32                                                                                                                                                                                                               | IEC60068-2-32                                                                                                                                                                                                            |
|                                   | Vibration Resistance              | IEC60068-2-6                            | IEC60068-2-6                                                                                                                                                                                                                | IEC60068-2-6                                                                                                                                                                                                                | IEC60068-2-6                                                                                                                                                                                                             |
| Certification                     | Certification                     | /                                       | CE, UKCA, FCC, PTCRB, UL,<br>C1D2 (Class1 Division 2), Verizon Wireless,<br>AT&T, IC, RCM, NBTC, ANATEL                                                                                                                     | CE, UKCA, FCC, PTCRB, UL,<br>C1D2 (Class1 Division 2), Verizon Wireless,<br>AT&T, IC, RCM, NBTC, ANATEL                                                                                                                     | CE, FCC, PTCRB, RCM, IC, IMDA, AT&T,<br>MIC&JATE, MSIP, EAC, ANATEL, UKCA                                                                                                                                                |
| Industrial Protocol               | Industrial Protocol               | Modbus RTU                              | Modbus RTU Master/Slave,<br>Modbus TCP Master/Slave, EtherNet/ IP,<br>ISO on TCP, OPC UA Client/Server,<br>Mitsubishi MC 3C/3E/3C Over TCP,<br>Mitsubishi CPU Port, FINS UDP, HostLink,<br>PPI, DLT645-2007, IEC 104 Server | Modbus RTU Master/Slave,<br>Modbus TCP Master/Slave, EtherNet/ IP,<br>ISO on TCP, OPC UA Client/Server,<br>Mitsubishi MC 3C/3E/3C Over TCP,<br>Mitsubishi CPU Port, FINS UDP, HostLink, PPI,<br>DLT645-2007, IEC 104 Server | Modbus RTU Master/Slave, Modbus TCP Master/Slave,<br>EtherNet/ IP, ISO on TCP, OPC UA Client/Server,<br>Mitsubishi MC 3C/3E/3C Over TCP,<br>Mitsubishi CPU Port, FINS UDP, HostLink,<br>PPI, DLT645-2007, IEC 104 Server |
| Operating System                  | OS                                | FreeRTOS                                | Custom Linux                                                                                                                                                                                                                | Custom Linux                                                                                                                                                                                                                | Custom Linux                                                                                                                                                                                                             |
| Secondary Development Environment | Secondary Development Environment | /                                       | Python                                                                                                                                                                                                                      | Python                                                                                                                                                                                                                      | Python, Docker, Azure IoT Edge,<br>AWS IoT Greengrass                                                                                                                                                                    |
| IoT Cloud Platform                | IoT Cloud Platform                | MQTT                                    | DeviceLive, AWS, Azure and other cloud platforms                                                                                                                                                                            | DeviceLive, AWS, Azure and other cloud platforms                                                                                                                                                                            | DeviceLive, AWS, Azure and other cloud platforms                                                                                                                                                                         |

An aerial photograph of a busy city intersection. Several vehicles are visible, including a red pickup truck, a tan minivan, a dark blue sedan, a white sedan, a white box truck, and a police car. The intersection features white crosswalks and yellow lane markings. Traffic lights are visible at the corners. A green circular graphic is partially visible on the left edge of the image.

# Industrial Routers

## **IR302 / IR315 / IR624 / IR915**

Equipped with comprehensive and intelligent software functions and all industrial-grade hardware, InHand industrial routers are suitable for various IoT scenarios and capable of providing highly reliable, high-speed and secure networking services to help enterprises improve operational efficiency.



# IR302

## Economical Industrial Router

4G

LTE CAT4,  
compatible with 3G/2G

Security

VPN  
Firewall

Reliable

Link Backup, Link Detection,  
VRRP, Dual SIM Failover, Embedded Watchdog

Cloud Management

DeviceManager Cloud

InRouter302, industrial router, supports 4G, dual Ethernet ports (WAN/LAN), Wi-Fi (AP, Client modes), serial port, and IO, effectively reducing deployment costs with a cost-effective design.

## Hardware

|                        |                                     |                       |                                                             |
|------------------------|-------------------------------------|-----------------------|-------------------------------------------------------------|
| CPU                    | 580MHz                              | Weight                | 240g                                                        |
| RAM                    | 128MB                               | Mounting Options      | DIN rail, Wall Mount                                        |
| FLASH                  | 32MB                                | Protection Rating     | IP30                                                        |
| Ethernet Port          | 2*10/100Mbps, WAN/LAN               | Housing               | Metal, Fanless                                              |
| Serial Port (Optional) | 1*RS232, industrial terminal        | Storage Temperature   | -40°C ~ 85°C                                                |
| IO (Optional)          | 2*IO, DI and DO Configurable        | Operating Temperature | -20°C ~ 70°C                                                |
| SIM                    | 2*NANO-SIM (4FF)                    | Operating Humidity    | 5 ~ 95% (non-condensing)                                    |
| Antenna Interface      | 4G: 2*SMA, WLAN: 1*RP-SMA           | EMC Rating            | 2                                                           |
| Wi-Fi (Optional)       | AP/Client dual mode,<br>802.11b/g/n | Certification         | CE, CB, UKCA, E-MARK,                                       |
| Power                  | 9-36 VDC, industrial terminal       |                       | FCC, IC, PTCRB, AT&T,                                       |
| Dimensions             | 98.3*92*24 mm                       |                       | Verizon, RCM, CCC, EAC&FAC,<br>UL, Anatel ,NOM,MIC,T-Mobile |

## Software

|                       |                                                                                                                                                                              |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Network Standard      | TDD LTE/FDD LTE/HSPA+/UMTS/GSM                                                                                                                                               |
| Network Access        | APN, VPDN, dual APN                                                                                                                                                          |
| Access Authentication | CHAP/PAP                                                                                                                                                                     |
| LAN Protocol          | ARP, Ethernet                                                                                                                                                                |
| WAN Protocol          | Static IP, DHCP, PPPoE                                                                                                                                                       |
| Network Protocol      | IPv4, TCP, UDP, Static routing, Ping, Traceroute, DHCP Server, DHCP Relay, DHCP Client, DNS relay, Telnet, SSH, HTTP, HTTPS                                                  |
| Firewall              | Stateful Packet Inspection (SPI), DoS attack defense, Multicast filter, Access Control List (ACL), Content URL filter, Port mapping, virtual IP mapping, NAT, IP-MAC binding |
| Data Security         | IPSec (IKEv1/IKEv2), L2TP, PPTP, GRE, OPEN VPN, CA digital certificate, WireGuard, ZeroTier                                                                                  |
| Reliability           | Link Backup, Link Detection, VRRP, Dual SIM Failover, Embedded Watchdog                                                                                                      |
| Configuration         | HTTPS, Telnet, SSH                                                                                                                                                           |
| Update                | Web, DeviceManager cloud                                                                                                                                                     |
| Log                   | Local system log, remote log, and serial export of log                                                                                                                       |
| Network Management    | SNMP, DeviceManager cloud                                                                                                                                                    |
| Remote Maintenance    | InConnect Services                                                                                                                                                           |
| Traffic Management    | Traffic threshold, traffic statistics and traffic alarm                                                                                                                      |
| Alarm                 | System restart alarm, LAN port online/offline alarm, data traffic alarm, SIM card failure alarm, etc.                                                                        |
| Maintenance Tools     | Ping, route tracking,tcpdump                                                                                                                                                 |



# IR315

## Economical Multi-port Industrial Router

4G

LTE CAT4/6,  
compatible with 3G/2G

Rich industrial interfaces

5 Ethernet ports,  
Wi-Fi, serial ports, IO, GNSS

Reliable

Link Backup, Link Detection, VRRP,  
Dual SIM Failover, Embedded Watchdog

Cloud Management

DeviceManager  
Cloud

InRouter315, industrial router, supports 4G, 5 Ethernet ports, Wi-Fi (AP, Client modes), serial port and IO, providing an economical and efficient networking solution.

