Advantech Industrial IoT Systems and Devices Star Product Guide

- Vertical Marketing Solutions
- Edge AI Technology
- Edge Computing
- Automation Control
- Intelligent Connectivity
- Edge Data Acquisition
- Wireless Sensing and Fleet Networking
Innovative IIoT Edge to Cloud Technologies

Smart Cameras
ICAM-7000 Series

EtherCAT I/O Controllers
EtherCAT Motion Controllers
AMAX-3000 Series
EtherCAT Control IPC
AMAX-5580
EtherCAT I/O Systems
AMAX-5000 Series

Domain Platforms
Oil and Gas Applications
TPC/ FPM/ EKI/ ADAM / UNO Series
Railway Applications
ITA/ EKI Series
Utility and Energy Applications
ECU-4000 Series/ EKI Series

VisionNavi
Machine Vision Application Software

AI Navi
Deep-Learning-Based Image Analysis Software

HMI Navi
HMI Software for Machine Visualization

Motion Navi
Visualized Designer for Standalone Motion Controller

DAQ Navi
High Speed Data Acquisition & Condition Monitoring

Wireless I/O and Sensors
WISE-2000 Series

DAQ and Remote I/O
IDAQ Series/ USB-5800 Series/ PCI/ PCIe Cards/ ADAM-4000/ 5000/ 6000 Series

Advanced Industrial Wireless
Advantech Industrial Wireless
**Edge AI Systems**

AI Computing Systems
MIC-700AI Series

AI Video Systems
MIC-700AVA Series

- NVIDIA® Jetson Xavier™ NX
- NVIDIA® Jetson AGX Xavier™
- NVIDIA® Jetson Nano™

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**WebAccess/SCADA**

IoT Application Software Platform

**WISE-EdgeLink**

Powerful Edge-to-Cloud Middleware for Intelligent Gateway Solutions

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**DeviceOn/BI**

Industrial IoT Cloud-Based Operation & Maintenance Platform

- Device Cloud Management
- Equipment and Facilities Management
- Edge Application Management

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**Connectivity and TSN**

Cellular Router/ Switch/ Wireless Communication
ICR-1000/ 3000/ 4000 Series; EKI-7000/ 8000 Series

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**Automation Systems**

UNO/ MIC/ HMI/ IPC/ WOP Series

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**IIoT Gateways**

Edge/ Communication/ Protocol/ Data Gateways
WISE/ UNO/ ADAM-5630/ ADAM-6700/ ECU-1000/ ECU-4553/ EKI Series

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**AI Computing Systems**

MIC-700AI Series

AI Video Systems
MIC-700AVA Series

- NVIDIA® Jetson Xavier™ NX
- NVIDIA® Jetson AGX Xavier™
- NVIDIA® Jetson Nano™

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**Automation Systems**

UNO/ MIC/ HMI/ IPC/ WOP Series

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**IIoT Gateways**

Edge/ Communication/ Protocol/ Data Gateways
WISE/ UNO/ ADAM-5630/ ADAM-6700/ ECU-1000/ ECU-4553/ EKI Series

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**Connectivity and TSN**

Cellular Router/ Switch/ Wireless Communication
ICR-1000/ 3000/ 4000 Series; EKI-7000/ 8000 Series
Many manufacturers are undergoing a digital transformation. Advantech seeks to help them in this endeavor by providing Overall Equipment Effectiveness (OEE) and Visualization solutions. These solutions deliver diverse integrated applications that monitor machine availability, production status, power consumption, and energy efficiency. These capabilities improve productivity, reduce loss, and increase profits.

### Factory OEE and Visualization Solutions

#### Starter Package

**iFactory/IFS-EGM**
- Real-time KPI management and dashboard visualization
- HW: MIC-7700 i7-7700T, includes I.Apps: OEE and EHS
- Suggested connections: up to 50 devices

#### Edge-Cloud Solutions

**Factory Workflow Digitalization Solutions**

### Enterprise Package

**iFactory/IFS-51A-AG01**
- WISE-PaaS/IoTSuite
  - Modular Edge Intelligent Data Acquisition (SRP-IFS210-D36TAE)
  - Protocol Gateway (SRP-IFS420 series)
  - Suggested connections: up to 100 devices

### Edge Intelligence Gateway Selections

#### Machine Monitoring

- CNC Machine Monitoring
  - WebAccess/CNC
  - Process Visualization with Modular Box Platform (ESRP-SCA-UNO series)
  - WebAccess/SCADA

#### Failure Detection

- Manufacturing Edge (IFS-EGM series)
  - Edge EHS Computer (SRP-IFS250 series)
  - WebAccess/SCADA
- Edge EHS Computer (SRP-IFS250 series)

#### Environment Data Collector

- WISE-EdgeLink

#### Edge Intelligence Gateway Selections

- Andon Data Connector
  - Shop Floor Gateway
  - Event & Alarm Notification
  - Command Center
  - iMobile Services

#### Enterprise Package

**iFactory/IFS-51B-PGW1**
- WISE-PaaS/IoTSuite
  - HW: SKY-7221, includes I.Apps: Andon, Shop Floor, Data Connector, and Event Notice
  - Suggested connections: up to 200 devices

### Machine Intelligence

- RTM Gateway
  - IFS-RTM-Uno1372A
Integrated Soft Computing Enables
Intelligent Machines

Smart Machine

Advantech offers unique SoftMotion kernel EtherCAT-based solutions with multiple I/O capabilities for distributed, deterministic motion control. Our innovative GigE Vision offload engine places field programmable gate arrays (FPGA), and Arm processors at the core of our computing platforms. We also provide versatile application ready platforms and software tools for motion control and machine vision.

**Intelligent Machine Vision Solutions**

**VisionNavi**

Machine Vision Application Software

- Intuitive GUI does not require programming skills
- Flexible licensing options including full, ID, and alignment
- Supports up to 6 x GigE vision cameras with up to 20M resolution in mono and bayer formats
- Supports conditional operator, external API for advanced applications

**ICAM-7000 Series**

Smart Camera

- Up to 5.0MP resolution with advanced image preprocessing
- IP67 rated ultra-small form factor
- High performance multi-core processor (Intel® Atom® Processor E3930, 1.30 GHz) and FPGA heterogeneous computing

**PCIE-1182**

10 GigE Vision Frame Grabber

- Intel® server-grade X550-AT2 10GbE MAC+PHY Ethernet controller
- Supports Jumbo frame (16,000 byte) and link aggregation
- PCI Express x4 compliant with low profile
- Programmable PoE+ power on/off control
- Powered Device (PD) auto detection and classification

**EtherCAT Motion Control Solutions**

**Arm-Based Solutions**

**AMAX-3110**

6-Axis Pulse Train Motion Controller

Features

- 6-axis servo/stepping pulse motor control with built-in SoftMotion kernel
- Supports 16DI/12DO, CMP, LTC, Handwheel, and PWM

Advantages:

- High-performance motion control
- Supports Advantech MotionNavi Designer

Benefit:

- Easy and rapid development
- Cost effective

**AMAX-324**

32-Axis EtherCAT Intelligent Motion Controller

Features

- 32-axis EtherCAT motion and I/O controller
- Onboard CMP, LTC, Handwheel, and PWM
- Built-in LCM display

Advantages:

- Integrated diagnostics and configuration with LCM
- Supports Advantech MotionNavi Designer

Benefits:

- Easy diagnostic and installation with rapid development capabilities
- Compact, cost effective solution

**PC-Based Solutions**

**PCI-1203/PCIE-1203/PCIE-1203L**

EtherCAT PCI/PCIE Master Cards

- Supports up to 64-axis, domain focus APIs, onboard compare trigger, position latch and MPG function
- High precision motion and I/O control, no need to understand the complicated EtherCAT protocol
- Easy-to-use, rapid development, wiring-saving

**Slave Modules**

**AMAX-3245**

4-Axis Pulse Train EtherCAT Slave Module

- EtherCAT packet to pulse output with compact size
- 4-Ch 100KHz compare trigger and 4-Ch 100KHz position latch
- Easy wire to pulse-type servo/stepping motor, high speed trigger for on-the-fly camera capture and dispensing
Accelerating Cloud-Enabled Industrial IoT and Smart City Applications

Environment & Energy Solution Suite

Advantech’s E&E solutions address growing public concern about energy usage and the environment. These solutions apply an industrial IoT focus to sensing, control monitoring, remote communication, and data management processes. These technologies are combined with WebAccess and WISE-PaaS — two reliable tools for information integration and data analysis. Using such software enables our solutions to be widely utilized across various E&E industries.

