



# IoT Cloud Software -IoTstar 2025-



Easy to use

No programming

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## Introduction

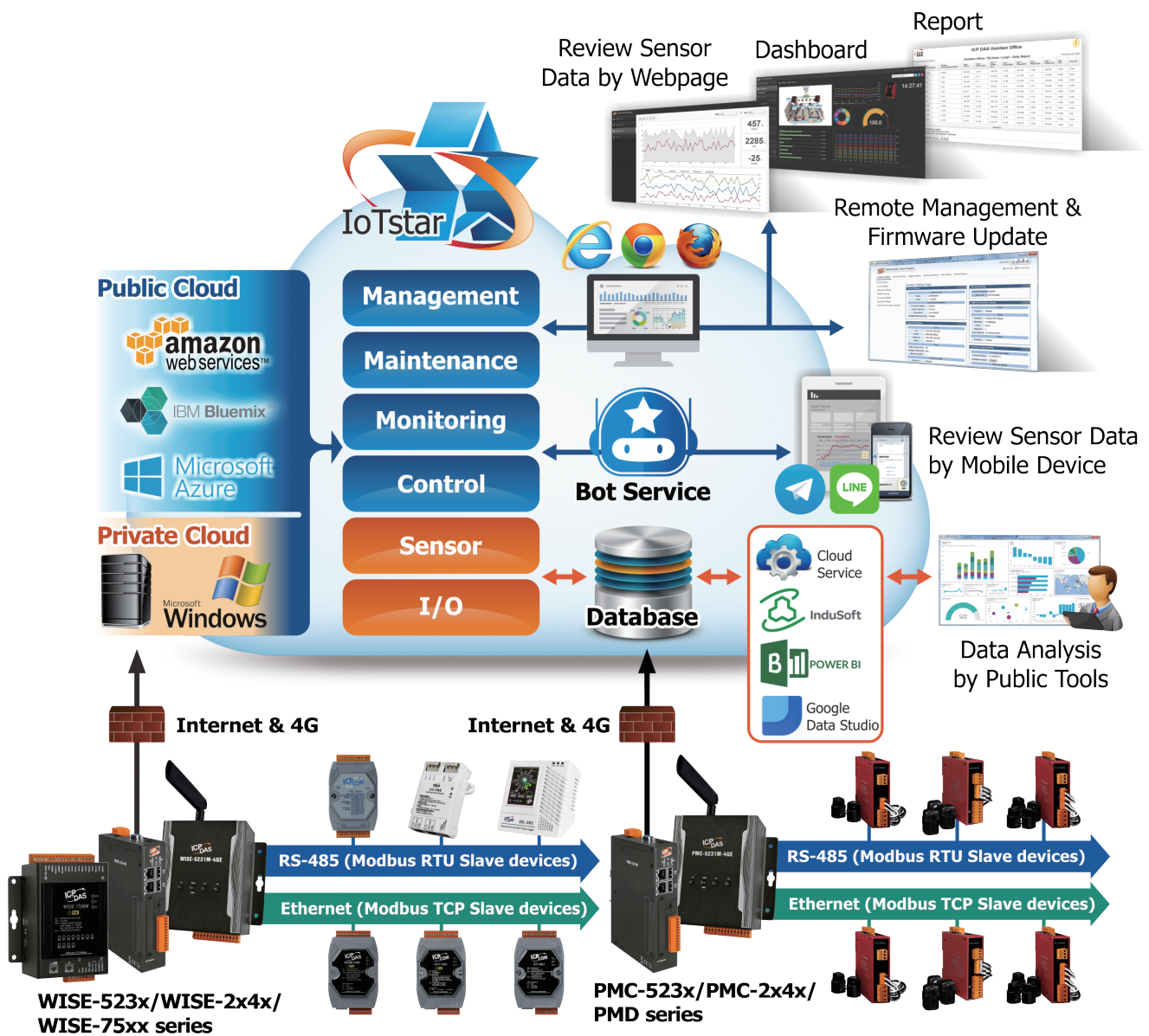
IoTstar 2025 is the latest version of ICP DAS's IoT cloud management software. It integrates the original IoTstar software and service packages (Dashboard Service, Report Service, Bot Service, etc.) into a single product, streamlining IoTstar's purchasing and installation process while making the system more intuitive and convenient to use. In addition to retaining all features and service packages from the previous version, IoTstar 2025 introduces several new user-centric functions and significantly enhances the overall user experience.

IoTstar 2025 can be installed on private PCs or VM (Virtual Machine) systems hosted on cloud platforms such as Microsoft Azure, IBM Bluemix, Amazon AWS and Google Cloud. This enables users to quickly establish their own IoT cloud monitoring systems. With IoTstar 2025, users can create IoT cloud systems that deliver the following services:



During the development of an IoT cloud system, no programming is required, system configuration can be completed through a web interface. Additionally, with SQL commands, IoTstar 2025 seamlessly integrates with cloud platforms and data analysis tools (such as Power BI, Google Data Studio, or SCADA systems), enabling users to efficiently build "IoT + Big Data" cloud applications. This significantly reduces both the time and cost associated with implementing "IoT + Big Data" cloud solutions.

## System Architecture





## Features

### Support Flexible Installation Environment for Quick IoT Cloud System Setup

The installation environment can be flexibly chosen based on site requirements.

#### Public IoT Cloud Solution:

IoTstar 2025 can be installed on VMs(virtual machine) within public cloud platforms such as Microsoft Azure, IBM Bluemix, Google Cloud, or Amazon AWS. This setup supports WISE, PMC, and PMD controllers while reducing the burden of maintaining the IoT cloud infrastructure.

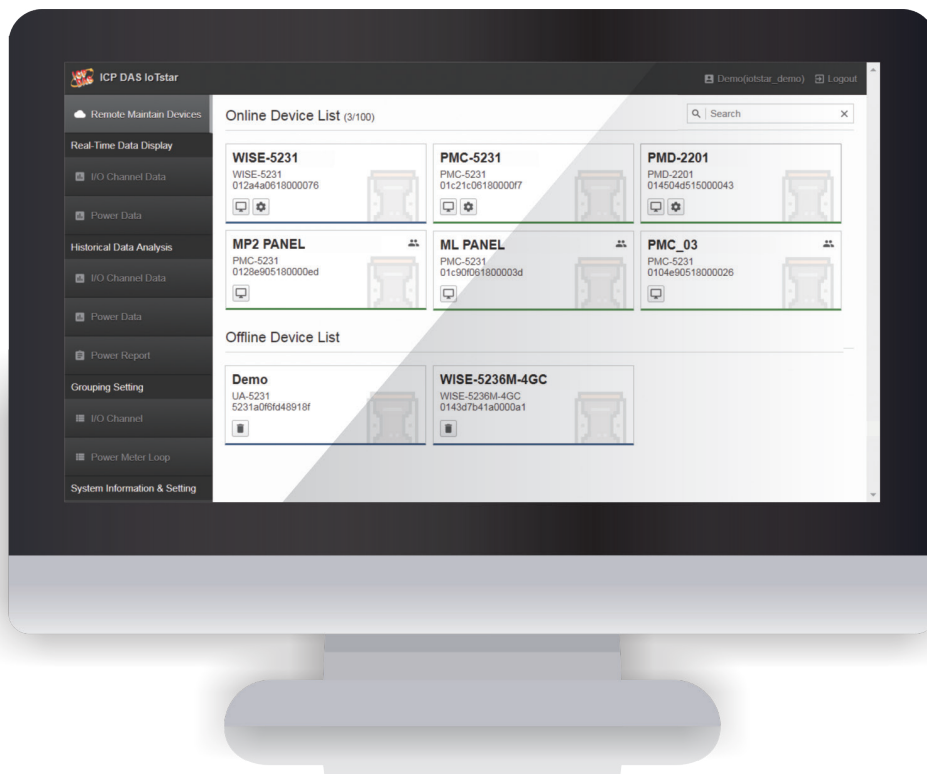


#### Private IoT Cloud Solution:

If users are concerned about system operation or data storage environments, IoTstar 2025 can be installed on a private Windows PC (Windows 7/8/10 or Windows Server) to implement a private IoT cloud solution for WISE, PMC, and PMD controllers. This allows users to manage and control their own IoT cloud environment, ensuring complete oversight of operations.