## Hardware

|                        |                                          |                       |                                                                       |
|------------------------|------------------------------------------|-----------------------|-----------------------------------------------------------------------|
| CPU                    | 580MHz                                   | Dimensions            | 127*108.2*35 mm                                                       |
| RAM                    | 128MB                                    | Weight                | 454g                                                                  |
| FLASH                  | 64MB                                     | Mounting Options      | DIN rail                                                              |
| Ethernet Port          | 5*10/100Mbps,1WAN, 4LAN                  | Protection Rating     | IP30                                                                  |
| Serial Port (optional) | 1*RS232 and 1*RS485, industrial terminal | Housing               | Metal, Fanless                                                        |
| IO (optional)          | 4*IO, DI and DO Configurable             | Storage Temperature   | -40°C ~ 85°C                                                          |
| SIM                    | 2*NANO-SIM (4FF)                         | Operating Temperature | -20°C ~ 70°C                                                          |
| Antenna Interface      | 4G: 2*SMA,WLAN: 2*RP-SMA,GPS: 1* SMA     | Operating Humidity    | 5 ~ 95%(non-condensing)                                               |
| Wi-Fi (optional)       | AP/Client dual mode, 802.11b/g/n         | EMC Rating            | 3                                                                     |
| Power                  | 9-36 VDC, industrial terminal            | Certification         | CE, E-MARK, FCC, IC, PTCRB,<br>AT&T, Verizon,T-Mobile,UL,<br>C1D2,MIC |
| Mounting options       | DIN rail, Wall Mount                     |                       |                                                                       |

## Software

|                       |                                                                                                                                                                              |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Network Standard      | NR NSA/NR SA/TDD LTE/FDD LTE/HSPA+/UMTS/GSM                                                                                                                                  |
| Network Access        | APN, VPDN, dual APN                                                                                                                                                          |
| Access Authentication | CHAP/PAP                                                                                                                                                                     |
| LAN Protocol          | ARP, Ethernet, VLAN                                                                                                                                                          |
| WAN Protocol          | Static IP, DHCP, PPPoE                                                                                                                                                       |
| Network Protocol      | IPv4, TCP, UDP, Static routing, OSPF, Ping, Traceroute, DHCP Server, DHCP Relay, DHCP Client, DNS relay, Telnet, SSH, HTTP, HTTPS                                            |
| Firewall              | Stateful Packet Inspection (SPI), DoS attack defense, Multicast filter, Access Control List (ACL), Content URL filter, Port mapping, virtual IP mapping, NAT, IP-MAC binding |
| Data Security         | IPSec (IKEv1/IKEv2), L2TP, PPTP, GRE, OPEN VPN, DMVPN, CA digital certificate, WireGuard, ZeroTier                                                                           |
| Reliability           | Link Backup, Link Detection, VRRP, Dual SIM Failover, Embedded Watchdog                                                                                                      |
| Configuration         | HTTPS, Telnet, SSH                                                                                                                                                           |
| Update                | Web, DeviceManager cloud                                                                                                                                                     |
| Log                   | Local system log, remote log, and serial export of log                                                                                                                       |
| Network Management    | SNMP, DeviceManager cloud                                                                                                                                                    |
| Remote Maintenance    | InConnect Services                                                                                                                                                           |
| Traffic Management    | Traffic threshold, traffic statistics and traffic alarm                                                                                                                      |
| Alarm                 | System restart alarm, LAN port online/offline alarm, data traffic alarm, SIM card failure alarm, etc.                                                                        |
| Maintenance Tools     | Ping, route tracking,tcpdump                                                                                                                                                 |



# IR602

## 5G Redcap Industrial Router

5G Redcap

5G NR SA

Wi-Fi 5

Dual-band, 2.4GHz and 5GHz,  
with a maximum speed of 1800Mbps.

Reliable

Link Backup, Link Detection, Dual  
SIM Failover, Embedded Watchdog

Cloud Management

DeviceLive  
Cloud

InRouter602, industrial router, supports 5G Redcap, 2 Gigabit Ethernet ports, Wi-Fi(AP, Client modes), providing an efficient networking solution.

### Hardware

|                   |                                                                         |                       |                                                |
|-------------------|-------------------------------------------------------------------------|-----------------------|------------------------------------------------|
| CPU               | 1.3GHz                                                                  | Dimensions            | 98.3*92*24 mm                                  |
| RAM               | 512MB                                                                   | Weight                | 420g                                           |
| FLASH             | 128MB                                                                   | Mounting options      | Din rail, Wall Mount                           |
| Ethernet Port     | 1*2.5GbE+1*1GbE, WAN/LAN                                                | Protection Rating     | IP30                                           |
| I/O               | 2*I/O(DI and DO Configurable)                                           | Housing               | Metal, Fanless                                 |
| SIM               | 2*NANO-SIM(4FF)                                                         | Storage Temperature   | -40°C ~ 85°C                                   |
| Antenna Interface | Cellular：2*SMA, WLAN：2*RP-SMA                                           | Operating temperature | -20°C ~ 70°C                                   |
| Wi-Fi (Optional)  | AP/Client dual modes, 802.11ax/ac/a/b/g/n,<br>2.4GHz and 5GHz dual-band | Operating humidity    | 5 ~ 95% (non-condensing)                       |
| Power             | 9-48 VDC, industrial terminal                                           | EMC Rating            | 3                                              |
|                   |                                                                         | Certification         | CE, FCC, IC, PTCRB, AT&T,<br>Verizon, T-Mobile |