Industrial IoT Cloud-based Management Services

DeviceOn/BI
Device Management and Business Integration Platform

Features
• Hierarchical organization twin object management
• Dashboard wizard
• Open API plug-in for data exchange

Advantages:
• Easy interface with low learning curve
• Instant and dynamic domain logic scenario configuration
• Available for cloud or on-premises versions depending on scenario.

Patrol Inspection
Service Patrol Dispatch Software

Features
• Scheduled patrol management
• Route planner and event task assignment
• Patrol statistics and reports

Advantages:
• Monitor real-time status updates in field site
• Simplifying complexity of dispatching process
• Tracking and reporting for strategic schedule management

Water Treatment Solutions

iWater-41A
Operation & Maintenance Command Center

• Hierarchical organization management
• Alarm/event management and patrol inspection
• Device/equipment operation and maintenance management

Solution Suite Package:
SKY-7221, WISE-PaaS IoTSuite, DeviceOn/BI, Patrol Inspection

iWater-42A
Biological Treatment A2O Solution

• Enables 100% web-based remote engineering, monitoring, and control
• Effective control for removal nitrogen and phosphorus
• Optimized aeration process

Solution Suite Package:
MIC-770, WebAccess 75 Points, A2O Process Package Software

iWater-43A
Coagulation Sedimentation Solution

• Enables 100% web-based remote engineering, monitoring, and control
• Effective prediction of water quality and coagulant dosage
• Enhanced coagulation process and dosing control

Solution Suite Package:
MIC-770, WebAccess 75 Points, Coagulation Process Package Software

iEnergy-47A
Microgrid Management

• Energy storage management
• Area power consumption management
• Power invertors management

Solution Suite Package:
SKY-7221, WISE-PaaS/IoTSuite, DeviceOn/BI, Patrol Inspection

Environmental Facility Management

iEnv-46A
Edge Cloud Facility Management

• Factory HVAC monitoring
• Power consumption monitoring
• Motor facilities PHM

Solution Suite Package:
SKY-7221, WISE-PaaS/IoTSuite, DeviceOn/BI, Patrol Inspection

iEnv-49A
Patrol Inspection Management

• Offline mobile app inspection
• Integrate with DeviceOn/BI alarm event
• Dynamic inspection route management

Solution Suite Package:
MIC-770, Patrol Inspection

Energy Solutions

iEnv-46A
Edge Cloud Facility Management

• Factory HVAC monitoring
• Power consumption monitoring
• Motor facilities PHM

Solution Suite Package:
SKY-7221, WISE-PaaS/IoTSuite, DeviceOn/BI, Patrol Inspection

iEnv-49A
Patrol Inspection Management

• Offline mobile app inspection
• Integrate with DeviceOn/BI alarm event
• Dynamic inspection route management

Solution Suite Package:
MIC-770, Patrol Inspection
Power Conversion Solutions for Maximum Energy Transition

Utility & Energy Solutions

Advantech’s ruggedized, IEC-61850-3 compliant ECU series includes automation controllers, gateways, and data acquisition modules. These ensure the safety and reliability of energy management and monitoring systems for distributed energy stations, renewable energy sources, grid infrastructures, and manufacturing.

**Star Product Highlights**

**Edge Gateways**

- **ECU-579**
  - Server Grade IEC-61850-3-Certified Power Automation Computer
  - Intel® Xeon® scalable CPU 20/ 14/ 8 Core™ (125W/ 85W/ 70W)
  - 12 x DIMM sockets support up to 768GB DDR4
  - Up to 2 x hot-swappable PSU
  - Up to 2 x PCIe x16 Gen3 slots, PCIe x8 Gen3 slots, PCIe x4 Gen3 slots
  - IPMI 2.0-compliant management

- **ECU-4784 Series**
  - IEC-61850-3-Certified Power Automation Computer
  - Intel® Coffee Lake Xeon® E-2276ML Hexa-core (2.00 GHz) up to 64G DDR4 ECC RAM
  - Intel® Skylake Core™ i5 6300U 16G DDR3L RAM
  - 8 x 10/ 100/ 1000MB LAN, 2 x RS-232, 8 x RS-232/ 422/ 485 serial ports
  - 3 x Display output/ 3 x SATA/ 2 x I/O expansion slots
  - Supports iCDManager/ VT-D/ AMT/ TPM

- **ECU-4574**
  - IEC-61850-3-Compliant Power Automation Computer
  - Intel Atom® E3940 processor (1.6 GHz) w/ 4 GB of DDR3L RAM
  - 10 x Giga LAN, 10 x Isolated RS-232/ 422/ 485 serial ports
  - 8 x DI, 8 x DO - isolated, 1 x IRIG-B

**PCle Cards**

- **ECU-P1524SPE/ 1524PE**
  - 2-Port SFP Ethernet Card with HSR/ PRP Support
  - 2 x SFP (1000 Mbps Base-X)
  - 2 x SFP (100/ 1000 Mbps HSR/PRP, selection via jumper)
  - Wide operating temperature range (-25~70 °C)

- **ECU-P1628D/ 161BD**
  - 8-Port Isolated/ Non-Isolated RS-232/ 422/ 485 Module
  - 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)

**Communication Gateways**

- **WISE-EdgeLink**
  - **ECU-1251**
    - IEC-61850-3-Compliant Edge Communication Gateway with 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-PICe slot for wireless expansion
    - Wide operating temperature range (-40~70 °C)

- **WISE-EdgeLink**
  - **ECU-1152**
    - IEC-61850-3-Compliant Edge Communication Gateway with 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-PICe slot for wireless expansion
    - Wide operating temperature range (-40~70 °C)

- **WISE-EdgeLink**
  - **ECU-4553**
    - IEC-61850-3-Compliant Edge Communication Gateway with 4x LAN, 16x 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
    - Wide operating temperature range (-40~70 °C)
Advantech is dedicated to developing systems that fulfill our vision of building intelligent cities worldwide. With over a decade of successful experience, we have considerable expertise designing and developing products in the urban transportation sector. Advantech offers a full product range for rail and roadway applications, such as railway automatic fare collection, wayside control, rolling stock, urban traffic management, highway management, and transportation hub management.

### Rugged-Design Computer Platforms

**ITA-5831**
- EN 50155 Compact Fanless System
- Intel® Core™ i7/i5/Celeron® platform w/ 16 GB onboard memory (up to 32 GB via DIMM expansion)
- Compliant with EN 50121-4 EMC standard for signalling applications
- Provides 3 x I/O modules, 1 x PC/104, and 1 x Mini PCIe slots for expansion
- Wide operating temperature range (-25 to 60 °C)
- Supports single and dual AC/DC power modules

**ITA-2231**
- EN 50121-4 2U Fanless System
- Intel® 6th Gen Core™ i7 processor w/ 16 GB onboard RAM (up to 32 GB via DIMM expansion)
- Compliant with EN 50121-4 EMC standard for signalling applications
- Provides 3 x I/O modules, 1 x PC/104, and 1 x Mini PCIe slots for expansion
- Wide operating temperature range (-25 to 60 °C)
- Supports single and dual AC/DC power modules

**ITA-1711**
- Intel® Celeron® J1900 Fanless Compact System
- 4 GB of DDR3 on board RAM w/ optional NVRAM
- 2 x GbE, 6 x USB, 14 x COM, and 1 x USB 3.0
- 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

### Display Systems

**ARS-P2800/ P3800**
- EN 50155 Passenger Information System Panel PC
- 28” LCD (1920x375) and 38” LCD (1920x540) resolution
- 1 x GbE (optional 2 x GbE for Daisy-Chain), 1 x USB 2.0
- EN 50155 T1 (-5 to 65 °C), IEC 61373 Class B
- IP54 rating ensures protection against dust/water ingress
- Customized panel sizes available upon request

