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V3/25

InHand Networks

InHand Edge Intelligence Solution

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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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 efficiencv and cost-eftectiveness

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.
Certified for cybersecurity (IEC 62443)

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

Alert & Remote Diagnosis

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

DeviceLive Cloud Service

Easy Configuration

WEB GUI configuration
Intuitive and simple

Multiple Security Strategy

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

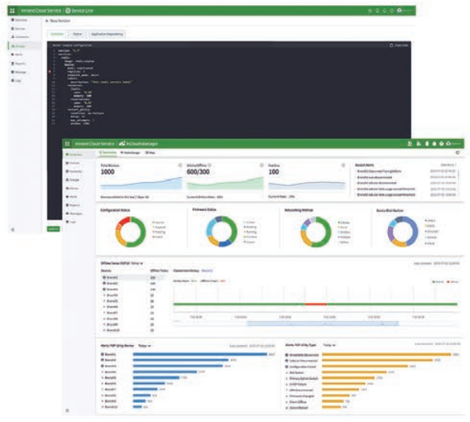
Unified Management

Batch device configuration
Scheduled firmware upgrade

Visual Monitoring

Comprehensive insight into device running status, network quality

Edge Computing APP Management

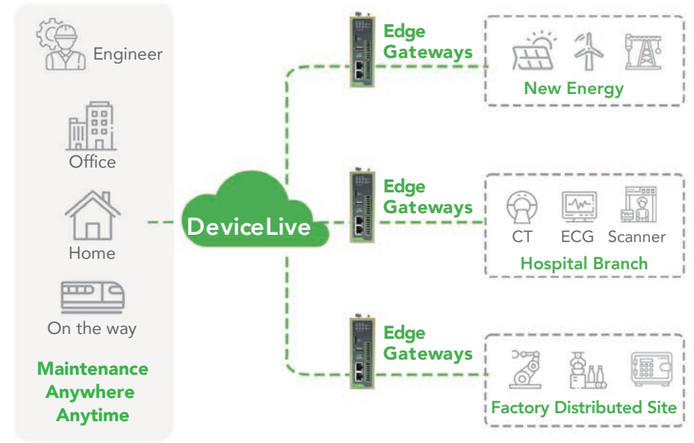


For edge intelligent hardware products,DeviceLive provides management and deployment of edge computing container applications, native applications,etc., without the need for users to build OTA services, providing a one-stop solution.

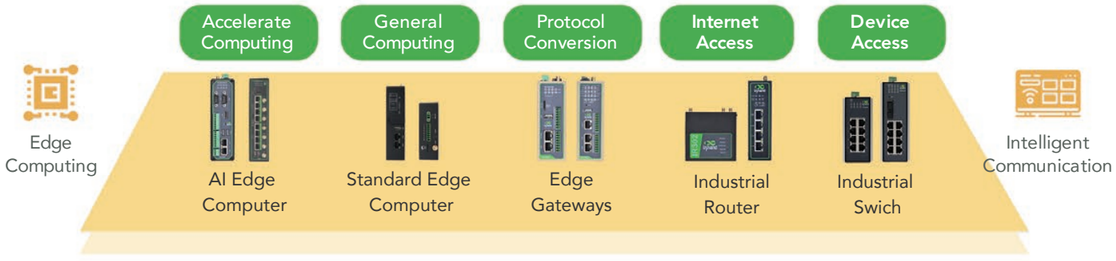
DeviceLive can centrally configure parameters of edge intelligent hardware, manage containers, upgrade edge computing apps, and support unified deployment package policy setting, define deployment rules, and realize centralized upgrade and control of distributed intelligent onsite.

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 AI Performance

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

Multiple Protocols

from simple transparent transmission to industrial protocols to various industry protocols

Multiple Interface Options

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

3. DevicesSupervisor™ 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

Modbus · OPC UA · BACnet · EUROMAP

Industrial equipment

SIEMENS · Rockwell Automation · MITSUBISHI ELECTRIC · Schneider Electric · DELTA · INOVANCE · FATEK · ABB · OMRON · KEYENCE · BECKHOFF · GE · YASKAWA · Panasonic · Honeywell

Energy equipment

IEC 60870-5-101 · IEC 60870-5-104 · IEC 61850 · DNP3 · DLT

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.

