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*Enabling an Intelligent Planet*

# About Advantech

## Advantech : Partnering for Smart City and IoT Solutions

Founded in 1983, Advantech has the corporate vision to "Enable an Intelligent Planet". The company is a global leader in the fields of IoT intelligent systems and embedded platforms. To embrace the trends of IoT, big data, and artificial intelligence, Advantech promotes IoT hardware and software solutions with the Edge Intelligence WISE-PaaS core to assist business partners and clients in connecting their industrial chains. Advantech is also working with business partners to co-create business ecosystems that accelerate the goal of industrial intelligence.

## Advantech's Good-to-Great 3-Circle Principle

The Advantech 3-Circle Principle is based on the book "Good to Great," by Jim Collins. According to the book, a company looking for long-term success should clearly address these three fundamental principles, and commit to their continuing, solid execution. Advantech is fully committed to this approach and has defined the Advantech "Good to Great 3-Circle Principle" as a means of adhering to it.

## World-Class Recognition

Advantech is an authorized alliance partner of both Intel® and Microsoft®. Our customers find the technologies we use inside our products to be widely compatible with other products in the global marketplace. Interbrand, the world renowned brand consulting firm, recognized Advantech as one of the Top 20 Taiwanese Global Brands for many years. Advantech appreciates this recognition of our efforts to build a trusted, global brand; it also symbolizes a promise we give to our business partners, which is to keep building a trustworthy brand that is recognized everywhere and improves the lives of all.

**Mission**
*Enabling an Intelligent Planet*

**Growth Model**
*Domain Focused
Biz Sectors
Co-Created with
a Global Trusted Brand*

**Focus & Goal**
*The Global Leader of
Embedded & Automation
Solution Platforms for
IoT System Integrators*

## Quality and Environmental Compliance

As a member of the global village, Advantech understands the importance of preserving the environment. Our environmental programs focus on reducing, reusing, and recycling materials used in our manufacturing operations. Advantech's quality and environmental compliance efforts include the

- ISO 9001 Certification
- ISO 14001 Certification
- ISO 13485 Certification
- OHSAS 18001 Certification
- TL9000 Certification
- ISO 17025 Certification

- RoHS Directive Compliance
- WEEE Directive Compliance
- Authorized Sony Green Partner
- REACH SVHC Directive Compliance
- EICC Conflict Minerals Declaration

## Timely Support at Your Convenience

Advantech has over 20 regional hotlines and offices throughout 23 countries, with over 8,000 employees employees to provide efficient, professional services for customer care, product selection, technical support, and order handling. Through our call centers and online stores, customers worldwide enjoy the convenience of Advantech's multi-service channels to reduce business turnaround time. Together with the four logistics centers in Taiwan, China, Europe and the United States, our global service network offers an extensive spectrum of services that includes warehousing, logistics, peripheral certification, sourcing & purchasing, and RMA & value-added services, and technical support & training.

# Advantech Online Services

## Advantech.com Website

Through www.advantech.com, we not only offer comprehensive products, but also real-time updated information to our customers. In addition to product information, you also can find case studies of proven applications from diverse sectors. Furthermore, registered MyAdvantech members, can access the RMA service center, updated price lists, and various promotion programs.

## Online Store

To extend Advantech's services, we launched the Buy.Advantech online store which offers one-stop shopping for Human Machine Interfaces, Industrial Ethernet networking, Controller & I/O products, plus computing platforms. This eStore offers comprehensive product information to build systems easily, with live expert support to solve problems, online configuration providing easy system customization options, instant quotations, an extensive library of FAQs and all the latest up-to-date downloads and firmware.

Buy.Advantech.com

## Online Support

Providing superior self-support mechanisms is one of the most essential parts of being a top-tier automation company, and we take pride in the outstanding level of service that we offer. To best support our customers, we've created a suite of useful interactive online tools, including:

- Technical Documents: Manuals, datasheets, updated drivers and utilities-all available for download through the support portal.
- 3D Product Models: Simulated products in 3D format to provide detailed visualizations for evaluation.

- Online Training: Self-training documents and videos to provide trainees with integrated information.
- Online Catalog: A comprehensive online catalog with extensive product information.
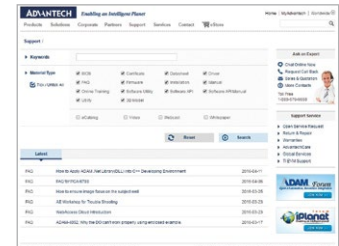
support.advantech.com

## 24/7 Online Service

To effectively respond to customers' questions, our regional call centers support inquiries about: purchasing, shipping, technical, RMA issues and more. Contact your regional call center to get the support you need today.

## Global Hotlines

| US / Canada | 1-888-576-9668 | China | 800-810-0345/8389 | Russia | 8-800-555-01-50 (Moscow) 8-800-555-81-20 (St. Petersburg) |
|---|---|---|---|---|---|
| Mexico | 52-01-800-467-2415 | Taiwan | 0800-777-111 | India | 1-800-425-5070/71 |
| Colombia | 57-1381-2858 | Japan | 0800-500-1055 | Thailand | 66-2-248-3140 |
| Brazil | 0800-770-5355 | Korea | 080-363-9494/9495 | Indonesia | 62-21-7511939 |
| Europe | 00800-2426- 8080/8081 | Singapore | 65-6442-1000 | Malaysia (KL) | 60-3-7725-4188 |
| | | Australia/ New Zealand | 1300-308-531 | Malaysia (Penang) | 60-4-537-9188 |

## Advancing Key Growth Areas in Industry 4.0, Industrial Equipment Manufacturing, Energy & Environment and Transportation

The Industrial Internet of Things (IIoT) is set to open up a new era of industrial applications, booming opportunities, and economic growth. The IIoT is a matrix of networks that connects people with data and intelligent machines in order to optimize industrial operations, productivity, and efficiency. To support the growth of IIoT, Advantech provides products and services that build the IIoT infrastructure and strengthen their offerings with four layers including, IoT Sensing Devices, Edge Intelligence Servers (EIS), IoT Cloud Platforms, and Solution Ready Package (SRP). Advantech is devoted to leveraging its computing, data acquisition, and networking competence to provide customer-centric products and solutions for key growth areas in Industry 4.0, Industrial Equipment Manufacturing, Energy & Environment, and Transportation.
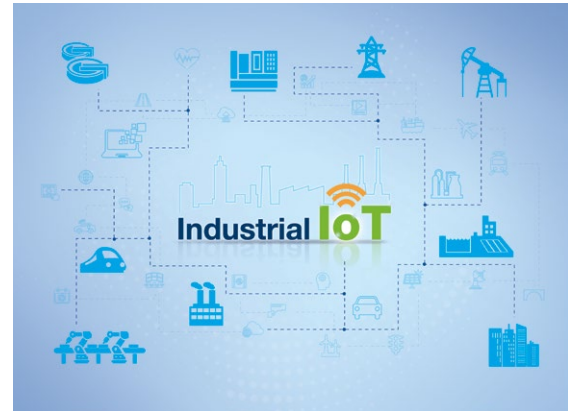


## Realizing Industry 4.0 with Advantech's iFactory SRP Solutions

Industry 4.0 is transforming manufacturing worldwide. Factory management needs assistance as they either upgrade existing facilities, or establish new ones that take advantage of Industry 4.0 optimization. Advantech IoT solution architecture enables the development of iFactory Solution Ready Packages (SRPs) that help customers as they embrace Industry 4.0. Advantech's iFactory SRPs are quick-start tools that enable a step-wise approach to achieving Industry 4.0.

The Industry 4.0 situation room is the most important upgrade to intelligent transformation. The Industry 4.0 situation room is the factory's nerve center where data is collected, analyzed, and visualized for real-time management. The situation room is realized with the iSensing devices, edge intelligent gateways, WISE-PaaS software platforms, and iFactory SRP solutions.

iFactory solutions facilitate machine connection without replacing existing equipment, allowing for collection of equipment status data, production data, and environmental data. Data acquisition enables production monitoring, data integration with MES, and visualization on the situation room dashboard for production optimization and data-driven decision making. The WebAccess App enables push notifications of unexpected downtime, allowing immediate action to be taken. Advantech realizes the intelligent factory from a user perspective, and helps customers embrace Industry 4.0.
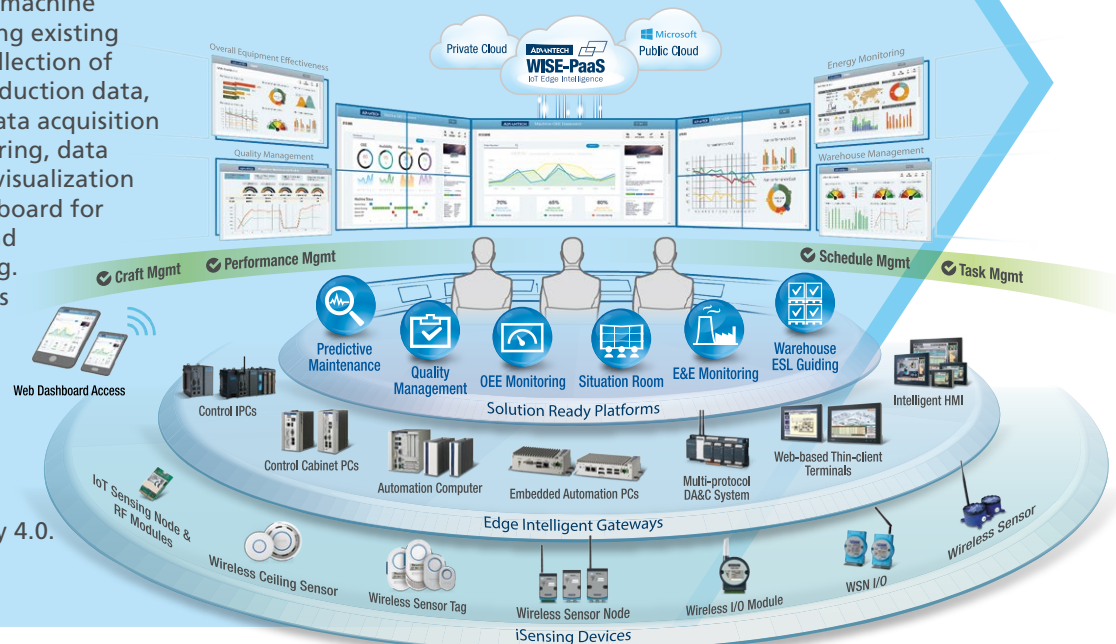
## The best industrial equipment manufacturing solutions for equipment builders

A key step Advantech adopts to realize smart manufacturing is to connect devices, computing systems, and equipment all together to accomplish data acquisition and integration, and import services to accomplish manufacturing process integration. Advantech achieves the network connection of equipment and devices needed to improve manufacturing and transform industry.

The product offerings of Advantech's industrial IoT include Internet of Things software – WebAccess, industrial communication products, gateways, PC-based control platforms, industrial computing platforms, servers and data capture modules. Meanwhile, Advantech also provides equipment automation and intelligent factory solutions. In the vertical markets of equipment automation, Advantech works with partners to find the most suitable industrial machinery, electronic equipment, and manufacturing solutions to meet the needs coming from diverse markets.

## Cloud-enabled Energy and Environment Solutions

As the development of IoT and cloud technology, lots of Energy & Environment practices have evolved to remote management using cloud service for further analytics, visualization, and machine learning. However, there are still many difficulties system integrator and equipment operators need to overcome, including getting data from wide area, connecting data to different cloud service, and making data visible and applicable.

To shorten the gap and accelerate our customers' time-to-market, Advantech is devoted to offering Solution Ready Packages (SRP) for Energy & Environment markets based on our success of both hardware/software products and domain experience.



With our Machine-to-Intelligence (M2I) SRP, which include power inverters, water pumps, HVAC, and transformers, equipment builders can easily get the status of their machines and facilities then connect their data to the cloud. By integrating different M2I SRP into vertical system SRP, system integrators can quickly build up energy, solar power, water treatment, and pollution management solutions.



## Intelligent Transportation Systems

With a decade of successful experience, Advantech has dedicated resources to designing and developing new products designed for the transportation industry. These products support both railway and roadway applications, including railway automatic fare collection, wayside control, rolling stock, city traffic management, highway management, transport hubs, and more. Our mission is to enable intelligent transportation systems, which also helps us fulfill our vision of creating and delivering smart city technologies.

7

# Enabling IIoT and Industry 4.0 with Sector-Focused Solutions and Intelligent Automation

Transportation

iFactory

Industrial Equipment

**Solution Ready P**

Equipment Connectivity

Process Visualization

CNC Machine Monitoring

OEE Monitoring

Factory Situation Room

Azure

**WebAccess/SCADA**
IoT Application Software Framework

**WebAccess/MCM**
Machine Condition Monitoring

**WISE-PaaS/EdgeLink**
M2I Edge Engine

**WebAccess/HMI**
HMI Runtime Development

**ADVANTECH**

**WISE-**
IoT Edge Int

WISE-PaaS
RESTful APIs

MQTT ORG

Modbus    CoAP

**Vertical-Focused Devices**

Transportation

Wayside Solutions

Fully Compliant with
EN 50121-4

Machine Automation

Power and Energy

Rolling Stock Solutions

Fully Certified with
EN 50155

Machine Vision

TÜV SÜD

IEC61850

EtherCAT Solutions/Motion Control

IEC 61850-3 Platforms/Switches

Servers & Storages

Human Ma

IEC61850
Compliant

Energy Gateways

**iConnectivity**

Industrial Wireless Solutions

Industrial Eth

**Industrial IoT Platfor**

t Manufacturing

Energy and Environment

General Industrial IoT

## ackages
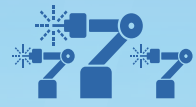
**Machine Automation**

**Water Treatment Management**

**Air Quality Monitoring**

**Renewable Energy Management**

3rd Party Cloud

**WISE-PaaS/VideoCMS**
Video Content Management

**WISE-PaaS/SignageCMS**
Signage Content Management

**WebAccess/NMS**
Network Management

**WISE-PaaS/RMM**
Remote Monitoring and Management

PaaS
telligence

Node-RED Packages

AMQP
Advanced Message Queuing Protocol

ROFI
US

OPC UA

## Intelligent Automation Systems

Control IPCs

Embedded Automation Computers

I/O & Video Cards

EtherCAT I/O Modules

Industrial PCs

Modular IPCs

achine Interface

## iSensing Devices

Data Acquisition Computers, Cards, and USB Modules

Wireless I/O Modules and Sensor Nodes

Remote I/O Modules

Edge Intelligent DAQ

ernet Solutions

## rms & Devices

# Global Certified Partner Network

Since 1983, Advantech has formed strong and lasting partnerships with many well-established channel partners and solution partners to deliver prompt and reliable local services for our customers. Currently, Advantech has over 600 partners in more than 70 countries worldwide to provide certified services and products anytime, anywhere.

## Certified Professionals Guarantee Outstanding Quality Services

Through rigorous training and validation, our partners are certified annually, guaranteeing a high standard of quality and service. With these dedicated and well-trained sales and technical support teams, Advantech customers can enjoy outstanding quality services and early access to latest industrial computing solutions.

- Value-added services: Many of our partners are, value-added resellers, focused channels, system integrators, or independent software vendors specialized in specific industry segments or applications with years of experience in developing application ready platforms.

  Their profound knowledge in integrating Advantech's hardware platforms with peripherals and software can speed up your time-to-market.

- Quality technical support: All the partners have dedicated application engineers to provide pre-sales and post-sales technical support. Within Advantech, there's a group of hotline and field application engineers to back up our partners, ensuring the highest service levels.

- Fast delivery with flexible global supply chain: With over 600 partners and 4 regional service centers worldwide, Advantech offers fast delivery and after-sales support to our customers.

## Strategic Focus Makes the Difference

As industrial and embedded computing applications become more diversified, customers are demanding tailored solutions for vertical applications plus high-quality local support. To fulfill such needs, Advantech has developed its global partner network with a strategic focus in mind. We only partner with distributors, VARs, and system integrators who value high-quality services as we do and pride themselves with expert industry know-how and technical proficiency. Through our comprehensive training and certification programs, Advantech partners are expert consultants in our portfolio of product and service offerings for various vertical segments.
Currently, Advantech has partners in the following categories:

## Channel Partners

Advantech Industrial IoT Channel Partners (CPs) are focused on industrial automation, embedded systems, and general computing platform markets. With local inventory, logistic services, technical support and other add-on value services, our partners provide professional services and prompt delivery of system and components for automation applications. Aligned with our regional sales offices and service centers, Advantech CPs have formed a strong service network to offer professional pre-sales and post-sales worldwide. Advantech has also identified key channel partners and focused on specific vertical segments, to provide local value added services for our customers such as application development, technical consultation, design services, integration and installation, on-site services, technical training, and project management. These CPs are certified value-added resellers with expertise in application development and system integration for each vertical segment.

## Solution Partners

Solution Partners are 3rd parties who integrate Advantech products and value-added software and peripherals to provide turn-key solutions. Advantech's Solution Partners offer our customers a full range of field proven integrated solutions in Medical, Telecom, Transportation, Gaming, Power & Energy, Building & Home Automation, Factory & Machine Automation, Environmental Monitoring & Facility Management, Retail, Hospitality & Selfservice, and many more. Their solutions are validated with Advantech products for compatibility, quality, and service.

## WISE-PaaS Alliance

Advantech WISE-PaaS Alliance is a market-oriented cooperation model based on Advantech's WISE-PaaS software platform. WISE-PaaS/ IIoT is one of the two software components of WISE-PaaS Alliance and is designed to connect partners, cultivate co-development of vertical solutions, and encourage strategic co-marketing. By providing comprehensive IoT solutions for diverse markets and applications, WISE-PaaS/ IIoT can enable partners to expand into various IoT vertical markets. By leveraging WISE-PaaS/IIoT and WebAccess platform and solutions, partners will be able to shorten their project life cycles through integrated solutions, gain competitive advantages through early technology access, boost profits and revenue through co-marketing activities, and enable cross-region business through Advantech's business networking and coverage.

# Advantech iPlanet Care

## Manufacturing

Our dual, world-class manufacturing centers in Taiwan and China maintain precise quality control, and offer a full range of production in a timely and cost-effective manner. To maximize the efficiency of operational procedures, we have implemented a cluster manufacturing system within our segmented manufacturing service units. This unique approach enables a direct, simplified, and highly streamlined design-to-manufacturing process.