### Touch Panel PCs

**ITA-8100/ 8100B/ 8120**
- EN 50155 Railway Panel Computer
- 10.4 & 12.1” touch panel with 1024x768 resolution (optional high brightness 1300 nis in 10.4”)
- 2 x GbE, 1 x USB 2.0, 2 x RS-422/ 485, 1 x Audio and 1 x DIO (M12)
- Supports UC-612-01 keypad and auto brightness adjustment with light sensor
- Wide voltage input range: 24/48V/72/110 Vdc (-40%)
- Wide operating temperature range: -40~70 °C

### EN 50155 Switches

**EKI-9500 Series**
- 8-28 Port EN 50155 Rolling Stock Switch
- EN 50155, EN 50121-3-2, IEC 61373 compliant
- Optional PoE/PoE+, Fast/ Gigabit Ethernet models

**EKI-9512E-4GETB**
- NAT Router for Ethernet Train Backbone
- EN 50155, EN 50121-3-2, IEC 61373 compliant
- IEC 61375 compliant- TRDP&TDP
- Layer 3 routing functions- VRRP, R-NAT

### MIC-300 Series

**3U CompactPCI System Solution for Railway Application**
- CPU Blade: MIC-3329: Intel Atom® Bay Trial low power & fan-less
- MIC-3332: Intel® 6th Gen. Core™ i & Xeon® high performance
- I/O Blade: MIC-3955: 3U 4 or 8 Port isolated serial board
- MIC-3958: 3U RJ45 or X-Code M12 GbE board
- Chassis Blade: MIC-3923: 3U compact PCI 19-inch enclosure
Industrial AI Platforms at The Edge

**Edge AI Platforms and Industrial Servers**

Artificial intelligence (AI) technology breaks away from static rule-based programming as it substitutes inference systems using dynamic learning for smarter decisions. Advanced AI technology, in combination with IoT technology, is redefining entire industries using smart applications. Advantech has collaborated with NVIDIA to deliver AI products at the edge for AI inference and training. These products adopt NVIDIA’s Jetson System on Module (SOM) and GPU cards. In sum, these systems deliver AI to manufacturing, transportation, and smart city applications.

### Edge AI Computing

**MIC-730AI**
AI Inference System on NVIDIA® Jetson AGX Xavier™
- Fanless compact design
- Supports 1 x MiniPCIe & 1 x M.2 (PCIe x4 NVMe)
- Linux OS with board support package (BSP)
- Supports PCIe add-on card
- Supports 24/7 secure remote monitoring, control, and OTA deployment

**MIC-710AI**
AI Inference System on NVIDIA® Jetson Xavier™ NX
- Compact fanless design
- 2 x embedded LAN ports
- Linux OS with board support package (BSP)
- Supports deep learning trained models
- Wide operating temperature range
- Supports 24/7 secure remote monitoring, control, and OTA deployment

**MIC-710AILX/MIC-710AIL**
AI Inference System on NVIDIA® Jetson Xavier™ NX / NVIDIA® Jetson Nano™
- Ultra-compact fanless design
- 1 x embedded LAN port
- Linux OS with board support package (BSP)
- Supports deep learning trained models
- Wide operating temperature range
- Supports 24/7 secure remote monitoring, control, and OTA deployment

### AI Video Systems

**MIC-730IVA**
8ch AI Video System on NVIDIA® Jetson AGX Xavier™
- Supports 8ch PoE video input
- Supports 2 x 3.5” HDD
- Board support package (BSP) includes Linux Ubuntu 18.04
- Supports H.264/H.265 cameras

**MIC-710IVX**
8ch AI Video System on NVIDIA® Jetson Xavier™ NX
- Supports 8ch PoE video input
- Supports 2 x 3.5” HDD
- Board support package (BSP) includes Linux Ubuntu 18.04
- Supports H.264/H.265 cameras

**MIC-710AIL**
AI Inference System on NVIDIA® Jetson Xavier™ NX / NVIDIA® Jetson Nano™
- Compact fanless design
- 2 x embedded LAN ports
- Linux OS with board support package (BSP)
- Supports deep learning trained models
- Wide operating temperature range
- Supports 24/7 secure remote monitoring, control, and OTA deployment

**MIC-710AIL**
AI Inference System on NVIDIA® Jetson Xavier™ NX / NVIDIA® Jetson Nano™
- Ultra-compact fanless design
- 1 x embedded LAN port
- Linux OS with board support package (BSP)
- Supports deep learning trained models
- Wide operating temperature range
- Supports 24/7 secure remote monitoring, control, and OTA deployment

### GPU Server

**SKY-640V2**
4U Rackmount GPU Server (4U 4 GPUs)
- Dual 3rd Gen. Intel® Xeon® Scalable processor
- 16 DIMM slot, Intel® Optane™ support
- Supports 4 x double width PCIe cards and 3 x single width PCIe cards
- Easy maintenance system fan design
- Unify front bezel design

### Edge Servers and AI Workstations

**HPC-7420+ASMB-976**
Short Depth 4U IEM Edge Server
- 3rd Gen, Intel® Xeon® Scalable processor
- DDR4 3200 MHz RDIMM up to 2048 GB (16 DIMMs), and Intel® Optane™ support
- Front access I/O and power supply
- 11x PCIe expansion slots (up to 2 GPUs)
- Environment temperature 0 – 50 °C
- 2 hot-swappable 2.5” SATA/SAS/SSD with slim/ultra slim ODD in option

**HPC-6240+ASMB-622**
Short Depth 2U MEC/IEM Edge Server
- 3rd Gen, Intel® Xeon® Scalable processor
- DDR4 3200 MHz RDIMM up to 2TB (16 DIMMs), and Intel® Optane™ support
- Flexible I/O module
- 4 PCIe x16 slots (Gen4) supporting 2 double deck cards
- 4 PCIe x8 slots for single deck expansion slots
- 4 hot-swappable 2.5” SATA/SAS/SSD (NVMe in option)

**HPC-7484+ASMB-805**
AI AOI Server (4U 2 GPUs)
- Intel® Xeon® W-2100 & W-2200 processors
- DDR4 2666 MHz RDIMM up to 512 GB
- Workstation 1S up to 4.1 GHz
- 3x PCIe x16 + 2x PCIe x4 or 1x PCIe x16 + 4x PCIe x8 + 2x PCIe x4
- 8 x hot-swap 3.5”/ 2.5” SAS3/ SATA3 and 1 x 2.5” internal HDD bay
Star Product Highlights

Infrastructure for the IoT

Intelligent Systems and Platforms

With a diverse range of innovative technologies including cloud computing (industrial and video servers), edge computing (fan-less, slim, portable devices), and high performance embedded systems, Advantech’s intelligent systems are 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.

Modular Industrial Computers

MIC-770 V2
Compact Fanless System with 10th Gen Intel® Xeon®/ Core™ i CPU Socket
- Intel® 10th Gen Xeon®/ Core™ i CPU socket-type (LGA1200) with Intel® W480E/H420E chipset
- Wide operating temperature (-10 ~ 60 °C)
- VGA and HDMI output
- 2 x GigabitLAN, 2 x USB 3.2 (Gen2) and 6 x USB 3.2 (Gen1)
- ECC RAM supported, up to 64GB

MIC-770 V2 + MIC-75G20
Desktop Compact Fanless System with GPU iModule
- Intel® 10th Gen Xeon®/ Core™ i CPU socket-type (LGA1200) with Intel® W480E/H420E chipset
- Offering powerful GPU solution with NVIDIA 350W, 3-slot width, 334.6mm length GPU cards for new AI application
- Dual 24VDC power inputs with reliable power and OCP solution for up to 700W maximum peak power currency

MIC-770 V2 + MIC-75G30
Desktop Compact Fanless System with GPU iModule
- Intel® 10th Gen Xeon®/ Core™ i CPU socket-type (LGA1200) with Intel® W480E/H420E chipset
- Powerful GPU solution with dual NVIDIA 250W, 2.75-slot width, 334mm length GPU cards for new AI application
- Triple 24VDC power inputs with reliable power and OCP solution for up to 1400W maximum peak power currency

IPC-242
Compact Industrial Computer System with 10th Gen Intel® Core™ i CPU Socket (LGA 1200)
- Intel® 10th Gen Core™ i7/i5/i3 (LGA type) processor with Intel® Q470E/H420E chipset
- 4 x expansion slots (PCI/ PCI)
- Dual GbE, 6 x USB3.2, 2 x USB 2.0, 1 x NVMe M.2, 2 x SATAIII, 2 x RS-232/422/485 serial ports
- 250W Flex ATX power supported
- Supports power output 5V/12V (max. 2A)
- Compatible MB: PCE-2032/ 2132