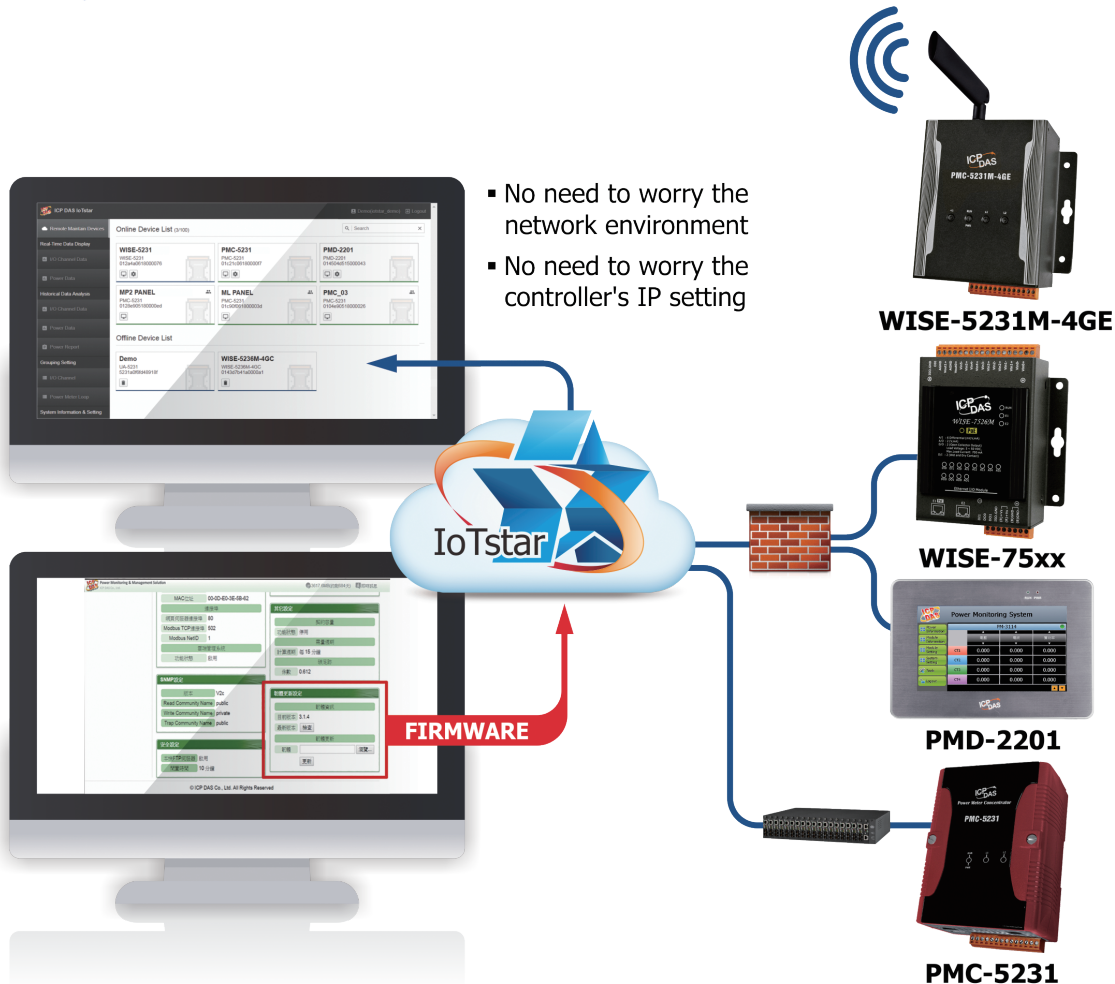
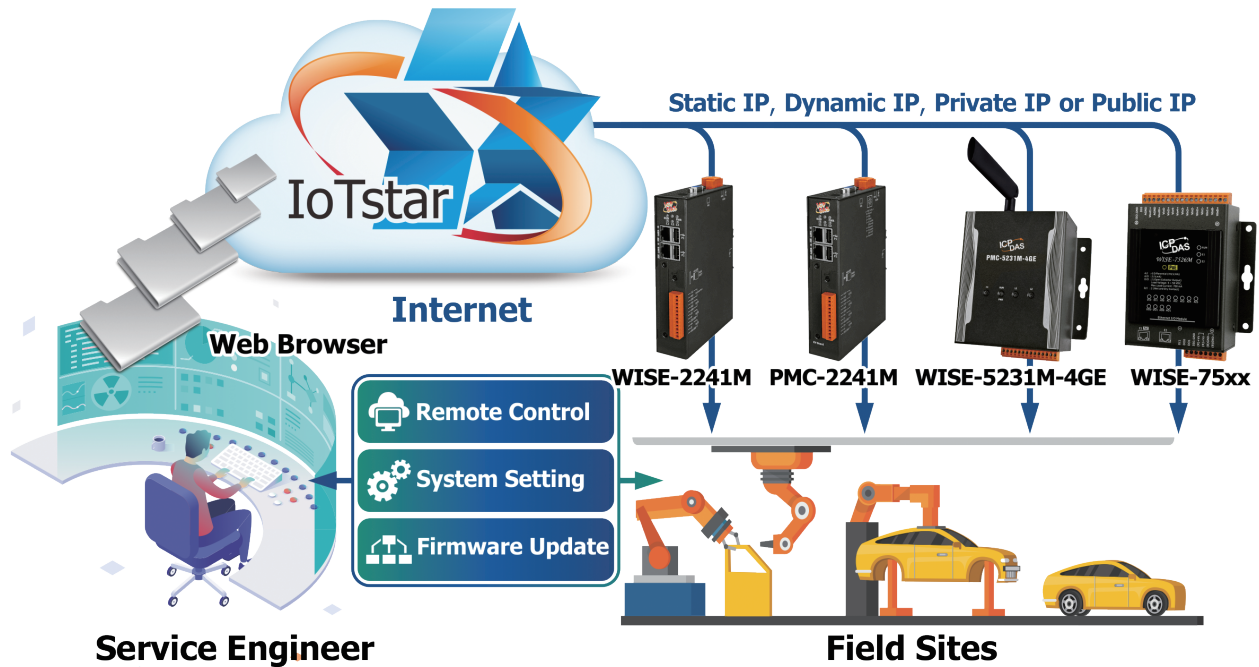
#### No programming required! Set up the IoT Cloud system with a browser.

Setting up the IoT cloud system is as simple as a few clicks on the IoTstar and WISE/PMC/PMC controller web interfaces. With no need for coding, users can quickly configure the system through a browser and have it running in no time.



## ■ Controller Remote Access Service

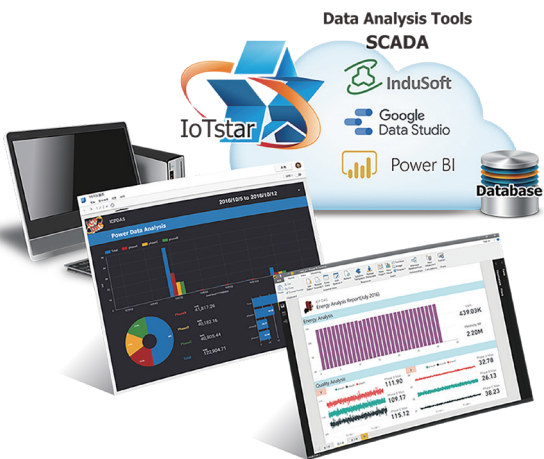
With IoTstar 2025, users no longer need to worry about the network environment of WISE, PMC, or PMD controllers—whether they use static, dynamic, virtual, or physical IP addresses. Through the web interface provided by IoTstar 2025, users can remotely monitor status, adjust system settings, and update firmware, minimizing the time and cost required for personnel to travel for on-site maintenance operations.





## ■ Sensor Data Collection Service

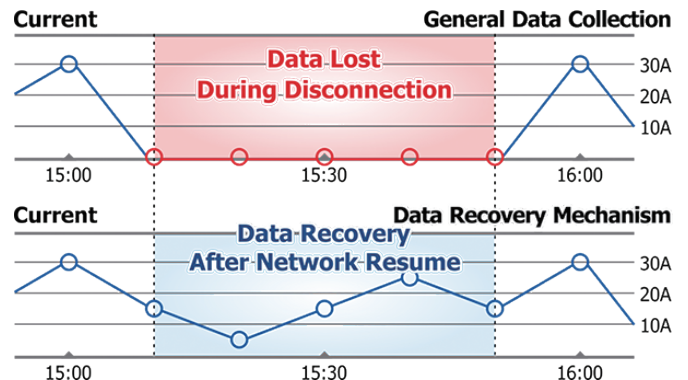
With IoTstar 2025, sensor data collection can efficiently gather both historical and real-time data from sensors or power meters connected to WISE, PMC, or PMD controllers. This data is imported into a cloud database, quickly establishing a data lake for "IoT and Big Data" applications. Users can also modify the database data via SQL commands to control the DO/AO channels of sensors connected to the controllers.



The SQL command interface makes it easy to integrate the sensor data stored by IoTstar 2025 with third-party data analysis tools (such as Power BI, Looker Studio, and SCADA systems) as well as ERP/MES systems. This seamless integration of OT (Operational Technology) and IT (Information Technology) systems enables comprehensive, real-time insights into system operations, supporting better decision-making and operational efficiency.

### Sensor Data Recovery Mechanism

In typical cloud data collection processes, sensor data is gathered and sent to the cloud for storage in a database. However, if a network disconnection occurs, any data transmitted during that period may be lost. IoTstar 2025 addresses this issue with a built-in sensor data recovery mechanism. During a network disruption, WISE, PMC, or PMD controllers temporarily store all data on their SD cards. Once the network connection is restored, the stored data is automatically retransmitted to IoTstar 2025 and imported into the database, ensuring the completeness and integrity of historical sensor data.



## ■ Sensor Data Report Service

IoTstar 2025 offers a powerful statistical report generation feature, enabling users to create reports from data collected by sensors or power meters connected to WISE, PMC, or PMD controllers. This feature transforms raw data into meaningful reports, providing insights into the operational status of machines, equipment, and facilities. These reports serve as an essential basis for informed decision-making, helping to eliminate bias and avoid blind spots.

### Features

- Generate a variety of statistical reports for sensors and power meters.
- Create reports for individual I/O channels (or power meter loops) or groups of channels/loops.
- Support queries for "Daily, Weekly, Monthly, Quarterly, or Yearly" reports with customizable date ranges.
- Provide data comparison to analyze values across I/O channels or power meter loops.
- Built-in editor allows flexible customization of report content, including headers and footers, to suit specific needs.
- Export reports in PDF or Excel format for easy sharing and analysis.

#### Power meter loop report

PMC-5231(Xindian office) / PM-4324-MTCP(Power meter of Area A) / Loop1(wall socket 1)

Day	Week	Month	Quarter	Year	>	Single Mode	>	Today	2021/10/19	>	Data Shown	Template Management	Download PDF	Download Excel
Time	Max. Demand(kW)	Energy Consumption(kWh)	Avg. PF(%)	Avg. I Phase A(A)	Avg. V Phase A(V)	Avg. I Phase B(A)	Avg. V Phase B(V)	Avg. I Phase C(A)	Avg. V Phase C(V)	Avg. kVA	Avg. kvar			
0	0.05	0.05	89.713	0.169	110.354	0.169	110.35	0.17	110.358	0.055	0.024			
1	0.05	0.05	89.566	0.169	110.557	0.168	110.553	0.169	110.562	0.056	0.025			
2	0.05	0.05	89.562	0.169	110.776	0.169	110.771	0.17	110.78	0.056	0.025			
3	0.05	0.05	89.628	0.17	110.975	0.17	110.972	0.17	110.982	0.056	0.025			
4	0.051	0.05	89.375	0.17	111.112	0.169	111.108	0.17	111.118	0.056	0.025			
Summary														
Daily Highest Usage: 0.051kW Occurrence Time: 2021-10-19 04:59:00 Daily Total Electricity Consumption: 0.41kWh														

▲ Report for "Power Meter Loop"

#### I/O Channel report

PMC-5231(Xindian office) / DL-1023(Air quality for factory) / AI2(PM2.5)