### Software

|                       |                                                                                                                                                                                             |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Network Standard      | NR NSA/NR SA/TDD LTE/FDD LTE/HSPA+/UMTS/GSM                                                                                                                                                 |
| Network Access        | APN, VPDN, dual APN                                                                                                                                                                         |
| Access Authentication | CHAP/PAP                                                                                                                                                                                    |
| LAN Protocol          | ARP, Ethernet, VLAN                                                                                                                                                                         |
| WAN Protocol          | Static IP, DHCP, PPPoE                                                                                                                                                                      |
| WLAN                  | Wi-Fi Portal                                                                                                                                                                                |
| Network Protocol      | IPv4, IPv6, TCP, UDP, Static routing, Ping, Traceroute, DHCP Server, DHCP Relay, DHCP Client, DNS relay, Telnet,<br>SSH, HTTP, HTTPS                                                        |
| Firewall              | MAC address filtering, domain filtering, NAT, port mapping, access control                                                                                                                  |
| Network Security      | Policy-Based Routing                                                                                                                                                                        |
| Data Security         | IPSec VPN、 L2TP                                                                                                                                                                             |
| Reliability           | Link Backup, Link Detection, Dual SIM Failover, Embedded Watchdog                                                                                                                           |
| Configuration         | HTTPS, Telnet, SSH                                                                                                                                                                          |
| Update                | Web, DeviceLive Cloud                                                                                                                                                                       |
| Log                   | Local system log, remote log                                                                                                                                                                |
| Network Management    | DeviceLive Cloud                                                                                                                                                                            |
| Remote Maintenance    | DeviceLive Cloud                                                                                                                                                                            |
| Traffic Management    | Traffic threshold, traffic statistics and traffic alarm                                                                                                                                     |
| Alarm                 | User login, configuration changes, high CPU utilization, detection state changes, VPN state changes,<br>client state changes, upstream link switching, device restart, device upgrade, etc. |
| Maintenance Tools     | Ping, route tracking, lperf, tcpdump                                                                                                                                                        |



# IR624

## Multi-port 5G Industrial Router

|              |                                                              |                                                                   |                  |
|--------------|--------------------------------------------------------------|-------------------------------------------------------------------|------------------|
| 5G           | Wi-Fi 5                                                      | Reliable                                                          | Cloud Management |
| 5G NR SA/NSA | Dual-band, 2.4GHz and 5GHz, with a maximum speed of 1200Mbps | Link Backup, Link Detection, Dual SIM Failover, Embedded Watchdog | DeviceLive Cloud |

InRouter624, industrial router, supports 5G/4G, 4 Ethernet ports(LAN/WAN), Wi-Fi (AP, Client modes), and serial ports, providing an efficient networking solution.

## Hardware

|                   |                                                                      |                       |                                                         |
|-------------------|----------------------------------------------------------------------|-----------------------|---------------------------------------------------------|
| CPU               | 880MHz                                                               | Dimensions            | 127*108.2*35 mm                                         |
| RAM               | 256MB                                                                | Weight                | 544g                                                    |
| FLASH             | 128MB                                                                | Mounting options      | DIN rail                                                |
| Ethernet Port     | 4*10/100/1000Mbps, WAN/LAN                                           | Protection Rating     | IP30                                                    |
| Serial port       | 1*RS232 and 1*RS485, industrial terminal                             | Housing               | Metal, Fanless                                          |
| SIM               | 2*NANO-SIM (4FF), eSIM (Optional)                                    | Storage Temperature   | -40°C ~ 85°C                                            |
| Antenna Interface | 5G: 4*SMA, 4G: 2*SMA, WLAN: 2*RP-SMA                                 | Operating temperature | -20°C ~ 70°C                                            |
| Wi-Fi (Optional)  | AP/Client dual modes, 802.11ax/ac/a/b/g/n, 2.4GHz and 5GHz dual-band | Operating humidity    | 5 ~ 95% (non-condensing)                                |
| Power             | 9-36 VDC, industrial terminal                                        | EMC Rating            | 3                                                       |
| Mounting options  | DIN rail, Wall Mount                                                 | Certification         | CE, E-MARK, FCC, PTCRB, Verizon, AT&T, T-Mobile, Anatel |

## Software

|                       |                                                                                                                                                                                          |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Network Standard      | NR NSA/NR SA/TDD LTE/FDD LTE/HSPA+/UMTS/GSM                                                                                                                                              |
| Network Access        | APN, VPDN, dual APN                                                                                                                                                                      |
| Access Authentication | CHAP/PAP                                                                                                                                                                                 |
| LAN Protocol          | ARP, Ethernet, VLAN                                                                                                                                                                      |
| WAN Protocol          | Static IP, DHCP, PPPoE                                                                                                                                                                   |
| WLAN                  | Wi-Fi Portal                                                                                                                                                                             |
| Network Protocol      | IPv4, IPv6, TCP, UDP, Static routing, Ping, Traceroute, DHCP Server, DHCP Relay, DHCP Client, DNS relay, Telnet, SSH, HTTP, HTTPS                                                        |
| Firewall              | MAC address filtering, domain filtering, NAT, port mapping, access control                                                                                                               |
| Network Security      | Policy-Based Routing                                                                                                                                                                     |
| Data Security         | IPSec VPN、 L2TP                                                                                                                                                                          |
| Reliability           | Link Backup, Link Detection, Dual SIM Failover, Embedded Watchdog                                                                                                                        |
| Configuration         | HTTPS, Telnet, SSH                                                                                                                                                                       |
| Update                | Web, DeviceLive Cloud                                                                                                                                                                    |
| Log                   | Local system log, remote log                                                                                                                                                             |
| Network Management    | DeviceLive Cloud                                                                                                                                                                         |
| Remote Maintenance    | DeviceLive Cloud                                                                                                                                                                         |
| Traffic Management    | Traffic threshold, traffic statistics and traffic alarm                                                                                                                                  |
| Alarm                 | User login, configuration changes, high CPU utilization, detection state changes, VPN state changes, client state changes, upstream link switching, device restart, device upgrade, etc. |
| Maintenance Tools     | Ping, route tracking, lperf, tcpdump                                                                                                                                                     |



# IR925

## Multi-port 5G Industrial Secure Router

5G

5G NR SA/NSA

Rich industrial interfaces

5 Gigabit Ethernet ports, RS232, RS485, I/O, GNSS

Security

VPN, Firewall, TPM 2.0

Cloud Management

Dual-band, 2.4GHz and 5GHz, with a maximum speed of 3000Mbps.

InRouter925, industrial router, supports 5G, Wi-Fi6(AP, Client modes), 5 Gigabit Ethernet ports, RS232, RS485, I/O, GNSS, and combines robust software security protection with hardware encryption chips to deliver a secure network solution for industrial scenarios.des), and serial ports, providing an efficient networking solution.