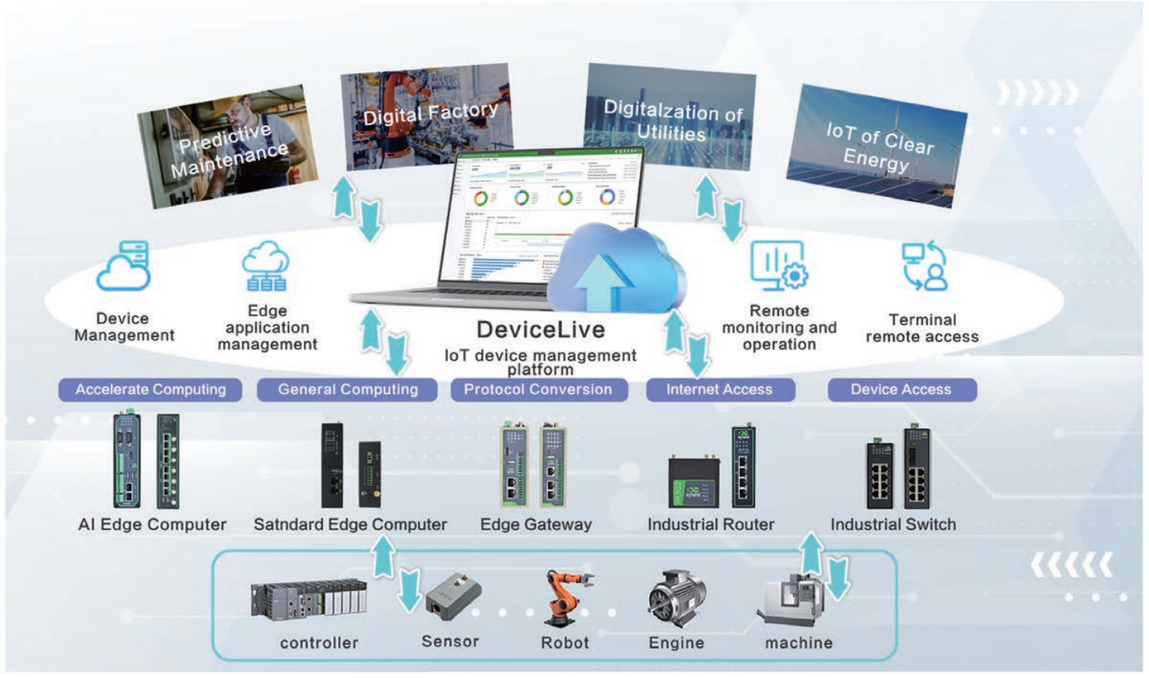
Smart Retail: Edge intelligence can be used in the retail industry, such as using cameras and sensors in stores for real-time monitoring, customer analytics, and inventory management to provide a smarter shopping experience.

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**

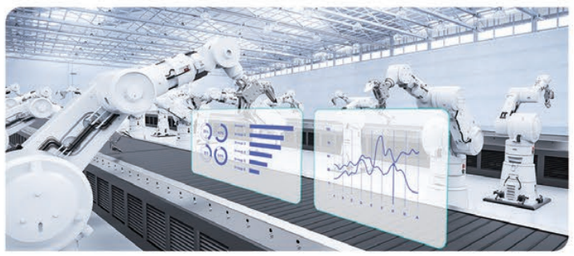
  Zero-touch deployment, remote configuration, predictive alert. Visual monitoring enhances management efficiency

- **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

AI-accelerated Edge Computer

Enable Edge Vision AI

InHand provides comprehensive edge AI solutions that support deep learning for AGV robotics, defect detection, retail, medical imaging, traffic monitoring, and a variety of other applications.

TensorFlow Caffe ONNX Keras mxnet PYTORCH

Basic edge AI computer
EC942 series

High performance edge
AI computer EC3320 series

Ultra-high performance edge
AI computer EC5000 series

Hot selling product

EC942
AI accelerated edge computer

- RK3588, 8 cores, 4 cores Cortex-A55@2.0GHz
- GPU: Mali G52 2EE
- 1.0 TOPS

EC954
AI accelerated edge computer

- RK3588, 8 cores, 4 cores Cortex-A55@2.0GHz
- GPU: Mali G52 2EE
- 1.0 TOPS, expansion up to 26TOPS

EC3320
Edge AI Inference Computer

- RK3588, 8 cores, 4 cores Cortex-A76 and 4 cores
- Cortex-A55, @2.6Ghz
- GPU: Support expansion of 4-core Mali-G610 MC4 high-performance
- 6.0 TOPS

EC5350/EC5550
Edge AI Inference Computer

- NVIDIA Jetson Orin Nano, 40 TOPS; NVIDIA Jetson Orin NX, 100 TOPS
- GPU: 1024-core NVIDIA Ampere GPU with 32 Tensor Cores
- 40/100 TOPS

Standard Edge Computer

Enable Edge Computing

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.

Basic edge computer
EC300 series

High performance edge computer
InBOX710 series

Hot selling product

EC312
Basic edge computer

- TI AM6231, single-core Cortex-A53@1.4GHz
- 1G SDRAM+8G eMMC
- 2 ETH ports + 2 serials , CAN/IO/4-20mA/RS232/RS485 flexible
- IEC62443-4-2

InBOX712
High performance edge computer

- RK3399, Dual-core Cortex-A72@1.8GHz+ Quad-core Cortex-A53@1.4GHz
- 2GB SDRAM+16GB eMMC
- 2 ETH port + 6 serials, CAN/GPIO

Edge Gateway

Intelligent protocol conversion

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.