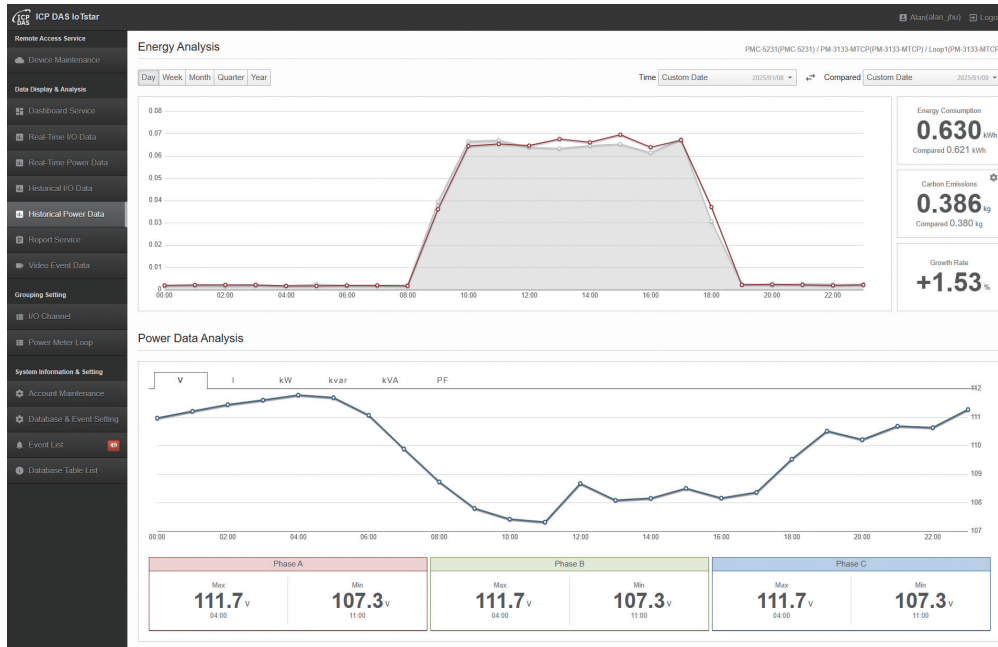
Day	Week	Month	Quarter	Year	>	Single Mode	>	Today	2021/10/19	>	Data Shown	Template Management	Download PDF	Download Excel
Time	Maximum(ug/m3)	Minimum(ug/m3)	Average(ug/m3)	Final Value(ug/m3)	Total Value(ug/m3)									
0	1	0	0.283	0	17									
1	1	0	0.116	0	7									
2	1	0	0.118	1	7									
3	1	0	0.066	0	4									
4	1	0	0.083	0	5									
Summary														
Daily maximum: 1 ug/m3		Daily minimum: 0 ug/m3		Daily average: 0.098 ug/m3										
Time of maximum daily value occurs: 2021-10-19 00:01:00		Time of minimum daily value occurs: 2021-10-19 00:00:00		Daily total value: 49 ug/m3										

▲ Report for "I/O Channel"



## ■ Sensor Data Visualization Service

IoTstar 2025 provides real-time and historical data queries for sensors and power meters connected to remote WISE/PMC/PMD controllers. It features dedicated power analysis pages that help users query and compare power consumption across different time periods, analyze usage trends, and identify potential energy-saving opportunities. At the same time, it helps reduce carbon footprints and contributes to environmental sustainability.



IoTstar 2025 offers a dashboard editor and various widget components, enabling users to create customized dashboards for viewing real-time data from sensors or power meters connected to WISE, PMC, or PMD controllers. Users can quickly build the dashboards needed for IoT cloud monitoring, monitor sensor or power meter status in real-time, and interact with them directly.



## Features

- Offers a dashboard editor for users to easily customize specific dashboard pages.
- Includes a variety of built-in widgets to present sensor or power meter data in multiple formats.
- Displays real-time sensor or power meter data with the ability to modify output channel statuses.
- Provides a rich content widget (WYSIWYG editor), allowing users to edit widget content by importing HTML code, text, web pages, images, videos, and more.
- Supports 'Dark Mode' for improved visibility during nighttime use.
- Receives on-site snapshots or video files from controllers, enabling users to browse and review them through IoTstar (to send snapshots or videos, use WISE with an iCAM IP camera).



Example of Air quality monitoring (Using Line Chart, Gauge, Plot Bar, Value Table, Value Label Overlay widgets).

Example of Power monitoring (Using Line Chart, Value, Value Output and Rich Content widgets).



**Widget provided:**



Example of Environmental monitoring (Using Line Chart, Value, Value Output, Map and Video Event List widgets).

## ■ Bot Service with Mobile Phone

IoTstar 2025 offers a built-in chat room feature that allows users to interact with WISE, PMC, or PMD controllers via the LINE or Telegram app, providing a fast and convenient way to manage equipment. Unlike traditional chatbots that rely solely on text commands, it features a user-friendly interface with buttons and dialog menus for easy access to information.

With this functionality, users can query real-time data from on-site I/O modules or power meters and adjust DO/AO channel values anytime, anywhere. Additionally, IoTstar 2025 can receive alarm events proactively sent by WISE, PMC, or PMD controllers and forward them to relevant LINE or Telegram users for real-time notifications. All alarm events are logged within IoTstar 2025, allowing users to review historical events using its event query feature.

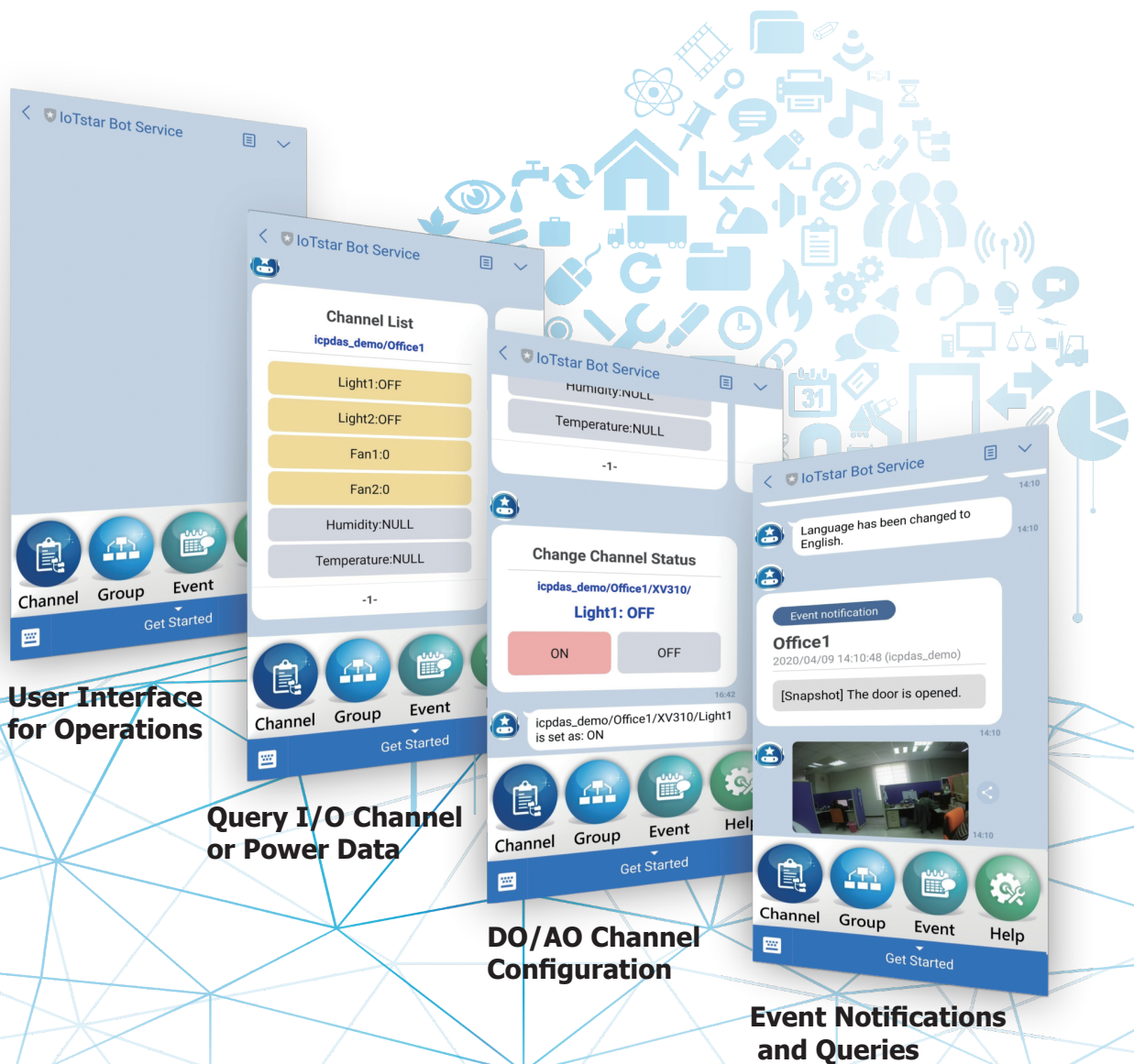




## Features

- Monitor WISE, PMC, and PMD controllers anytime, anywhere using the LINE or Telegram app.
- Query real-time sensor or power meter data and adjust output channels.
- Receive alarm events with text, snapshots, or videos (WISE can integrate with iCAM IP cameras to send snapshots or video files).
- View and query the history of alarm events.
- Ensure secure and reliable communication between LINE/Telegram and the controllers.
- Easy maintenance with only the LINE or Telegram app requiring updates.

\*\*\*The following interface is operated via the LINE App.