### Hardware

|                   |                                                                      |                       |                                         |
|-------------------|----------------------------------------------------------------------|-----------------------|-----------------------------------------|
| CPU               | 1GHz                                                                 | Power                 | 9-48 VDC, industrial terminal           |
| RAM               | 512MB                                                                | Dimensions            | 141.2 * 118.5 * 53mm                    |
| FLASH             | 8GB eMMC                                                             | Weight                | 1002g                                   |
| Ethernet Port     | 1*2.5GbE+4*1GbE, WAN/LAN/VLAN                                        | Mounting options      | DIN rail, Wall Mount                    |
| Serial port       | 1*RS232 and 1*RS485, industrial terminal                             | Protection Rating     | IP30                                    |
| I/O               | 4*I/O(DI and DO Configurable), 1*relay output                        | Housing               | Metal, Fanless                          |
| GNSS              | Support GPS                                                          | Storage Temperature   | -40°C ~ 85°C                            |
| SIM               | 2*NANO-SIM(4FF)                                                      | Operating temperature | -40°C ~ 70°C                            |
| Antenna Interface | 5G:4*SMA, 4G:2*SMA, WLAN: 2*RP-SMA                                   | Operating humidity    | 5 ~ 95%(non-condensing)                 |
|                   | GNSS: 1*SMA                                                          | EMC Rating            | 4                                       |
| Wi-Fi (optional)  | AP/Client dual modes, 802.11ax/ac/a/b/g/n, 2.4GHz and 5GHz dual-band | Certification         | CE, FCC, PTCRB, AT&T, Verizon, T-Mobile |

### Software

|                       |                                                                                                                                                                                          |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Network Standard      | NR NSA/NR SA/TDD LTE/FDD, LTE/HSPA+/UMTS/GSM                                                                                                                                             |
| Network Access        | APN, VPDN, dual APN                                                                                                                                                                      |
| Access Authentication | CHAP/PAP                                                                                                                                                                                 |
| LAN Protocol          | ARP, Ethernet, VLAN                                                                                                                                                                      |
| WAN Protocol          | Static IP, DHCP, PPPoE                                                                                                                                                                   |
| Network Protocol      | IPv4, IPv6, TCP, UDP, Static routing, Ping, Traceroute, DHCP Server, DHCP Relay, DHCP Client, DNS relay, Telnet, SSH, HTTP, HTTPS                                                        |
| WLAN                  | Wi-Fi Portal                                                                                                                                                                             |
| Firewall              | MAC address filtering, domain filtering, NAT, port mapping, access control                                                                                                               |
| Data Security         | IPSec VPN, L2TP                                                                                                                                                                          |
| Reliability           | Link Backup, Link Detection, Dual SIM Failover, Embedded Watchdog                                                                                                                        |
| Configuration         | HTTPS, Telnet, SSH                                                                                                                                                                       |
| Update                | Web, DeviceLive Cloud                                                                                                                                                                    |
| Log                   | Local system log, remote log                                                                                                                                                             |
| Network Management    | DeviceLive Cloud                                                                                                                                                                         |
| Remote Maintenance    | DeviceLive Cloud                                                                                                                                                                         |
| Traffic Management    | Traffic threshold, traffic statistics and traffic alarm                                                                                                                                  |
| Alarm                 | User login, configuration changes, high CPU utilization, detection state changes, VPN state changes, client state changes, upstream link switching, device restart, device upgrade, etc. |
| Maintenance Tools     | Ping, route tracking, lperf, tcpdump                                                                                                                                                     |

Select Guide

|                   | Model                       | IR302                                                                                                                 | IR315                                                                                                                 | IR602                                                                                                                        | IR624                                                                                                                      | IR925                                                                                                                        |
|-------------------|-----------------------------|-----------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| Hardware platform | CPU                         | 580MHz                                                                                                                | 580MHz                                                                                                                | 1.3GHz                                                                                                                       | 880MHz                                                                                                                     | 1GHz                                                                                                                         |
|                   | RAM                         | 128MB                                                                                                                 | 128MB                                                                                                                 | 512MB                                                                                                                        | 256MB                                                                                                                      | 512MB                                                                                                                        |
|                   | FLASH                       | 32MB                                                                                                                  | 64MB                                                                                                                  | 128MB                                                                                                                        | 128MB                                                                                                                      | 8GB eMMC                                                                                                                     |
| Interfaces        | Cellular                    | LTE CAT1/LTE CAT4                                                                                                     | LTE CAT4/LTE CAT6                                                                                                     | 5G Redcap                                                                                                                    | 5G                                                                                                                         | 5G                                                                                                                           |
|                   | Wi-Fi                       | IEEE 802.11b/g/n, 2.4GHz, AP/Client<br>Maximum transmission speed of 150Mbps                                          | IEEE 802.11b/g/n, 2.4GHz, AP/Client<br>Maximum transmission speed of 300Mbps                                          | IEEE 802.11ax/ac/a/b/g/n, 2.4GHz and 5GHz dual-band, AP/Client<br>Maximum transmission speed of 1800Mbps                     | IEEE 802.11ac/a/b/g/n, 2.4GHz and 5GHz dual-band, AP/Client<br>Maximum transmission speed of 1200Mbps                      | IEEE 802.11ax/ac/a/b/g/n, 2.4GHz and 5GHz dual-band, AP/Client<br>Maximum transmission speed of 3000Mbps                     |
|                   | Ethernet Port               | 2*10/100Mbps(WAN/LAN)<br>RJ45 interface, network status indicator light1.5KV network isolation transformer protection | 5*10/100Mbps(WAN/LAN)<br>RJ45 interface, network status indicator light1.5KV network isolation transformer protection | 1*2.5GbE and 1*1GbE(WAN/LAN)<br>RJ45 interface, network status indicator light1.5KV network isolation transformer protection | 4*10/100/1000Mbps(WAN/LAN)<br>RJ45 interface, network status indicator light1.5KV network isolation transformer protection | 1*2.5GbE and 4*1GbE(WAN/LAN)<br>RJ45 interface, network status indicator light1.5KV network isolation transformer protection |
|                   | Serial port                 | Supported only in the -S model, 1*RS232<br>3PIN industrial terminal                                                   | Supported only in the -S model, 1*RS232+1*RS485<br>5PIN industrial terminal                                           | NO                                                                                                                           | 1*RS232+1*RS485<br>5PIN industrial terminal                                                                                | 1*RS232+1*RS485<br>5PIN industrial terminal                                                                                  |
|                   | I/O                         | 2*I/O, DI and DO Configurable<br>3PIN industrial terminal                                                             | 4*I/O, DI and DO Configurable<br>5PIN industrial terminal                                                             | 2*I/O, DI and DO Configurable                                                                                                | NO                                                                                                                         | 4*I/O and 1*relay output<br>7PIN industrial terminal                                                                         |
|                   | GPS                         | NO                                                                                                                    | YES                                                                                                                   | NO                                                                                                                           | NO                                                                                                                         | YES                                                                                                                          |
|                   | SIM Card                    | 2*NANO-SIM(4FF)                                                                                                       | 2*NANO-SIM(4FF)                                                                                                       | 2*NANO-SIM(4FF)                                                                                                              | 2*NANO-SIM(4FF)                                                                                                            | 2*NANO-SIM(4FF)                                                                                                              |
|                   | Reset                       | YES                                                                                                                   | YES                                                                                                                   | YES                                                                                                                          | YES                                                                                                                        | YES                                                                                                                          |
|                   | Grounding                   | YES                                                                                                                   | YES                                                                                                                   | YES                                                                                                                          | YES                                                                                                                        | YES                                                                                                                          |
|                   | Operating temperature       | -20°C ~ 70°C                                                                                                          | -20°C ~ 70°C                                                                                                          | -20°C ~ 70°C                                                                                                                 | -20°C ~ 70°C                                                                                                               | -20°C ~ 70°C                                                                                                                 |
|                   | Storage Temperature         | -40°C ~ 85°C                                                                                                          | -40°C ~ 85°C                                                                                                          | -40°C ~ 85°C                                                                                                                 | -40°C ~ 85°C                                                                                                               | -40°C ~ 85°C                                                                                                                 |
|                   | Operating humidity          | 5 ~ 95%(non-condensing)                                                                                               | 5 ~ 95%(non-condensing)                                                                                               | 5 ~ 95%(non-condensing)                                                                                                      | 5 ~ 95%(non-condensing)                                                                                                    | 5 ~ 95%(non-condensing)                                                                                                      |
| Power             | Power Input                 | DC9-36V                                                                                                               | DC9-36V                                                                                                               | DC9-48V                                                                                                                      | DC9-48V                                                                                                                    | DC9-48V                                                                                                                      |
|                   | Reverse Polarity Protection | YES                                                                                                                   | YES                                                                                                                   | YES                                                                                                                          | YES                                                                                                                        | YES                                                                                                                          |
|                   | Overcurrent Protection      | NO                                                                                                                    | YES                                                                                                                   | YES                                                                                                                          | YES                                                                                                                        | YES                                                                                                                          |
| Mechanical Specs  | Mounting options            | DIN rail, Wall Mount                                                                                                  | DIN rail, Wall Mount                                                                                                  | DIN rail, Wall Mount                                                                                                         | DIN rail, Wall Mount                                                                                                       | DIN rail, Wall Mount                                                                                                         |
|                   | Dimensions                  | 98.3*92*24 mm                                                                                                         | 127*108.2*35 mm                                                                                                       | 98.3*92*24 mm                                                                                                                | 127*108.2*35 mm                                                                                                            | 141.2 * 118.5 * 53 mm                                                                                                        |
|                   | Housing                     | Metal                                                                                                                 | Metal                                                                                                                 | Metal                                                                                                                        | Metal                                                                                                                      | Metal                                                                                                                        |
|                   | Protection Rating           | IP30                                                                                                                  | IP30                                                                                                                  | IP30                                                                                                                         | IP30                                                                                                                       | IP30                                                                                                                         |
| EMC               | EMC Rating                  | 2                                                                                                                     | 3                                                                                                                     | 3                                                                                                                            | 3                                                                                                                          | 4                                                                                                                            |
| Physical Specs    | Shockproof                  | IEC60068-2-27                                                                                                         | IEC60068-2-27                                                                                                         | IEC60068-2-27                                                                                                                | IEC60068-2-27                                                                                                              | IEC60068-2-27                                                                                                                |
|                   | Free Fall                   | IEC60068-2-32                                                                                                         | IEC60068-2-32                                                                                                         | IEC60068-2-32                                                                                                                | IEC60068-2-32                                                                                                              | IEC60068-2-32                                                                                                                |
|                   | Vibration Resistance        | IEC60068-2-6                                                                                                          | IEC60068-2-6                                                                                                          | IEC60068-2-6                                                                                                                 | IEC60068-2-6                                                                                                               | IEC60068-2-6                                                                                                                 |
| Certification     |                             | CE, CB, UKCA, E-MARK, FCC, IC, PTCRB, AT&T, Verizon, T-Mobile, RCM, CCC, EAC&FAC, UL, Anatel, NOM, MIC                | CE, E-MARK, FCC, IC, PTCRB, AT&T, Verizon, T-Mobile, UL, C1D2, MIC                                                    | CE, FCC, IC, PTCRB, AT&T, Verizon, T-Mobile                                                                                  | CE, E-MARK, FCC, IC, PTCRB, AT&T, Verizon, T-Mobile                                                                        | CE, FCC, IC, PTCRB, AT&T, Verizon, T-Mobile                                                                                  |