- In-house board, chassis, and system production
- Dual world-class manufacturing centers minimize business risks
- Advanced production capabilities and customizable processes
- Rigid quality assurance system
- Most complete ISO standard coverage

**ATMC**
Taipei, Taiwan

- Small Volume Production
- Board & System Products
- ODM/OEM Projects
- Engineering Sample Innovation Services

**Mutual Backup**

**Centralized ERP & Shop Floor**

**AKMC**
KunShan, China

- Mid-to-High-Volume Production
- Board, Chassis and System Design & Production
- ODM/OEM Projects
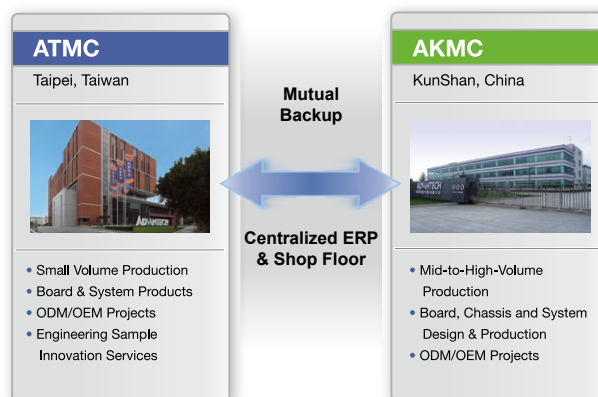
## Configure To Order Services

Advantech's Configure To Order Services (CTOS) makes industrial computing solutions more accessible by offering web-based configuration tools, comprehensive, complex assembly services with high-mix, low-volume box build and customized assembly, modification, system integration and functional testing services.

- Online intelligent configuration
- Comprehensive approach to complex configuration solutions
- Local customized configuration services
- 2 year global warranty covering system & peripherals integrated

**ADVANTECH CTOS**
*Configure To Order Services*

## Certified Quality Assurance System

Advantech has been designing and manufacturing industrial PCs according to our 3C Quality Statement:

- Always strive for overall customer satisfaction
- Continuous improvement
- Apply closed-loop mechanisms to resolve problems

At Advantech, quality is our main priority. A complete line of safety, EMC and reliability measures such as ESD, vibration, drop testing, temperature, humidity and HALT chambers are available to ensure our products meet the strictest standards. All facilities are at least ISO 9001 and 14001 certified while others hold additional certifications such as ISO 13485, 17025, TL9000 and OHSAS18001. An environmental program that focuses on reducing, reusing and recycling of materials throughout the manufacturing process is also applied at Advantech. All our products are 100% RoHS compliant and hazardous substance management systems are applied to meet worldwide environmental requests. Advantech's efforts towards environmental protection have been recognized by Sony since 2004 (Sony Green Partner).

- Complete ISO coverage
- Constant quality and reliability monitoring
- Green policies
- Ease of access to quality contacts

# One-Stop Global Services

Advantech iPlanet Care combines exceptional business expertise, powerful design capacities, and a thorough global service network to provide one-stop global services and total solutions. Our broad range of global support packages adds maximum flexibility and efficiency to your projects.

## Global Logistics Services

With strong integrated ERP and SAP supply chain solutions, our worldwide logistics network offers a wide range of options for different delivery models including local and global solutions that meet your unique needs and budget requirements. Advantech's Logistics Service gives you the flexibility to simplify your logistical networks, bring your products to market on time, and enjoy a timely return on your investment.

- Optimized and flexible shipping solutions
- Integrated ERP and SAP supply chain solution with global distribution network
- Centralized plants with local delivery

## Global Peripheral Procurement Services

Advantech global peripheral procurement network consists of local teams that leverage strong, worldwide supplier relationships and strict vendor and product management to offer quality-guaranteed, compatible peripherals with short lead times and competitive prices.

## Global Customer Support Services

- Localized procurement with worldwide network support
- Global standardization management; 100% compatible peripherals
- Trusted quality with revision control
- Short lead time and competitive price

Our global presence provides localized reliable customer support services. We can create an optimized maintenance and support plan, leveraging the full power of our service portfolio to help reduce costs and proactively mitigate business risks to best meet your needs. In addition to our complete technical and repair support, we provide a variety of customizable after-sales services, including extended warranty, advance replacement, upgrades, fast repairs, and more. With our knowledgeable local support groups, we enable a consistent support experience around the world and help keep your investment at peak performance and within your budget.



Non-Stop technical support

- 24/7 technical support: hotline AE & online chat support
- Easy-to-use web-based repair and tracking system (eRMA)
- Global deployment with local full-line repair capability
- Various value-added, after-sales service packages



Onsite Service | Warranty — Extended Warranty Service | Pick-up Service | Fast Repair Service | Advanced Replacement Service | Upgrade Service | Technology Update Service | Preventive Maintenance Service | Health Checkup Service
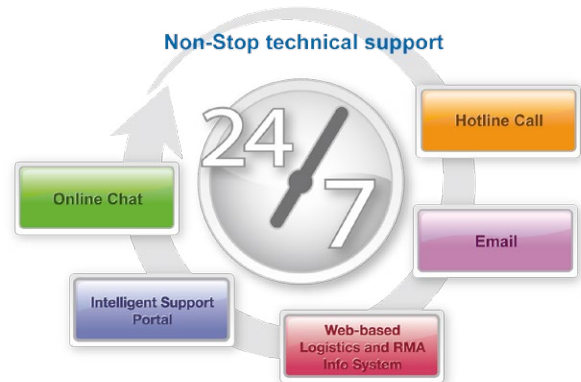
# Advantech WISE-PaaS Edge Intelligence Platform

## Enabling IoT Edge Intelligence & IoT Innovative Business Models



Advantech's key strategies for the next decade are to provide integrated IoT solution platforms. The Advantech WISE-PaaS Edge Intelligence Platform offers a diverse range of software that can be applied and integrated into domain-focused SRPs. This platform provides a wide range of software and cloud-based service solutions from industrial data/ video acquisition, analysis, and visualization to cloud platform services and dashboard functions, thus enabling IoT at all system layers and realizing IoT-powered business models in various vertical markets. Join Advantech's WISE-PaaS VIP program and enjoy IoT success by leveraging WISE-PaaS's comprehensive solutions.

## Advantech WebAccess Software



### WebAccess/SCADA
#### Industrial IoT Application Software Platform
- Enables 100% web-based remote engineering, monitoring, and control
- Driver support for major PLCs, PACs, I/O modules, CNCs, network switches, and computer platforms
- Redundant SCADA, ports, and devices for high availability
- Supports multiple databases for data connectivity and data fusion
- HTML5-based dashboard for cross-browser, cross-platform data visualization and data analysis
- Provides flexible open interfaces for easy development and integration of third-party applications
- Plug-and-play functionality ready for private cloud solution
- Online software license authentication for cloud computing virtual machines



### WebAccess/HMI
#### HMI Runtime Development Software
- Smart screen management
- Project-based management for multiple applications
- Software support for a diverse range of machines
- Provides efficient tools for easy customization
- Boosts performance with simulations
- Enhanced data security



### WebAccess/CNC
#### CNC Machine Networking Solution
- Supports leading CNC network controllers
- Supports CNC machine and I/O device monitoring
- Provides CNC availability queries and NC file transfer function
- Supports all features and full functions of WebAccess/SCADA software
- Automatically generates CNC projects for WebAccess/ SCADA software
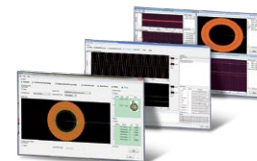


### WebAccess/MCM
#### Machine Condition Monitoring Softwave
- Dynamic signal acquisition and analysis
- Real-time monitoring and alarm notification
- Provides feature extraction algorithms for data processing
- Remote management for distributed monitoring solutions
- Integrated with WebAccess/ SCADA
- Ensures easy setup without additional programming



### WebAccess/NMS
#### Network Management System
- Cross-browser compatible
- Online Google Maps and offlineOpenStreetMap support
- Supports all Advantech Ethernetbased products
- Dynamic connectivity indication
- Automatically discovers and diagrams network topology
- PoE, ring, wireless, cellular connection indication



### WISE-PaaS/VideoCMS
#### Video Content Management
- Centralized management and deployment of video sources
- Configurable video analysis modules, generated events, and attributed data to facilitate an intelligent security system
- Powerful SDK integration for expansion to various application scenarios



### WISE-PaaS/EnSaaS
#### Platform for IoT Cloud Services
- Connect, monitor, and manage millions of IoT assets
- Managed SQL, NoSQL, and time-series databases for app developers
- Visualization dashboard for deriving actionable insights
- Quickly create powerful cloud apps using a fully managed platform

# iFactory and M2I Solution-Ready Packages

## Designed for Smart Factory and IoT Applications

In response to increasing demand for Industry 4.0 technology, Advantech has aimed to create data-driven solutions that enable intelligent manufacturing solutions that are more flexible and responsive. To highlight this, iFactory solutions are targeted at markets that seek to utilize smart factories, such as in food and beverage, electronics manufacturing, auto assembly, footwear, and energy and environment industries; whereas M2I/ CNC solutions are designed to enhance CNC intelligent machine monitoring.

**Industry 4.0**

## Process Visualization Solutions

### SRP-FPV240

Enhanced Productivity and Reduced Downtime with Centralized Management
- Centralized applications and client management
- Enables superior visualization for multi-tasking
- Reduced downtime and easy maintenance of thin clients

SRP Package:
1 x UNO-2362G-T2AE, ACP-Ready Thin Client,
HDMI x 1, DP x 1

### SRP-FPV220

Process Data Charting and Analysis for Production Optimization
- Shop-floor information visualization
- Mobile production monitoring with dashboards
- Easily integrated with MES via open APIs

SRP Package:
1 x WebAccess/ SCADA, 1 x UNO-2483G,
1 x WISE-4012

## Equipment Connectivity Solutions

### SRP-M2i240-A

Easy Programming for Real-Time Machine Control
- IEC 61131-3-compliant
- Dual Fieldbus for real-time data acquisition
- EtherCAT for real-time soft motion control

SRP Package:
1 x CODESYS V3.5 SP8, 1 x UNO-1372G,
1 x iDoor CANOpen

### SRP-FEC220

Machine Data Acquisition for Monitoring and Optimization
- 100% data acquisition
- Flexible protocol conversion
- Easily connect OT and IT

SRP Package:
1 x WebAccess/ HMI, 1 x UNO-2271G,
1 x ADAM-6060

## M2I/CNC Solution

### SRP-M2i600

CNC Processing Efficiency Monitoring and Tool Wear Management
- Easy protocol conversion for all major CNC controllers
- A range of CNC operation and management functions
- Visual and web-based dashboards

SRP Package:
1 x WebAccess/ CNC, 1 x UNO-1372G-J

# Energy & Environment Solution-Ready Packages

## Accelerating Cloud-enabled IoT and Smart City Applications

**ADVANTECH**
**WISE-PaaS**
IoT Edge Intelligence

Given the growing public concern regarding energy and the environment, Advantech's E&E SRPs have an industrial IoT focus on the processes of sensing, control monitoring, and remote communication. By combing these technologies with WebAccess and WISE-PaaS, both of which are reliable tools for information integration and data analysis, our E&E M2I and SRPs solutions can be widely utilized in various E&E industries.

## Central Management

**WebAccess/SCADA**

Data Server        Application Server

Multi-Display System

Display Server

### E&E SRP-010 Basic System Series
- Highly stable and reliable industrial-grade server
- Powerful processing performance based on the Intel® Xeon® E5 CPU
- Extended hardware and software architecture for flexible scalability

Field Sites:
Energy management, solar power management, water management, and indoor air quality solutions

### E&E SRP-100 Situation Room Series
- Multi-screen integration for creating a highly visualizable control room
- Ruggedized fanless industrial display server
- HD display quality

Field Sites:
Energy management, solar power management, and water managementt solutions

## Field Site Solutions

**WebAccess/EMS**

**WebAccess/SPMS**

**WebAccess/SCADA**

### E&E SRP-400
Energy Management Solution
- Data acquisition sensors and meters
- Customized energy consumption reports
- Built-in formula for energy management

SRP Package:
1 x EMS, 1 x WebAccess/ SCADA w/ 5000 tags,
1 x UNO-2483G, 1 x ECU-1251

### E&E SRP-410
Solar Power Management Solution
- Hierarchical visualization and complete management
- System stability guaranteed by seamless integration
- Precise and effective data acquisition

SRP Package:
1 x SPMS, 1 x WebAccess/ SCADA, 1 x ECU-4784,
10 x ECU-1251

### E&E SRP-WMS420
Water Management Solution
- Monitoring and analysis for operational efficiency
- Reliable and stable seamless integration
- Data acquisition for different equipment types

SRP Package:
1 x WMS, 1 x WebAccess/ SCADA w/
20000 tags, 1 x ECU-4784, 1 x ADAM-3600

## Machine to Intelligence (M2I) Solutions

**WISE-PaaS/EdgeLink**

**WISE-PaaS/EdgeLink**

**WISE-PaaS/EdgeLink**

### E&E SRP-401
On-Site Energy Data Acquisition
- Connect to field devices with multi-protocol support
- Smart meter for energy data acquisition
- Data store and forward

SRP Package:
ECU-1152TL, WISE-M502

### E&E SRP-411
Distributed Solar Power Data Acquisition
- One slot for wireless expansion
- Built-in data mapping for solar power inverters
- Data store and forward

SRP Package:
ECU-1251TL, WISE-M502

### SRP-EM2i450
Distributed Equipment M2I SRP
- Conditional maintenance
- Real-time monitoring of operating status
- Cloud connectivity via MQTT

Applied devices:
Water pumps, power generators, and HAVC

# Machine Automation

## Integrated Soft Computing to Enable Intelligent Machines

Advantech has independently developed a unique SoftMotion kernel and innovative GigE Vision offload engine that uses field programmable gate arrays (FPGA), digital signal processing (DSP) units, and Arm® processors as the core-computing platform. In addition to providing versatile solutions, Advantech's PCI and PCIe motion cards and all-in-one systems also deliver optimum motion performance and fulfill the needs of OEM machine makers and system integrators. Our new motion solutions also support EtherCAT for distributed, deterministic motion and I/O capability. MAS and VPS are our new SRP offerings for motion control and machine vision, enabling customers to continuously advance their technologies.

## EtherCAT Solutions

### High Precision
• Motion master cycle time: Up to 250 μs for 6/ 10/ 16/ 32/ 64 axes
• I/O master cycle time: 200 μs

### Real Time
• Embedded RTOS for real-time motion control
• User-friendly basic scripts for stored procedures

### Ease of Use
• Unified API for rapid development
• SoftMotion Engine for vertical applications

### Integration
• Supports EtherCAT servo/ stepping motors
• Pulse train control via EtherCAT motion modules
• Automatic connection of EtherCAT slaves throughout a network

### Structure



**PCIE-1203** PC-Based Master Card
EtherCAT Rotary/ Linear Motors
**AMAX-3245** Pulse Command Module
**AMAX-4830/33/34** DIN-rail Type Remote I/O Module
Pulse-type Motor
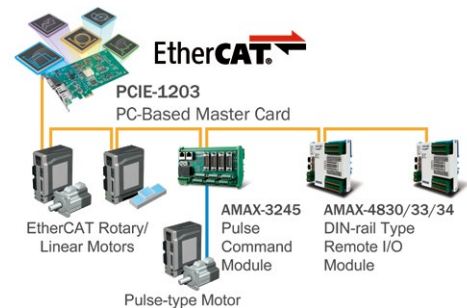
## PC-Based Programmable Motion Control Solutions

### Open Platform Multi-Axis Controller
• Seamlessly integrated motion control, machine vision, and I/O components
• Open standard interface for communication and database connectivity

### One Programming Tool – Motion Studio
• Easy to program with BASIC language, thus shortening the learning curve
• Extensive debugging tools for machine control applications
• Fast to learn, program, and service

### Real-Time SoftMotion Kernel
• Up to 6-axis interpolation, trajectory planning, and tracking
• Rich motion functions for XYZ table and SCADA control

### Structure



**MAS Controller**
Industrial Camera / PLC
Servo Motors
DI / DO / AI / AO

## Automatic Vision Inspection Solutions

### Configurable Application Software
• Easy-to-configure and deploy applications without programming
• Intuitive GUI shortens the learning curve
• Industrial-grade and compact design
• Fanless system w/ IP40 rating
• 7-year product lifetime
• Palm-sized (137 x 50 x 118 mm)

### Versatile I/O for the Factory Floor
• PWM lighting control
• Debounce filter w/ interrupt on digital input
• Compliant with GigE Vision cameras

### Structure



**VPS-3100**
GEN<i>CAM
Industrial cameras    Monitor    Lighting
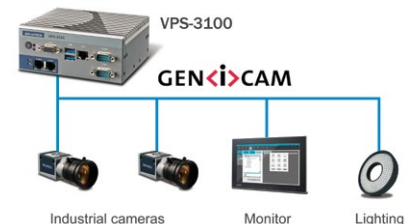
# Power and Energy Solutions

## Ensuring Reliable Solutions in the Changing Energy Market

To ensure safety and reliability by strengthening the energy management and monitoring of distributed energy stations, renewable energy sources, grid infrastructure, and manufacturing consumption, Advantech offers the ECU series of automation controllers, gateways, and data acquisition modules. These units are IEC 61850-3-compliant, have a robust design, and offer such features as wireless connectivity, multi-protocol support, and WebAccess integration to provide a flexible and robust open platform for convenient secondary development. By leveraging the extensive range of Advantech energy technology and solutions, users can manage tasks economically and efficiently despite the increasing complexity and dynamic nature of power and energy markets.