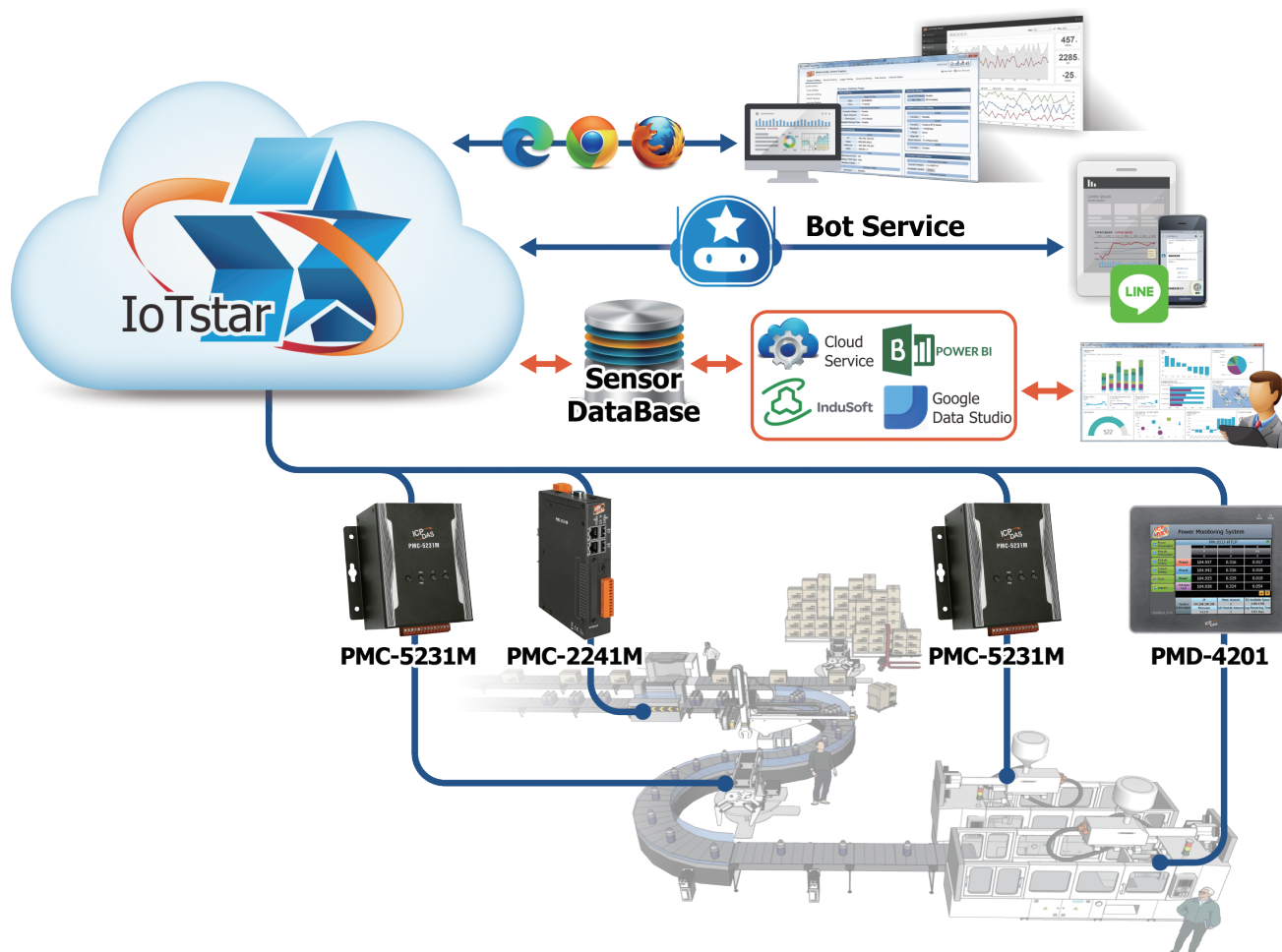
## Applications

### Cloud-based Power Monitoring Solution for Factories

The ICP DAS "IoTstar + PMC/PMD" solution allows users to quickly deploy a cloud-based power monitoring system for factories. PMC/PMD power meter concentrators can connect with ICP DAS power meters to collect, organize, and record equipment power consumption data. In addition to transmitting power data to IoTstar, the PMC/PMD concentrators manage power demand, monitor equipment operations, and execute automated actions based on pre-set edge computing rules (IF-THEN-ELSE logic rules). Alarms can be sent instantly via LINE, Telegram, WeChat, email, or SMS. Once IoTstar receives the data, it offers services such as "Controller Remote Access Service," "Sensor Data Collection Service," "Sensor Data Visualization Service," "Sensor Data Report Service," and "Bot Service with Mobile Phone".

#### Key Benefits

- No Programming Required: Collect and store power data automatically in the cloud.
- SQL Database Integration: Seamlessly connect IT systems to analyze trends in power usage.
- Remote Monitoring and Maintenance: Optimize factory equipment performance with timely responses.
- Cloud-based Controller Management: Enable status monitoring, system configuration, and firmware updates for PMC/PMD controllers via the cloud, reducing the time and costs associated with on-site maintenance.



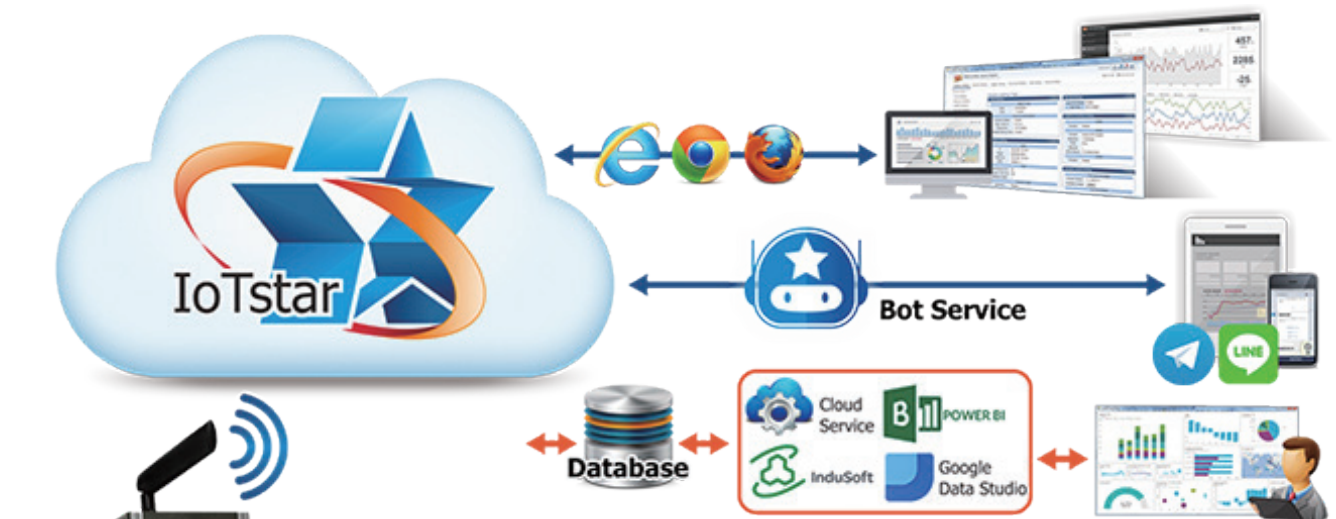
## ■ Cloud-based Environment Monitoring Solution

The ICP DAS "IoTstar + WISE" solution enables users to build an environment monitoring system in the cloud. The WISE IIoT edge controller collects, organizes, and records environmental data from Modbus TCP/RTU sensors. The system can also monitor and control environmental facilities in real time, with alarm messages sent instantly via LINE, Telegram, WeChat, email, or SMS based on pre-set edge computing logic((IF-THEN-ELSE logic rules).

When IoTstar receives environmental data, it provides services such as: "Controller Remote Access Service," "Sensor Data Collection Service," "Sensor Data Visualization Service," "Sensor Data Report Service," and "Bot Service with Mobile Phone".

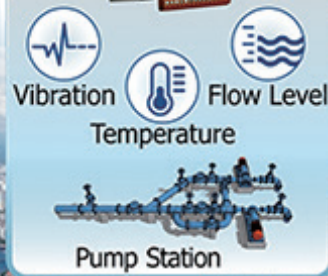
### Key Benefits

- No Programming Required: Collect and store environmental data automatically in the cloud.
- SQL Database Integration: Seamlessly connect IT systems to easily track environmental changes and trends.
- Remote Monitoring and Maintenance: Enhance the performance of environmental facilities with prompt responses.
- Cloud-based Controller Management: Enable status monitoring, system configuration, and firmware updates for WISE controllers via the cloud, reducing the time and costs associated with on-site maintenance.



## Urban Water Drainage System

WISE-5231M-4GE

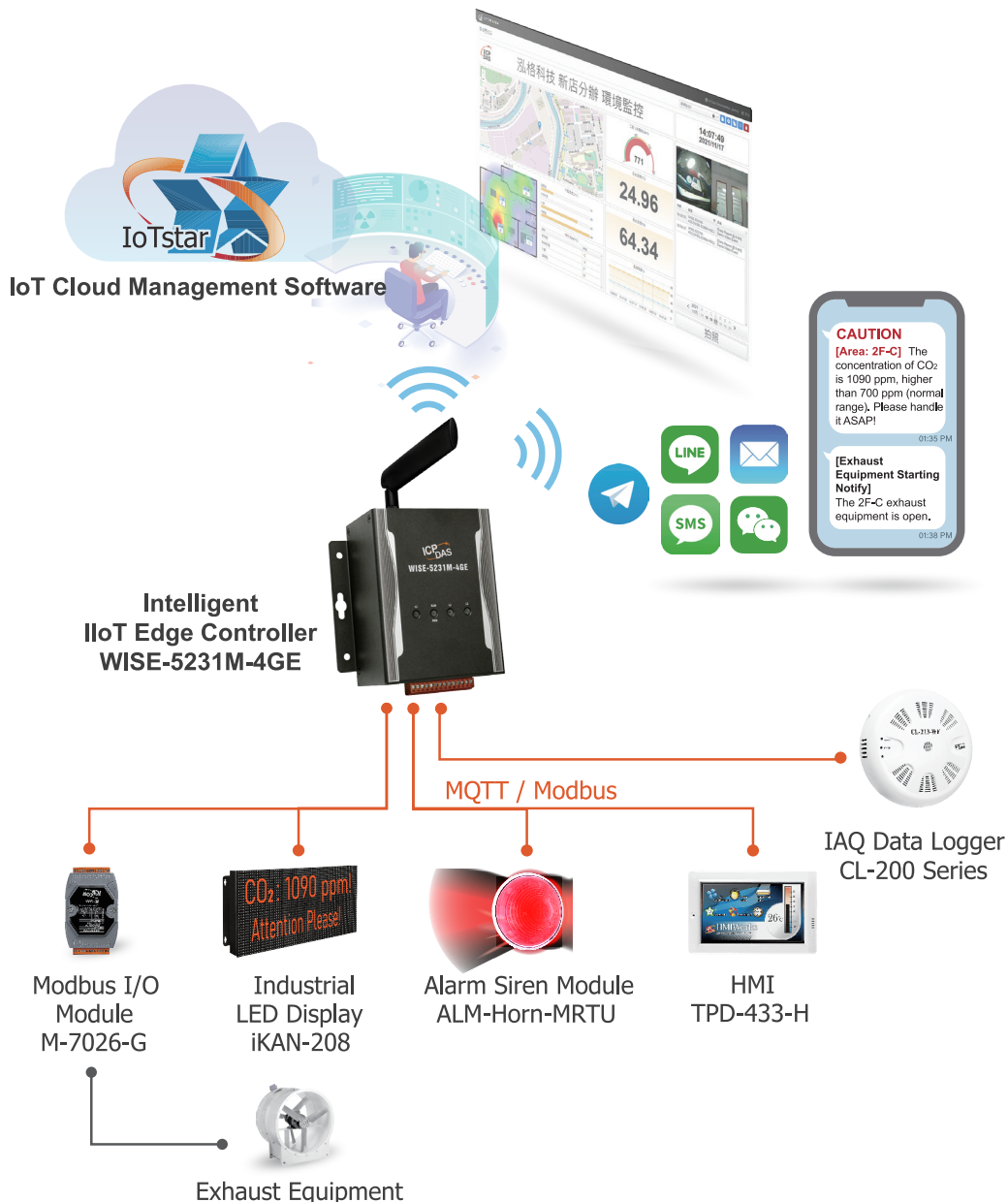


## ■ Cloud-based Indoor Air Quality Monitoring Solution

The ICP DAS "IoTstar + WISE + DL/CL module" solution enables users to quickly establish a cloud-based air quality monitoring system. DL/CL series modules measure aerosol concentrations (e.g., PM2.5, PM1, PM10) and particle counts (0.3µm, 0.5µm, 1µm, 2.5µm, 5µm, 10µm). They also detect fumes and gases relevant to human health (e.g., CO, CO2, HCHO, NH3, H2S, TVOC) and transmit the data to the WISE IIoT edge controller. WISE collects the air quality data and forwards it to IoTstar. In response to abnormal conditions, WISE can automatically trigger actions, such as activating exhaust fans, warning lights, or access control systems, and sending real-time alerts via LINE, Telegram, WeChat, email, or SMS. These actions are executed based on pre-set edge computing rules (IF-THEN-ELSE logic). Once IoTstar receives the air quality data sent by WISE, it offers services including: "Controller Remote Access Service," "Sensor Data Collection Service," "Sensor Data Visualization Service," "Sensor Data Report Service," and "Bot Service with Mobile Phone" .