# Industrial Ethernet Switches

## **ISE / ISM**

InHand Networks' industrial Ethernet switch series boasts outstanding features, including high protection ratings, electromagnetic compatibility, and industrial-grade design, ensuring the construction of highly reliable communication systems in demanding industrial environments.



# ISE

## Unmanaged Industrial Ethernet Switches

### High Protection Rating

EMC level 3, IP40  
Redundant dual power inputs  
Wide temperature and voltage ranges

### A Diverse and Flexible Port Combination

5-18 Ports.10/ 100/ 1000BaseT(X) (RJ45 connector)  
100/ 1000BaseSFP Ports  
100BaseFX/1000BaseFX ports

### Easy to Use Quick Deployment

Plug and play,  
quick deployment  
Supports relay alarms

InHand Networks’ industrial Ethernet switch series boasts outstanding features, including high protection ratings, electromagnetic compatibility, and industrial-grade design, ensuring the construction of highly reliable communication systems in demanding industrial environments.

## Model Selection

|                                                            | ISE2003D               | ISE2005D  | ISE5005D  | ISE2008D      | ISE5008D  | ISE3018D     | ISE2016D | ISE5010D     | ISE5306D                  | ISE5310D  |
|------------------------------------------------------------|------------------------|-----------|-----------|---------------|-----------|--------------|----------|--------------|---------------------------|-----------|
| Ethernet Interface                                         |                        |           |           |               |           |              |          |              |                           |           |
| Max. Number of Ports                                       | 3                      | 5         | 5         | 8             | 8         | 18           | 16       | 10           | 6                         | 10        |
| 100BaseFX Ports                                            | 1                      |           |           |               |           |              |          |              |                           |           |
| 100/1000BaseSFP Slots                                      |                        |           |           |               |           |              |          | 2            | 2                         | 2         |
| 10/100BaseT(X) Ports                                       | 2                      | 5         |           | 8             |           | 16           | 16       |              |                           |           |
| 10/100/1000BaseT(X) Ports                                  |                        |           | 5         |               | 8         |              |          | 8            |                           |           |
| Combo Ports<br>(10/100/1000BaseT(X) or<br>100/1000BaseSFP) |                        |           |           |               |           | 2            |          |              |                           |           |
| PoE Ports<br>10/100/1000BaseT(X)                           |                        |           |           |               |           |              |          |              | 4                         | 8         |
| PoE Standards                                              |                        |           |           |               |           |              |          |              | IEEE802.3af , IEEE802.3at |           |
| Switch Properties                                          |                        |           |           |               |           |              |          |              |                           |           |
| Backplane Bandwidth                                        | 16 Gbps                | 16 Gbps   | 16 Gbps   | 16 Gbps       | 16 Gbps   | 8.8 Gbps     | 8.8 Gbps | 20 Gbps      | 20 Gbps                   | 20 Gbps   |
| MAC Table Size                                             | 4 K                    | 4 K       | 4 K       | 4 K           | 4 K       | 8 K          | 8 K      | 4 K          | 4 K                       | 4 K       |
| Packet Buffer Size                                         | 1.5 Mbits              | 1.5 Mbits | 1.5 Mbits | 1.5 Mbits     | 1.5 Mbits | 4 Mbits      | 4 Mbits  | 1.5 Mbits    | 1.5 Mbits                 | 1.5 Mbits |
| Others                                                     |                        |           |           |               |           |              |          |              |                           |           |
| Dimensions                                                 | 24*100*61.8mm          |           |           | 40*100*61.8mm |           | 72*140*110mm |          | 52*140*110mm |                           |           |
| Operating Voltage                                          | 9.6~60 VDC & 18~30 VAC |           |           |               |           |              |          | 18-60VDC     |                           | 48-57VDC  |
| Storage Temperature                                        | -40 ~ +75℃             |           |           |               |           |              |          |              |                           |           |
| Installation                                               | DIN-rail mounting      |           |           |               |           |              |          |              |                           |           |
| Certifications                                             | CE, FCC, UL            |           |           |               |           |              |          |              | CE, FCC                   |           |