## Automation Platforms

### ECU-4784 Series

TUV IEC-61850-3-Certified Power Automation Computer
- Intel® Xeon® quad-core E3-1505L processor (2.0 GHz) w/ 16 GB of DDR4 ECC RAM
- Intel® Core™ i7 4650U/ Core™ i3 4010U/ Celeron® 2980U processor w/ 8 GB of DDR3L RAM
- 8 x 10/ 100/ 1000MB LAN, 2 x RS-232, 8 x RS-232/ 422/ 485 serial ports
- 2 x I/O expansion slots
- Supports iCDManager/ VT-D/ AMT/ TPM

### ECU-4685

IEC-61850-3-Compliant Power Automation Computer w/ Intel® Celeron® 2980U Processor
- Intel® Celeron 2980U processor (1.6 GHz) w/ 4 GB of DDR3L RAM
- 6 x 10/ 100/ 1000MB LAN, 2 x RS-232, 8 x RS-232/ 485 serial ports
- 2 x relay output, 1 x IRIG-B
- 1 x mini-PCIe slot (full size)

## XPCIe Cards

### ECU-P1524PE (HSR+PRP)

2-Port SFP Gigabit Ethernet card w/ HSR+PRP support
- 2 x SFP (1000 Mbps Base-X)
- 2 x SFP (HSR+PRP, selection via jumper)
- Wide operating temperature range (-25~70°C)

### ECU-P1761 (Digital I/O)

4-ch Isolated Digital Input/ 4-ch Isolated Relay Output Card w/ IRIG-B
- 4 x digital input (wet contact)
- 4 x relay output (Form C)
- 1 x IRIG-B
- Wide operating temperature range (-25~70°C)

### ECU-P1628D/ 1618D (COM)

8-Port Isolated/ Non-Isolated RS-232/ 422/ 485 Card
- RS-232: 50~115.2 kbps (max.)
- RS-422/ 485: 50~921.6 kbps (max.)
- 2500 VDC isolation (ECU-P1628D)
- Wide operating temperature range (-20~70°C)

## RISC-Based Gateways

### ECU-1251

IEC-61850-3-Compliant Cortex® A8 Power Automation Gateway w/ 2 x LAN, 4 x COM
- Arm® Cortex® A8 800-MHz processor w/ 256 MB of DDR3L RAM
- 2 x 10/ 100 MB LAN, 4 x RS-232/ 485 serial ports
- 1 x mini-PCIe slot for wireless expansion
- Wide operating temperature range (-40~70°C)

### ECU-1152

IEC-61850-3-Compliant Cortex® A8 Power Automation Gateway w/ 2 x LAN, 6 x COM
- Arm® Cortex® A8 800-MHz processor w/ 512 MB of DDR3L RAM
- 2 x 10/ 100 MB LAN, 6 x RS-232/ 485 serial ports
- 1 x mini-PCIe slot for wireless expansion
- Wide operating temperature range (-40~70°C)

### ECU-4553

IEC-61850-Compliant Cortex® A8 Power Automation Gateway w/ 4 x LAN, 16 x COM
- ARM® Cortex® A8 800-MHz processor w/ 1 GB of DDR3L RAM
- 4 x 10/ 100MB LAN, 16 x RS-232/ 485 serial ports
- 2 x CAN 2.0b, 1 x IRIG-B
- Wide operating temperature range (-40~70°C)

# Intelligent Transportation Systems

**Total Solutions Build Up Modernized Infrastructure**

With a decade of successful experience, Advantech has dedicated resources to designing and developing new products designed for the transportation industry. These products support both railway and roadway applications, including railway automatic fare collection, wayside control, rolling stock, city traffic management, highway management, transport hubs, and more. Our mission is to enable intelligent transportation systems, which also helps us fulfill our vision of creating and delivering smart city technologies.

## Rugged-design Computer Platform

Fully Certified with EN 50155

### ITA-5831
**EN 50155-Certified Compact Fanless System**
- Intel® Core™ i7-6822EQ platform with QM170
- Satisfies EN 50155 Tx (-40~70°C) and IEC 61373 body mount Class B standards
- Compliant with EMC standard EN 50121-3-2 for rolling stock apparatus
- Ruggedized communication and power port connectors (M12)
- Supports easy-swap storage and I/O modules

Fully Certified with EN 50155

### ITA-5231
**EN 50155-Certified Fanless System**
- H-series, 6th generation Intel® Core™ i3/i5/i7 platform with QM170
- Satisfies temp. standards for EN 50155 TX (-40~70°C) and IEC 61373 body mount class B
- Compliant with EN 50121-3-2/ EN 50121-4 on EMC compatibility
- Ruggedized connectors (M12) used for communication and power ports
- Supports easy-swap storage and I/O modules

## Display System

### ARS-P3800
**EN50155-Certified 38" Railway Panel PC w/ AMD® Embedded G-Series Processor**
- 38" LCD panel w/ 1920 x 540 resolution
- 1 x GbE (M12), 1 x USB 2.0 (M12)
- Certificated with EN50155 T1 (-25~55°C), IEC 61373 Class B, EN 45545
- IP54 rating ensures protection against dust/ water ingress
- Fanless, anti-shock and anti-vibration design

## Process Visualization Solutions

### ITA-1711
**Intel® Celeron™ J1900 Fanless Compact System**
- 4 GB of DDR3 onboard RAM w/ optional NVRAM
- 2 x LAN, 6 x USB, 14 x COM, and 1 x USB 3.0 ports
- Replaceable secondary display (VGA 2/ DVI-D/ LVDS)
- Supports dual outputs of full HD resolution video
- Serial RS-232/ 422/ 485 ports support with automatic flow control

Fully Compliant with EN 50121-4

### ITA-2231
**EN50121-4-Compliant 2U Fanless System**
- Intel® 6th Gen Core™ i7 processor w/ 16 GB of DDR4 RAM (up to 32 GB via DIMM expansion)
- Compliant with EN 50121-4 EMC standard for railway applications
- Provides 3 x ITA-EM modules, 1 x PCI104, and 1 x M.2 slots for expansion
- Wide operating temperature range (-25~60 °C)
- Supports single/ dual power modules

## Touch Panel PC

Fully Certified with EN 50155    NEW

### ITA-8120
**EN50155-Certified 12.1" Railway Panel PC with Intel® Atom™ X Series Processor**
- 12"LCD touch panel w/ 1024 x768 resolution
- 2x GbE (M12), 1x USB 2.0 (M12), 2x RS-422/ 485 (M12)
- Wide voltage input range: 24/ 48/ 72/ 110 VDC (±40%)
- Compliant with EN50155 T3 (-25~70°C), IEC 61373 Class B, and EN 45545

## EN50155 Switches

### EKI-9500 Series
**28/ 20/ 16/ 12/ 10/ 8-Port EN50155 Managed Switch w/ PoE Support**
- EKI-9520: 16 x M12 D-coded/ X-coded PoE ports + 4 x M12 X-coded w/ bypass
- EKI-9528: 16 x M12 D-coded/ X-coded PoE ports + 4 x M12 X-coded w/ bypass + 8 x M12 D-coded/ X-coded ports
- Wide power input range (24/ 36/ 48/ 72/ 96/ 110 VDC)

### EKI-9512E-4EETB
**EN50155 Train Router for Rolling Stock Backbone**
- 8 x 10/ 100 Mbps M12 D-coded + 4 x 10/ 100 Mbps M12 D-coded w/ bypass
- TTDP (IEC-61375-2-5)
- Wide power input range (24/ 36/ 48/ 72/ 96/ 110 VDC)

## Managed Ethernet Switch for Road Transportation

### EKI-7700 Series
**Industrial Managed Switch**
- X-Ring Pro redundancy (recovery time < 20 ms)
- IXM for rapid deployment
- PoE/ PoE+ models available
- Compliant with EN50121-4 and NEMA TS2

# Intelligent Systems and Platforms

## Infrastructure for the IoT

**Intelligent Systems**
Pursuing IoT Evolution with I-Cloud and Intelligent Systems

Industrial Cloud    Network Security

Production Automation    Equipment Builder    Intelligent Video

With a diverse range of innovative technologies including cloud computing (industrial and video servers), edge computing (fanless, slim, portable devices), and high-performance embedded systems, Advantech's industrial cloud services and system design-to-order services (DTOS) transform embedded systems into intelligent systems equipped with smart, secure, energy-saving features. Our intelligent systems are designed specifically for vertical markets in intelligent transportation, factory automation/ machine automation, cloud infrastructure, and intelligent video application sectors.

## Industrial Computers

### ACP-2020
2U Rackmount Short Depth Chassis for ATX/ MicroATX Motherboards
- 398-mm short-depth 2U rackmount chassis
- Supports microATX single-processor motherboards
- 350-W single or 500-W redundant power supply
- Two internal 2.5" or hot-swap drive bays
- Intelligent system module for smart fan, self-diagnosis, and remote management

### IPC-631
4U Front I/O Short Depth Rackmount Chassis for ATX/ Micro-ATX Motherboards
- 350-mm short-depth rackmount chassis
- Supports microATX single-processor motherboards, CPU TDP up to 120 W
- 500-W single or redundant power supply
- All I/O ports, buttons, LEDs, drive bays, and AC inlet on the same side
- PWM-controlled smart fan for minimal noise

### ACP-4340
4U Rackmount Chassis w/ 4 x Hot-Swap Drive Trays
- Supports a PICMG backplane with up to 14 slots or an ATX/ microATX motherboard
- Shock-resistant disk drive bay holds 4 x hot-swap 3.5" and 2.5" SATA disk trays, 1 x slim optical disk drive, and 1 x 2.5" internal drive
- 2 x front USB 3.0 ports
- Front-accessible system fan without opening top cover for easy maintenance
- Intelligent system module for smart fan control, self-diagnosis, and remote management

## Machine Vision Systems

### AIIS-3400U/ P
Compact Vision System, Intel® 6th/ 7th Gen Core™ i CPU, 4-ch Camera Interface for GigE PoE or USB 3.0
- Intel® 6th/ 7th Gen Core™ i CPU (LGA1151)
- AIIS-3400P: 4-ch GbE PoE
- AIIS-3400U: 4-CH USB 3.0 w/ dedicated controller

## Modular Industrial Computer

### MIC-7700
Intel® 6th/ 7th Gen Core™ i Desktop Compact Fanless System
- Intel® 6th/ 7th Gen Core™ i CPU socket-type (LGA1151) w/ Intel® Q170/ H110 chipset
- VGA and DVI output
- 2 x GigaLAN and 8 x USB 3.0
- 2 x RS-232/ 422/ 485 and 4 x RS232 serial ports
- 1 x 2.5" HDD/ SSD, 1 x CFast, and 1 x mSATA

### MIC-7420
Compact Fanless System with Intel® 6th Gen Core™ i Processor
- Intel® 6th Gen Core™ i7/i3 (BGA type) processor w/ Intel® QM170 chipset
- 8 GB of DDR4 memory (up to 24 GB)
- 2 x DVI, 2 x GbE LAN, 8 x USB ports
- 2 x PCIe x4/ 2 x PCI expansion slots
- 2 x 3.5"/ 2.5" HDD and 1 x M.2

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## Storage / Hybrid Server

### SKY-5240
**2U 4-Node Intel® Xeon® Scalable Series Hybrid Server**
- Cutting edge technologies with Intel Xeon Scalable Family and support up to 24 DIMMs per Node
- Flexible I/O options, easy to upgrade to 1G/10G/40G/100G LAN via daughter boards
- Supports NVMe, SAS 12G, and SATA 6G for flexible storage arrangement
- Featured with Platinum redundant power supply, providing up to 96% high efficiency
- Supports two additional PCIe x16 expansion cards

## Tower Chassis

### HPC-5000
**Small Tower Chassis for MicroATX/ Mini-ITX Motherboards**
- Supports microATX/ mini-ITX motherboards
- Supports 2 x 3.5" or 1 x 3.5" and 1 x 2.5" internal HDDs
- 2 x USB 2.0 and 2 x USB 3.0 ports on the front panel
- Supports up to 4 FH/ FL (10.5") expansion slots
- Supports 300/ 500-W high-efficiency single ATX power supply
- Replaceable air filter to protect against dust ingress
- Under 23 dB(A) in idle mode (tested with ASMB-585 in smart fan mode)

## GPU Server

### SKY-6400
**4U Rackmount Intel® Xeon® Scalable Series GPU server**
- Supports DDR4 REG 2666/ 2400/ 2133/ 1866-MHz DIMM (up to 384 GB)
- Provides 4 expansion slots
- PCIe x16 double-deck card + 1
- PCIe x8 single-deck FH/ FL card
- PSU: 2000-W 1+1 redundant power supply with 80 PLUS Platinum certification
- IPMI function support for remote management
- Dual Intel® Xeon® scalable series processor

## Video Capture Cards

### DVP-7011UHE
**4K Capture Card**
- 1-ch 4K HDMI 2.0 video input with H.264 software compression
- 60/ 50 fps (NTSC/ PAL) at up to 4096 x 2160p for recording and display
- PCIe x 4 host interface
- Low profile size

### DVP-7635HE
**4-ch AHD Capture Card**
- 4-ch AHD/ CVI/ TVI/ composite (CVBS) hardware compression
- 30/ 25 fps (NTSC/ PAL) at up to 1920 x 1080p for recording and display per channel
- PCIe x 4 host interface
- Supports watchdog function

### DVP-7011MHE
**M.2 DVI/ VGA/ HDMI Capture Card**
- 1-ch HDMI/ DVI-D/ DVI-A/ YPbPr channel video inputs with H.264 software compression
- 30/ 25 fps (NTSC/ PAL) at up to full HD for recording and display
- PCIe M.2 (B/ M) host interface

## Industrial Motherboards

### AIMB-705
**LGA1151 6th/ 7th Gen Core™ i7/i5/i3/ Pentium ATX with DVI/ VGA, DDR4, SATAIII, USB 3.0, and 6 x COM**
- Intel® Core™ i7/i5/i3/Pentium® processor w/ H110 chipset
- Dual-channel (non-ECC) DDR4 RAM at 1866/ 2133 MHz (up to 32GB)

### AIMB-785
**LGA1151 6th/ 7th Gen Core™ i7/i5/ i3/Celeron/ Pentium ATX with 2 x DVI VGA, DDR4, and SATA III, USB 3.0, and 6 x COM**
- Intel® Core™ i7/i5/i3/Celeron®/Pentium® processor w/ Q170 chipset
- Dual-channel (non-ECC) DDR4 at 1866/ 2133 MHz (up to 64 GB)
- Supports triple display (VGA/ 2 DVI-D)

## Slot Single-Board Computers

### PCE-3029
**LGA1151 6th/ 7th Gen Intel® Core™ i7/i5/i3 Half-Sized SHB with DVI/ VGA, DDR4, SATA III, mSATA, USB 3.0, and 2 x COM**
- Intel® Core™ i7/i5/i3/Celeron®/Pentium® processor w/ H110 chipset
- Dual-channel (non-ECC) DDR4 at 1866/ 2133 MHz (up to 32 GB)

## Slot Single-Board Computers

### PCE-5029
**LGA1151 6th/ 7th Gen Intel® Core™ i7/i5/i3 Full-Sized SHB with DVI/ VGA, DDR4, SATA III, USB 3.0, and 2 x COM**
- Intel® Core™ i7/i5/i3 processor w/ H110 chipset
- Dual-channel (non-ECC) DDR4 at 1866/ 2133 MHz (up to 32 GB)

### PCE-5129
**LGA1151 6th/ 7th Gen Intel® Core™ i7/ i5/i3 Full-Sized SHB with 2 x DVI VGA, DDR4, SATA III, USB 3.0, 2 x COM, M.2, and AMT**
- Intel® Core™ i7/i5/i3 LGA1151 processor w/ Q170 chipset
- Dual-channel (non-ECC) DDR4 at 1866/ 2133 MHz (up to 32 GB)
- Supports SW Raid 0/ 1/ 5/ 10
- Supports triple display (VGA/ 2 DVI D)
- Compliant with PICMG 1.3

### PCE-7129
**LGA1151 6th and 7th Gen Intel® Xeon®/ Core™ 7/i5/i3/Pentium® LGA1151System Host Board with DDR4, SATA 3.0, USB 3.0, M.2, Dual GbE, and Triple Display**
- Intel® Xeon® E3-1200v5/ Core™ i7/i5/i3 LGA1151 processor w/ C236 chipset
- Dual-channel (non-ECC) DDR4 1866/ 2133 MHz (up to 32 GB)
- Supports triple display (VGA/ 2 DVI D/ DP)

# Embedded Automation Computers

## Seamless Cloud Connection and Transmission for Smart Factories

Equipped with advanced communication capabilities and integrated iDoor technology, UNO systems can serve as intelligent IoT gateways for smart factories to ensure convenient cloud connectivity. These units offer scalable computing power for field site control and can support a diverse range of protocols for various PLC models with the integration of Advantech's WebAccess/ HMI software. The modularized design allows for flexible configuration and future expandability, making UNO systems ideal industrial computing solutions for smart factory operations.