### Key Benefits

- Real-time Air Quality Monitoring: Automatically respond to abnormal conditions.
- SQL Database Integration: Analyze air quality trends with ease.
- Remote Control and Alerts: Manage operations and receive notifications remotely.





## ■ Cloud-based Greenhouse Monitoring Solution

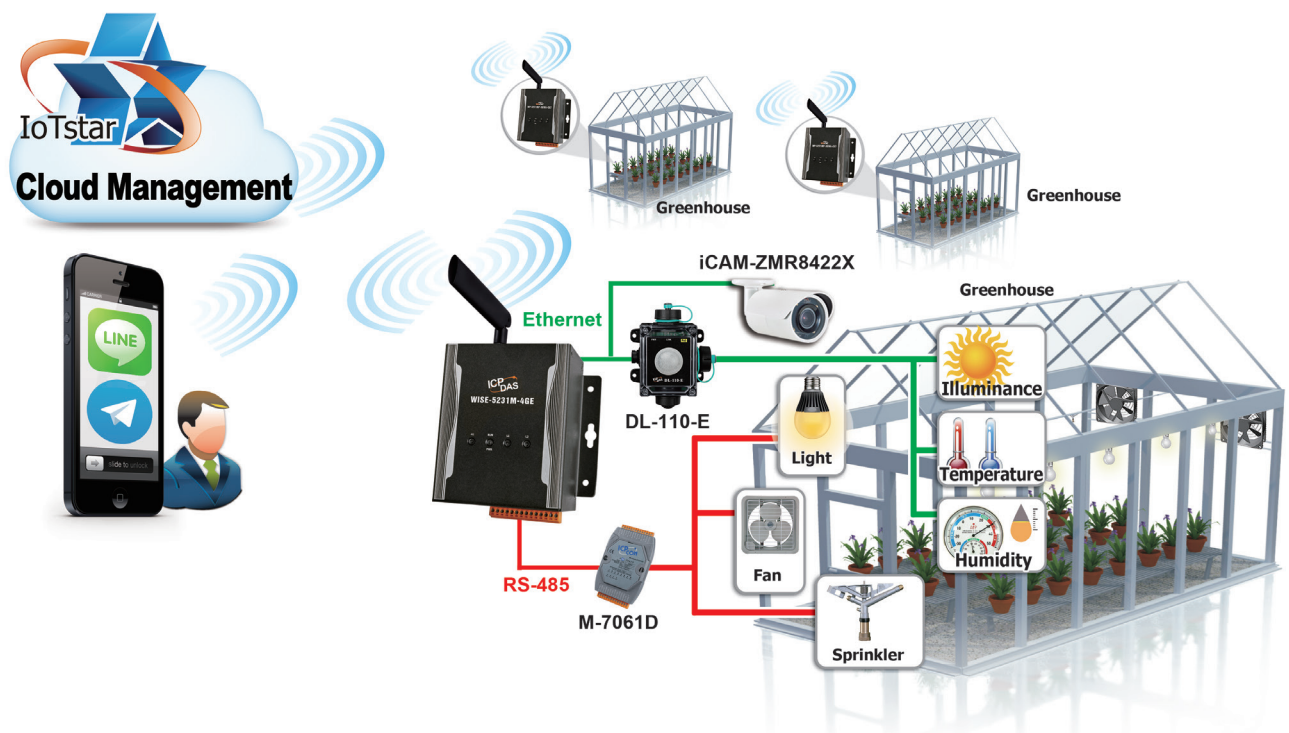
As agriculture moves toward greater precision and automation, intelligent greenhouse systems are becoming increasingly important. The ICP DAS "IoTstar + WISE + DL module" solution functions as a highly efficient automated greenhouse monitoring system. It offers real-time cloud-based monitoring of illuminance, temperature, and humidity, ensuring optimal environmental conditions. The system can automatically execute scheduled tasks, such as turning on air conditioners, adjusting lighting, activating sprinklers, and applying fertilizer. Additionally, it sends alerts via LINE, Telegram, WeChat, email, or SMS to notify personnel of abnormal conditions for immediate action.

The WISE controller seamlessly integrates with ICP DAS iCAM series IP cameras to provide real-time video monitoring of greenhouse environments. In the event of an intrusion or abnormal activity, WISE automatically sends both text and video messages to security personnel through LINE, Telegram, or WeChat, ensuring a swift and effective response to potential threats.

With IoTstar's services—"Controller Remote Access Service," "Sensor Data Collection Service," "Sensor Data Visualization Service," "Sensor Data Report Service," and "Bot Service with Mobile Phone"—users can efficiently monitor and manage greenhouse environments anytime, anywhere. This solution empowers users to achieve higher efficiency, productivity, and safety while minimizing operational risks, paving the way toward smart agriculture.

### Key Benefits

- Automated Greenhouse Control: Improve productivity with real-time monitoring.
- Integrated Security Alerts: Respond instantly to intrusions with text and video notifications.
- Remote Access: Manage multiple greenhouses from anywhere for greater efficiency.

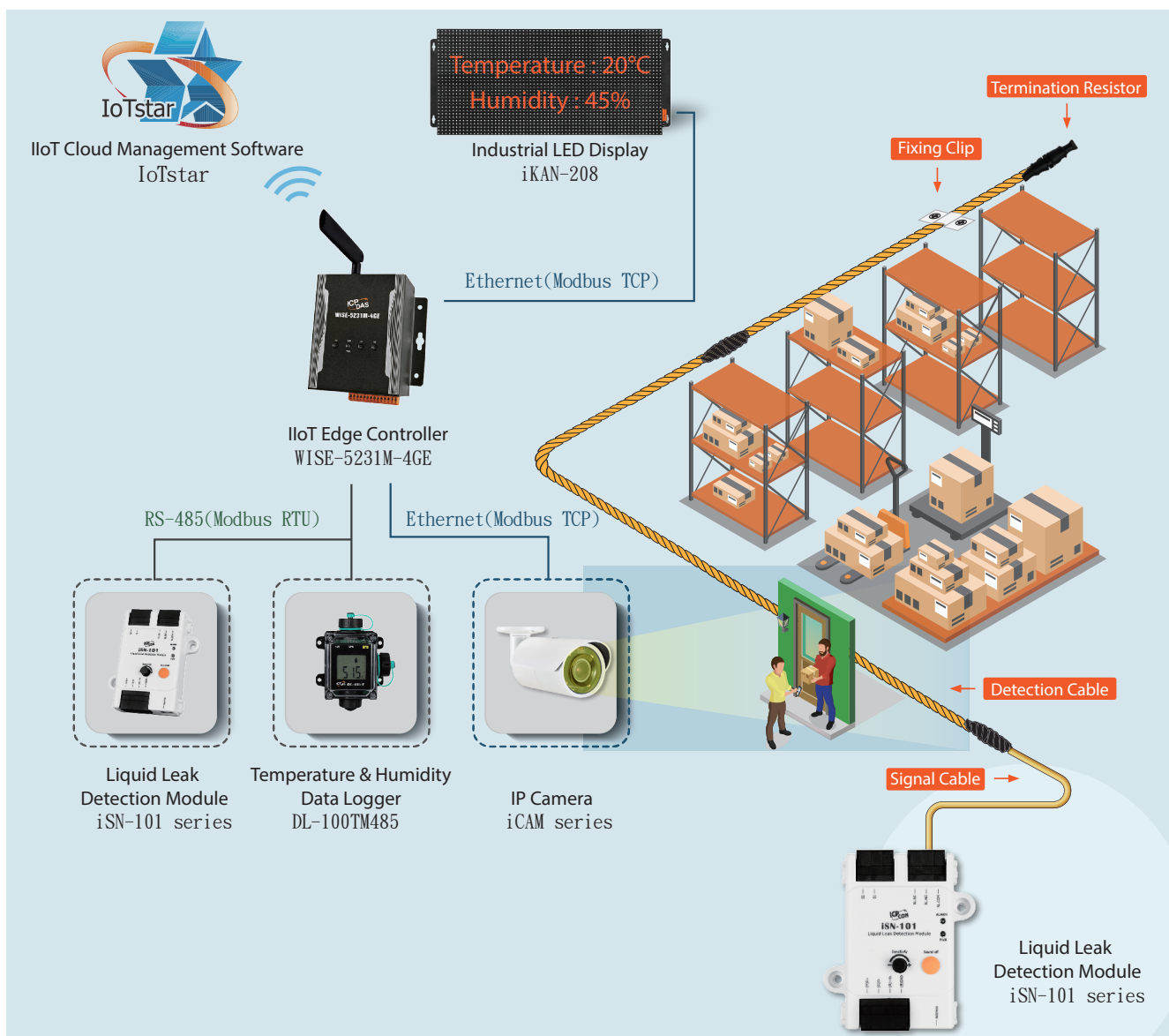


## ■ Cloud-based Building, Warehouse, Factory Monitoring Solution

The ICP DAS "IoTstar + WISE + iSN/DL/CL module" solution enables enterprises to quickly set up a cloud-based monitoring system for buildings, warehouses, and factories. iSN modules detect liquid leakage, while DL modules monitor environmental temperature and humidity. Data from these modules is sent to the WISE IIoT edge controller for processing and recording. WISE applies pre-set edge computing rules (IF-THEN-ELSE logic) to trigger real-time actions, such as activating exhaust fans or warning lights, based on the detected conditions. WISE also sends alerts via LINE, Telegram, WeChat, email, or SMS to notify personnel of abnormal events. Additionally, it integrates with ICP DAS iCAM IP cameras for real-time video surveillance, automatically sending text and video notifications to security personnel upon detecting intrusions. With IoTstar's services—"Controller Remote Access Service," "Sensor Data Collection Service," "Sensor Data Visualization Service," "Sensor Data Report Service," and "Bot Service with Mobile Phone"—users can monitor facility environments remotely and respond quickly to ensure smooth operations.

