

# Advantech Industrial IoT Systems and Devices Star Product Guide

- ✓ Advantech WISE-PaaS
- ✓ iFactory & M2I/iMachine SRPs
- ✓ Energy and Environment SRPs
- ✓ Machine Automation
- ✓ Power & Energy Solutions
- ✓ Intelligent Transportation Systems
- ✓ Intelligent Systems and Platforms
- ✓ Embedded Automation Computers
- ✓ Intelligent HMI
- ✓ Control IPCs
- ✓ Edge DAQ Devices
- ✓ Industrial Communication
- ✓ Wireless IoT Sensing Devices
- ✓ Data Acquisition and Control
- ✓ Remote I/O Modules
- ✓ Industrial Tablets for Mobile Workers



**WebAccess**

**ADVANTECH**

*Enabling an Intelligent Planet*

[www.advantech.com](http://www.advantech.com)

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







## Packages



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

Platform



Node-RED Packages

## Intelligent Automation Systems



Machine Interface



Modular IPCs



Industrial PCs



Embedded Automation Computers

Control PCs

## I/O & Video Cards



EtherCAT I/O Modules

Data Acquisition Computers, Cards, and USB Modules



Ethernet Solutions

## iSensing Devices



Edge Intelligent DAQ



Remote I/O Modules



Wireless I/O Modules and Sensor Nodes

## Forms & Devices

# Advantech WISE-PaaS Edge Intelligence Platform

## Enabling IoT Edge Intelligence and 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

### 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

### 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

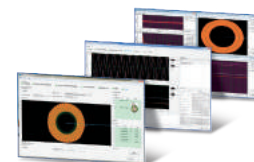


WebAccess/CNC

### WebAccess/CNC

CNC Machine Networking Solution

- Automatically generates CNC projects for WebAccess / SCADA software
- Supports CNC machine and I/O device monitoring
- Supports leading CNC network controllers
- Provides CNC machining status and PLC register monitoring
- Provides CNC availability queries and NC file transfer functionality
- Provides historical CNC alarm and operation queries
- Supports all features and full functions of WebAccess / SCADA software



WebAccess/MCM

### WebAccess/MCM

Machine Condition Monitoring Software

- 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

### 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



WISE-PaaS/VideoCMS

### 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

### 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



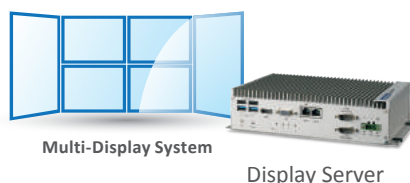
# Energy & Environment Solution-Ready Packages

## Accelerating Cloud-enabled IoT and Smart City Applications

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 combining 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



### 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 treatment, 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 treatment solutions

## Field Site Solutions



### 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 Treatment Solution

- Monitoring and analysis for operational efficiency
- Reliable and stable seamless integration
- Data acquisition for different equipment types

#### SRP Package:

1 x iWater Treatment, 1 x WebAccess/ SCADA w/ 20000 tags, 1 x ECU-4784, 1 x ADAM-3600

## Machine to Intelligence (M2I) Solutions



### 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 HVAC

# 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  $\mu$ s for 6/ 10/ 16/ 32/ 64 axes
- I/O master cycle time: 200  $\mu$ s

#### Real Time

- Embedded RTOS for real-time motion control
- User-friendly basic scripts for stored procedures

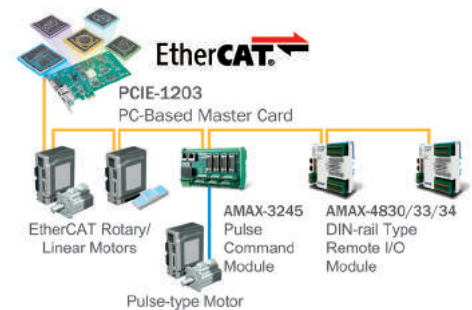
#### Ease of Use

- 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



### 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



### 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



# 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 V<sub>oc</sub> 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



#### 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 Compliant 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 x 768 resolution
- 2x GbE (M12), 1x USB 2.0 (M12), 2x RS-422/ 485 (M12)
- Wide voltage input range: 24/ 48/ 72/ 110 V<sub>DC</sub> (±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 V<sub>DC</sub>)



#### 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 V<sub>DC</sub>)

### 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

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



## Storage / Hybrid Server



NEW

### SKY-5240

2U 4-Node 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



vmware  
READY

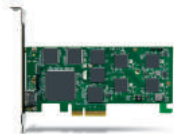
NEW

### SKY-6400

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

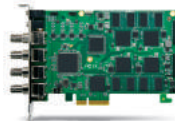
## Video Capture Cards



### 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)



### 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® LGA1151 System 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



NEW

### 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)

### Optimized UNO

#### UNO-2271G-E21AE

- 2 x GbE, 1 x USB 3.0, 1 x HDMI
- Supports additional second stack expansion for iDoor (UNO-2372G-EKAE)

### Universal UNO

#### UNO-2271G-E22AE

- 2 x GbE, 1 x USB 3.0, 1 x HDMI, 3 x USB 2.0

### Customized UNO

#### UNO-2271G-E23AE

- 2 x GbE, 1 x USB 3.0, 1 x HDMI, 2 x RS-232/ 422/ 485



NEW

### 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)

### Optimized UNO

#### UNO-2372G-E021AE

- 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)

### Universal UNO

#### UNO-2372G-E022AE

- 2 x GbE, 1 x USB 3.0, 3 x USB 2.0, 1 x HDMI, 1 x DP
- 2 x iDoor expansion slots