# ISM

## Managed Industrial Ethernet Switches

### Stable and Reliable

EMC level 4, IP40  
Redundant dual power inputs  
Wide temperature and voltage ranges

### Advanced Ring Network Technology

Supports STP, RSTP, and MSTP protocols  
some models also support  
ERPS networking protocol

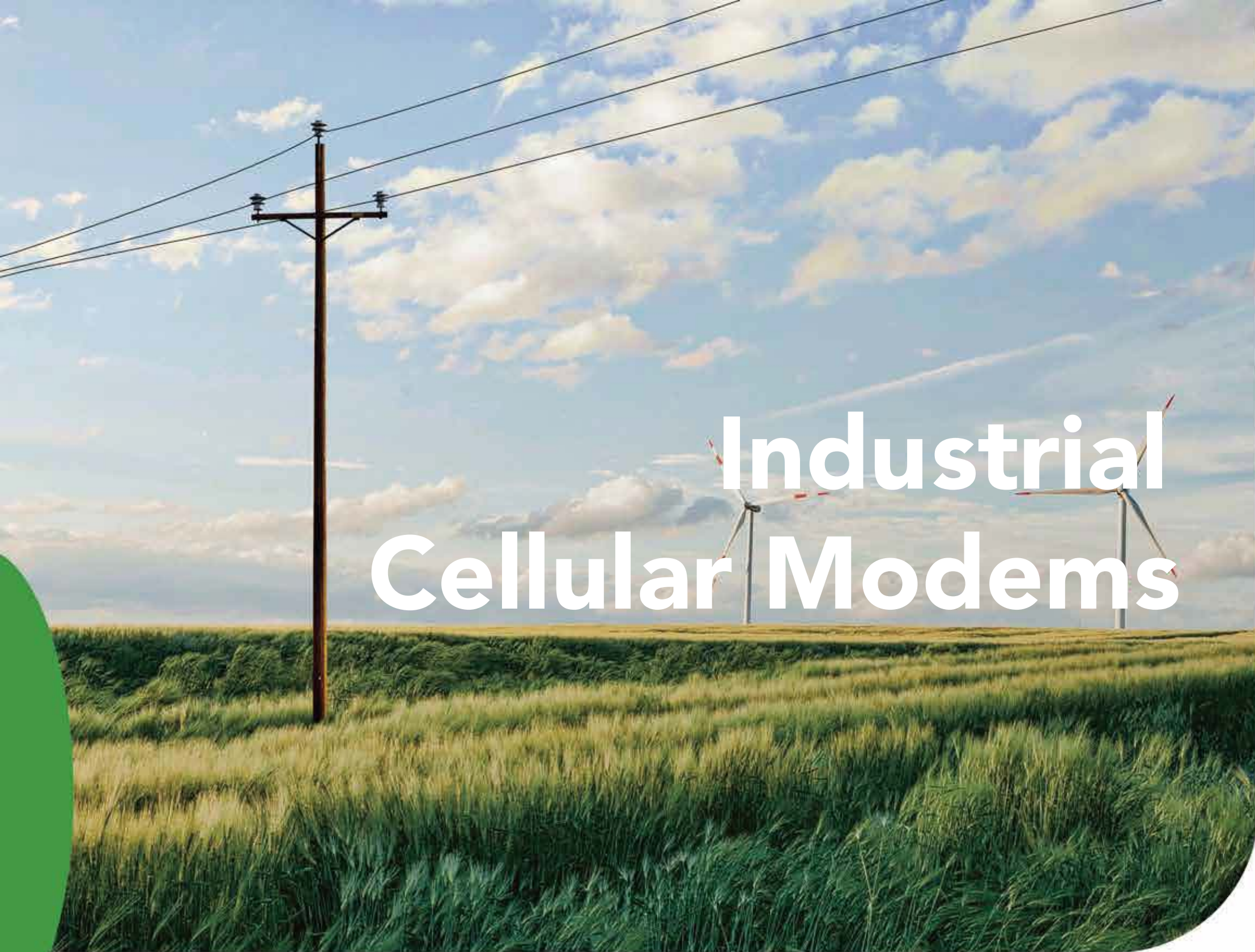
### Comprehensive Network Security Performance

ACL policies, MAC address binding VLAN  
Supports QoS  
IGMP Snooping, GMRP

The ISM series supports various network redundancy protocols, offering users a flexible choice for building complex industrial Ethernet communication systems. Whether in harsh production environments or industrial applications with strict requirements for reliability and availability, InHand Networks' industrial Ethernet switches can meet your needs.

