Advantech Industrial IoT Systems and Devices Star Product Guide
Enabling IIoT and Industry 4.0 with Sector-Focused Solutions and Intelligent Automation
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**
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
- Enhanced data security

**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**
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**
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**
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

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.

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-FC220
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

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

M2I/ CNC Solution

Industry 4.0
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 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

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

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-11S2TL, WISE-MS02

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-12S1TL, WISE-MS02

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

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

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

EtherCAT Solutions

PCIE-1203
PC-Based Master Card

EtherCAT Rotary/Linear Motor

AMAX-3245
Pulse Command Module

AMAX-4830/33/34
DIN-rail Type Remote I/O Module

Pulse-type Motor

Open Platform Multi-Axis Controller

MAS Controller

Industrial Cameras / PLC

Servo Motors

DI / DO / AI / AO

Real-Time SoftMotion Kernel

Automatic Vision Inspection Solutions
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.

Touch Panel PC

**IT-A-8810**
EN50155-Certified 12.1” Railway Panel PC w/ Intel® Atom™ X Series Processor
- 12” LCD touch panel w/ 1024 x 768 resolution
- 2 x 1G Ethernet (M12), 1 x USB 2.0 (M12), 1 x RS-232/422/485 (M12)
- Wide operating temperature range (-25~70°C)
- Support for PoE+ and 802.3at
- EN50155 T3 (-25~70°C), class B, EN 45545

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

**EKI-9512E-4EE**
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 (IEEE 802.3at)
- Wide power input range (24/36/48/72/96/110 Vdc)

Rugged-design Computer Platform

**IT-A-5831**
EN 50155-Certified Compact Fanless System
- Intel® Core™ i7-6822EQ platform with QM170
- Supports 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

**IT-A-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 IT-A-EM modules, 1 x PCIe, and 1 x M.2 slots for expansion
- Wide operating temperature range (-25~60°C)
- Supports single/ dual power modules

**EN50155 Switches**

**EKI-9500 Series**
28/20/16/12/10/8-Port EN50155 Managed Switch w/ PoE Support
- EKI-9520E: 16 x M12 D-coded/ X-coded PoE ports + 4 x M12 X-coded w/ bypass
- EKI-9528E: 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)

**Display System**

**ARS-P3800**
EN50155-Certified 38” Railway Panel PC w/ AMD® Embedded G-Series Processor
- 38” LCD panel w/ 1024 x 768 resolution
- 1 x GbE (M12), 1 x USB 2.0 (M12)
- Certified 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

Managed Ethernet Switch for Road Transportation

**EKI-9512E-4EE**
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 (IEEE 802.3at)
- Wide power input range (24/36/48/72/96/110 Vdc)
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

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

Modular Industrial Computer

MIC-7420
Compact Fanless System with Intel® 6th Gen Core™ i Processor
- Intel® 6th Gen Core™ i7/13 (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
### 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

### 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

### 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-5S2 in smart fan mode)

### 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/ HDMI 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-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

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UNO-2271G</strong></td>
<td>Intel® Atom™ Pocket-Sized Smart Factory Edge Gateway</td>
</tr>
<tr>
<td><strong>UNO-2271G-E21AE</strong></td>
<td>2 x GbE, 1 x USB 3.0, 1 x HDMI, supports additional second stack expansion for iDoor (UNO-2372G-EKAE)</td>
</tr>
<tr>
<td><strong>UNO-2271G-E23AE</strong></td>
<td>2 x GbE, 1 x USB 3.0, 1 x HDMI, 2 x RS-232/422/485</td>
</tr>
<tr>
<td><strong>UNO-2372G</strong></td>
<td>Intel® Atom™ Small-Sized Smart Factory Data Gateway</td>
</tr>
<tr>
<td><strong>UNO-2372G-E021AE</strong></td>
<td>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)</td>
</tr>
<tr>
<td><strong>UNO-2372G-E022AE</strong></td>
<td>2 x GbE, 1 x USB 3.0, 1 x HDMI, 2 x iDoor expansion slots</td>
</tr>
<tr>
<td><strong>UNO-2484G</strong></td>
<td>Intel® Core™ i7/i5/i3 Regular-Sized, High-Performance Modular IPC</td>
</tr>
<tr>
<td><strong>UNO-2484G-6731AE</strong></td>
<td>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)</td>
</tr>
<tr>
<td><strong>UNO-2484G-6732AE</strong></td>
<td>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</td>
</tr>
<tr>
<td><strong>UNO-2484G-6732H5AE</strong></td>
<td>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</td>
</tr>
<tr>
<td><strong>UNO-2484G-6732HE5AE</strong></td>
<td>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</td>
</tr>
</tbody>
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**UNO-2484G-6732HE5AE**