NEW

### 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

### Optimized UNO

#### UNO-2484G-6731AE

- 4 x GbE, 4 x USB 3.0, 1 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)

### Universal UNO

#### UNO-2484G-6732AE

- 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

### Customized UNO

#### UNO-2484G-6732H5AE

- 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



## 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



NEW

### 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: 2 x 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



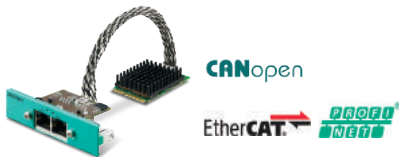
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### UNO-3483G

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



### Wireless Communication PCM-24S Series

Wireless communication iDoor modules enhance connectivity for industrial IoT

- Wi-Fi/ Bluetooth
- 3G/ GPS
- LTE/ GPS
- LoRa
- Sigfox
- 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
- Digital I/O
- GigaLAN
- MRAM
- CFast slot
- USB dongle
- USB 3.0
- PoE
- TPM
- Audio
- IO-Link

# 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-B500-673AE**  
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-B500-633AE**  
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 range (-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

## 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

### 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 V<sub>DC</sub>, 12~32 V<sub>DC</sub>)
- 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)



NEW

### 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 V<sub>DC</sub>)



### 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 V<sub>DC</sub>)
- 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



NEW

### PPC-3000S Series

6.5"/ 10.4"/ 12.1"/ 15"/ 15.6"/ 18.5"/ 21.5" Intel® Celeron 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 V<sub>DC</sub>)

## 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 V<sub>DC</sub> 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 V<sub>DC</sub> 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-rated 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-rated 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

#### 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



NEW

#### 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:  $\pm 10V$
- 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/ SSD
- Supports RAID 0/ 1

# Edge DAQ Devices

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

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) WebAccess/ Taglink, 2) Node-RED core product solution, and 3) the ADAM-5630 open edge data acquisition platform.



## WebAccess/ TagLink 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 WebAccess/TagLink

- 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 WebAccess/TagLink

- 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



NEW

### ECU-1051TL

Compact RISC-based IIoT Gateway with WebAccess/TagLink

- Linux-based
- CPU: Arm® Cortex-A8 (32-bit, 600 MHz)
- RAM: 256 MB
- Data storage: NADA flash
- 2 x LAN, 2 x COM ports



NEW

### ECU-1050TL

Wireless to Wireless RISC based IIoT Gateway with WebAccess/TagLink

- 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



NEW

### 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



NEW

### 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)



NEW

### 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



NEW

### 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



NEW

### ADAM-5037

8-ch High-Speed AI Module

- 4/ 8 slots selection
- Micro-SD slot for storage



NEW

### ADAM-5101

Storage Expansion Module

- Supports mini PCI express or M.2 interface



NEW

### ADAM-5101P

Mini-PCI Express Expansion

- Supports wireless expansion
- 2 x Antenna Points



NEW

### ADAM-5191

Serial Expansion Module

- 4 x serial ports
- Supports RS-485/ 232/ 422



NEW

### 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



#### Wizzard 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
- 3 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
- 3 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
- 3 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 802.11

- a/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



### 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



NEW

### 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



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



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



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<sub>DC</sub>)
- 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)
- PROFINET 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/ Po+ 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/ Po+ 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<sub>DC</sub>)



### 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<sub>DC</sub>)



# 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

### Wireless Sensor Nodes



eMTC

NB-IoT



#### 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

### 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

### Wireless M2I Edge Devices



WISE-PaaS/EdgeLink



#### 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

# 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 DAQNav 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



NEW

### 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<sub>DC</sub>)



### 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



NEW

### 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



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### 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 ( $\pm 0.2 \sim 10$  V)
- Built-in anti-aliasing filter



NEW

### 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 V<sub>DC</sub> 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<sub>DC</sub>)
- Wide output voltage range (5~40 V<sub>DC</sub>)
- 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 V<sub>DC</sub> 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 V<sub>DC</sub>



### USB-4630

4-Port Isolated SuperSpeed USB 3.0 Hub

- The world's first isolated SuperSpeed USB Hub (5 Gbps)
- 2,500 V<sub>DC</sub> voltage isolation for upstream ports
- Lockable USB 3.0 cable included
- Can be powered via USB bus or 10~30 V<sub>DC</sub> 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 V<sub>DC</sub> 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 V<sub>DC</sub> 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 V<sub>DC</sub> 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® Processor

- Intel® Celeron® 1047UE (1.4 GHz)/ Core™ i3-3217UE processor (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)



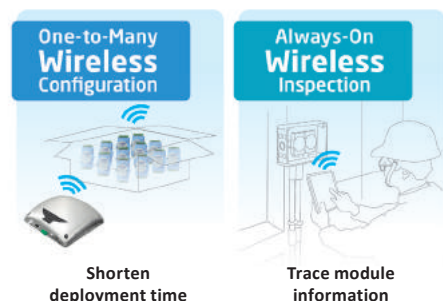
# Remote I/O Modules

## Transformation for IIoT's Wider & Larger Application

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



#### 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 V<sub>DC</sub>
- 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 V<sub>DC</sub> overvoltage protection
- 3,000 V<sub>DC</sub> 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 V<sub>DC</sub> 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



### 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

### 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

### 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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# ADVANTECH

*Enabling an Intelligent Planet*

[www.advantech.com](http://www.advantech.com)

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