## Model Selection

|                                                            | ISM5006D          | ISM5010D | ISM5012D                   | ISM5020D               | ISM5026U       | ISM7028U          | ISM5310D                  |
|------------------------------------------------------------|-------------------|----------|----------------------------|------------------------|----------------|-------------------|---------------------------|
| Ethernet Interface                                         |                   |          |                            |                        |                |                   |                           |
| Max. Number of Ports                                       | 6                 | 10       | 12                         | 20                     | 26             | 28                | 10                        |
| 100BaseFX Ports                                            |                   |          |                            |                        |                |                   |                           |
| 100/1000BaseSFP Slots                                      | 2                 | 2        | 4                          | 4                      | 2              | 4                 | 2                         |
| 10/100BaseT(X) Ports                                       |                   |          |                            |                        |                |                   |                           |
| 10/100/1000BaseT(X) Ports                                  | 4                 | 8        | 8                          | 16                     | 20             | 16                |                           |
| Combo Ports<br>(10/100/1000BaseT(X)<br>or 100/1000BaseSFP) |                   |          |                            |                        | 4              | 8                 |                           |
| PoE Ports<br>10/100/1000BaseT(X)                           |                   |          |                            |                        |                |                   | 8                         |
| PoE Standards                                              |                   |          |                            |                        |                |                   | IEEE802.3af , IEEE802.3at |
| Switch Properties                                          |                   |          |                            |                        |                |                   |                           |
| Backplane Bandwidth                                        | 44 Gbps           | 44 Gbps  | 56 Gbps                    | 68 Gbps                | 56 Gbps        | 144 Gbps          | 44 Gbps                   |
| MAC Table Size                                             | 8 K               | 8 K      | 8 K                        | 16 K                   | 8 K            | 16 K              | 8 K                       |
| Packet Buffer Size                                         | 4 Mbits           | 4 Mbits  | 4 Mbits                    | 4 Mbit                 | 4 Mbits        | 1.5 Mbits         | 4 Mbits                   |
| Redundancy Protocols                                       |                   |          |                            |                        |                |                   |                           |
| STP/RSTP/MSTP                                              | √                 | √        | √                          | √                      | √              | √                 | √                         |
| Management                                                 |                   |          |                            |                        |                |                   |                           |
| Web                                                        | √                 | √        | √                          | √                      | √              | √                 | √                         |
| RMON                                                       | √                 |          | √                          | √                      | √              | √                 | √                         |
| SNMPv1/v2c/v3                                              | √                 | √        | √                          | √                      | √              | √                 | √                         |
| Port Mirror                                                | √                 | √        | √                          | √                      | √              | √                 | √                         |
| Syslog                                                     | √                 | √        | √                          | √                      | √              | √                 | √                         |
| Telnet/SSH                                                 | √                 | √        | √                          | √                      | √              | √                 | √                         |
| Console Port                                               | √                 | √        | √                          | √                      | √              | √                 | √                         |
| Filter                                                     |                   |          |                            |                        |                |                   |                           |
| 802.1p Priority Queuing                                    | √                 | √        | √                          | √                      | √              | √                 | √                         |
| 802.1Q VLAN                                                | √                 | √        | √                          | √                      | √              | √                 | √                         |
| IGMP v1/v2/v3                                              | √                 | √        | √                          | √                      | √              | √                 | √                         |
| Security                                                   |                   |          |                            |                        |                |                   |                           |
| HTTPS/SSL                                                  | √                 | √        | √                          | √                      | √              | √                 | √                         |
| TACACS+                                                    | √                 | √        | √                          | √                      | √              | √                 | √                         |
| MAC Sticky                                                 | √                 | √        | √                          | √                      | √              | √                 | √                         |
| RADIUS                                                     | √                 | √        | √                          | √                      | √              | √                 | √                         |
| SSH                                                        | √                 | √        | √                          | √                      | √              | √                 | √                         |
| Access Control List                                        | √                 | √        | √                          | √                      | √              | √                 | √                         |
| Layer 3 Switching                                          | /                 | /        | /                          | √                      | √              | √                 | /                         |
| Others                                                     |                   |          |                            |                        |                |                   |                           |
| Dimensions                                                 | 52*140*10mm       |          | 72*140*110mm               | 130*140*110mm          | 442*43.8*335mm | 440*44.4*321mm    | 52*140*110mm              |
| Operating Voltage                                          | 18-60VDC          |          | 18-60VDC                   | 18-60VDC               | 100-240VAC     | 100-240VAC        | 48~57VDC                  |
| Storage Temperature                                        | -40 ~ +75°C       |          | -40 ~ +85°C                | -40 ~ +85°C            | -40 ~ +85°C    | -40 ~ +85°C       | -40 ~ +75°C               |
| Installation                                               | DIN-rail mounting |          | DIN-rail mounting          | DIN-rail mounting      | Rack mounting  | Rack mounting     | DIN-rail mounting         |
| Certification                                              | CE, FCC           |          | CE, FCC, UL,<br>IEC61850-3 | CE, FCC,<br>IEC61850-3 | UL, CE,<br>FCC | UL,<br>IEC61850-3 | CE, FCC,<br>IEC61850-3    |

A landscape photograph showing a green grassy field in the foreground. A wooden utility pole with power lines stands on the left. In the background, two wind turbines are visible against a blue sky with scattered white clouds. The title 'Industrial Cellular Modems' is overlaid in large white text.

# Industrial Cellular Modems

## **InDTU324**

The InDTU series industrial cellular modem features fast networking, flexible scalability, quick construction and low costs. It provides industrial users with wireless data transmission channels over TCP/IP on 4G/3G/2G/NB-IoT/Cat1 networks, enabling communications between on-site serial devices and central control systems, facilitating remote data acquisition and equipment control. It is widely applied in power, industrial automation, transportation, water management, agriculture, environmental protection, and meteorology.



# InDTU324

## Industrial Cellular Modem

Multiple  
Network Access

4G/3G/2G/CAT M1  
/NB cellular networks

High  
Reliability

Self-recovery  
Link redundancy, Link detection

Ultra-low Power  
Consumption

Adaptable to various  
field power supply modes

Fully Industrial  
Grade

-40°C ~ 70°C  
+5 ~ 35VDC, IP30

The InDTU324 series industrial grade wireless data terminal uses cellular network as the bearer network to provide wireless data transmission channel over TCP/ IP. It functionally completes wireless data communications between remote control station serial devices and the central control system, to enable remote control of industrial field sites.

## Hardware

|                   |                                                   |                       |                           |
|-------------------|---------------------------------------------------|-----------------------|---------------------------|
| CPU               | ARM Cortex-M3 108MHz                              | Consumption           | 47mA@12V                  |
| RAM               | 96KB                                              | Installation          | Wall mounting             |
| ROM               | 1024KB                                            | Protection Rating     | IP30                      |
| Serial            | 2*Logic serial ports:                             |                       |                           |
|                   | Serial port 1: RS-232/RS-485 (Optional)           | Housing               | Metal                     |
|                   | Serial port 2: RS-232                             | Storage Temperature   | -40°C ~ 85°C              |
| SIM Card          | 1*SIM, Mini-SIM(2FF)                              | Operation Temperature | -40°C ~ 70°C              |
| Antenna Interface | 1*LTE                                             | Ambient Humidity      | 5 ~ 95% (non- condensing) |
| Power Input       | DC5-35V, pluggable industrial terminal connection | EMC                   | Level 2                   |
|                   |                                                   | Certification         | CE                        |