IPC-220, IPC-240
Compact Industrial Computer System with 10th Gen Intel® Core™ i CPU Socket (LGA 1200)
- Intel® 10th Gen Core™ i7/i5/i3 (LGA type) processor with Intel® Q470E/H420E chipset
- 2/4 PCIe/PCI slot expansions
- Dual GbE, 6 x USB3.2, 2 x USB 2.0, 1 x NVMe M.2, 2 x SATAIII, 2 x RS-232/422/485 serial ports
- 19 ~ 24 VDC input power range
- Supports power output 5V/12V (max. 2A)
- Compatible MB: PCE-2032/ 2132

AlIS-3410U/ 3410P
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)
- AlIS-3410P: 4-ch GbE PoE
- AlIS-3410U: 4-ch USB 3.0 with dedicated controller
- Supports 1 x expansion slot
**Star Product Highlights**

**Industrial Computers**

- **ACP-2020G**
  2U Rackmount Chassis for GPU Applications
  - Supports ATX/uATX motherboards
  - Tool-less card cage for GPU card
  - Built-in 850W 80 Plus Platinum single power supply

- **IPC-631**
  4U Front I/O Short Depth Rackmount Chassis for ATX/ uATX Motherboards
  - 350mm short-depth rackmount chassis
  - Supports ATX/uATX single-processor motherboards, CPU TDP up to 120W
  - 500W single power supply
  - PWM-controlled smart fan for minimal noise

- **ACP-4340 DC**
  4U Rackmount Intelligent Chassis with 4 Hot-Swap Drive Bays and DC Power Supply
  - Supports ATX/uATX motherboard
  - Built-in 4 hot-swap drive bays supporting 3.5”/2.5” HDD/SSD
  - Front-accessible, easy-maintenance system fans

**Industrial Motherboards**

- **AIMB-787**
  10th Gen Intel® Core™ i ATX Motherboard
  - Intel 10th Gen Core™ i9/7/5/3 LGA1200 processor with Q470E chipset
  - Up to 128 GB of dual-channel (non-ECC) DDR4
  - 1 x PCIe x16 (Gen 3), 4 x PCIe x4 (Gen 3), 2 x PCI slots, USB 3.2, SATA 3.0 (RAID 0, 1, 5, 10)
  - Triple displays: 1 x VGA, 1 x DVI, 1 x DP

- **AIMB-707**
  10th Gen Intel® Core™ i ATX Motherboard
  - Intel 10th Gen Core™ i9/7/5/3 LGA1200 processor with H420E chipset
  - Up to 64 GB of dual-channel (non-ECC) DDR4
  - 1 x PCIe x16 Gen 3.0, 2 x PCIe x4 (x1 link) Gen 3.0, 4 x PCI slots, USB 3.2, SATA 3.0
  - Dual displays - 1 x VGA, 1 x DVI

- **PCE-5132**
  10th Gen Intel® Core™ i System Host Board
  - Intel 10th Gen. Core™ i9/7/5/3 LGA1200 processor with Q470E chipset
  - Up to 64 GB of dual-channel (non-ECC) DDR4
  - PCIe Gen. 3.0, M.2, USB 3.2, SATA 3.0 (RAID 0, 1, 5, 10), dual GbEs
  - Triple displays: 1 x VGA, 1 x DVI/ DP, 1 x DVI/ DP

**Industrial GPU Cards (Bundle Sale)**

- **SKY-MXM-T1000**
  NVIDIA® Quadro® Embedded MXM Module
  - MXM 3.1 Type A form factor
  - 768 CUDA cores
  - 2.24 TFLOPS
  - 4 x DP 1.4a
  - 4GB GDDR6 memory
  - 192GB/s maximum memory bandwidth
  - Bundle sale with Advantech IPC

- **SKY-QUAD-RTXA4000**
  NVIDIA® RTXA4000 PCIe Graphic Card
  - 4 x Display Port 1.4
  - 16GB GDDR6 with error-correcting code (ECC)
  - Max. power consumption 140 W
  - H x L: 111 x 241 mm single slot

- **SKY-TESL-A100-40P**
  NVIDIA® Tesla® A100 GPU Card
  - Tesla A100 40GB PCIe x16 HS
  - Bundle sale with Advantech IPC

**Video Capture Cards**

- **DVP-7621HE**
  2-ch Full HD Capture Card
  - 2-channel HDMI/DVI/VGA/S-video/YPbPr video inputs with H.264/ MPEG4 hardware compression
  - 60/50 fps (NTSC/PAL) at up to 1920 x 1080p resolution for recording and display for each channel
  - PCIe x1 host interface
  - Supports watchdog function

- **DVP-7636HE**
  4-ch SDI Full HD H.264 PCIe Capture Card
  - 4-channel SDI video input with H.264 hardware compression
  - 60/50 fps (NTSC/PAL) at up to 1080p resolution for display and recording
  - PCIe x4 host interface
  - Windows/Linux OS supported

- **DVP-7637HE**
  4-ch HDMI Full HD H.264 PCIe Capture Card
  - 4-channel HDMI video input with H.264 hardware compression
  - 60/50 fps (NTSC/PAL) at up to 1080p resolution for display and recording
  - PCIe x4 host interface
  - Windows/Linux OS supported
Seamless Connection and Transmission for Edge IoT Applications

Embedded Automation Computers

Advantech’s UNO series embedded automation box PCs are ideal for edge computing, bridge the gap between IT and OT, and accelerate industry 4.0. The UNO series serve as flexible IoT gateways coming in different sizes and versatile mountings. They also support Advantech iDoor technology that gives them the flexibility to configure various I/O requirements, includes wireless communication, industrial I/O and peripherals, and industrial fieldbus, based on different applications.

Integrated Edge Controllers

UNO-127 Intel Atom® X Extremely Small Edge Computing DIN-Rail Controller
- Intel® x6413E processor (1.5 GHz) with 4GB DDR4 onboard memory (Elkhart Lake)
- Onboard 64G eMMC 5.1
- 2 x LAN, 2 x USB, 1 x HDMI, 1 x mPCIe, 2 x LED Indicators (Power/Run)
- Modular design for optional 4 x ISO, COM, 1 x LAN, 1 x M.2 B Key expansion
- Onboard TPM 2.0, IBECC supported

UNO-137 Intel Atom® E3940 Small-Size Integrated DIN-Rail Controller
- Industrial-grade Intel Atom® E3940 processor (1.6 GHz) with 8GB DDR3L memory (Apollo Lake)
- 2 x LAN, 2 x COM, 4 x USB, 2x DP (support DP++), 1 x M.2 B key for 2242 SATA or 3042/3052 cellular module
- Modular design for optional 1 x iDoor expansion
- Wide operating temperature range (-40~70 °C / -40~158 °F)
- Port isolation for 8 x DI, 8 x DO, 2 x COM

UNO-148 Intel® Core™ i Real-Time DIN-Rail Controller
- Intel® 11th Gen Core™ i7 / i5 / i3 processor with 8GB DDR4 memory (Tiger Lake UP3)
- 3 x LAN, 4 x USB, 2 x DP (support DP++), Port isolation for 8 x DI, 8 x DO, 4 x COM
- High internal expandability: 1 x mPCIe, 1 x M.2 B key for 2242 SATA or 3042/3052 cellular module, 1 x M.2 M Key for 2280 nVME, 1 x M.2 E Key for wireless module
- Built-in Intel® Ethernet Controller i225 for TSN capabilities
- Modular design for 2 optional extension kits provided: 1x iDoor + 1x 2.5” SATA expansion, 1 x PCIEx4 expansion

UNO-348 Intel® Core™ i High Performance Expandable Controller
- 10th generation Intel® Core™ i5 / i9 processor with 8G/16G DDR4 memory
- 3 x GbE, 1 x RS-232/422/485, 4 x USB 3.2, 2 x USB 2.0, 1 x DP++, 1 x HDMI Mic-in, Line-out
- Flexible expansion with up to 3 x PCIe/PCI slots, 1 x M.2 B key, 1 x mPCIe and 2 x 2.5” SSD
- Rugged and fanless design suits for harsh embedded environment
- Out of Band (OOB) Manageability with iBMC
- Built-in TPM 2.0 for ensuring the integrity of the platform