## Modular Box Platforms

### UNO-2271G
Intel® Atom™ Pocket-Sized Smart Factory Edge Gateway
- Intel® Atom™ E3815 processor, w/ 4 GB of DDR3L onboard RAM
- Modular design for flexible expansion
- Built-in 32 GB of eMMC storage
- Versatile mounting options (DIN rail/ pole/ VESA/ stand)

**NEW**

| Optimized UNO | Universal UNO | Customized UNO |
|---|---|---|
| **UNO-2271G-E21AE** | **UNO-2271G-E22AE** | **UNO-2271G-E23AE** |
| • 2 x GbE, 1 x USB 3.0, 1 x HDMI | • 2 x GbE, 1 x USB 3.0, 1 x HDMI, 3 x USB 2.0 | • 2 x GbE, 1 x USB 3.0, 1 x HDMI, 2 x RS-232/ 422/ 485 |
| • Supports additional second stack expansion for iDoor (UNO-2372G-EKAE) | | |

### UNO-2372G
Intel® Atom™ Small-Sized Smart Factory Data Gateway
- Intel® Atom™ E3845/ Celeron J1900 processor w/ 4 GB of DDR3L RAM
- Modular design for flexible expansion
- Versatile mounting options (DIN rail/ VESA/ stand)

**NEW**

| Optimized UNO | Universal UNO |
|---|---|
| **UNO-2372G-E021AE** | **UNO-2372G-E022AE** |
| • 2 x GbE, 1 x USB 3.0, 3 x USB 2.0, 1 x HDMI, 1 x DP | • 2 x GbE, 1 x USB 3.0, 3 x USB 2.0, 1 x HDMI, 1 x DP |
| • Supports additional second stack expansion for iDoor (UNO-2372G-EKAE) | • 2 x iDoor expansion slots |

### UNO-2484G
Intel® Core™ i7/i5/i3 Regular-Sized, High-Performance Modular IPC
- Intel® Core™ i7/i5/i3 processor w/ 8 GB of DDR4 RAM
- Ruggedized and cableless design with lockable I/O
- TPM 2.0 technology for cyber security
- Versatile expansion module for different applications

**NEW**

| Optimized UNO | Universal UNO | Customized UNO |
|---|---|---|
| **UNO-2484G-6731AE** | **UNO-2484G-6732AE** | **UNO-2484G-6732H5AE** |
| • 4 x GbE, 4 x USB 3.0, 1 x HDMI, 1 x DP, 4 x RS-232/ 422/ 485 | • 4 x GbE, 4 x USB 3.0, 1 x HDMI, 1 x DP, 4 x RS-232/ 422/ 485, 4 x iDoor expansion slots | • 4 x GbE, 4 x USB 3.0, 4 x USB 2.0, 5 x HDMI, 1 x DP, 4 x RS-232/ 422/ 485 |
| • Supports additional second stack expansion: UNO-2484G-EKAE (4 x iDoor installation); UNO-2484G-S2AE (dual external accessible storage) | | |

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# Control Cabinet PCs

### UNO-1252G/ 1251G

Micro-Sized DIN-Rail Industrial IoT Gateway

- Intel® Quark™/ TI Cortex®-A8 processor with 512/ 256 MB of RAM
- UNO-1252G: 2 x LAN, 2 x USB, 2 x mPCIe, 2 x COM, 8 x DI/O, 1 x microSD, 1 x SIM, 1 x iDoor, Ycoto Lynux
- UNO-1251G: 2 x LAN, 1 x USB, 1 x mPCIe, 3 x COM, 1 x CAN, 2 x microSD, 1 x microSIM, WEC7
- Programmable OLED display for indicating system status

### UNO-1372GH/ UNO-1372G-J

Intel® Atom™/ Celeron Small-Sized DIN Rail Controller

- Intel® Atom™ E3845/ Celeron J1900 processor w/ 4 GB of DDR3L RAM
- UNO-1372GH: 3 x GbE, 2 x mPCIe, 2 x USB 2.0, 1 x USB 3.0, 1 x RS-232, 1 x RS-422/ 485, 1 x VGA, 1 x HDMI, 8 x DI/O, 1 x Line-out, 1 x iDoor, CID2-certified
- UNO-1372G-J: 2x GbE, 2 x mPCIe, 3 x USB 2.0, 1 x USB 3.0, 4 x RS-232/ 422/ 485, 1 x DP, 1 x HDMI, 8 x DI/O, 1 x iDoor
- Dedicated TPM2.0 onboard for hardware security (UNO-1372G-J)

### UNO-1483G

Intel® Core™ i3 Standard-Sized DIN-Rail Controller

- 4th Gen Intel® Core™ i3 processor (up to 1.7 GHz) w/ 8 GB of DDR3L RAM
- 4 x GbE, 3 x mPCIe, 1 x PCIe x1, 2 x USB 2.0, 2 x USB 3.0, 1 x RS232, 2 x RS422/ 485, 1 x VGA, 1 x DP, 8 x DI/O, 1 x line out, 1 x iDoor
- Redundant power and easy-access swappable RTC battery

### UNO-3283G/ 3285G

Intel® Core™ i Wall Mount Automation Computer

- 6th Gen Intel® Core™ i processor w/ 8 GB of DDR4 RAM
- 2 x GbE, 6 x USB 3.0, 2 x RS-232/ 422/ 485, 1 x DVI-I, 1 x HDMI, 1 x CFast 1 x iDoor, 2 x mPCIe (UNO-3283G: 2 x PCI/ PCIe, UNO-3285G: 4 x PCI/ PCIe)
- Dual hot-swappable HDD/ SSD slots with thumb screws for easy maintenance
- Redundant power input

### UNO-3382G/ 3384G

Intel® Core™ i7/Celeron® Book Mount Automation Computer

- 4th Gen Intel® Core™ i7/Celeron® processors with 4/ 8 GB of DDR3L RAM
- 2 x GbE, 2 x USB 2.0, 2 x USB 3.0, 1 x RS-232/ 422/ 485, 1 x DP, 1 x HDMI, 2 x mPCIe, 1 x CFast, 2 x iDoor   (UNO-3384: 2 x PCI/ PCIe)
- Dual hot-swappable HDD/ SSD slots with thumb screws for easy maintenance

### UNO-3483G

Intel® Core™ i7 Enclosure Mount Automation Computer

- 3rd Gen Intel® Core™ quad-core i7-3612QE processor (up to 2.1 GHz) w/ 8 GB of DDR3L RAM
- 2 x GbE, 2 x USB 2.0, 2 x USB 3.0, 1 x RS-232 (pin header), 1 x RS-422/ 485 (pin header), 1 x VGA, 1 x HDMI, 1 x PCIe x4, 3 x mPCIe, 2 x iDoor
- Dual hot-swappable HDD/ SSD slots with thumb screws for easy maintenance

# iDoor Modules
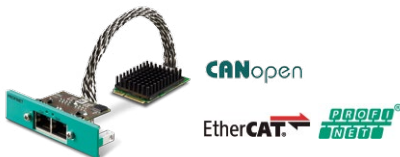
### Industrial Fieldbus
**PCM-26 Series**

Industrial Fieldbus iDoor modules support common automation protocols

- CANOpen
- EtherCAT
- POWERLINK
- PROFIBUS
- EtherNet/ IP
- CC-Link IE
- PROFINET
- Sercos 3

### Wireless Communication
**PCM-24S Series**

Wireless communication iDoor modules enhance connectivity for industrial IoT

- Wi-Fi/ Bluetooth
- LTE/ GPS
- Sigfox
- 3G/ GPS
- LoRa
- Sub-1G

### Industrial I/O and Peripherals
**PCM-23/ 24/ 27/ 29 Series**

Industrial I/O and peripheral modules enable flexible I/O expansion

- RS232/ 422/ 485
- MRAM
- USB 3.0
- Audio
- Digital I/O
- CFast slot
- PoE
- IO-Link
- GigaLAN
- USB dongle
- TPM

# Intelligent HMI

## Leading HMI Innovations for Smart Factories

As a leading promoter of Industry 4.0, Advantech offers a diverse range of HMI products equipped with iDoor technology, including high-performance control panels, low-power industrial thin clients, web browser terminals, and industrial monitors. For vertical markets such as railway transportation and food and beverage industries, we also provide reliable domain-focused products with IP69K, C1D2, and EN50155 certification. Advantech has developed a new generation of modular solutions for a diverse range of configurations to meet specific usage requirements, offering customers a quick time to market and high level of expandability for Industry 4.0 applications.

## Modular Industrial Panel PCs

### Preconfigured Modular Systems

### TPC-5000 Series
Modular 12"/ 15"/ 17"/ 18.5"/ 21.5". LED LCD w/ 6th Gen Intel® Core™ i7/i3/ Celeron® Multi-Touch Panel Computer
- Intel® Core™ i7-6600U processor with 8 GB of DDR4 SODIMM
- Various front panel sizes that support either PCT touch for multi-touch control or 5-wire resistive touch
- 3 x GbE, 1 x full-sized mini-PCIe with iDoor technology and 1 x half-sized PCIe slot

### TPC-2000 Series
Modular 12"/ 15"/ 17"/ 18.5"/ 21.5" LED LCD w/ Intel® Atom™ Industrial Thin Client
- Intel® Celeron® J3455 Quad-Core Processor (1.50 GHz) + 4 GB of DDR3L SODIMM
- Various front panel sizes that support either PCT touch for multi-touch control or 5-wire resistive touch
- Supports NFC, Wi-Fi, and Bluetooth wireless communication, as well as iDoor technology

### FPM-7000 Series
Modular 12/ 15/ 17/ 18.5/ 21.5 Full HD Industrial Monitor
- Supports dual displays and control with picture-in-picture functionality
- Module-in-module design with customizable I/O interface
- iLINK technology enables long-distance (up to 100 m) one-to-one/ one-to-many (up to 4) data transmissions

## Standalone Modules

### Box Module

**TPC-B500-6C2AE**
Intel® Celeron® 3955U,
4 GB of DDR4 RAM

**TPC-B500-6C2AE**
Intel® i7-6600U,
8 GB of DDR4 RAM

**TPC-B200-J12AE**
Intel® Celeron® J3455
1.50 GHz, 4G of DDR3L RAM

**TPC-B200-E12AE**
Intel® Atom® 1.8GHz,
4G of DDR3L RAM

**FPM-B700-AE**
Modular monitor box w/ 2 x I/O slots

**TPC-B500-6C2AE**
Intel® i3-6100U,
8 GB of DDR4 RAM

## Panel Module

**FPM-D12T-AE**
12.1" XGA

**FPM-D15T-AE**
15" XGA

**FPM-D17T-AE**
17" SXGA

**FPM-D18W-AE**
18.5" HD

**FPM-D21W-AE**
21.5" Full HD

# High Performance Control Panels

## TPC-1x82 Series

12"/ 15"/ 17" TFT LED LCD
Intel® Core™ i3 Touch Panel Computer

- Intel® Core™ i3-5010U/ 4010U (1.7/ 2.1 GHz) w/ 4 GB of DDR3L SDRAM + 5-wire resistive touch screen
- Expandable system I/O, isolated digital I/O, Fieldbus, and communication via iDoor technology
- PCIe and mini-PCIe expansion support
- Supports 2 x USB 3.0 and HDMI ports for independent displays

## TPC-1x81WP Series

15.6"/ 18.5" TFT LED LCD
Intel® Core™ i7/i3 with PCT Multi-Touch Panel Computer

- 7H surface hardness glass widescreen with PCT multi-touch control, IP66 rating, and true-flat design
- Expandable system I/O, isolated digital I/O, Fieldbus, and communication via iDoor technology
- Built-in ikey and Home key provide an intuitive user interface
- Supports USB 3.0 and HDMI for independent displays

# Industrial Thin Clients

## TPC-xx51T Series

5.7"/ 6.5"/ 12.1"/ 15"/ 17" TFT LED LCD
Intel® Atom™ Dual-Core Thin Client
Panel Computer

- Intel® Atom™ dual-core E3827, 1.75 GHz, processor with 4 GB of DDR3L SDRAM (Optional Intel® Celeron™ quad-core J1900 processor )
- Wide operating temperature (-20 ~ 60 °C)
- IP66-rated front panel with durable true-flat 5-wire resistive touchscreen
- Supports iDoor technology (TPC-1251T-EHKE required)

## TPC-xxWP Series

10.1"/ 15.6" TFT LED LCD Intel® Atom™
Dual-Core Thin Client Panel Computer

- Intel® Atom™ dual-core E3827 (1.75 GHz) w/ 4 GB of DDR3L SDRAM
- Wide operating temperature range (-20~55°C)
- 7H surface hardness glass widescreen with PCT multi-touch control, IP66 rating, and true-flat design
- Supports iDoor technology (TPC-1251T-EHKE required)

## TPC-1840WP/ TPC-2140WP

18.5"/ 21.5" TFT LCD Multi-Touch
Panel Computer with AMD Dual-Core
Processor

- AMD dual-core T56E (1.65 GHz) w/ independent GPU
- 16:9 WXGA/ FHD TFT LED LCD display with PCT multi-touch control
- Built-in function and home key buttons provide an intuitive user interface
- Easy maintenance Cfast/ HDD/ mini-PCIe components

# Web Browser Terminals

## WebOP-3000 Series

7"/ 10.1"/ 12" Cortex™-A8 Operator Panel

- Microsoft Windows Embedded CE 6.0
- Backup memory frame in 128 KB (64 words) without battery
- Wide operating temperature range (-20~60°C)
- Flat-sealed front panel with IP66 rating

## WebOP-2000 Series

4.3"/ 7"/ 10.1" WSVGA Operator Panel

- 65,536 colors TFT LCD, Arm9-based CPUs
- Front panel flat-sealed with IP66 rating
- Low power consumption (10 W)
- Supports over 400 PLC communication protocols

# Domain-Focused Panel PCs

## SPC Series

All-Around IP66-Rated 18.5"/ 21.5" Stationary Panel
w/ Intel® i3/i5/i7/AMD® Dual-Core Processor

- Intel® Core™ i3-4010U/ AMD G-series T56N processor
- 7H surface hardness glass widescreen with true-flat design, all-around IP66 rating VESA mount support
- Waterproof M12 I/O: 1 x RS-232, 1 x USB, and 2 x LAN (customization is allowed)
- Winner of the 2013 iF product design award
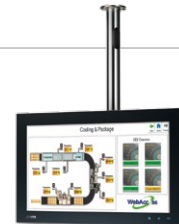
## IPPC-5211WS

IP69K-Rated 21.5" TFT LED LCD w/ PCT Touch Panel

- Intel® Celeron® quad-core J1900 (2 GHz)
- 21.5" full HD TFT LED LCD display
- IP69K rating with corrosion-proof stainless steel housing
- Supports detachable accessories for various applications

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## Panel PCs

**NEW**

### PPC-6000C Series
15"/ 17"/ 19" 6th Gen Intel® Core™ i7/i5/i3 Panel PC w/ Selectable Mini-ITX Motherboard
• 6th Gen Intel® Core™ i, up to 45W TDP (socket type)
• True-flat, IP65-rated, front bezel with resistive or optional PCAP touchscreen
• Selectable mini-ITX motherboard for diverse requirements
• 2 x expansion slots (1 x PCIe x 4 or 2 x PCI)

**NEW**                                         **NEW**

### PPC-3001 Series
15"/ 15.6"/ 21.5" 6th/ 4th Gen Intel® Core™ i5 Fanless Panel PC
• Intel® Core™ i5-6300U/ 4300U, 2.4 GHz/ 1.9 GHz, processor
• True-flat, IP65-rated front bezel w/ PCAP or resistive touchscreen
• Wide input voltage range (9~32 VDC, 12~32 VDC)
• Supports 1 x PCIe x 4/ PCI x1 bus expansion
• Built-in isolated RS-422/ 485 with auto flow control
• Supports triple display (1 x DP, 1 x VGA)

### PPC-3001S Series
18.5"/ 21.5" 6th Gen Intel® Core™ i5 Fanless Panel PC
• Intel® Core™ i5-6300U, 2.4 GHz, processor
• True-flat, IP65-rated front bezel with PCAP touchscreen
• Compact fanless design with solid aluminum alloy enclosure
• Wide input voltage range (12~24 VDC)

**NEW**

### PPC-3000 Series
10.4"/ 12.1"/ 15"/ 17"/ 19" Intel® Atom™ Quad-Core Fanless Panel PC
• Intel® Atom™ quad-core E3940/ E3845 (1.6/ 1.91 GHz)
• Wide operating temperature range (-20~60°C)
• Wide input voltage range (9~32 VDC)
• Supports 1 x PCI/ PCIe bus expansion
• Built-in isolated RS-422/ 485 with auto flow control
• Optional expansion for CF/ CFast, USB dongle, RS232 and GPIO

### PPC-3000S Series
6.5"/ 10.4"/ 12.1"/ 15"/ 15.6"/ 18.5"/ 21.5" Intel® Celeron Dual/ Quad-Core Fanless Panel PC
• Intel® Celeron quad-core N2930/ N4200 (1.83/ 1.1 GHz)
• True-flat, IP65-rated front bezel with resistive or PCAP touchscreen
• Compact fanless design with solid aluminum alloy enclosure
• Wide input voltage range (12 ~ 24 VDC)

## Industrial Monitors

### FPM-2000 series
12"/ 15"/ 17" SXGA Industrial Monitor with Resistive Touchscreen and Direct-VGA Port
• Robust design with IP65 aluminum front panel
• Anti-glare screen
• Supports panel, wall, desktop, rack or VESA arm mounting
• Combination RS-232 + USB interface for touchscreen function

### FPM-3000 series
15"/ 17"/ 19" SXGA Industrial Monitor with Resistive Touchscreen, Direct-VGA and DVI Ports
• Robust design with stainless steel chassis and IP65 aluminum front panel protection
• OSD control pad on front panel
• Supports industrial 12 and 24 VDC power input
• Supports panel, wall, desktop, rack or VESA arm mounting

### FPM-5000 series
6.5"/ 12"/ 15"/ 15.6"/ 18.5"/ 21.5" True-Flat Industrial Monitor with PCT/ Resistive, Direct VGA, and DVI Ports
• Robust design with IP65-rated front panel
• Front USB port for easy maintenance
• Supports industrial 12 and 24 VDC power input
• Supports panel, wall, desktop, or VESA arm mounting

# Control IPCs

## Scalable PC-based Automation Controllers for Smart Factories

Advantech's APAX series products leverage embedded computing technology and a modular system design. Featuring flexible I/O expansion, real-time Fieldbus and I/O control, and network connectivity via a range of interfaces, the APAX series provides integrated control systems and an open environment that can be integrated with unique software to bridge the gap between operational and information technology.

## Control IPCs

### APAX-5580
Embedded Control IPC
- Supports CODESYS V3.5 RTE
- Onboard Fieldbus support for EtherCAT, PROFINET, Ethernet/ IP
- PLC-graded RTC battery with 10-year lifecycle
- Supports up to 8 x local and 64 x remote COM ports
- Supports up to 32 x APAX expansion I/O, 768 x DI/DO, and 192 x AI channels

### APAX-5580CDS
Supports CODESYS V3.5 RTE
- Onboard Fieldbus support for EtherCAT, PROFINET, Ethernet/ IP
- PLC-graded RTC battery with 10-year lifecycle
- Supports up to 8 x local and 64 x remote COM ports
- Supports up to 32 x APAX expansion I/O, 768 x DI/DO, and 192 x AI channels

## Couplers

### APAX-5070/ 5071/ 5072
Fieldbus Communication Coupler
- APAX-5070 supports 1-ms Modbus response time
- Flexible Modbus mapping table
- Supports UDP data streaming and event alarms

## CODESYS Cloud Connectivity Plug-in Package

### WebAccess/SCADA Support
- Export tags from CODESYS PLC Handler
- Seamless integration w/ WebAccess SCADA nodes

### ODBC Database Direct Connection
- Update tag values to a cloud database each cycle
- Supports update times of <1 ms

### OPC/ UA Support
- OPC/ UA Server supported
- Supports Micro Embedded Device Server profile
- OPC/ UA Security support (x.509)

## APAX Series Modules

### APAX-5090
Local Bus Communication Module
- 4 x RS-232/ 422/ 485 ports
- Up to 64 x virtual COM ports with APAX-5580
- Supports a distributed topology with APAX bus

### APAX-5017H
12-ch High-Speed AI Module
- Input current: 4~20 mA
- Input voltage: ±10V
- Each channel can be configured to different input types and ranges
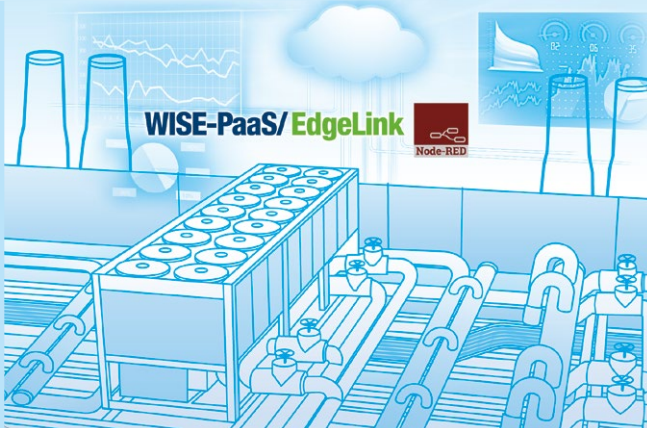- 100/ 1000 Hz sampling rate per channel

### APAX-5430
SATA HDD Module
- SATA I/ II/ III 2.5" HDD/ SDD
- Supports RAID 0/ 1

# Edge DAQ Devices

## Booster for Equipment Manufacturers, Rental Services, and End Users

**WISE-PaaS/EdgeLink**
Node-RED

Advantech's edge data acquisition solutions are designed to simplify remote equipment monitoring. These solutions can improve service quality by facilitating product care, enabling equipment operation monitoring, and allowing for efficiency and energy consumption analysis. This allows manufacturers, rental services, and end users to obtain insights on usage behaviors by connecting machine data to the cloud in order to derive intelligence through the analysis of big data. Advantech provides three major solutions for protocol translation and minimizing programming effort in different application scenarios: 1) WISE-PaaS/EdgeLink, 2) Node-RED core product solution, and 3) the ADAM-5630 open edge data acquisition platform.