### Key Benefits

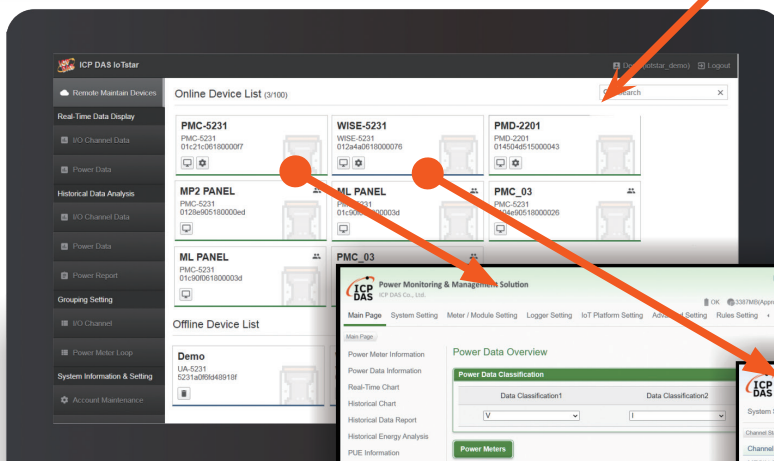
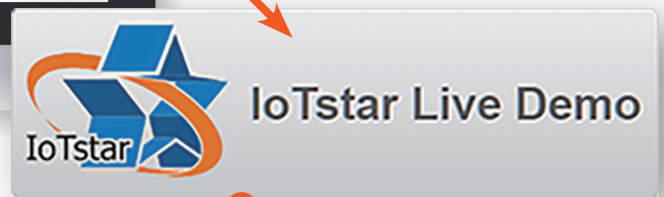
- Proactive Facility Management: Monitor and respond to environmental conditions in real time.
- Integrated Video Surveillance: Use iCAM IP cameras for real-time monitoring and notifications.
- Remote Access: Reduce maintenance costs with remote control capabilities.



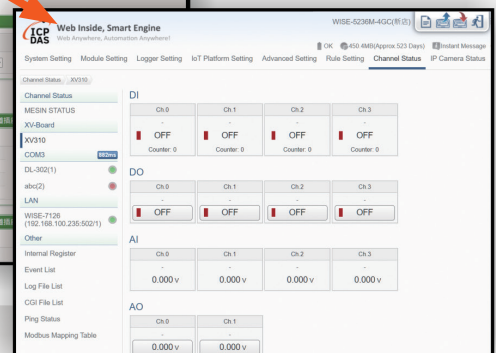
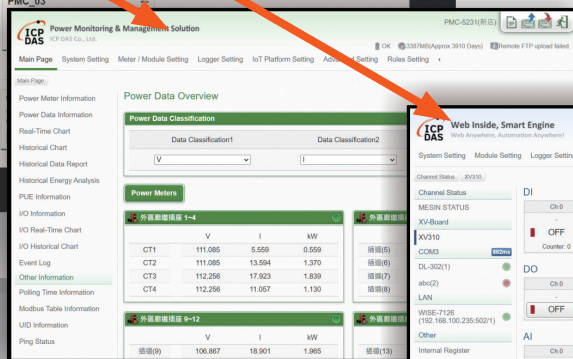
# IoTstar 2025 Live Demo (iotstar.icpdas.com)

The IoTstar 2025 Live Demo enables users to explore its full range of features, including:

- Cloud-based monitoring and configuration of onsite WISE, PMC, and PMD controllers.
- Access to data from sensors or power meters connected to the controllers.
- Interactive data visualization dashboards for sensor or power meter data.
- Generation of statistical reports for sensor or power meter data.
- Viewing image events captured by iCAM series network cameras integrated with WISE controllers.



With IoTstar, you can log in to controllers directly for remote configuration and maintenance without needing their IP addresses or login passwords.





## Controller Supported List

Model	WISE-284xM	WISE-224xM	WISE-523x(M)	WISE-75xxM
System				
CPU	Quad-core ARM CPU, 1.6 GHz/Core	ARM CPU, 1.0 GHz		32 bits CPU (400MHz)
microSD	Yes (Built-in one 4 GB microSD card )			-
Ethernet	10/100/1000 Base-TX * 2		10/100/1000 Base-TX * 1	10/100 Base-TX * 2 (for Daisy-Chain Topology)
Casing	Metal( WISE-523x is Plastic)			Metal
Mobile Network	Support 3G/4G Mobile Network(*1)			-
I/O Module Support				
Local Side	Support ICP DAS XV-board			Built-in I/O module
Remote Side	Support at most 48 I/O modules			-
iCAM IP Camera	up to 12	up to 4		-
Software function				
Intelligent logic operation	Yes (Full Function)			Yes (Basic function)
Information Security Enhancement	Yes	-		-

Model	PMC-284xM	PMC-224xM	PMC-523x(M)	PMD
System				
CPU	Quad-core ARM CPU, 1.6 GHz/Core	ARM CPU, 1.0 GHz		
microSD	Yes (Built-in one 4 GB microSD card)			
Ethernet	10/100/1000 Base-TX * 2		10/100/1000 Base-TX * 1	
TFT LCD (with Touch Panel)	-			PMD-220x: 7" Display PMD-420x: 10" Display
Casing	Metal (PMC-523x is Plastic)			Metal
Mobile Network	Support 3G/4G Mobile Network (*1)			-
Power Meter & I/O Module Support				
Local Side	Supports ICP DAS XV-board (PMC-2241M-iWSN not supported)			-
Remote Side	Support at most 48 modules (Include ICP DAS Modbus Power Meters and Modbus I/O modules)	Support at most "24 ICP DAS Modbus Power Meter + 8 Modbus I/O modules" (PMC-2241M-iWSN supports up to 93 ICP DAS iWSN wireless modules)		
Software function				
Intelligent logic operation	Yes (Full Function)			
Information Security Enhancement	Yes	-		-

### Note 1:

#### 3G/4G version of WISE-523xM, WISE-224xM, WISE-284xM, PMC-523xM, PMC-224xM & PMC-284xM

3G system (-3GWA)	WCDMA: 850/900/1900/2100 MHz
3G/4G system (-4GE)	FDD LTE: B1/B3/B5/B7/B8/B20 bands (Frequency Band for EMEA, Korea, Thailand, India and Taiwan) WCDMA: 850/900/2100 MHz
3G/4G system (-4GC)	FDD LTE: B1/B3/B8 bands (Frequency Band for China) TDD LTE: B38/B39/B40/B41 bands (Frequency Band for China) WCDMA: 900/2100 MHz, TD-SCDMA 1900/2100 MHz, CDMA2000 (BC0) 800 MHz

## ■ Built-in I/O Channel Specifications for WISE-75xx

Model	Local I/O Channel				Specifications
	DI	DO	AI	AO	
WISE-7502M	6	3	3	-	AI : +/- 150 mV, +/- 500 mV, +/- 1V, +/- 5 V, +/- 10 V, +0 ~ +20 mA, +/- 20 mA, 4 ~ 20mA DO : Power Relay (Form A); DI : Wet (Sink,Source)
WISE-7504M	4	-	4	4	AI : +/- 500 mV, +/- 1V, +/- 5 V, +/- 10 V, +0 ~ +20 mA, +/- 20 mA, 4 ~ 20mA AO : 0 ~ 5 V, +/- 5 V, 0 ~ 10 V, +/- 10 V, 0 ~ 20 mA, 4 ~ 20 mA DI : Dry (Source), Wet (Sink)
WISE-7515M	-	-	7	-	RTD (AI) : Pt100, Pt1000, Ni120, Cu100, Cu1000
WISE-7517M	-	4	8	-	AI : +/-150 mV, +/-500 mV, +/-1 V, +/-5 V, +/-10 V, +/-20 mA, 0 ~ 20 mA, 4 ~ 20mA DO : Open Collector (Sink)
WISE-7517M-10	-	-	10/20	-	AI : +/-150 mV, +/-500 mV, +/-1 V, +/-5 V, +/-10 V, +/-20 mA, 0 ~ 20 mA, 4 ~ 20 mA
WISE-7518ZM	-	3	10	-	AI : +/-15 mV, +/-50 mV, +/-100 mV, +/-500 mV, +/-1 V, +/-2.5 V, +/-20 mA, 0~20 mA, 4~20 mA, Thermocouple (J, K, T, E, R, S, B, N, C, L, M, LDIN43710) DO : Open Collector (Sink)
WISE-7519ZM	-	3	10	-	AI : +/-15 mV, +/-50 mV, +/-100 mV, +/-150 mV, +/-500 mV, +/-1 V, +/-5 V, +/-10 V, +/-20 mA, 0~20 mA, 4~20 mA, Thermocouple (J, K, T, E, R, S, B, N, C, L, M, LDIN43710) DO : Open Collector (Sink)
WISE-7524M	5	5	-	4	AO : 0 ~ 5 V, +/- 5 V, 0 ~ 10 V, +/- 10 V, 0 ~ 20 mA, 4 ~ 20 mA DI : Dry (Source), Wet (Sink,Source); DO : Open Collector (Sink)
WISE-7526M	2	2	6	2	AI : +/- 500 mV, +/- 1 V, +/- 5 V, +/-10 V, 0 ~ 20 mA, +/- 20 mA, 4~20mA AO : 0 ~ 5 V, +/- 5 V, 0 ~ 10 V, +/- 10 V, 0 ~ 20 mA, 4 ~ 20 mA DI : Dry (Source), Wet (Sink,Source); DO : Open Collector (Sink)
WISE-7528M	-	-	-	8	AO : 0 ~ 5 V, +/- 5 V, 0 ~ 10 V, +/- 10 V, 0 ~ 20 mA, 4 ~ 20 mA
WISE-7542M	-	16	-	-	DO : Open Collector (Sink)
WISE-7544M	8	8	-	-	DI : Wet (Sink,Source); DO : Open Collector (Sink)
WISE-7551M	16	-	-	-	DI : Wet (Sink,Source)
WISE-7552M	8	8	-	-	DI : Wet (Sink,Source); DO : Open Collector (Source)
WISE-7553M	16	-	-	-	DI : Dry (Source)
WISE-7555M	8	8	-	-	DI : Dry (Source), Wet (Sink,Source); DO : Open Collector (Source)
WISE-7560M	6	6	-	-	DI : Wet (Sink,Source); DO : Power Relay Form A (SPST N.O.)
WISE-7561M	-	11	-	-	DO : Power Relay Form A (SPST N.O.)
WISE-7567M	-	8	-	-	DO : Power Relay Form A (SPST N.O.)