Domain-Focused Edge Gateways

UNO-420 PoE Powered Device Sensing Gateway
- Intel Atom® E3815 processor with 2GB DDR3L onboard memory
- 2 x GbE (1 x PoE-IN), 1 x USB 3.0, 1 x HDMI, 1 x RS-485, 2 x RS-232/422/485, and
- 8 x programmable GPIO
- 32GB eMMC storage onboard
- ESRP package: supports WISE-EdgeLink

UNO-430 Intel Atom® E3950 quad-core processor with 8G DDR3L memory
• 2 x GbE, 2 x RS-232/422/485 (isolated), 1 x RS-232 (console), M.2 2242 key B, TPM 2.0
• Water-proof and sustain -40~70 °C for outdoor environment
• Easy maintenance and installation with front door and cable gland design
• C1D2, ATEX, IECEx certified

UNO-410 Intel Atom® E3940 Explosion-Protected Gateway
• Intel® Atom® E3940 processor (1.6 GHz) with 8GB DDR3L memory
• 2 x GbE, 3 x USB 3.2, 1 x USB 2.0, 2 x RS-232/422/485, 8 x DI, 8 x DO, 2 x DP1.2
• Wide operating temperature range (-40~70 °C / -40~158 °F)
• Onboard TPM 2.0 provides hardware-based security
• C1D2, ATEX, IECEx certified
**Communication Gateways**

**UNO-238**
Intel® Core™ I Compact IoT Edge Computer

- 8th Gen Intel® Core™ processor
- 2 x GbE, 4 x USB 3.2, 2 x RS-232/422/485, 1 x HDMI, 1 x DP, 1 x GPIO (8 bit)
- Can be expanded to facilitate wireless communication
- Threaded DC jack for reliable power supply
- Optimized mechanical design for easy RAM swapping

**UNO-220**
Raspberry Pi Industrial Kit

- Tiny size for RPi-based IoT solution
- Industrial grade I/O board for the Raspberry Pi
- Battery-backed RTC chip for keeping the track of time
- The inclusion of OS allows the RPi to identify UNO-220 and automatically configure the GPIOs and drivers for the board
- Integrated with PoE function allows users to power Raspberry Pi 4 via an Ethernet cable (UNO-220-P4N2AE)

**UNO-247**
Intel® Celeron® J3455E Edge Gateway

- Intel® Celeron® J3455E processor
- 2 x GbE, 2 x USB 3.0, 2 x USB 2.0, 4 x RS-232, 2 x RS-485, 1 x HDMI, 1 x VGA
- Threaded DC Jack design for more steady power supply
- ESRP package: supports WISE-DeviceOn

**Modular Automation Box PCs**

**Pocket-Size Modular Box PCs**

- Intel® Atom® E3815/E3825/N6211 processor
- Built-in 4GB DDR3L memory & 32G eMMC

**Small-Size Modular Box PCs**

- Intel Atom® E3845/Celeron® J1900 / Celeron® J3455 quad-core Processors w/ 4GB of DDR3L RAM
- TPM 2.0 technology for cyber security

**Regular-Size High-Performance Modular Box PCs**

- Intel® Core™ i7/i5/i3 processor with 8 GB of DDR4 RAM
- Cable-less & fan-less design ensure highest reliability
- TPM 2.0 technology for cyber security

**iDoor Modules**

**Industrial Fieldbus**
PCM-26 Series
Industrial Fieldbus iDoor Modules Support Common Automation Protocols

- CANOpen
- EtherCAT
- PROFINET
- PROFIBUS
- POWERLINK
- CANOpen
- EtherCAT
- PROFINET
- PROFIBUS
- POWERLINK

**Wireless Communication**
PCM-24S Series
Wireless Communication iDoor Modules Enhance Connectivity for Industrial IoT

- Wi-Fi/ Bluetooth
- LTE/ GPS

**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
- MRM
- USB 3.0
- Audio
- Digital I/O
- CFast slot
- PoE
- GigLAN
- USB dongle
- TPM
Leading HMI Innovations for Smart Factories

Intelligent HMI and Industrial Monitors

Advantech offers a diverse range of general as well as domain-focused HMI products equipped with iDoor technology, including high performance control panels, industrial thin clients, web browser terminals, and industrial monitors. In response to Industry 4.0, 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.

Preconfigured Systems

TPC-5000 Series
Modular 12”/ 15”/ 15.6”/ 18.5”/ 21.5”/ 23.8” LED LCD Intel® Core™ i7/ i3/ i5/ Celeron® Industrial Control Panel
- 6th generation Intel® Celeron® 3955U/ Core™ i3-6100U/ Core™ i5-6300U/ Core™ i7-6600U processor with 4/ 8 GB DDR4
- iDOOR, PCIe, removable SSD, and M.2 for flexible expansion
- TPM 2.0, 3 x GbE, and isolation power design for control software compatibility

TPC-2000 Series
Modular 12”/ 15”/ 15.6”/ 18.5”/ 21.5”/ 23.8” LED LCD Intel® Celeron®/ Atom® Industrial Thin Client
- Intel® Celeron® J3455/ Intel Atom® E3940 processor with 4GB DDR3L
- Compact, universal design with low power consumption
- Industrial-grade, wide operating temperature range (-20~60 °C)
- Supports iDoor, mPCIe, M.2 storage, and 2.5” SSD for expansion

FPM-7002 Series
Modular 12”/ 15”/ 15.6”/ 18.5”/ 21.5”/ 23.8” LED LCD Industrial Monitor
- Supports both 4:3 and 16:9 display ratios
- Supports dual displays and control with Picture-in-Picture functionality
- Module-in-Module design with customizable I/O
- ILINK technology enables long-distance (up to 100 m) one-to-one/one-to-many (up to 4) data transmissions

Configurable Modules

Box Modules

TPC-B510-833AE
Intel® i3-8145U, 8 GB of DDR4 RAM
TPC-B510-853AE
Intel® i5-8365U, 8 GB of DDR4 RAM
TPC-B510-873AE
Intel® i7-8665U, 8 GB of DDR4 RAM

TPC-B500-633AE
Intel® i3-6100U, 8 GB of DDR4 RAM
TPC-B500-653AE
Intel® i5-6300U, 8 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® E3940 1.60 GHz, 4G of DDR3L RAM

Panel Modules

FPM-D12T-BE
12.1” XGA
FPM-D15T-BE
15” XGA
FPM-D15W-FBE
15.6” FHD
FPM-D17T-BE
17” SXGA
FPM-D18W-BE
18.5” HD
FPM-D18W-BE
18.5” HD
FPM-D21W-BE
21.5” FHD
FPM-D24W-BE
23.8” FHD

FPM-D2000-AE
Modular monitor box w/ 2 x I/O slots for FPM-M700 I/O modules
## All-in-One High Performance Control Panels

### TPC-300 Series with Intel® Core™ i3/ i5/ i7 Dual-Core Encapsulated Touch Panel Computer
- Intel® Core™ i3-4010U / i5-6100U processor
- 74 surface hardness glass widescreen with true-flat design, and 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

### TPC-125H/ 815H
- Certified 12.1”/15” TFT LED LCD Intel® Atom™ Quad-Core Industrial Thin Client
- Intel® Atom™ quad-core E3845 1.9Ghz w/ 4GB DDR3L SDRAM (optional Intel® Celeron® quad-core J1900 processor)
- UL C1D2 certified for hazardous environments
- IP66-rated front panel with durable true-flat 5-wire resistive touchscreen
- Supports iDoor technology and VESA mounting
- Wide operating temperature (-20 ~ 60 °C)
- Shatter protection film

### TPC-1881WPH
- Certified 18.5”/21.5” TFT LED LCD Intel® Core™ i5 Touch Panel Computer
- Intel® Core™ i5-4300U with 4GB/ 8GB DDR3L SDRAM
- Certified with UL C1D2 for hazardous environments
- Expandable system I/O, isolated digital I/O, Fieldbus, and communication via iDoor technology
- Supports USB 3.0 and HDMI for independent displays