## WISE-PaaS/EdgeLink Core DAQ Solution

### WISE-PaaS/EdgeLink

M2I Edge Engine
• Click-and-go cloud access deployment
• Protocol support for multiple PLCs
• IEC-61131-3 Soft Logic controller
• SSL encryption for web page access
• Optimized network connection with cyber security protection

## Modularize Edge DAQ

**ADAM-3600**
Wireless Intelligent RTU with WISE-PaaS/EdgeLink
• Linux-based
• CPU: Arm® Cortex-A8, 32 bit
• RAM: 256 MB
• Data storage: micro-SD
• 2 x LAN ports
• 2 x wireless comm. interface (mini-PCIe)
• 8 x DI, 8 x AI, 4 x isolated DO channels

**ADAM-3651/ ADAM-3656**
Digital I/O Expansion Module
• ADAM-3651: 8-ch DI module
• ADAM-3656: 8-ch DO module

**ADAM-3617/ ADAM-3624**
Analog I/O Expansion Module
• ADAM-3617: 4-ch AI module
• ADAM-3624: 4-ch AO module

## Edge Intelligent Communication

**ECU-1251TL**
RISC-based IIoT Gateway with WISE-PaaS/EdgeLink
• Linux-based
• CPU: Arm® Cortex-A8 (32-bit, 800 MHz)
• RAM: 1 GB
• Memory: 256 MB
• External storage: micro-SD, 1 GB
• 2 x LAN, 1 x USB 2.0, 4 x RS-485/ 232 ports
• 1 x mini-PCIe/ USB

**ECU-1051TL**  NEW
Compact RISC-based IIoT Gateway with WISE-PaaS/EdgeLink
• Linux-based
• CPU: Arm® Cortex-A8 (32-bit, 600 MHz)
• RAM: 256 MB
• Data storage: NADA flash
• 2 x LAN, 2 x COM ports

**ECU-1050TL**  NEW
Wireless to Wireless RISC based IIoT Gateway with WISE-PaaS/EdgeLink
• Linux-based
• CPU: Arm® Cortex-A8 (32-bit, 600 MHz)
• RAM: 256 MB
• Data storage: NADA flash
• 1 x LAN port
• 2 x wireless comm. interface (mini-PCIe)

# Node-RED Core DAQ Solution



### Node-RED
- Graphical programming with drag-and-drop user interface
- Exclusive function nodes for fast and customized application deployment
- Encrypted data to the cloud or a database
- Universal JavaScript-based programming for customization
- Data analytics and visualization

## ADAM-6750
Data Analytics Gateway with Digital I/O
- Linux-based
- CPU: Arm® Cortex-A8 (32-bit, 1 GHz)
- RAM: 1 GB
- Memory: 256 MB
- External storage: micro-SD (1 GB)
- 2 x LAN, 1 x RS-485 port
- 8-ch DI/ 4-ch DO

## ADAM-6717UH
Data Analytics Gateway with High-Speed Analog Input
- Linux-based
- CPU: Arm® Cortex-A8 (32-bit, 1 GHz)
- RAM: 1 GB
- Memory: 256 MB
- External storage: micro-SD (1 GB)
- 2 x LAN ports
- 8-ch AI/ 1-ch DO (sample rate: 100 KHz over 8 channels)

## ADAM-6771
Data Analytics Gateway
- Linux-based
- CPU: Arm® Cortex-A8 (32-bit, 1 GHz)
- RAM: 1 GB
- Memory: 256 MB
- External storage: micro-SD (1 GB)
- 2 x LAN, 1 x USB 2.0, 2 x RS-485, 2 x RS-485/ 232 ports

# Edge Intelligent DAQ Controller

## ADAM-5630
- TI Cortex-A8 (600 MHz) w/ 512 MB of DDR3 RAM
- Real-time Linux
- 2 x LAN ports with two MAC addresses
- 4/ 8 slots selection
- Micro-SD slot for storage
- Wired and wireless communication expansion options
- Supports web services

# Expansion Modules

## ADAM-5037
8-ch High-Speed AI Module
- 4/ 8 slots selection
- Micro-SD slot for storage

## ADAM-5101
Storage Expansion Module
- Supports mini PCI express or M.2 interface

## ADAM-5101P
Mini-PCI Express Expansion
- Supports wireless expansion
- 2 x Antenna Points

## ADAM-5191
Serial Expansion Module
- 4 x serial ports
- Supports RS-485/ 232/ 422

## ADAM-5192
Network Expansion Module
- 2 x LAN ports

## ADAM-5000 Expansion I/O Modules
- 9 x AI/ AO Channels
- 16 x DI/ DO Channels
- 2 x Counters

# Industrial Communication

## Seamless Data Connectivity from the Network Edge to the Core

Advantech leverages over 20 years of industry experience to develop industrial communication products that provide reliable wired and wireless communication solutions for mission critical applications. These products include industrial Ethernet switches, industrial Fieldbus gateways, Modbus gateways, cellular IP gateways, cellular routers, wireless access points/ clients, media converters, and serial device servers, all of which contribute to securely transmitting critical and sensitive information, remotely monitoring and controlling networked devices, and delivering advanced communication capabilities for industrial applications.

## Wireless Sensing Platforms

### Wzzard Mesh Platform
Wireless Mesh I/O Sensors–Intelligent Sensing Platforms
• Ultra-low power consumption
• 802.15.4e SmartMesh IP technology
• Supports MQTT and JSON IoT protocols
• UL Class 1/ Division 2 hazardous location rating
• IP66-rated, reinforced-fiber polyester PBT enclosure

### SmartSwarm 243 LoRa Private Gateway/ WISE-6610 LoRaWAN Gateway
LoRa I/O Sensors Node and Gateway
• Low power consumption for solar and battery power applications
• Long-range, wide-area IoT gateway
• IP66-rated reinforced-fiber polyester PBT enclosure
• LoRa private protocol for closing system applications

## Intelligent Gateway

### SmartSwarm 351 Asset Integration Gateway
Seamlessly Integrate Data from Legacy Modbus Systems, Devices, and Sensors
• Protocol translation w/ Modbus and MQTT support
• Event triggering and data transmissions without duplication
• Data aggregation and reporting to reduce network traffic
• Authentication and encryption features for data security

## LTE Routers & Gateways

### SL30x Series
SmartStart Routers and Gateways
• LTE/ UMTS/ HSPA+/ HSDPA/ GPRS/ EDGE
• Wi-Fi (optional)
• 2 x SIM card holders
• Advanced security and networking features
• UL 60950-1 certification for hazardous locations

### SR30x Series
SmartFlex Routers and Gateways
• LTE/ UMTS/ HSPA+/ HSDPA/ GPRS/ EDGE
• Wi-Fi (optional); GPS receiver (wired version not included)
• 2 x SIM card holders, 1 x MicroSD card holder
• PoE PD/ PSE (optional)
• Advanced security and networking features

### ST35x Series
SmartMotion Routers and Gateways
• Twin interdependent cellular modules for redundant reliability
• Wi-Fi (optional) and GPS receiver (not included w/ wired version)
• 4 x SIM card holders, 1 x microSD card holder
• PoE PD/ PSE (optional)
• Advanced security and networking features

## Fieldbus Gateways

### EKI-1242EIMS
Modbus RTU/ TCP to EtherNet/ IP Fieldbus Gateway
• Dual power input
• Integrates Modbus RTU/ TCP and EtherNet/ IP communication
• Designed for protocol extensibility and adaption
• Built-in real-time diagnostics
• I models support a wide operating temperature range

### EKI-1242PNMS
Modbus RTU/ TCP to PROFINET Fieldbus Gateway
• Dual power input
• Integrates Modbus RTU/ TCP and EtherNet/ IP communication
• Designed for protocol extensibility and adaption
• Built-in real-time diagnostics
• I models support a wide operating temperature range

### EKI-1242ECMS
Modbus RTU/ TCP to EtherCAT Fieldbus Gateway
• Dual power input
• Integrates Modbus RTU/ TCP and EtherNet/ IP communication
• Designed for protocol extensibility and adaption
• Built-in real-time diagnostics
• I models support a wide operating temperature range

# Serial Device Servers



### EKI-1526/ EKI-1528

16/ 8-Port RS-232/ 422/ 485 Rackmount Serial Device Server
• Connect up to 8/ 16-port RS-232/ 422/ 485 devices directly to TCP/ IP networks
• High-speed baud rates (50 bps~976.5 Kbps) for high-volume transmission
• VCOM, TCP server, TCP client, UDP, and RFC2217 operating modes

### EKI-1528-DR

8-Port RS-232/ 422/ 485 DIN Rail Serial Device Server
• 2 x 10/ 100 Mbps Ethernet ports for LAN redundancy
• VCOM, TCP server, TCP Client, UDP, and RFC2217 operating modes
• I models support a wide operating temperature range;
• CI models support isolation and a wide operating temperature range

### EKI-1520 Series

1/ 2/ 4-Port RS-232/ 422/ 485 Serial Device Server
• 2 x 10/ 100 Mbps Ethernet ports for LAN redundancy
• VCOM, TCP server, TCP Client, UDP, and RFC2217 operating modes
• I models support a wide operating temperature range
• CI models support isolation and a wide operating temperature range

# Modbus Gateway



### EKI-1220 Series

1/ 2/ 4/ 8-Port Modbus Gateway
• Supports redundancy-enhanced Modbus ID
• Integrates Modbus TCP and Modbus RTU/ ASCII networks
• Wide operation temperature range and isolation (optional)

# Modbus Router



NEW

### EKI-1220R Series

1/ 2/ 4-Port Modbus Gateway/ Router
• Integrated stateful firewall for protection from intrusion
• Supports redundancy-enhanced Modbus ID
• Integrates Modbus TCP and Modbus RTU/ ASCII network

# WLAN Device Servers



### EKI-1360/ 1360MB Series

1/ 2-Port RS-232/ 422/ 485 to 802.11a/b/g/n WLAN Serial/ Modbus Device Server
• 2 x 10/ 100 Mbps Ethernet ports for LAN redundancy
• VCOM, TCP server, TCP Client, UDP, and RFC2217 operating modes
• Supports dual bands 2.4/ 5 GHz (selective)

# Industrial Wireless AP/ Clients



NEW

### EKI-6331AN/ 6332GN

802.11N Wi-Fi AP/ Bridge/ Client
• Compliant with IEEE 802.11 a/n and 802.11 b/g/n
• High output power
• Fast roaming
• IP55 rated for waterproof

### EKI-6333AC

802.11N/ AC Wi-Fi AP/ Bridge
• Compliant with IEEE 802.11 a/b/g/n/ac
• DIN rail mounting
• Supports dual bands 2.4/ 5 GHz (selective)

# L3 Switches



### EKI-9700/ 9600 Series

Industrial Layer 3 Managed Switch
• Static routing/ NAT (EKI-9612G, EKI-9628G)
• Static routing, RIP v1/ v2, OSPF v2, VRRP (EKI-9728G)
• Supports up to 4 x 10GbE fiber ports (EKI-9728G)
• Wide operating temperature range

# Network Management System



### WebAccess/NMS

Network Management System
• Cross-browser compatible
• Online Google Maps and offline OpenStreetMap support
• Supports all Advantech Ethernet-based products
• Dynamic connectivity indication
• Automatically discovers and diagrams network topology
• PoE, ring, wireless, cellular connection indication

# IEC 61850-3-Certified Switches



IEC61850    NEW

### EKI-9228 Series

Industrial Rackmount Managed Switch with Flexible Port Options
• 16 x Gigabit RJ-45 ports, 4 x SFP, 8 x Gigabit combo ports
• SFP socket for easy and flexible fiber expansion
• Gigabit X-Ring redundancy (ultra-high-speed recovery time, <20 ms), RSTP/ STP (802.1w/ 1D), MSTP
• Wide operating temperature range (-40~85°C)
• Dual wide-range AC/ DC power input



IEC61850    NEW

### EKI-9226G Series

26-port Rackmount Managed Switch w/ High-Density Fiber Ports
• 20 x Gigabit SFP + 6 x Gigabit RJ-45 ports
• Numerous fiber ports for establishing fiber links to many locations
• Security: 802.1x , HTTPS, SSH, and SNMPv3
• Gigabit X-Ring redundancy (ultra-high-speed recovery time, <20 ms), RSTP/ STP (802.1w/ 1D), MSTP
• Wide operating temperature range (-40~85°C)
• Dual wide-range AC/ DC power input and 2 x relay outputs



IEC61850    NEW

### EKI-9213

DIN Rail Managed Switch w/ Support for HSR/ PRP
• 8 x 10/ 100 Mbps RJ-45 + 3 x 100/ 1000 Mbps SFP + 2 x 10/ 100 Mbps HSR/ PRP combo ports
• IEC 62439-3 Clause 4 (PRP) and Clause 5 (HSR)-compliant
• Security: 802.1x , HTTPS, SSH, and SNMPv3
• Wide operating temperature range (-40~85°C)

# L2 Managed Switches

### EKI-7428G-4CI
Industrial Rackmount Managed Switch
- IXM for rapid deployment
- Management: SNMP v1/ v2c/ v3, WEB, Telnet, Standard MIB
- Wide operating temperature range (-40~70°C)
- Dual-power input (12~48 V$_{DC}$)
- EN50121-4 and NEMA TS2-certified

### EKI-7700 Series
Industrial Managed Switch
- Models supporting Gigabit / FastEthernet ports + Gigabit Copper/ SFP combo ports
- IXM function enables fast deployment
- IP30-rated chassis design
- EN50121-4 and NEMA TS2-certified

### EKI-5500-EI/ PN/ 5600-EI/ PN
Managed Switch with EtherNet/ IP or PROFINET Protocol Support
- UL508, Class 1 Division 2, ATEX-certified
- Compatible with SIMATIC step 7 and TIA portal (PROFINET-compatible models)
- PROFITNET models support MRP
- Faceplate compatible with Rockwell FactoryTalk® View (Ethernet/ IP compatible models)
- Easy and fast deployment from Advantech IXM technology

# Unmanaged Switches

### EKI-5000 Series
Unmanaged Switch
- IECEx, ATEX, CID2 certification for hazardous environments
- Monitoring utility
- Port-based QoS for deterministic data transmissions
- Loop detection
- Dual-power input

### EKI-2000 Series
Unmanaged Switch
- 5 x Fast Ethernet ports w/ slim design (W 25 x H 80 x D 84 mm)
- Supports redundant power input + 1 x DC power jack
- Wide operating temperature range (-40~75°C)
- IP40-rated chassis design
- AC power design (EKI-2428G-4FA)

### EKI-2525LI
Unmanaged Switch
- 5 x Fast Ethernet ports w/ slim design (W 25 x H 80 x D 84 mm)
- Supports redundant power input + 1 x DC power jack
- Wide operating temperature range (-40~75°C)
- IP40-rated chassis design

# PoE Switches

### EKI-7428G-4CPI
Industrial Rackmount Managed Switch with 24G PoE, 4G Combo Ports
- 24 x IEEE 802.3 af/ at PoE Gigabit ports, 4 x Gigabit copper/ SFP combo ports
- IXM for rapid deployment
- Management: SNMP v1/ v2c/ v3, WEB, Telnet, Standard MIB
- Wide operating temperature range (-40~70°C)
- EN50121-4 and NEMA TS2-certified

### EKI-7700 Series
Fully Managed PoE/ PoE+ Industrial Ethernet Switch
- X-Ring Pro redundancy (recovery time < 20 ms)
- IXM for rapid deployment
- Wide operating temperature range (-40~75°C)
- EN50121-4 and NEMA TS2-certified

### EKI-5000/ 2000 Series
Unmanaged PoE/ PoE+ Industrial Ethernet Switch
- Compact size
- Redundant power design
- Wide operating temperature range (-40~75°C)
- IP30-rated chassis design
- IECEx, ATEX, and CID2 certification for hazardous environments (EKI-5000 Series)

### EKI-9528/ 9520 Series
28/ 20-Port EN50155 Managed Switch w/ Support for PoE
- EKI-9520: 16 x M12 D-coded/ X-coded PoE ports + 4 x M12 X-coded w/ bypass
- EKI-9528: 16 x M12 D-coded/ X-coded PoE ports + 4 x M12 X-coded w/ bypass + 8 x M12 D-coded/ X-coded ports
- M12 with IP67 protection
- Wide operating temperature range for EN501055 Tx (-40~70°C)
- Wide input power range (24/ 36/ 48/ 72/ 96/ 110 V$_{DC}$)

### EKI-9516/ 9512/ 9510/ 9508 Series
16/ 12/ 10/ 8-Port EN50155 Managed Switch w/ Support for PoE
- IEEE 802.3af/ 802.3at per port with system PoE power management (PoE models)
- Compact size for space-limited environments (EKI-9510/ 9508)
- Wide operating temperature range for EN501055 Tx (-40~70°C)
- M12 with IP67 protection (EKI-9516/ 9512)

### EKI-9512E-4EETB
EN50155 Train Router for Rolling Stock Backbone
- 8 x 10/ 100 Mbps M12 D-coded + 4 x 10/ 100 Mbps M12 D-coded w/ bypass
- TTDP (IEC-61375-2-5)
- Wide input power range (24/ 36/ 48/ 72/ 96/ 110 V$_{DC}$)

# Wireless IoT Sensing Devices

## Intelligent Wireless Sensing Devices for IoT Big Data Acquisition

With developments in wireless and cloud technology, more remote management services have adopted cloud services for wide area communication. To shorten the gap between the network edge and the cloud, Advantech provides wireless sensing devices that directly pass data to the cloud by utilizing MQTT and RESTful APIs.