Intel® Core™ i7/i5/i3 Regular-Sized, High-Performance Modular IPC
- Modular design for flexible expansion
- Supports additional second stack expansion: UNO-2484G-EKAE (4 x iDoor installation); UNO-2484G-S2AE (dual external accessible storage)
- Customized UNO

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**UNO-2484G-6732H5AE**

Intel® Core™ i7/i5/i3 Regular-Sized, High-Performance Modular IPC
- Modular design for flexible expansion
- Supports additional second stack expansion: UNO-2484G-EKAE (4 x iDoor installation); UNO-2484G-S2AE (dual external accessible storage)
- Customized UNO

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**UNO-2484G-6732HE5AE**

Intel® Core™ i7/i5/i3 Regular-Sized, High-Performance Modular IPC
- Modular design for flexible expansion
- Supports additional second stack expansion: UNO-2484G-EKAE (4 x iDoor installation); UNO-2484G-S2AE (dual external accessible storage)
- Customized UNO
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 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™ i7 Wall Mount Automation Computer
- 6th Gen Intel® Core™ i7 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-3384G: 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
- 1 x RS232, 2 x RS422/ 485 (pin header), 1 x RS-232/ 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
- LoRa
- 3G/ GPS
- 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 PCIe slot with iDoor technology

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-B500-5C2AE
Intel® Celeron® 3955U, 4 GB of DDR4 RAM
TPC-B500-673AE
Intel® i3-6100U, 8 GB of DDR4 RAM

Panel Module

TPC-B800-612AE
Intel® Celeron® 3955U, 4GB DDR4 RAM
TPC-B800-633AE
Intel® i3-6100U, 8 GB of DDR4 RAM

TPC-B200-612AE
Intel® Celeron® J3455 1.50 GHz, 4 GB of DDR3L RAM
TPC-B200-633AE
Intel® Atom® 1.8GHz, 4 G of DDR3L RAM

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

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)
- 7H surface hardness glass widescreen with PCT multi-touch control, IP66 rating, and true-flat design
- Supports iDoor technology (TPC-1251T-EHKE required)

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/ 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
- 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 display
- IP69K rating with corrosion-proof stainless steel housing
- Supports detachable accessories for various applications
Panel PCs

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)

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)

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)
- True-flat, IP65-rated front bezel with resistive touchscreen
- 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.

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

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

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/SSD
- Supports RAID 0/1

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)

Star Product Highlights
Star Product Highlights

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 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

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

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

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

**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 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

#### SmartSwarm 351 Asset Integration Gateway

- **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
- | models support a wide operating temperature range
- \( C \) 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
- | models support a wide operating temperature range
- \( C \) models support isolation and a wide operating temperature range

Modbus Gateway

EKI-1220 Series
1/ 2/ 4-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

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

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)

Industrial Layer 3 Managed Switch

EKI-9226G Series
26-port Rackmount Managed Switch w/ Support for HSR / PRP
- 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 (\(-40~85^\circ \text{C}\))
- Dual wide-range AC/ DC power input

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

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)

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

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)

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### 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 Vdc)  
- 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  
- IP3O-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, CIID2 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  
- 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  
- 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 CIID2 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 Vdc)

**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**  
ENS0155 Train Router for Rolling Stock Backbone  
- 8 x 10/ 100 Mbps M12 D-coded + 4 x 10/ 100 Mbps M12 D-coded w/ bypass  
- TDP (IEC-61375-2-5)  
- Wide input power range (24/ 36/ 48/ 72/ 96/ 110 Vdc)
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
- Ready-to-use software and accessories for immediate use

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

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-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 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<sub>DC</sub>)

**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-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-1714UL; 12-bit, 10 MHz for PCI-1714U)
- 30 V<sub>DC</sub> overvoltage protection

**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-1716/ 1716L**
16-ch Multi-Function PCI Card
- 16-ch 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)

**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 sensors)
- 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-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

**PCIE-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)
- 8 x 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
- 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)
- MIC1810: 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 Introductions

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

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

*PROFINET:PN, EtherNet/IP:EI

ADAM-4200 Series
Ethernet I/O Modules
- 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

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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
### Regional Service & Customization Centers

**China**
- Kunshan: 86-512-5777-5566

**Taiwan**
- Taipei: 886-2-2792-7818

**Netherlands**
- Eindhoven: 31-40-267-7000

**Poland**
- Warsaw: 00800-2426-8080

**USA**
- Milpitas, CA: 1-408-519-3998

### Worldwide Offices

#### Greater China

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#### Middle East and Africa

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#### Americas

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