Entry-level Edge Gateway
IG101 series

Cost-effective Edge Gateway
IG500 series

High Performance Edge Gateway
IG900 series

Hot selling product

IG101
Entry-level Edge Gateway

- CPU: ARM Cortex-A5
- RAM: 4MB
- Flash: 2MB

IG502
Cost-effective Edge Gateway

- CPU: ARM Cortex-A8 600MHz
- RAM: 512MB
- eMMC: 8GB
- 2*10/100M Ethernet
- IEC62443-4-2

IG902
High performance Edge Gateway

- CPU: ARM Cortex-A8 1GHz
- eMMC: 8GB
- 2*10/100/1000M Ethernet
- IEC62443-4-2

IG504
Multi-port Edge Gateway

- CPU: ARM Cortex-A8 600MHz
- RAM: 512MB
- eMMC: 8GB
- 4*10/100M Ethernet
- IEC62443-4-2

Industrial Routers

Highly reliable industrial-grade LTE routers

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.

Economical Industrial Router
IR300 series

Multi-port Industrial Router
IR600 series

High Performance Industrial Router
IR900 series

Hot selling product

IR302
Economical Industrial Router

- High speed LTE, dual SIM failover
- Single band Wi-Fi, 150Mbps
- Multi-layered security protection
- Cloud-Managed

IR315
Multi-port Industrial Router

- High speed LTE, dual SIM failover
- Single band Wi-Fi, 300Mbps
- Rich Industrial Interfaces
- Multi-layered security protection
- Cloud-Managed

IR624
Multi-port 5G Industrial Router

- 5G SA/NSA, dual SIM failover
- 2.4GHz and 5GHz Dual band Wi-Fi, 1200Mbps
- Rich Industrial Interfaces
- Multi-layered security protection
- Cloud-Managed

IR915
High-Performance Industrial Router

- High speed LTE, dual SIM failover
- Single band Wi-Fi, 300Mbps
- High EMC rating
- Rich Industrial Interfaces
- Multi-layered security protection
- Cloud-Managed

Industrial Ethernet Switches

Unmanaged and managed layer 2 or layer 3 switches for industrial use

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.



Unmanaged Industrial Ethernet Switches
ISE series

Managed Industrial Ethernet Switches
ISM series

Hot selling product

ISE5008D
Unmanaged Industrial Switches

- Ethernet Interface:
  8*10/100/1000BaseT Ports
- Operating Voltage:
  9.6~60 VDC & 18~30 VAC
  Redundant dual input
- Certifications: CE, FCC, UL

ISM5006D
Managed Industrial Switches

- Ethernet Interface:
  2*100/1000BaseX SFP Ports,
  4*10/100/1000 BaseT Ports.
- Redundancy: STP, MSTP, RSTP, Port Trunking
- Certifications: CE, FCC

ISE5310D
Unmanaged Industrial Switches

- 2*100/1000BaseX SFP Ports
  8*802.3af/at 10/ 100/ 1000BaseT Ports
- Operating Voltage:
  48-54VDC, Redundant dual inputs
- Certifications: CE、FCC、IEC61850-3

ISM5020D
Managed Industrial Switches

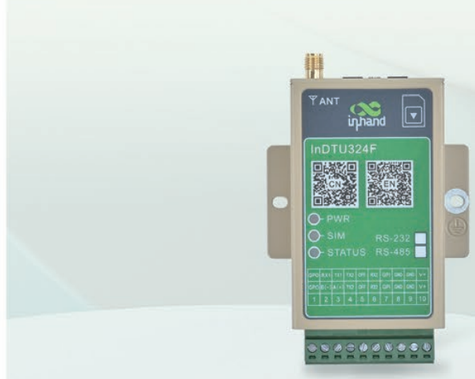
- Ethernet Interface:
  4*100/1000/2500Base X SFP Ports,
  16*10/100/1000 BaseT Ports
- Redundancy:
  ERPS, MRP, RSTP, MSTP, Port Trunking
- Certifications: CE、FCC、IEC61850-3

Industrial Cellular Modem

Serial-to-cellular communications

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.





Hot selling product

InDTU324

- Multiple Network Access: 4G/3G/2G/CAT M1/NB cellular network
- 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

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 Monitoring	Monitor gateway cellular signal, IMSI, online/offline status, and other information.
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: iscada.inhandcloud.com

Quick Response to Market Demands

5 R&D Centers

Beijing
Chengdu
Jiaxing
Toronto
Virginia

3 Manufacturing Centers

Supply Chain: Self-owned Factory with Ensured Capacity and Quality

3 Manufacturing centers: Jiaxing (China), Bangkok (Thailand), Toronto (Canada)

9 Production lines with a high level of flexibility

3,000 Units produced per day

17,898 Square meters

Multi-location Inventory & Tech Support

4 Storage and Technical Support Centers

Toronto
Canada
Virginia
US
Düsseldorf
Germany
Jiaxing
China

Used worldwide. Proven worldwide.

Canada
Management of Hydropower Station

Germany
Smart EV Charging Kiosks

China
Predictive Maintenance of Air Compressors

US
Predictive Maintenance of Generators

Switzerland
Predictive Maintenance of Textile Machines

Thailand
Flood Early Warning

Australia
Wireless Water Metering

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