While WISE-4000 are designed for wide area communication with Wi-Fi, LPWAN, LoRa, NB-IoT/eMTC, and 3G/LTE, the WISE-2000 are all-in-one devices for specific applications, and the WISE-6000 comprise ready-to-use M2I edge devices for remote machine status monitoring and management.

## Wireless I/O Modules

### WISE-4000 Series

2.4 GHz Wi-Fi I/O Module

• REST and MQTT protocol for IoT or cloud services
• Local data logger and cloud storage w/ secure sockets
• HTML5 web interface for mobile configuration

**WISE-4012**
• 4-ch AI/ DI + 2-ch DO

**WISE-4051**
• 8-ch DI + 1 x RS-485 port

**WISE-4050/ 4060**
• 4-ch DI + 4-ch DO/ relay

**WISE-4012E IoT Developer Kit**
• 2-ch AI + 2-ch DI + 2-ch relay
• Ready-to-use software and accessories for immediate use

Wi-Fi   TAIWAN EXCELLENCE 2016

## Wireless Sensor Nodes

### WISE-4200/ 4400/ 4600 Series

Sensor to Intelligence Node

**WISE-4220 (2.4 GHz Wi-Fi)**
• REST and MQTT protocol for IoT or cloud services
• Local data logger and cloud storage w/ secure sockets

**WISE-4210 (Sub-GHz LPWAN)**
• Less interference than at 2.4 GHz
• Long distance communication with 3.6 V AA battery power

**WISE-4470 (Cellular, NB-IoT)**
• Local data logger and cloud storage w/ secure sockets
• IP65-rated protection with M12 connectors and an internal antenna

**WISE-4610 (LoRa, LoRaWAN)**
• IP65-rated protection with M12 connectors for outdoor applications
• Solar panel rechargeable battery and optional GPS for location tracking

Wi-Fi   LPWAN   LoRa   eMTC   NB-IoT   3G

NEW

## Wireless Sensor Devices

### WISE-2000 Series

Self-Powered Sensor Nodes and Intelligent RFID Gateways

**WISE-2210 (Sub-GHz LPWAN)**
• Self-Powered by photovoltaic panel or current transducer
• Power consumption measuring or environment monitoring for equipment and machine

**WISE-2800 (RFID)**
• 4-port UHF RFID read/ write function
• Node-RED programmable for data read/ write, filtering, and transfer
• Application-ready function block
• Ethernet and Wi-Fi interface for up-link

LPWAN   Wi-Fi   RFID   Node-RED   NEW

## Wireless M2I Edge Devices

### WISE-6200 Series

RISC Edge Device with Arm Cortex-A8 and RT-Linux OS

• Support for more than 100 PLC drivers via WebAccess/ TagLink
• Built-in DI/DO, AI/AO, RS-485 and Ethernet for machine status monitoring
• Wi-Fi, 3G, NB-IoT w/ mini-PCIe communication
• Intelligent logic control with Node-RED
• ePaper for local visualization and web service support for remote management

Wi-Fi   NB-IoT   3G

WISE-PaaS/ EdgeLink

Node-RED   NEW

# Data Acquisition and Control

## Diverse Form Factors to Satisfy All DAQ Requirements

Advantech offers a wide range of industrial data acquisition and control devices with various interfaces and functions. Based on PC technology, from add-on cards and portable modules to signal conditioning and graphical software tools, Advantech's industrial I/O products are reliable, accurate, affordable, and suitable for a range of industrial automation applications such as measurement, laboratory operations, machine automation, and production testing. Moreover, Advantech's latest DAQNavi I/O driver supports Windows 7, 8, 10, and Linux, enabling customers to seamlessly integrate data acquisition cards with the latest platforms for improved performance and reduced development time.

## PCI Express DAQ Cards

### PCIE-1730H/ 1756H
32/ 64-ch Isolated DI/DO PCI Express Card
- 16/ 32-ch isolated DI/DO channels w/ 24 V compatibility
- Interrupt handling capability for all DI channels
- Software-selectable digital filter time for all DI channels
- 16-ch TTL DI/DO w/ 5 V compatibility (PCIE-1730H only)
- High-voltage isolation on all isolated DI/DO channels (2,500 V$_{DC}$)

### PCIE-1812
8-ch Simultaneous Sampling Multi-Function PCI Express Card
- 8 x differential simultaneous sampling AI channels (sample rate: up to 250 kHz; resolution: 16-bit)
- 2 x AO channels (sample rate: up to 3 MHz; resolution: 16-bit)
- 2 x analog/ digital triggers for AI/ AO channels
- 4 x 32-bit programmable encoder counters/ timers
- 32 x programmable DI/DO channels with interrupt function

### PCIE-1813
4-ch, 26-bit Simultaneous Sampling, Universal Bridge Input, Multi-Function PCI Express Card
- 4 x AI channels (sample rate: 38.4 Hz/ 4 s; resolution: 26-bit for full-, half-, and quarter-bridge sensor inputs)
- 2 x AO channels (sample rate: up to 3 MHz; resolution: 16-bit)
- 4 x 32-bit programmable encoder counters/ timers
- 32 programmable DI/DO channels with interrupt functions

### PCIE-1810/ 1816/ 1816H
16-ch AI Multi-Function PCI Express Card
- Sample rate: 500 KHz for PCIE-1810 and PCIE-1816; 1 MHz for PCIE-1816H
- Resolution: 12/ 16-bit
- Analog and digital triggers
- Waveform generator for AO channels
- 24 x programmable DI/DO channels

### PCIE-1802/ 1802L
8/ 4-ch Dynamic Signal Acquisition PCI Express Card
- 8/ 4 x simultaneously sampled AI channels (sample rate: up to 216 KHz)
- 24-bit resolution A/ D converters (dynamic range: 115 dB)
- Wide input voltage range (±0.2~10 V)
- Built-in anti-aliasing filter

### PCIE-1840/ 1840L
4-ch Digitizer PCI Express Card
- 4 x AI channels (sample rate: up to 125/ 80 MHz, resolution: 16-bit)
- 500-MHz time-interleaved sampling rate
- Supports continuous data streaming
- 2 GB of onboard memory

## PCI DAQ Cards

### PCI-1714U/ 1714UL
4-ch Simultaneous AI PCI Card
- A/ D converter for each channel
- 4 x single-ended AI channels (12-bit, 30 MHz for PCI-1714U; 12-bit, 10 MHz for PCI-1714UL)
- 30 VDC overvoltage protection

### PCI-1716/ 1716L
16-ch Multi-Function PCI Card
- 16 x single-ended, 8 x differential/ combination AI channels
- 16-bit A/ D converter (sample rate: up to 250 kHz)
- Automatic calibration
- 16 x DI/DO channels
- 2 analog outputs with 16-bit resolution (PCI-1716 only)

### PCI-1730U/ 1756
32/ 64-ch Isolated DI/O Universal PCI Card
- High-voltage isolation on DO channels (2,500 V$_{DC}$)
- Wide output voltage range (5~40 VDC)
- High sink current for isolated output channels (max. 200 mA/ channel)
- Current protection for each port

# USB DAQ Modules

### USB-4711/ 4716
16-ch Multi-Function USB Module
- 2 x analog output channels
- Resolution (sample rate): 12-bit (150 kHz)/ 16-bit (200 kHz)
- 8x 5V/ TTL-compatible DI/DO channels
- 1 counter for event counting, frequency measurement, and PWM output
- Lockable USB cable for connection security

### USB-5830/ 5856
32/ 64-ch Isolated Digital I/O module (USB 3.0)
- SuperSpeed USB (5 Gbps)
- Built-in USB hub
- 2,500 VDC isolation protection
- Level 3 ESD and surge protection

### USB-DSO
2-ch Digital Storage Oscilloscope
- Sample rate: up to 1 GHz
- Bandwidth: 200 MHz
- Waveform memory: up to 128 MS/ ch
- Resolution: 8/ 16-bit

# Communication Solutions

### PCI-1600/ PCIE-1600
2/ 4/ 8-Port PCI/ PCIe Serial Communication Card with Surge/ Isolation Protection
- PCI/ PCIE - 1604/ 1610/ 1620: RS-232 port
- PCI/ PCIE - 1602/ 1612/ 1622: RS-232/ 422/ 485 port
- Optional surge/ isolation protection
- Fast data transmission: up to 921.6 kbps

### PCIE-1680
2-Port CAN Bus Universal PCI Communication Card w/ CANopen Support
- Supports two simultaneous CAN networks
- Fast data transmission: up to 1 Mbps
- CAN controller frequency: 16 MHz
- Isolation protection: 2,500 VDC

### USB-4630
4-Port Isolated SuperSpeed USB 3.0 Hub
- The world's first isolated SuperSpeed USB Hub (5 Gbps)
- 2,500 VDC voltage isolation for upstream ports
- Lockable USB 3.0 cable included
- Can be powered via USB bus or 10~30 VDC external power source

# EtherCAT Remote I/O Modules

### AMAX-4817
8-ch Isolated AI EtherCAT Remote I/O Module
- Suitable for EtherCAT networks
- 8 x AI channels w/ 2,500 VDC isolation (resolution: 16-bit)
- Quick-remove European-type connector
- Supports DC mode
- LED indicators for I/O status

### AMAX-4830
16-ch Isolated DI/DO EtherCAT Remote I/O Module
- Suitable for EtherCAT networks
- 2,500 VDC isolation
- Quick-remove European-type connector
- Supports DC mode
- LED indicators for I/O status

### AMAX-4856
32-ch Isolated DI/DO EtherCAT Remote I/O Module
- Suitable for EtherCAT networks
- 2,500 VDC isolation
- Quick-remove European-type connector
- Supports DC mode
- LED indicators for I/O status

# DAQ-Embedded Computers

### MIC-1810/ 1816
12/ 16-bit Data Acquisition Platform w/ Intel® Core™ i3/Celeron® Processer
- Intel® Celeron® 1047UE (1.4 GHz)/ Core™ i3-3217UE processer (1.6 GHz)
- MIC-1810: 16x AI channels (sample rate: up to 500 KHz; resolution: 12-bit), 2 x AO channels (sample rate: up to 500 KHz; resolution: 12-bit)

- MIC-1816: 16 x AI channels (sample rate: up to 1 MHz; resolution: 16-bit), 2 x AO channels (sample rate: up to 3 MHz; resolution: 16-bit)
- 2 x 10/ 100/ 1000BASE-T RJ45 LAN ports
- 2 x USB 2.0 and 2 x USB 3.0 ports

- 2 x RS-232 ports
- Onboard FIFO memory (4k samples)
- Supports digital and analog triggers
- 24 x programmable DI/DO channels
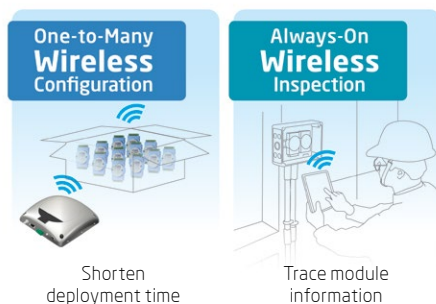- 2 x programmable counters/ timers (32-bit)

# Remote I/O Modules

## Transformation for IIoT's Wider & Larger Applications

Advantech's ADAM remote I/O modules, with their cutting-edge functional design, have been a consistently reliable figure in the industrial automation field for over 25 years. The versatile product offerings and latest technology updates for this series of modules continue to accelerate the realization of industrial IoT and fulfill the demands of larger scale network infrastructure in an increasingly more diverse range of applications. With RFID and USB technology, users have additional options for configuration and inspection, even when unpowered. Additionally, for larger network infrastructure, ADAM Ethernet-based remote I/O modules use SNMP and MQTT to enhance communication efficiency.

## RFID Introduction

One-to-Many
**Wireless** Configuration

Always-On
**Wireless** Inspection

Shorten deployment time

Trace module information

### RFID Access

Applicable to ADAM-4100 and ADAM-6200 series

## Serial I/O Modules

### ADAM-4100 Series
Robust RS-485 I/O Modules
- Wide operating temperature range (-40~85°C/ -40~185°F)
- High protection level: 4-kV surge, 3-kV EFT, 8-kV ESD
- High common mode voltage: 200 VDC
- Burnout detection

#### Module Selection
- ADAM-4117: Robust 8-ch AI module
- ADAM-4118: Robust 8-ch thermocouple
- ADAM-4150: 7-ch DI/ 8-ch DO module
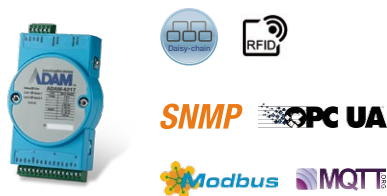- ADAM-4168: 8-ch relay module

### ADAM-4000 Series
RS-485 I/O Modules
- Watchdog timer
- ±35 VDC overvoltage protection
- 3,000 VDC voltage isolation

#### Module Selection
- ADAM-4017+: 8-ch AI module
- ADAM-4024: 4-ch AO/ 4-ch DO module
- ADAM-4015: 6-ch RTD module
- ADAM-4051: 16-ch DI module
- ADAM-4055: 8-ch DI/ 8-ch DO module

## Ethernet I/O Modules

### ADAM-6200 Series
Daisy-Chain Ethernet I/O Modules
- Cloud management: configuration, monitoring, and firmware updates
- Daisy chain connectivity w/ auto-bypass protection
- Supports HTML5, JavaScript, XML
- Supports GCL and P2P functions
- Group configuration capability

#### Module Selection
- ADAM-6217: 8-ch AI module
- ADAM-6224: 4-ch AO/ 4-ch DI module
- ADAM-6250: 8-ch DI/ 7-ch DO module
- ADAM-6251: 16-ch DI module
- ADAM-6266: 4-ch Relay/ 4-ch DI module

### ADAM-6100 Series
Real-Time Ethernet I/O Modules
- Daisy chain connectivity
- Coupler-free design
- GSD, L5K, and EDS file-ready
- 2,500 VDC isolation protection

#### Module Selection
- ADAM-6117EI/PN: 8-ch AI module
- ADAM-6160EI/PN: 6-ch relay module
- ADAM-6150EI/PN: 8-ch DI/ 7-ch DO module
- ADAM-6151EI/PN: 16-ch DI module
- ADAM-6156EI/PN: 16-ch DO module

*PROFINET:PN , EtherNet/ IP:EI
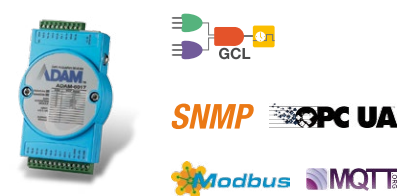
### ADAM-6000 Series
Smart Ethernet I/O Modules
- Cloud management: configuration, monitoring, and firmware updates
- Embedded web server
- Data stream function to push data
- Supports GCL and P2P functions
- Supports C# .NET and VB.NET

#### Module Selection
- ADAM-6015:7-ch RTD module
- ADAM-6017: 8-ch AI/ 2-ch DO module
- ADAM-6050: 12-ch DI/ 6-ch DO Relay module
- ADAM-6060: 6-ch DI/ 6-ch Relay module

# Industrial Tablets for Mobile Workers

## Support On-Site Management, Manufacturing and Inspections

Advantech's industrial tablets are designed for mobile workers in on-site factory inspections. Equipped with the latest Intel® processor and RF technology, our rugged tablets enable seamless data transmission, thus ensuring access to real-time information. For example, the AIM-65 tablet and application-oriented peripherals are built for rough handling in extreme environments; this tablet has been drop-tested at 1.2 m and has an IP65 rating. The extension module also has a barcode scanner (20°/ 70°) and RJ45+COM capabilities to satisfy customization requirements. For extended operations, the AIM-65 can be operated and easily removed from its wall docking station, and it has hand and shoulder straps to enable hands-free carry.

## Industrial-Grade Tablets and Handheld Terminals

Universal Cover

Screen Protection Film

Vehicle Docking Station

Active Pen

Desk Docking Station

Multi Charger & External Battery

Extension Modules

### PWS-872
**10" Industrial-Grade Tablet w/ 7th Gen Intel® Core™ i3/i5/i7/Celeron® Processor**
- 10.1" high-brightness WUXGA LED display with scratch-resistant Corning® Gorilla® Glass 3 panel
- Multi-touch PCAP touchscreen with support for gloved operation
- Rugged design with MIL-STD-810G certification, IP65 rating, and 4-ft. drop tolerance
- 4G LTE, WLAN (802.11 a/b/g/n/ac), Bluetooth 4.1, and GPS modules with BeiDou/ GLONASS support
- Built-in front and rear cameras, 1D/ 2D barcode scanner, and NFC RFID reader

Vehicle Docking Station

Office Docking Station

Extension Modules

Holster

Hand Strap

Active Stylus

Multi-Battery Charging Station

Multi-Tablet Charging Station

Battery with Meter

### AIM-65
**8" Industrial-Grade Tablet w/ Intel® Atom™ Processor**
- Intel® Atom™ processor for Windows 10 IoT and AIM Android operating systems
- 8" WUXGA full HD display with scratch-resistant Corning® Gorilla® Glass 3 and multi-touch PCAP control
- WLAN, BT, NFC, 3G/ 4G LTE technology for seamless communications
- Optional extension modules such as a 1D/ 2D barcode scanner and LAN +COM module
- Additional modules and accessories can be customized according to application requirements

Docking Station

Battery

Tablet Holster

Multi-Bay Battery Charger

### PWS-472
**5" Industrial-Grade Handheld Terminal w/ Arm® Cortex™-A53 Quad-Core Processor**
- ARM® Cortex™-A53, quad-core, 1.3 GHz processor with Android 5.1
- 5" HD (1280 x 720) capacitive touchscreen
- Lightweight design (295 g)
- IP65 rated for protection from water and dust
- Wide operating temperature range (-20~60°C)
- Wi-Fi, Bluetooth, GPS, BeiDou, and 4G LTE communication capabilities
- 13-megapixel auto-focus camera and optional 1D/ 2D barcode scanner

### PWS-472 UHF RFID Reader
**5" Industrial-Grade Handheld UHF RFID Reader with ARM® Cortex™-A53 Quad-Core Processor**
- Built-in 13-megapixel auto-focus camera and 1D/ 2D barcode scanner
- Long-range UHF RFID capabilities (compatible with EPC C-1 G-2/ ISO 18000-6C)
- User-friendly trigger button
- IP54 rated for protection from water and dust
- Wi-Fi, Bluetooth, GPS, BeiDou capabilities

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# Enabling an Industrial IoT Evolution

Advancements in technology have shaped modern life, allowing us to interconnect people in ways never thought possible before. Advantech, a global industrial computing and automation manufacturer, continues to explore what technology brings to our lives. With over three decades of proven experience, we combine information, automation and communication technology with efficiency, energy conservation, minimized risk, cost-effectiveness, and environmental protection to create solutions to enable an intelligent planet.