### TPC-71W
- 7” Cortex™-A9 Web Browser
- Cortex™-A9 Dual/ Quad 1.0GHz Processor
- Supports Linux Ubuntu, Windows Embedded Compact 7 and Android 6
- Wide operating temperature range (-20–60 °C)
- Flat-sealed front multi-touch panel with IP66 rating

## Domain-Focused Panel PCs

### SPC-200 Series
- All-Around IP66-Rated 18.5”/ 21.5” Intel® i3/ i5/ i7 Dual-Core Encapsulated Touch Panel Computer
  - Intel® Core™ i3-4010U / i5-6100U processor
  - 74 surface hardness glass widescreen with true-flat design, and 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

### SPC-500 Series
- All-Around IP69k-Rated 15” TFT LED LCD Intel® Core™ i3/ Celeron® Stainless Steel Touch Panel Computer
  - Intel® Skylake-U Celeron®-3955U CPU/ i3-6100U CPU
  - All-around 304L stainless steel housing with IP69k & M12 connectors
  - VESA mount supported
  - EN 1672-2 compliance
  - Shatter protection film

### SPC-800 Series
- All-Around IP65-Rated 15.6”/ 21.5” arm-mounted HMI with Intel® i3/ i5/ i7 or Industrial Monitors
  - Intel® Skylake-U Celeron®/ i3/ i5/ i7 processor or pure monitor
  - All-around IP65-rated protection
  - Supports Rittal and Bernstein arm system dimension for mounting
  - Supports RAFI FS22+ push button dimension for integration maintenance
  - Flexible configuration with integrated customizable extension unit

## Industrial Monitors

### FPM-7000 Series
- True-flat Industrial Grade Monitor
  - 6.5”/ 12”/ 15”/ 15.6”/ 18.5”/ 21.5”
  - Robust design with IP66/ 66 aluminum bezel
  - Elegant true flat design
  - Supports panel, wall, desktop, and VESA arm mounting

### FPM-5000 Series
- Featured Industrial Monitor
  - 15”/ 17”/ 19”
  - Robust design with IP65/ 66 aluminum bezel
  - Front USB extension for diverse applications
  - Supports panel, rack, wall, desktop, and VESA arm mounting

### FPM-3000 Series
- Extreme Rugged Industrial Monitor
  - 12”/ 15”/ 17”/ 19”
  - Robust design with IP66/ 66 hardened anodized front bezel & SS rear cover
  - Wide operating temperature (-20 ~ -60 °C)
  - Supports panel, rack, wall, desktop, and VESA arm mounting

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*Star Product Highlights*

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**Star Product Highlights**

**Panel PCs**

**Configurable**

**PPC-6000C Series**
- 15"/ 17"/ 19" 6th / 7th / 8th / 9th Gen Intel® Core™ i7/ i5/ i3 Panel PC w/ Selectable Mini-ITX Motherboard
- 6th / 7th / 8th / 9th Gen Intel® Core™ L, up to 65W TDP (socket type)
- Selectable mini-ITX motherboard for diverse requirements
- 2 x expansion slots (1 x PCIe x 4 or 2 x PCI)
- Supports dual SATA storage (RAID 0, 1)

**PPC-100 Series**
- 11.6"/ 15.6"/ 23.8" Quad-Core Cortex™A17/ A72 Web browser terminal
- Rockchip 3288 processor or Raspberry solution
- True-flat, IP65-rated front bezel with PCAP touchscreen
- Supports Linux Ubuntu, Android and Android API customization service

**Multiple Function**

**PPC-400 Series**
- 12"/ 15"/ 15.6"/ 21.5" 6th/ 7th Gen Intel® Core™ i5/i3 Fanless Panel PC
- Intel® Core™ i3-6100U/ 7100U/ 7300U/ 1115G7E or i7-7600U/ 1185G7E optional
- Wide operating temperature range (-20 ~ 60 °C)
- Wide input voltage range (9 ~ 32 V DC)
- Supports PCI/ PCIe expansion and triple display
- Supports M.2 and TPM

**PPC-3000 Series**
- 15.6"/ 18.5"/ 21.5"/ 23.8" 6th/ 7th/ 11th Gen Intel® Core™ i3/ i5/ i7 Fanless Panel PC
- Intel® Core™ i3-6100U/ 7100U/ 7300U/ 1115G7E or i7-7600U/ 1185G7E optional
- Wide input voltage range (12 ~ 24 V DC)
- Supports dual display and TPM

**General Purpose**

**PPC-300 Series**
- 6.5"/ 10.4"/ 12.1"/ 15"/ 15.6"/ 18.5"/ 21.5"/ 23.8" Intel® Celeron®/ Pentium Dual/ Quad-Core Fanless Panel PC
- Intel® Celeron® quad-core N2930/ N4200/ N6415 processor
- Compact fanless design with solid aluminum alloy enclosure
- Wide input voltage range (12 ~ 24 V DC)

**PPC-3000S Series**
- 15"/ 17" Robust design with 304 stainless steel front bezel and anti-rust coated SPCC rear cover
- Wide operating temperature range (-20 ~ 60 °C/ -4 ~ 140 °F)
- Anti-glare screen with tempered glass and IP66-certified front panel
- Supports panel, VESA, wall, desktop, and stand mounting

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**Semi Industrial Monitors**

**FPM-200/ 200W Series**
- General Industrial Monitor
- 12"/ 15"/ 15.6"/ 17"/ 21.5"
- Robust system with die-casting aluminum chassis and IP66-rated aluminum alloy front bezel
- Supports various mount options: panel, desktop, and VESA arm

**FPM-100W Series**
- Semi Industrial Monitor
- 15.6"/ 21.5" Full HD TFT LED LCD Display
- Built-in 10-point PCAP multi-touch panel with USB interface
- Slim bezel and compact design
- Wide operating temperature from 0 ~ 50° C
- Supports VESA arm mounting (100 x 100 mm)

**FPM-800 Series**
- Domain Industrial Monitor
- 15"/ 17"
- Robust design with 304 stainless steel front bezel and anti-rust coated SPCC rear cover
- Wide operating temperature range (-20 ~ 60 °C)
- Anti-glare screen with tempered glass and IP66-certified front panel
- Supports panel, VESA, wall, desktop, and stand mounting

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**Domain Industrial Monitor**

**FPM-200/ 200W Series**
- General Industrial Monitor
- 12"/ 15"/ 15.6"/ 17"/ 21.5"
- Robust system with die-casting aluminum chassis and IP66-rated aluminum alloy front bezel
- Supports various mount options: panel, desktop, and VESA arm

**FPM-100W Series**
- Semi Industrial Monitor
- 15.6"/ 21.5" Full HD TFT LED LCD Display
- Built-in 10-point PCAP multi-touch panel with USB interface
- Slim bezel and compact design
- Wide operating temperature from 0 ~ 50° C
- Supports VESA arm mounting (100 x 100 mm)

**FPM-800 Series**
- Domain Industrial Monitor
- 15"/ 17"
- Robust design with 304 stainless steel front bezel and anti-rust coated SPCC rear cover
- Wide operating temperature range (-20 ~ 60 °C)
- Anti-glare screen with tempered glass and IP66-certified front panel
- Supports panel, VESA, wall, desktop, and stand mounting
Supports On-site Management, Manufacturing and Patrol Inspection

Industrial Tablet Solutions

The AIM-75S/78S tablets are designed for mobile workers for use in onsite factory inspections. Application oriented peripherals are built for rough handling in extreme environments. They have been drop-tested at 4ft, and are IP65 certified. With extension modules — bar-code scanner, RJ45+COM and UHF Reader — they can satisfy customized requirements and be easily removed from the docking station with just one-hand. In addition, a hand strap/shoulder strap enables hands-free carrying options.