## ■ Specification for WISE-284x/224x/523x

I/O Module Specification		Description	Max. Connection Allowed
I/O Module for Local site	Local Bus	ICP DAS: XV-Board series module	1
I/O Module for Remote site	DCON by RS-485	ICP DAS : I-7000/DL series module ICP DAS : M-7000/tM/DL/LC/IR series module	COM3 and COM4 can connect up to 16 modules individually.
	Modbus RTU by RS-485	Others : modules that support Modbus RTU Slave Protocol	
	Modbus TCP by Ethernet	ICP DAS : WISE-7100/(P)ET-7000/DL/WF-2000 series module Others : modules that support Modbus TCP Slave Protocol	LAN interface can connect up to 16 modules.
IP Camera		ICP DAS : iCAM series module	LAN interface can connect up to 4 cameras (WISE-523x/224x) or 12 cameras (WISE-284x).

## ■ List of Supported I/O Modules for WISE-284x/224x/523x

Function		Module List
<b>I-7000 Module</b>		
AI/AO	Voltage & Current	I-7012, I-7012D, I-7012F, I-7012FD, I-7017, I-7017F, I-7017R, I-7017C, I-7017FC, I-7017RC, I-7017R-A5, I-7017Z
	Thermocouple	I-7011, I-7011D, I-7011P, I-7011PD, I-7018, I-7018P, I-7018R, I-7018Z, I-7019R
	RTD	I-7013, I-7013D, I-7015, I-7015P, I-7033, I-7033D
	Thermistor	I-7005
	Transmitter	I-7014D
	Strain Gauge	I-7016, I-7016D, I-7016P, I-7016PD
	Analog Output	I-7021, I-7021P, I-7022, I-7024, I-7024R
DI/DO	DC Digital Input	I-7041, I-7041D, I-7041P, I-7041PD, I-7051, I-7051D, I-7052, I-7052D, I-7053-FG, I-7053D-FG
	AC Digital Input	I-7058, I-7058D, I-7059, I-7059D
	DC Digital Output	I-7042, I-7042D, I-7043, I-7043D, I-7045, I-7045D, I-7045-NPN, I-7045D-NPN
	DC Digital Input & Output	I-7044, I-7044D, I-7050, I-7050D, I-7050A, I-7050AD, I-7055, I-7055D, I-7055-NPN, I-7055D-NPN
Relay Output	Power Relay Output	I-7060, I-7060D, I-7061, I-7061D, I-7063, I-7063D, I-7065, I-7065D, I-7067, I-7067D
	Solid State Relay Output	I-7063A, I-7063AD, I-7063B, I-7063BD, I-7065A, I-7065AD, I-7065B, I-7065BD
	Photomos Relay Output	I-7066, I-7066D
Others	Counter/Frequency	I-7080, I-7080D, I-7080B, I-7080BD, I-7088, I-7088D



Function		Module List
<b>M-7000 Module</b>		
AI/AO	Voltage & Current	M-7017, M-7017C, M-7017R, M-7017R-A5, M-7017RC, M-7017Z
	Thermocouple	M-7011, M-7011D, M-7018, M-7018R, M-7018Z, M-7019R, M-7019Z
	RTD	M-7015, M-7015P
	Thermistor	M-7005
	Strain Gauge	M-7016, M-7016D
	Analog Output	M-7022, M-7024, M-7024R, M-7024L, M-7028, M-7028D
	RMS Input	M-7017RMS
DI/DO	DC Digital Input	M-7041, M-7041D, M-7041P, M-7041PD, M-7041-A5, M-7041D-A5, M-7046, M-7046D, M-7051, M-7051D, M-7052, M-7052D, M-7053, M-7053D
	AC Digital Input	M-7058, M-7058D, M-7059, M-7059D
	DC Digital Output	M-7043, M-7043D, M-7045, M-7045D, M-7045-NPN, M-7045D-NPN
	DC Digital Input & Output	M-7050, M-7050D, M-7055, M-7055D, M-7055-NPN, M-7055D-NPN
Relay Output	Power Relay Output	M-7060, M-7060D, M-7060P, M-7060PD, M-7061, M-7061D, M-7064, M-7064D, M-7065, M-7065D, M-7067, M-7067D, M-7068, M-7068D, M-7069, M-7069D
	Solid State Relay Output	M-7065B, M-7065BD
	Photomos Relay Output	M-7066P, M-7066PD
Others	Counter/Frequency	M-7080, M-7080D, M-7080B, M-7080BD, M-7084, M-7088, M-7088D
	Multi-Function	M-7002, M-7003, M-7024U, M-7024UD, M-7026
<b>tM Module</b>		
AI/AO	Voltage & Current	tM-AD2, tM-AD5, tM-AD5C, tM-AD8, tM-AD8C
	Thermistor	tM-TH8
DI/DO	DC Digital Input	tM-P8
	DC Digital Output	tM-C8
	DC Digital Input & Output	tM-P4A4, tM-P4C4
Relay Output	Power Relay Output	tM-P3R3, tM-R5
	Photomos Relay Output	tM-P3POR3
Others	Multi-Function	tM-DA1P1R1, tM-AD4P2C2
<b>(P)ET-7000 Module</b>		
AI/AO	Voltage & Current	(P)ET-7017, (P)ET-7217, (P)ET-7017-10, (P)ET-7217-10, (P)ET-7217-A5
	Thermocouple	(P)ET-7018Z, (P)ET-7019Z, (P)ET-7218Z, (P)ET-7219Z
	RTD	(P)ET-7015, (P)ET-7215
	Thermistor	(P)ET-7005
DI/DO	DC Digital Input	(P)ET-7051, (P)ET-7053, (P)ET-7251, (P)ET-7253
	DC Digital Output	(P)ET-7042, (P)ET-7242
	DC Digital Input & Output	(P)ET-7044, (P)ET-7050, (P)ET-7052, (P)ET-7244, (P)ET-7250A, (P)ET-7252, (P)ET-7255
Relay Output	Power Relay Output	(P)ET-7060, (P)ET-7067, (P)ET-7260, (P)ET-7261, (P)ET-7267
	Photomos Relay Output	(P)ET-7065, (P)ET-7066
Others	Multi-Function	(P)ET-7002, (P)ET-7016, (P)ET-7024, (P)ET-7026, (P)ET-7202, (P)ET-7224, (P)ET-7226

Function		Module List
<b>WISE-7000 Module</b>		
AI/AO	Voltage & Current	WISE-7117
	Thermocouple	WISE-7118Z
	RTD	WISE-7115
	Thermistor	WISE-7105
DI/DO	DC Digital Input	WISE-7151, WISE-7153
	DC Digital Output	WISE-7142
	DC Digital Input & Output	WISE-7144, WISE-7150, WISE-7152, WISE-7255
Relay Output	Power Relay Output	WISE-7160, WISE-7167
Others	Multi-Function	WISE-7102, WISE-7126
<b>WF-2000 Module</b>		
AI/AO	Voltage & Current, Thermocouple	WF-2017,WF-2019/S
DI/DO	DC Digital Input, DC Digital Output	WF-2051, WF-2042
	DC Digital Input & Output	WF-2055
Relay Output	Power Relay Output	WF-2060
Others	Multi-Function	WF-2026
<b>iSN Module</b>		
Liquid Leakage Detection Module		iSN-101, iSN-104
<b>LC Module</b>		
DI/DO	AC Digital Input	LC-101H, LC-103H
<b>DL Module</b>		
Temperature/Humidity/Illumination		DL-10, DL-100, DL-110, DL-120
Temperature/Humidity/O2		DL-1050
Temperature/Humidity/CO/CO2		DL-301, DL-302, DL-303
Temperature/Humidity/CO/CO2/PM1/PM2.5/PM10/TVOC		DL-1020, DL-1021, DL-1022, DL-1023, DL-1038
<b>DLW Module</b>		
Mini Weather Station Module		DLW-1023, DLW-1100, DLW-1120, DLW-1200, DLW-1243
<b>IR Module</b>		
IR Learning Remote Module		IR-210, IR-712A, IR-712-MTCP
<b>XV-Board Module</b>		
DI/DO	DC Digital Input	XV110
	DC Digital Output	XV111, XV111A
	DC Digital Input & Output	XV107, XV107A
Relay Output	Power Relay Output	XV116
	Signal Relay Output	XV119
Others	Multi-Function	XV306, XV307, XV308, XV310
<b>Modbus RTU/TCP Slave Module</b>		
Coil Output / Discrete Input / Input Register / Holding Register		

## ■ Power Meter & I/O Module Specification for PMC-284x/224x/523x & PMD

- \*PMC-284x support at most 48 modules (Include ICP DAS Modbus Power Meters and Modbus I/O modules)
- \* PMC-224x/523x & PMD support "24 ICP DAS Modbus Power Meter + 8 Modbus I/O modules"
- \* PMD/PMC support at most 4 ICP DAS PM-4324 series Power Meters.

Specification		Description	Max. Connection Allowed
Module for Local site	Local Bus	ICP DAS: XV-Board series module	1 (Not apply to PMD series controller )
Module for Remote site	Modbus RTU by RS-485	ICP DAS : PM-2xxx/3xxx/4xxx series Power Meter ICP DAS : M-7000/DL/IR series module Others : modules that support Modbus RTU Slave Protocol	COM3 and COM4 can connect up to 16 modules individually. (PMD is [COM1/COM2] interface)
	Modbus TCP by Ethernet	ICP DAS : PM-2xxx-MTCP/ 3xxx-MTCP/4xxx-MTCP series Power Meter Others : modules that support Modbus TCP Slave Protocol	LAN interface can connect up to 16 modules.

**\*PMC-2241M-iWSN supports "93 ICP DAS iWSN Wireless Modules"**

Specification		Description	Max. Connection Allowed
Module for Remote site	iWSN Protocol	Support ICP DAS iWSN Wireless Modules	Supports up to 3 ICP DAS iWSN-200 data concentrators, with each iWSN-200 connecting up to 31 iWSN modules.