## Software

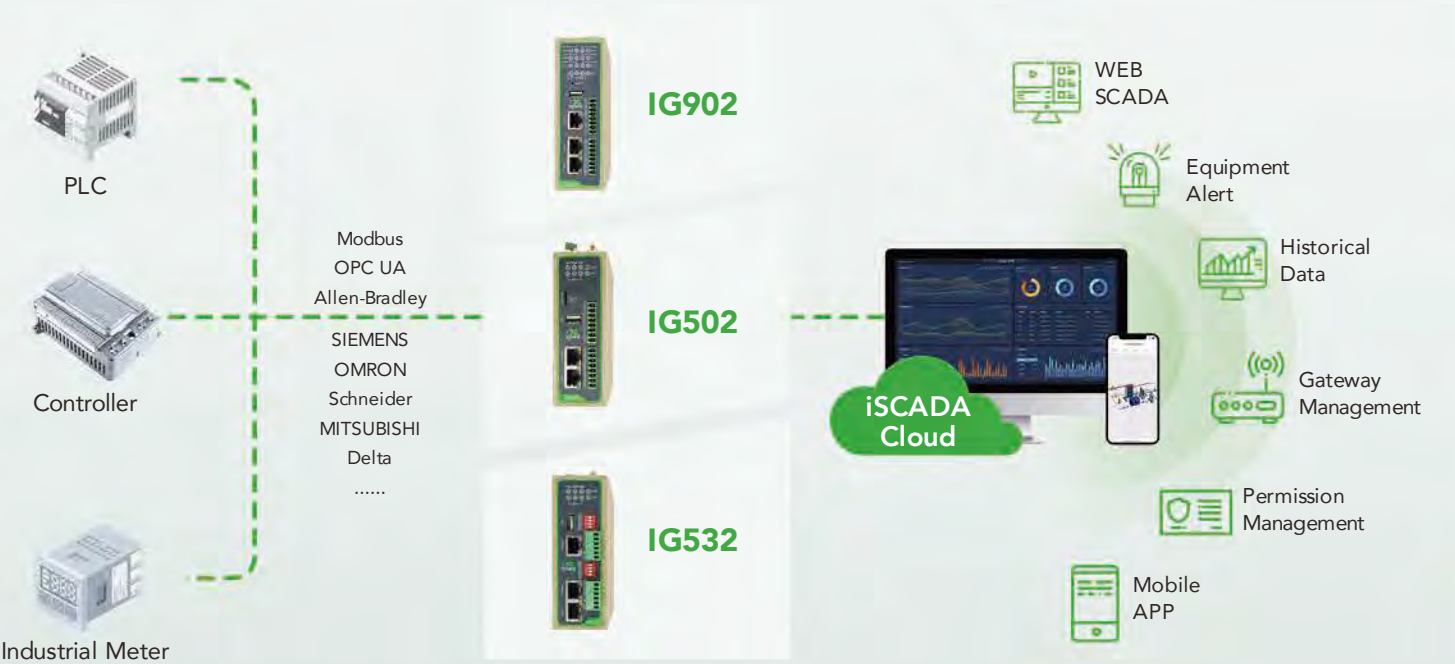
|                       |                                                                                                |
|-----------------------|------------------------------------------------------------------------------------------------|
| Network Type          | LTE-TDD/LTE-FDD/WCDMA/CDMA/GSM/EGPRS                                                           |
| Access Authentication | CHAP/PAP                                                                                       |
| Industrial Protocol   | Modbus RTU/TCP protocol conversion                                                             |
| Network Protocol      | Ping, DNS, transparent TCP/UDP, InHand DC TCP/DC UDP, user-defined login/heartbeat data packet |
| Reliability           | Backup, Link Detection, Embedded Watchdog                                                      |
| Configuration Method  | Local serial port, RTool, InHand Device Manager, SMS                                           |
| Upgrade Method        | Upgrade firmware through local serial port or remotely                                         |
| Log                   | Supports local and online viewing of logs, facilitates checking device operating status        |
| Device Management     | Supports InHand Device Manager remote central management                                       |



# iSCADA

## **iSCADA**

The iSCADA Cloud provides web-based SCADA, equipment alert, and remote control for customers. Data acquisition and cloud integration are made effortless, allowing real-time monitoring of equipment status and swift response to operational alarms, enhancing operational efficiency, and minimizing equipment downtime.



# iSCADA

## Simple and Efficient Equipment Visualization Platform

### Rapid Deployment

One configuration, batch deployment

### Remote Monitoring

Multiple real-time monitoring methods for remote equipments

### Alert Notification

Supports various alert notification methods

### Data Security

Security mechanism based on AWS IoT

The iSCADA Cloud provides web-based SCADA, equipment alarms, and remote control for customers. Data acquisition and cloud integration are made effortless, allowing real-time monitoring of equipment status and swift response to operational alarms, enhancing operational efficiency, and minimizing equipment downtime.

## Remote Monitoring

|                  |                                                                                                                                                                                                       |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| WEB SCADA        | Supports custom WEB SCADA, providing common SCADA components and functions. Through WEB SCADA, intuitively and efficiently view equipment operating status and modify equipment operation parameters. |
| Equipment Alert  | Customize alert notification strategies, with the ability to push alerts through various channels such as WEB, SMS, email, etc., enabling proactive fault warnings.                                   |
| Historical Data  | Supports storing critical data, analyzing historical device performance through charts, and exporting data.                                                                                           |
| Dashboard        | Analyze enterprise operations from multiple dimensions, including online/offline status, alerts, and traffic.                                                                                         |
| Mobile APP       | Stay informed about equipment operations and receive alerts on anomalies anytime, anywhere with mobile app.                                                                                           |
| Rapid Deployment | Configure data collection strategies and other settings through device model features. Once configured, deploy the settings in bulk to multiple gateways.                                             |

## Permission Management

|              |                                                                                                                                        |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Organization | Customize the organization tree structure to flexibly assign permissions for equipments, gateways, and models under each organization. |
| Role         | Customize role-based functional permissions.                                                                                           |
| User         | Customize user data and functional permissions.                                                                                        |
| API Token    | Customize API token permissions and expiration time.                                                                                   |

## Gateway Management

|                   |                                                                                                |
|-------------------|------------------------------------------------------------------------------------------------|
| Gateway Status    | Monitor gateway cellular signal, IMSI, online/offline status, and other information.           |
| Monitoring        |                                                                                                |
| Software Upgrade  | Remotely batch upgrade firmware, Python SDK, and DeviceSupervisor Agent versions for gateways. |
| Remote WEB Access | Remote access to the gateway's WEB page for modifying runtime configurations.                  |

## Complementary Hardware Products

|                                                                                    |                                          |
|------------------------------------------------------------------------------------|------------------------------------------|
| Product                                                                            | InGateway902, InGateway532, InGateway502 |
| Cloud address: <a href="https://iscada.inhandcloud.com">iscada.inhandcloud.com</a> |                                          |

## 5 Major R&D Centers

Rapid Response to Market Demands



## 2 Major Manufacturing Centers

Supply Chain: Ensured Production Capacity and Quality



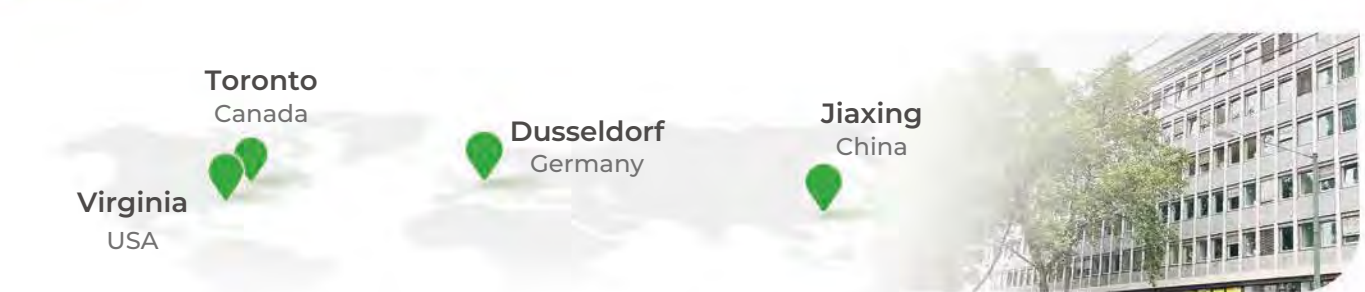
**2** Manufacturing Centers  
Jiaxing (China)  
Toronto (Canada)

**15** high-efficiency  
production lines

**11w+** monthly capacity

## 4 Major Warehousing and Technical Support Centers

Multi-location Warehousing and Technical Support



Used worldwide. Proven worldwide.