Industrial-Grade Tablet & Peripherals

AIM-75S
8" Industrial-Grade Tablet with Qualcomm® Snapdragon™ 660 Processor, Android 10, and GMS Certified

AIM-78S
10.1" Industrial-Grade Tablet with Qualcomm® Snapdragon™ 660 Processor, Android 10

AIM-65
8" Industrial-Grade Tablet with Intel Atom® Processor, Windows 10 IoT

- 1920 x 1200 resolution, 400nits brightness, Corning® Gorilla® and multitouch PCAP TS
- LTE, WLAN, Bluetooth, NFC
- IP65 and 4-ft drop tolerance
- Optional vertical solution extension modules and docking station

AIM-68
10.1" Industrial-Grade Tablet with Intel Atom® Processor, Windows 10 IoT

- 1920 x 1200 resolution, 380/800nits brightness, Corning® Gorilla® and multitouch PCAP control
- 3G/4G LTE, WLAN, Bluetooth, NFC
- IP65 and 4-ft drop tolerance
- Integrated barcode scanner supports data collection as option
- Optional vertical solution extension modules and docking station

PWS-872
10.1" Industrial-Grade Tablet with Intel® Core™ i3/ i5/ i7/ Celeron® Processor, Windows 10 IoT

- 1280x 800 resolution, 300nits display brightness, Corning® Gorilla® and multi-touch PCAP, support for gloved operation
- 4G LTE, WLAN, Bluetooth, NFC and GPS modules with Beidou/ GLONASS support
- Hot-swappable external battery, MIL-STD-810G, IP65 and 4-ft. drop
- Integrated barcode scanner supports data collection as option
- Optional vertical solution extension modules and docking station

LEO-WS10
Handheld Dimensioning and Barcode Scanner

- 1 sec and 1 hand for dimensioning with OIML certification
- Laser aimer for accurate aiming at barcodes
- 3D handheld sizing scanner with embedded 2D scanner
- No pre-calibration needed
- Easy operation and portability
- Compatible with any computer and OS via standard USB I/F
Integrated CODESYS Solutions for Real-time Machine Control and Data Acquisition

Automation Control Solutions

Advantech, a leading provider of innovative solutions, offers a wide range of hardware products equipped with CODESYS software. CODESYS supports a diverse range of control applications. Advantech uses comprehensive hardware-software solutions and is committed to delivering innovative industrial computing platforms and I/O technology that eases IoT application development. Advantech provides a full range of products, controllers, and fieldbus I/O modules. These empower complete control solutions support domain-focused markets and accelerate Industry 4.0.

**Edge Controllers**

Cabinet Controllers

AMAX-637/ AMAX-648
Real-Time SoftPLC and SoftMotion Cabinet Controller
- Open controller with real-time fieldbus control
- Reduces downtime with powerful visualization management
- Flexible integration with diverse database connectivity options

AMAX-658
High Performance Compact Modular EtherCAT Controller
- IEC 61131-3 solution with EtherCAT slice I/O, empowered by CODESYS
- Open platform with standard interface, easily integrate into any IT/OT applications
- Compact size with high efficiency to improve equipment intelligence and stability as well as maintenance efficiency

Modular Controllers

AMAX-658
Real-Time SoftPLC and SoftMotion Cabinet Controller
- Supports master real-time fieldbus protocols
- Supports HMI design and visualization for management
- Supports real-time dual fieldbus data acquisition of PROFINET and EtherCAT communications

Panel Controllers (Visualization)

AMAX-548
Real-Time SoftPLC and SoftMotion Panel Controller
- Supports isolated DI/DO, analogue (V/mV/mA, RTD, thermal couple ), AO (V/mA ), counter/encoder
- DC mode selectable

**Fieldbus and I/Os**

Industrial Fieldbus I/O & Peripheral

PCM-26 Series
- CANopen
- PROFINET
- EtherNet/IP

PCM-24/ 27 Series
- MRAM
- Analog I/O or AI/AO
- Digital I/O or DI/DO
- PoE

Compact Modular EtherCAT Slice I/O
- Removable push-in I/O terminal
- Smart power quality diagnosis
- Dual power inputs
- 2000 VDC isolation
- Supports isolated DI/DO, analogue (V/mV/mA, RTD, thermal couple ), AO (V/mA ), counter/encoder
- DC mode selectable

**Industrial Slice I/Os**

AMAX-5000 I/O Series

**Industrial Distributed I/Os**

AMAX-4830
16-Ch Isolated DI and 16-Ch Isolated DO EtherCAT Remote I/O Module
- Suitable for EtherCAT networks
- 2,500 VDC isolation
- Quick-remove European-type connector
- Supports distributed clock (DC) mode
- LED indicators for I/O status
Booster for Equipment Manufacturers, Rental Services, and End Users

Edge DAQ Devices

Advantech’s edge data acquisition solutions with WISE-PaaS/EdgeLink, Node-RED, and Python are designed to simplify remote monitoring. These solutions improve service quality by facilitating product care, enable equipment monitoring, and allow for efficient energy consumption analysis. This allows manufacturers, rental services, and end users to obtain insights on usage behaviors by deriving intelligence through big data analysis.

Data Acquisition Gateways

Expansion Modules

ADAM-3600 Wireless Intelligent RTU
- TI Cortex-A8 (600MHz) with 256MB DDR3L
- Real-time Linux
- 4 expansion slots
- SD slot for local data storage
- 2 x LAN ports with two MAC addresses
- 2 x wireless communication interface (mini-PCIe)
- 8 x DI, 8 x AI, 4 x isolated DO channels

ADAM-5091 Serial Expansion Module
- 4 x serial ports
- Supports RS-485/ 232/ 422

ADAM-5192 Network Expansion Module
- 2 x LAN ports

ADAM-5630/ ADAM-5630E 4/8 Slot Risc-Based Modular DA&C Controller
- TI Cortex-A8 (600 MHz) with 512 MB of DDR3 RAM
- Real-time Linux
- 2 x LAN ports with two MAC addresses
- 4/8 expansion slots
- SD slot for local data storage
- Wired and wireless communication expansion options
- Supports web services

ADAM-5000 Expansion I/O Modules
- 9 x AI/AO modules
- 16 x DI/DO modules
- 2 x counter/ frequency modules

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-3668 4-ch Relay Output Module
- 2-ch form A and 2-ch form C
- Contact rating: 0.3A@125VAC, 1A@30VDC
Seamless Data Connectivity from the Network Edge to the Core

Industrial Communication

Advantech leverages over 35 years of industry experience to develop 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 data, monitoring and controlling networked devices.

Intelligent Connectivity Software

**WebAccess/DMP**
Device Management and Provisioning
- Remote router management and application delivery
- Device health monitoring and statistics
- RESTful APIs
- Zero-touch provisioning for mass deployment
- Multi-tenancy options
- Supports cloud & on-premise version

**WebAccess/NMS**
Network Management System
- Cross-browser compatible
- Online Google Maps and offline OpenStreetMap support
- Dynamic connectivity indication
- Automatically discovers and diagrams network topology
- PoE, ring, wireless, cellular connection indication

**WebAccess/VPN**
Advanced Secure Networking Platform
- Remote access solution for routers
- Secure Private Networks in Internet
- Encrypted & reliable communication, centrally defined VPN topology
- Managed LAN, 1:1 NAT modes, firewall & access control
- User-friendly management, easy deployment

Communication Gateways

### ICR-4453
**New 5G Ready High Speed Router Platform & Edge Computing Gateway**
- 5G NR cellular connectivity
- Quad-core CPU & enhanced memory, docker ready
- 2 x SIM, eSIM, 5 x Gigabit Ethernet with optional 4 x PoE
- SFP fiber port, USB, GNSS Receiver, RS-232, RS-485, CAN bus, 2 x DI, 2 x DO
- Optional dual band WiFi 802.11AC

### ICR-2000/2400 Series
**Industrial Entry 4G LTE Router & Gateway**
- LTE Cat.4, 1 x SIM or 2 x SIM
- 1 or 2 x Ethernet 10/100
- 1 DI/DO
- RS-232/485 (optional)
- Robust metal cover with wall mount option
- Advanced security features, VPN, Open Linux OS

### ICR-3200 Series
**Industrial IoT 4G LTE Router & Gateway**
- LTE Cat.4 with 3G/2G fallback, 2 x SIM, eSIM
- Powerful CPU with 1.3 GB storage to host customer SW applications, Python, Node-RED
- 2 x Ethernet 10/100, 1 x RS-232, 1 x RS-485 and I/O
- Optional - Wi-Fi 802.11ac, Bluetooth v5.1, GNSS Receiver
- Advanced security features, VPN, Open Linux OS