## General Industrial IoT

- Platforms for general industries
- Platfrom & device distribution
- Medical Equipment, Broadcasting and Video Surveillance

## Transportation

- Railway
- Road network
- Transport hub

## Industrial Equipment Manufacturing (IEM)

- Machine automation
- Predictive maintenance
- Remote control and video capture
- Edge computing

## iConnectivity

- WebAccess/NMS
- Cellular routing solution
- Wired & wireless network infrastructure
- Protocol & interface conversion solution

## Energy & Environment

- Energy management
- Solar power management
- Water management
- Pollution monitoring

## iFactory

- M2I/iMachine
- OEE monitoring
- Industry 4.0 situation room
- Factory energy & environment monitoring
- Warehouse management

# Industry 4.0

Industry 4.0 is transforming manufacturing worldwide. Factory management needs assistance as they either upgrade existing facilities, or establish new ones that take advantage of Industry 4.0 optimization. Advantech's IoT solution architecture strategy enables the development of iSensing devices, edge intelligent gateways, and iFactory Solution Ready Packages (SRPs) that help our customers embrace Industry 4.0.
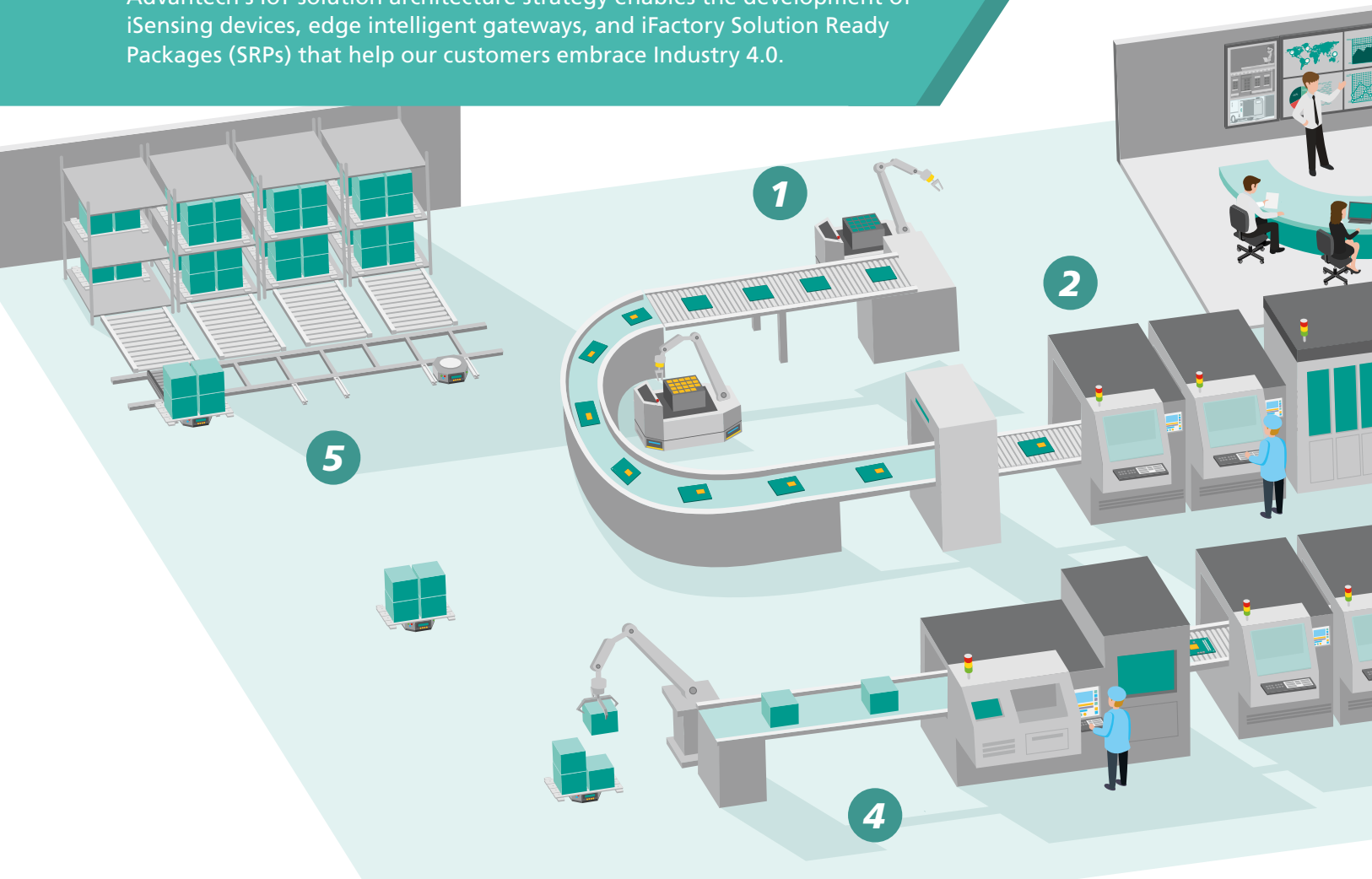
## Product Solutions

### WebAccess Software

**Advantech WebAccess**
• IIoT application software platform

### Solution Ready Package (SRP)

**SRP Series**
• Software-hardware integrated solutions

### Wireless IoT Sensing Devices

**WISE-4000 Series**
• IoT wireless I/O modules

### Remote I/O Modules

**ADAM-4000/6000 Series**
•RS-485 & Ethernet I/O modules

### 1 M2I/iMachine

- Real-time monitoring for cloud-based Machine-to-Intelligence (M2I) management.
- Robot management with machine status monitoring, diagnosis, and intelligent prediction.
- CNC machine monitoring for enhanced CNC management and predictive maintenance.

### Predictive Maintenance

- Access multiple data sources in real time to predict asset failures or quality issues and improve operational processes.
- Intelligent predictive analytics to prevent unexpected breakdowns, allowing maintenance to be planned before failures occur.

### 2 OEE Monitoring

- Data acquisition from wireless shop-floor devices in real time.
- Overall Equipment Effectiveness (OEE) monitoring for realizing equipment connectivity and effective optimization.
- Dashboard visualization with machine availability, downtime, and streamlined balance rates.

### 3 Industry 4.0 Situation Room

- Factory nerve center where data is collected, analyzed, and visualized for real-time management and data-driven decision making.
- Data consolidation and visualization framework easily accessible to factory managers.
- Real-time management for efficiency improvements and production optimization.

### 4 Factory Energy & Environment Monitoring

- Factory energy management system to enable energy supply and consumption optimization to reduce factory operating costs.
- Temperature and humidity monitoring to optimize factory operations.
- Factory safety can be monitored for dust, gas, $CO_2$, water and other hazardous materials to ensure the factory environment is safe.

### 5 Warehouse Management

- Automated guided vehicles (AGV) solution to transport materials and products.
- Full warehouse inventory visibility to optimize warehouse management.
- Paperless warehouse management in real time to ensure competitive and successful distribution operations.

| **Industrial Communication** | **Industrial Controllers** | **IIoT Gateways** | **Intelligent HMI** |
|---|---|---|---|
| EKI Series, Wzzard™ & IE Multiway | UNO-1000/3000, APAX-5000 & MIC-7000 Series | ADAM-3600/ECU-1100 & UNO-2000 Series | TPC & PPC Series |
| • Industrial communication | • Control IPCs | • Industrial IoT gateways | • Control panels, thin clients, and operator panels |

# Industrial Equipment Manufacturing Solutions

The key step Advantech adopts to realizing intelligent manufacturing and smart equipment is to connect devices, computing systems, and equipment together to accomplish data acquisition, analysis, and visualization. Cloud platform services and dashboards complete data integration and allow network connection of all equipment and data to achieve intelligent manufacturing processes and industry transformation.
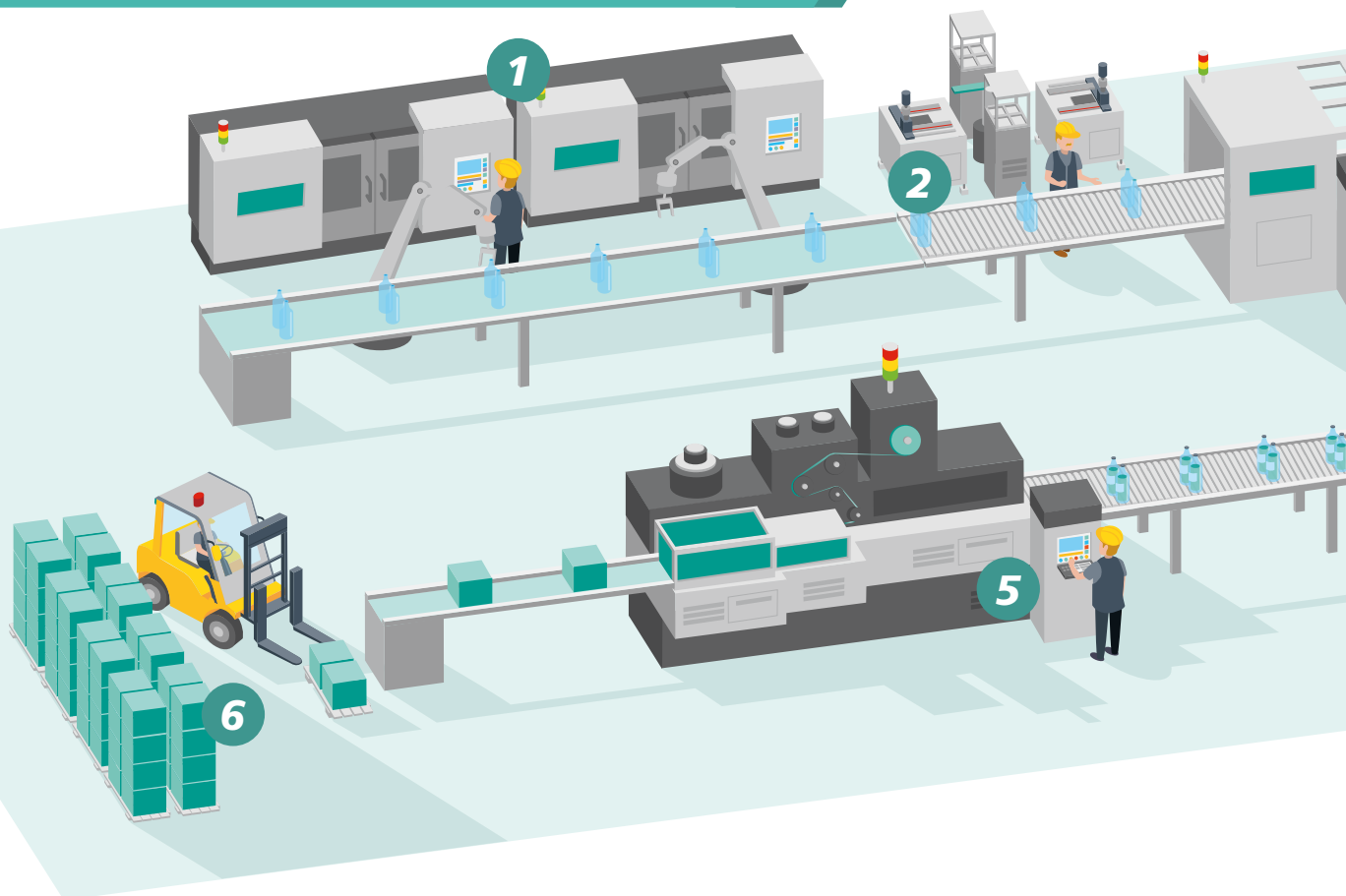
## Product Solutions

### Motion Control

- Supports versatile EtherCAT servo/stepping motor
- Pulse train control via EtherCAT motion module

### Machine Vision

- Easy-to-configure without programming
- Intuitive GUI shortens the learning curve
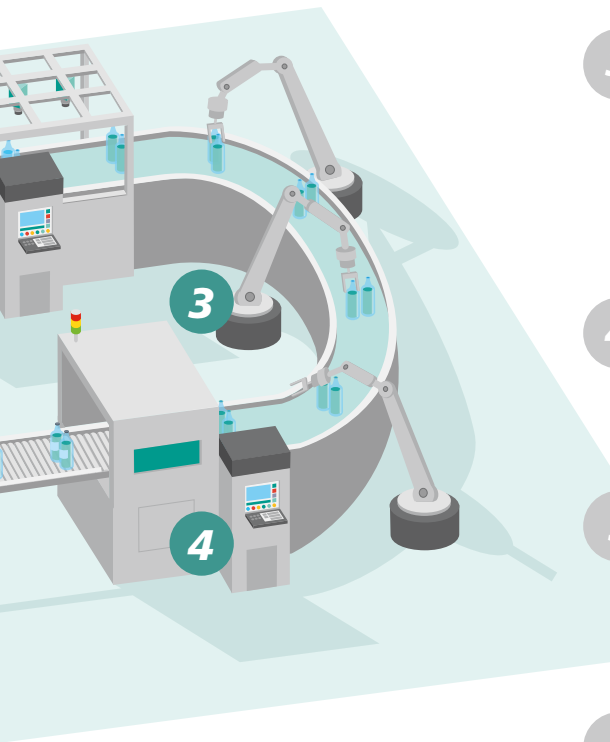
### Industrial Ethernet Switch & Wireless Network

- Wired & wireless network infrastructure

### Data Acquisition

- Provides a wide range of I/O devices with various interfaces and functions
- Reliable and accurate data acquisition hardwares and graphical software tools

## 1 Remote Control and Video Capture

- Extremely low latency(<3 ms) for video, control and data transmission
- Extends up to 100 meter (330 ft)
- Supports High Resolution 1920x1080 @ 60Hz

## 2 Protocol Gateway

- Supports various widely used industrial protocols such as PROFINET, EtherNET/IP and EtherCAT
- Seamless conversion between each industrial protocol
- Efficiently connect to different protocol equipment with redundancy and management features

## 3 Predictive Maintenance

- Wide-range of industrial data acquisition and control devices with various interfaces and functions
- Reliable, accurate, affordable, and suitable for diverse industrial automation applications
- Enables customers to seamlessly integrate data acquisition cards with the latest platforms for improved performance and reduced development time

## 4 Edge Computing

- Modular design for PC-based controllers, industrial PCs, and panel computers
- High system configuration flexibility to meet the needs of various applications
- Minimize lead times with global CTOS capability

## 5 Motion Control and Machine Vision

- Unique SoftMotion kernel and innovative GigE Vision offloads engine using FPGA, DSP and ARM as the core-computing platform
- Provides versatile solutions and optimum motion / vision performance for fulfilling the demands of OEM machine makers and system integrators

## 6 Industrial Connectivity

- Robust, reliable, and sophisticated connectivity from the network edge to the network core
- Transmit data over copper cables, fiber optics, and wireless connections
- Flexible access to network status via multiple industrial protocols

### Remote Control and Video Capture

- Only one power supply supports both transmitter and receiver
- Mountable design for Industry application scenario

### All-in-One Computing Platform

- AIIS Series: Compact Vision System supports the latest Intel® Core™ processors
- AiMC Series: Micro Computer supports the latest Intel® Core™ processors

### Modular IPC

- Comprises compact modularized systems
- Supports the innovative i-Module for flexible expansion to satisfy diverse application requirements

### Servers and Storage

- Xeon® E5 processor for high performance computing
- CPU/GPU hybrid technology for video-intensive applications
- Supreme server DTOS for optimal customization

# Intelligent Transportation Systems

From railways to roads, airports to harbors, the endless streams of vehicles, passengers, and cargo vessels create difficulties and challenges for transportation infrastructure planning by city authorities and traffic operators. With decades of experiences and an impressive portfolio of successful applications, Advantech offers a comprehensive range of solutions and in-depth industry know-how to help our partners and customers build effective transportation systems around the world.
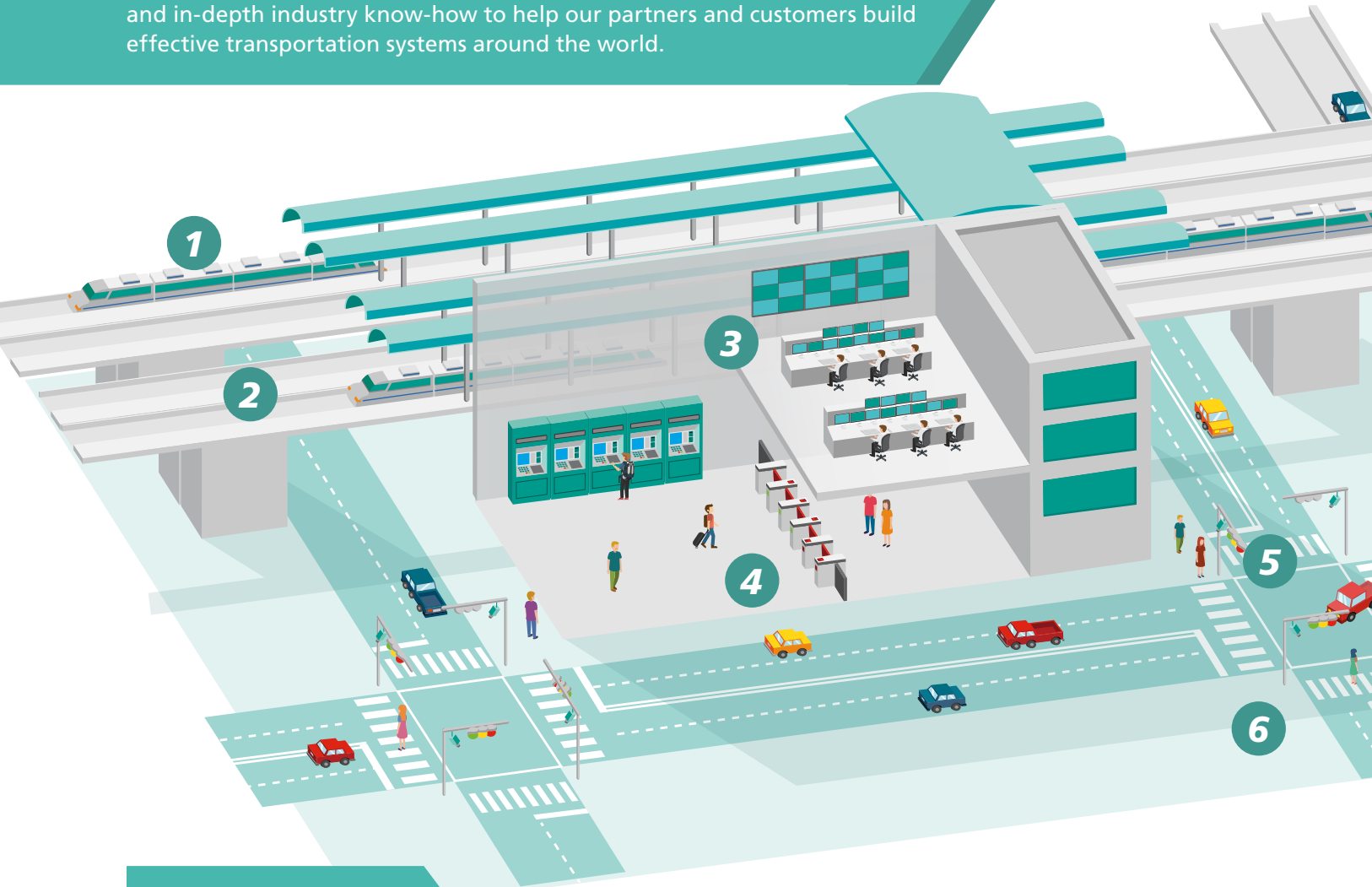
## Product Solutions