## ■ List of Supported Power Meters for PMC-284x/224x/523x & PMD

Function		Module List
Single-phase Power Meter	Modbus RTU	PM-3112-100, PM-3112-160, PM-3112-240, PM-3114-100, PM-3114-160, PM-3114-240
	Modbus TCP	PM-3112-MTCP-100, PM-3112-MTCP-160, PM-3112-MTCP-240, PM-3114-MTCP-100, PM-3114-MTCP-160, PM-3114-MTCP-240
3 Phases Power Meter	Modbus RTU	PM-3033, PM-3133P, PM-3133-100, PM-3133-160, PM-3133-240, PM-3133-100P, PM-3133-160P, PM-3133-240P, PM-3133-360P, PM-3133-400P, PM-3133i-100P, PM-3133i-160P, PM-3133i-240P, PM-3133i-360P, PM-3133i-400P, PM-3133-RCT500P, PM-3133-RCT1000P, PM-3133-RCT2000P, PM-3133-RCT4000P, PM-2133D-100P, PM-2133D-160P, PM-2133D-240P, PM-2133D-360P, PM-2133D-400P
	Modbus TCP	PM-3033-MTCP, PM-3133P-MTCP, PM-3133-100-MTCP, PM-3133-160-MTCP, PM-3133-240-MTCP, PM-3133-100P-MTCP, PM-3133-160P-MTCP, PM-3133-240P-MTCP, PM-3133-360P-MTCP, PM-3133-400P-MTCP, PM-3133i-100P-MTCP, PM-3133i-160P-MTCP, PM-3133i-240P-MTCP, PM-3133i-360P-MTCP, PM-3133i-400P-MTCP, PM-3133-RCT500P-MTCP, PM-3133-RCT1000P-MTCP, PM-3133-RCT2000P-MTCP, PM-3133-RCT4000P-MTCP, PM-2133D-100P-MTCP, PM-2133D-160P-MTCP, PM-2133D-240P-MTCP, PM-2133D-360P-MTCP, PM-2133D-400P-MTCP
Multi-circuit Power Meter	Modbus RTU	PM-4324P, PM-4324-100P, PM-4324-160P, PM-4324-240P, PM-4324-360P, PM-4324-400P, PM-4324A-100P, PM-4324A-160P, PM-4324A-240P, PM-4324A-360P, PM-4324A-400P, PM-4324D-100P, PM-4324D-160P, PM-4324D-240P, PM-4324D-360P, PM-4324D-400P
	Modbus TCP	PM-4324P-MTCP, PM-4324-100P-MTCP, PM-4324-160P-MTCP, PM-4324-240P-MTCP, PM-4324-360P-MTCP, PM-4324-400P-MTCP, PM-4324A-100P-MTCP, PM-4324A-160P-MTCP, PM-4324A-240P-MTCP, PM-4324A-360P-MTCP, PM-4324A-400P-MTCP, PM-4324D-100P-MTCP, PM-4324D-160P-MTCP, PM-4324D-240P-MTCP, PM-4324D-360P-MTCP, PM-4324D-400P-MTCP



## ■ List of Supported I/O Module for PMC-284x/224x/523x & PMD

Function		Module List
<b>M-7000 Module</b>		
AI/AO	Voltage & Current	M-7017, M-7017C, M-7017R, M-7017R-A5, M-7017RC, M-7017Z
	Thermocouple	M-7011, M-7011D, M-7018, M-7018R, M-7018Z, M-7019R, M-7019Z
	RTD	M-7015, M-7015P
	Thermistor	M-7005
	Strain Gauge	M-7016, M-7016D
	Analog Output	M-7022, M-7024, M-7024R, M-7024L, M-7024U, M-7028, M-7028D
	RMS Input	M-7017RMS
DI/DO	DC Digital Input	M-7041, M-7041D, M-7041P, M-7041PD, M-7041-A5, M-7041D-A5, M-7046, M-7046D, M-7051, M-7051D, M-7052, M-7052D, M-7053, M-7053D
	AC Digital Input	M-7058, M-7058D, M-7059, M-7059D
	DC Digital Output	M-7043, M-7043D, M-7045, M-7045D, M-7045-NPN, M-7045D-NPN
	DC Digital Input & Output	M-7050, M-7050D, M-7055, M-7055D, M-7055-NPN, M-7055D-NPN
Relay Output	Power Relay Output	M-7060, M-7060D, M-7060P, M-7060PD, M-7061, M-7061D, M-7064, M-7064D, M-7065, M-7065D, M-7067, M-7067D, M-7068, M-7068D, M-7069, M-7069D
	Solid State Relay Output	M-7065B, M-7065BD
	Photomos Relay Output	M-7066P, M-7066PD
Others	Counter/Frequency	M-7080, M-7080D, M-7080B, M-7080BD, M-7084, M-7088, M-7088D
	Multi-Function	M-7002, M-7003, M-7024U, M-7024UD, M-7026
<b>DL Module</b>		
Temperature / Humidity		DL-10, DL-100, DL-110, DL-120
CO / CO <sub>2</sub> / Temperature / Humidity		DL-301, DL-302, DL-303
PM <sub>1</sub> / PM <sub>2.5</sub> / PM <sub>10</sub> / CO / CO <sub>2</sub> / Temperature / Humidity		DL-1020, DL-1021, DL-1022, DL-1023, DL-1038, DL-1050
<b>IR Module</b>		
IR Learning Remote Module		IR-210, IR-712, IR-712A
<b>XV-Board Module</b>		
DI/DO	DC Digital Input	XV110
	DC Digital Output	XV111, XV111A
	DC Digital Input & Output	XV107, XV107A
Relay Output	Power Relay Output	XV116, XV119
Others	Multi-Function	XV306, XV307, XV308, XV310
<b>Modbus RTU/TCP Slave Module</b>		
Coil Output / Discrete Input / Input Register / Holding Register		

## ■ List of Supported iWSN Wireless Module for PMC-224xM-iWSN

Function		Module List
iWSN Wireless Power Meter		iWSN-9603
iWSN Wireless Sensing Module	CT	iWSN-110X
	CT /Thermistor/DI	iWSN-121A
	CT /Thermistor	iWSN-1310

## ■ Installation Platform Requirement

	Specification Suggestions
<b>CPU</b>	64-bit (x64); 3.0 GHz or higher GHz Processor
<b>RAM</b>	Minimum 8 GB for RAM. When the number of controllers or sensors, or the size of Database is increased, upgrade the RAM space as needed to ensure the best performance of the system.
<b>Hard Disk</b>	Minimum 64GB for Hard Disk space. When the number of controllers or sensors, or the size of Database is increased, upgrade the Hard Disk space as needed to ensure the best performance of the system.
<b>OS System</b>	Windows 7, Windows 8, Windows 10, Windows Server 2012 or later OS system (64-bit Windows required).
<b>Notes</b>	<ul style="list-style-type: none"> <li>Support WISE-523x/2x4x/75xx, PMC-523x/2x4x and PMD controllers.</li> <li>Need to work with IIS Web Server.</li> <li>Need to work with Database system such as Microsoft SQL Server, MySQL Server or Oracle Database. (For detailed version information, please refer to IoTstar user manual)</li> </ul>

## ■ Ordering Information

- **IoTstar 2025 (built-in "Controller Remote Access Service", "Sensor Data Collection Service", "Sensor Data Visualization Service", "Sensor Data Report Service", "Bot Service with Mobile Phone")**

Model	Description
<b>IoTstar2025-RC050</b>	IoTstar 2025 - IoT Cloud Management Software (Max. 50 controllers can be connected.)
<b>IoTstar2025-RC200</b>	IoTstar 2025 - IoT Cloud Management Software (Max. 200 controllers can be connected.)
<b>IoTstar2025-RC500</b>	IoTstar 2025 - IoT Cloud Management Software (Max. 500 controllers can be connected.)

- **IoTstar 2025 Upgrade Package (Optional package for IoTstar 2025)**

Model	Description
<b>IoTstar2025-UC050-200</b>	IoTstar 2025 Upgrade Package (Upgrade the maximum number of controllers connected to IoTstar from 50 to 200.)
<b>IoTstar2025-UC200-500</b>	IoTstar 2025 Upgrade Package (Upgrade the maximum number of controllers connected to IoTstar from 200 to 500.)

**Note:** For IoTstar versions released before 2025, no new features will be added. However, essential bug fixes will continue to be provided. If you need to expand the number of controllers or purchase additional software features, please contact our sales team.



- ### IIoT 1 Software . Controller/Server
- Cloud Management Software: IoTStar
  - SCADA System Software: AVEVA Edge
  - Condition Monitoring Solution: ExoWISE
  - Edge Controller WISE Series
  - Communication Server: UA Series
  - MQTT Communication Server: BRK Series



- ### IIoT 2 Access Control Security/ Factory Automation
- WISE Surveillance Solution
  - IP Camera iCAM Series
  - Smart Access Control
  - IIoT and Smart Phone Integration
  - MQTT I/O Module MQ Series
  - Stack Light Monitoring Module
  - Emergency Voice/Visual Alert Module
  - Industrial LED Message Display
  - Bluetooth LE Gauge Master
  - Temperature Data Logger
  - Signal Conditioning Modules
  - No-touch Infrared Sensor Switch



- ### IIoT 3 Environmental Monitoring/ Mini Weather Station
- Smart Environmental Monitoring: CL Series
  - Air Box: DL Series
  - Mini Weather StationMotion: DLW Series
  - Detector: PIR Series
  - Industrial Sensor Network Detection: iSN Series
  - Wireless Environmental Solution: iWSN/iXN/iSOS Series



- ### Energy Management Solution
- Energy Management Solutions
  - Energy Management Applications
  - InduSoft
  - Power Meter Concentrator
  - Smart Power Meter
  - True RMS Input Module
  - DN-800 Series
  - iWSN/iXN Solution
  - Infrared Thermography Temperature Monitoring
  - Portable Power Monitoring Suitcase
  - RPS-4M Redundant Power Supply



- ### WISE Intelligent IIoT Edge Controller & I/O Module
- WISE IIoT Edge Controller I/O Module
  - Cloud Management
  - WISE Applications
  - IIoT Edge Controller
  - Intelligent I/O Module
  - Intelligent Surveillance Solution
  - Smart Phone Integration Solution
  - Condition Monitoring Solution



- ### Smart Building, Smart Home Automation
- Video Intercom & Access Control
  - Touch HMI - TouchPAD Series
  - Smart Lighting Control
  - Energy Saving - PM/PMC Series
  - Environmental - DL/CL Series
  - Motion Detector - PIR Series
  - Wi-Fi Wireless - WF Series
  - Infrared Wireless - IR Series
  - ZigBee Wireless - ZT Series
  - IIoT Server & Concentrator
  - LED Display - iKAN Series



- ### PC-based I/O Boards
- PCI Express Bus Data Acquisition Boards
  - PCI Bus Data Acquisition Boards
  - ISA Bus Data Acquisition Boards



- ### TouchPAD HMI Solutions
- Introduction
  - TPD/VPD Products Series
  - Video Intercom & Access Control Series
  - TPD/VPD Application