### Rolling Stock Controller

**ITA-5000 Series**
• EN 50155 certified product for railway applications

### Rugged-design Platform

**ITA-2000 Series**
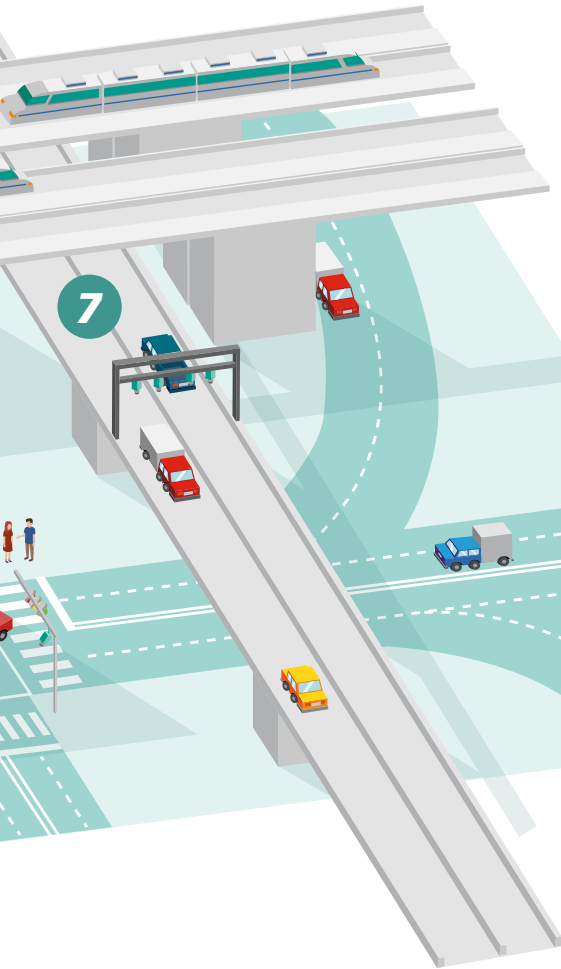• Flexible configuration design for multiple COM, CAN, LAN

### AFC Controller

**ITA-1000 Series**
• EN 50155 Certified Panel PC

### Display System

**ARS-P3800/2800**
• EN 50155 Certified Panel PC

### 1  Rolling Stock Solution

• Passenger information system
• CCTV system
• Infotainment system
• Vehicle monitoring system

### 2  Wayside Control Solution

• Wayside signaling
• Interlocking system
• Train control system

### 3  Integrated Supervisory Control System

• Building automation system
• Fire alarm system
• Passenger information system
• CCTV system

### 4  Automatic Fare Collection Solution

• Automatic gate machine
• Ticket vending machine

### 5  Intelligent Video Analytics Solution

• Traffic management surveillance system
• License plate recognition system

### 6  Traffic Management Solution

• Signal control management
• Road condition monitoring
• Emergency system

### 7  Highway Management Solution

• Electronic toll collection system
• Bridge & tunnel monitoring
• Traffic flow control & analysis

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**Panel Controller**

**ITA-8000 Series &
TPC-8100**
• EN 50155 certified HMI

**Railway Ethernet Solutions**

**EKI-9500 Series**
• EN 50155 certified switches

**Roadway Ethernet Solutions**

**EKI-7700 & MiniMc Series**
• Roadway network
  communications

**Wireless Solutions**

**WISE/Wzzard/SmartFlex**
• Transportation wireless
  communications

# Cloud-enabled Energy & Environment Solutions

Nowadays, energy and environment practices have evolved to remote management using cloud services. To accelerate our customers' time-to-market, Advantech offers Solution Ready Package (SRP) based on our hardware/ software products and domain experience. With Machine-to-Intelligence (M2I) SRP, equipment builders can easily connect operating data to the cloud. By integrating M2I SRPs into vertical system SRPs, SIs enjoy the benefits of remote management, operations, and maintenance.
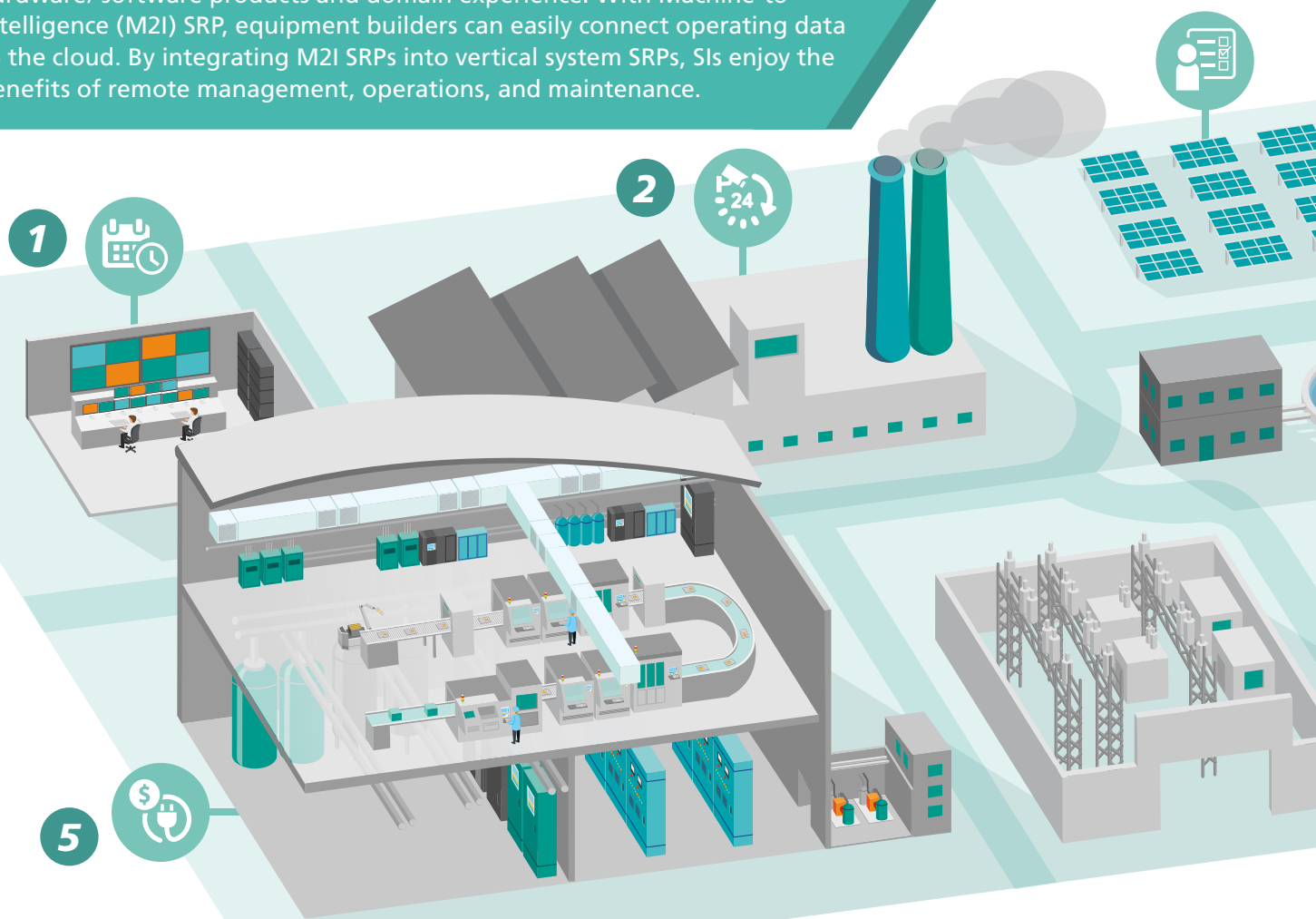
## Product Solutions

**Vertical Application System SRP**

WebAccess/SCADA

**Energy Management Solution**
• Energy consumption visualization and analysis for optimization

WebAccess/SCADA

**Solar Power Management Solution**
• Centralized operation with unmanned remote sites
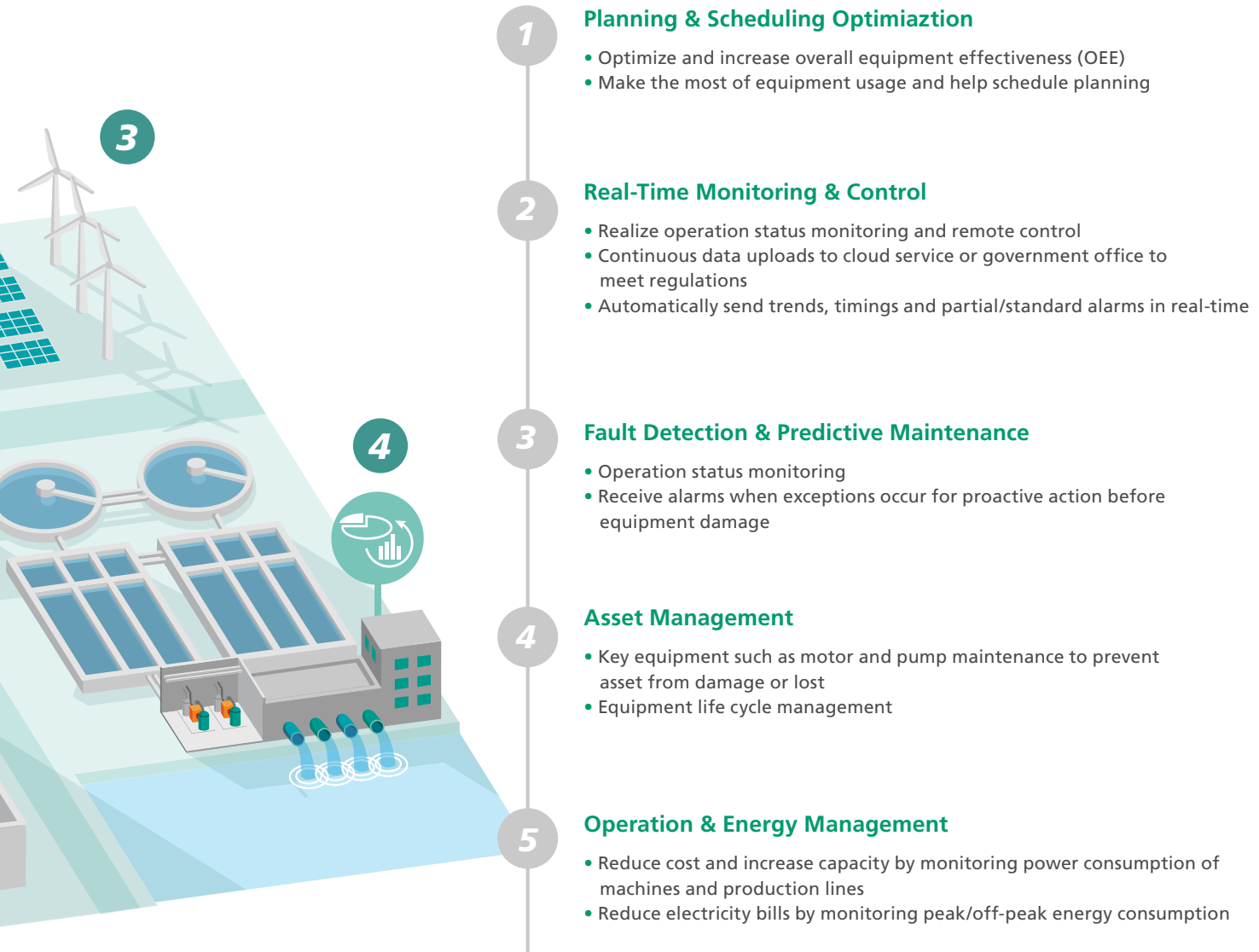
WebAccess/SCADA
WebAccess/IMM

**Indoor Air Quality Management Solution**
• Management solution continuous indoor air quality monitoring and analysis

WebAccess/SCADA

**Water Management Solution**
• Cloud-enabled remote equipment monitoring for water and wastewater treatment

**1**

## Planning & Scheduling Optimiaztion

- Optimize and increase overall equipment effectiveness (OEE)
- Make the most of equipment usage and help schedule planning

**2**

## Real-Time Monitoring & Control

- Realize operation status monitoring and remote control
- Continuous data uploads to cloud service or government office to meet regulations
- Automatically send trends, timings and partial/standard alarms in real-time

**3**

## Fault Detection & Predictive Maintenance

- Operation status monitoring
- Receive alarms when exceptions occur for proactive action before equipment damage

**4**

## Asset Management

- Key equipment such as motor and pump maintenance to prevent asset from damage or lost
- Equipment life cycle management

**5**

## Operation & Energy Management

- Reduce cost and increase capacity by monitoring power consumption of machines and production lines
- Reduce electricity bills by monitoring peak/off-peak energy consumption

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## Machine-to-Intelligence (M2I) SRP

**Distributed Solar Power Data Acquisition**
- Reliable data acquisition for solar power markets

**HVAC & Heater E&E M2I SRP**
- Remote monitoring and centralized management for HVAC and heater

**Mobile Power Generator E&E M2I SRP**
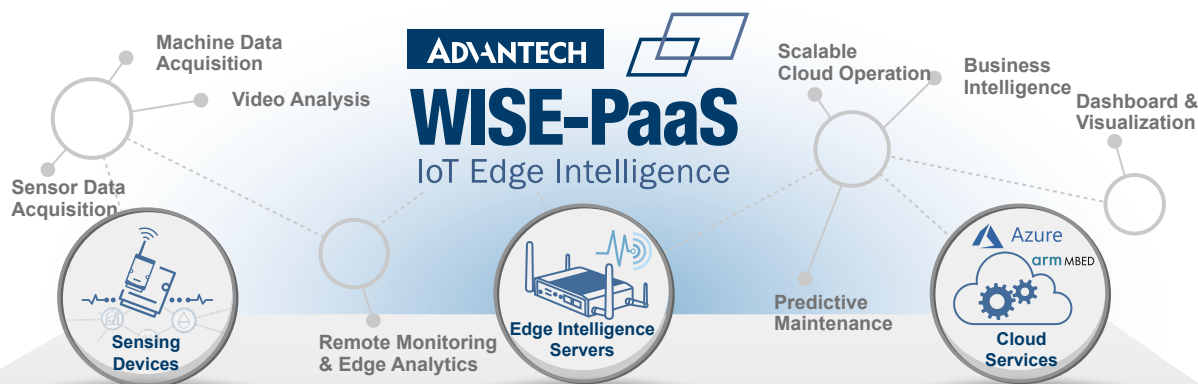- Remote monitoring and centralized management for mobile power generator

**Water Pump E&E M2I SRP**
- Remote monitoring and centralized management for water pump

# Enabling IoT Edge Intelligence with WISE-PaaS

In the era of IoT, billions of sensing devices are distributed in factories, power plants, water treatment plants, transportation, healthcare, and retail industries for environmental monitoring, surveillance and more. Big data analysis improves accuracy, efficiency, and productivity. Intelligence is ubiquitous and inevitable. Advantech launched the WISE-PaaS edge intelligence platform to provide total solutions to system integrators and manufacturers, enabling real IoT powered business models in various vertical markets.

**ADVANTECH**
**WISE-PaaS**
IoT Edge Intelligence

Machine Data Acquisition
Video Analysis
Sensor Data Acquisition
Scalable Cloud Operation
Business Intelligence
Dashboard & Visualization

**Sensing Devices**
Remote Monitoring & Edge Analytics
**Edge Intelligence Servers**
Predictive Maintenance
Azure arm MBED
**Cloud Services**

**WISE-PaaS/EnSaaS**  Platform for IoT Cloud Services

WISE-PaaS/AFS        WISE-PaaS/Dashboard        WISE-PaaS/SaaS Composer

WISE-PaaS/EnSaaS is a cloud-based software platform designed to empower cloud services. It provides a highly secure, multi-tenancy architecture with automatic expansion to create a highly robust data platform for Advantech's domain-focused cloud services or customer's own cloud services.

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### WebAccess
**Industrial Data Acquisition and Visualization**

WebAccess/SCADA    WebAccess/CNC    WISE-PaaS/EdgeLink
WebAccess/NMS      WebAccess/MCM    WebAccess/HMI

WebAccess is the core of Advantech's industrial IoT solutions for data acquisition, analysis, and visualization. WebAccess supports open interface APIs for secondary development and enterprise-level system integration.

### WISE-PaaS/VideoSense
**Intelligent Video and Multimedia Management**

WISE-PaaS/VideoCMS    WISE-PaaS/SignageCMS
WISE-PaaS/HumanDetectAI

WISE-PaaS/VideoSense is a service platform for intelligent video analytics that collects sensor data, performs video analytics, data visualization, and dispatches files through a central management system.

### WISE-PaaS/EdgeSense
**Edge Intelligence and Sensing Integration**

WISE-Agent    WISE-PaaS/RMM    WISE-PaaS/OTA
WISE-PaaS/Security

WISE-PaaS/EdgeSense is an edge intelligence and sensing integration software solution that incorporates sensor data aggregation, edge analytics, cloud applications, and security management for real-time device-to-cloud operational intelligence.

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### WISE-PaaS VIP Program
**ADVANTECH WISE-PaaS** IoT Edge Intelligence / VIP Program

WISE-PaaS provides a range of software and cloud-based service solutions that enable IoT in every layer and every vertical domain. Join Advantech's WISE-PaaS Alliance to become a special VIP, and enjoy IoT success with Advantech.