### SmartFlex SR30x Series
**Flexible, Modular 4G LTE Router & Gateway**
- LTE Cat.4 with 3G/2G fallback, 2 x SIM, GNSS Receiver
- 2 x Ethernet 10/100 (Independent or switch)
- Optional - 5 x Ethernet, PoE, RS-232/RS-422/ RS-485, Wi-Fi
- Advanced security features, VPN, Open Linux OS
- E-mark, UL CID2, ATEX certifications

Communication Gateways & I/O Nodes

**WISE-6610 LoRaWAN Gateway and LoRaWAN I/O Node**
- Long-distance wireless data transmission and third-party LoRaWAN device compliant
- Embedded network server and Node-RED, bundle a lightweight IoT protocol MQTT
- LoRaWAN gateway design with backup function
- LoRaWAN node design with IP66-rated reinforced-fiber polyester PBT enclosure

**EKI-6333AC/ EKI-136X Series/ EKI-9502G**
**802.11AC Wi-Fi AP/ Bridge/ Client/ EN 50155 Router**
- Supports 802.11 a/b/g/n/ac: MIMO 2T2R
- EKI-136X series support serial device to Wi-Fi or Lan to Wi-Fi variety function
- Supports secure access with WEP, WPA/WPA2-Personal, WPA/WPA2-Enterprise
- Wireless band 2.4G/5G selective/dual
- Provides web-based configuration
- Cellular connectivity with dual SIM cards design for each cellular module (EKI-9502G)
**Modbus Gateways/Routers**

**EKI-1220(R) Series**
- 1/2/4/8-Port Modbus Gateway/Router
- Integrated stateful firewall for protection from intrusion
- Supports redundant-enhanced Modbus ID
- Integrates Modbus TCP and Modbus RTU/ASCII network
- Optional fiber optics connectivity (1-port ST or 2-port SC)

**EKI-1500 Series**
- 1/2/4/6/8-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)
- VCOM, TCP server, TCP client, UDP, and RFC2217 modes
- Optional fiber optics connectivity (1-port SC)

**TSN Ethernet Switch**

**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)
- -40 ~ 75 °C wide operating temperature

**EKI-7700 Series**
- Industrial Managed Switch
- High variety of port combinations
- 1U 19 inch rack-mount design
- EN 50121-4 and NEMA TS-2 certified
- Supports Advantech IXM/NMS technology

**Serial Device Servers**

**EKI-7412G-4X /7428G-4X 10G Series**
- Network Management System
- 10G uplink bandwidth supported
- Powerful and reliable managed features
- 1U 19 inch rack-mount design
- Up to 60 °C operating temperature

**Entry-Level Device Servers**

**EKI-1511 Series**
- 1-Port Device Server
- L models support RS-232
- X models support RS-422/485
- I models support wide operating temperature
- Robust stainless steel exterior with minimalist design

**Protocol Gateways**

**EKI-1242 Series**
- Modbus RTU/TCP to Various Industrial Protocols Fieldbus Gateway
- Dual power inputs
- Designed for protocol extensibility and adaption
- Built-in real-time diagnostics
- I models support a wide operating temperature range

**L3 Managed Switches**

**EKI-9712G-4FMPI**
- Industrial 802.3bt Managed Switch
- Supports -40 ~ 75 °C wide operating temperatures
- Dual (redundant) AC and/or DC hot-swappable power supplies
- SNMP manageable via iView software featuring massive provision and monitoring

**L2 Managed Switches**

**EKI-5000 Series**
- Industrial 802.3bt Managed Switch
- Supports 802.3at/bt PoE port x 2
- Configurable PoE power allocation with max. 180W power
- Configurable PoE behavior to reboot PD and notify link down

**Industrial 15/30/60/90W PoE Injectors**

**EKI-2701 Series**
- Supports IEEE802.3 af/at/bt standards
- Serves as power sourcing equipment (PSE)
- Extended operating temperature (-40~75 °C)
- EKI-2701MPI-53 supports 10/100/10G 2.5G/5G multi-speed data transmission
- Smart media converter with SFP uplink port and 1x PoE port x 2
- Configurable PoE power allocation with max. 180W power
- Configurable PoE behavior to reboot PD and notify link down

**Managed 10G Media Converters and Chasis**

**IMC-595MPI**
- 10G standalone media converter (IMC-610-A)
- Modular design with chassis from 3/6/20 slots (IMC-790-A)
- SNMP manageable via iView software featuring massive provision and monitoring
- Dual (redundant) AC and/or DC hot-swappable power supplies

**10/100/1000 Mbps PoE(+) Media Converters**

**EKI-2740 Series & IMC-390 Series**
- Supports IEEE802.3 af/at/bt standards
- Serves as power sourcing equipment (PSE)
- Designed with 1/10/100/1000Base-T and SFP or a fixed fiber transceiver

**10G Ethernet Energy Switches**

**EN50155 Rolling Stock Switches**

**EKI-9500 Series**
- 28/16/12/10/8-Port EN 50155 Rolling Stock Switch
- EN 50155, EN 50121-3-2, IEC 61373 compliant
- PoE/ PoE+ models are available
- Various port combination with Fast Ethernet/ Gigabit Ethernet options
- IP40/IP54/IP67 and rugged housing

**IEC 61850-3 Power Solutions**

**EKI-61850-3 Power Switch**
- Energy Switches
- 90W High Power PoE Solutions

**90W High Power PoE Solutions**

**EKI-9728G 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)
- -40 ~ 75 °C wide operating temperature

**EKI-5000 Series**
- Industrial 802.3bt Managed Switch
- Supports -40 ~ 75 °C wide operating temperatures
- Dual (redundant) AC and/or DC hot-swappable power supplies
- SNMP manageable via iView software featuring massive provision and monitoring

**Star Product Highlights**
Diverse Form Factors to Satisfy DAQ Requirements

Data Acquisition and Control

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.

### PCI Express DAQ Cards

**PCIE-1810**
16-ch, 12-bit Multi-Function PCI Express Card
- Sample rate: 500 kS/s
- Resolution: 12-bit
- Analog and digital triggers
- Waveform generator for AO channels

**PCIE-1805**
32-ch, 16-bit Analog Input PCI Express Card
- Sample rate: 1 MS/s
- Resolution: 16-bit
- ±10 V to ±1 V voltage measurement
- 0 ~ 20 mA or 4 ~ 20 mA current measurement
- Supports digital and analog triggers

**PCIE-1802/ 1802L/ 1803**
8/ 4/ 8-ch, 24-bit Dynamic Signal Acquisition
- Sample rate: 216 kS/s/ch
- Resolution: 24-bit
- Dynamic range: 115 dB
- Wide input voltage range (±0.2 ~ 10 V)
- Built-in anti-aliasing filter

**PCIE-1761H/ 1762H**
8/ 16-ch Relay and 8/ 16-ch Isolated Digital Input w/ Digital Filter and Interrupt PCIe Card
- 8/16-ch opto-isolated digital input channels
- 8/16-ch relay actuator output channels
- Interrupt handling capability for all DI channels

**PCIE-1730H/ 1756H/ 1758**
32/ 64/ 128-ch Isolated DI/DO PCIe Card
- 32/ 64/ 128-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
- 32-ch TTL DI/DO w/ 5 V compatibility (PCIE-1730H only)
- High-voltage isolation on all isolated DI/DO channels (2,500 Vdc)

### Vibration Sensing Gateways

**WISE-750**
Intelligent Vibration Sensing Gateway
- Set-and-run AI monitoring system
- Comprehensive evaluation, configuration and deployment kit
- Compact size
- 4-channel measurement paired with alarm indication
- Accelerometer included

### PCI Express AO Cards

**PCIE-1824**
32-ch, 16-bit Analog Output PCIe Card
- Resolution: 16-bit
- Update rate: static
- Output range: +/-10 V, 0 ~ 20 mA and 4 ~ 20 mA
- Synchronized output function
- High ESD protection (2,000 Vdc)

### PCI Express Digital I/O Cards

**PCIE-1761H/ 1762H**
8/ 16-ch Relay and 8/ 16-ch Isolated Digital Input w/ Digital Filter and Interrupt PCIe Card
- 8/16-ch opto-isolated digital input channels
- 8/16-ch relay actuator output channels
- Interrupt handling capability for all DI channels

**PCIE-1763AH/ 1763DH**
16-ch Solid-State Relay (SSR) Output and 16-ch Isolated Digital Input w/ Digital Filter & Interrupt PCIe Card
- 16-ch isolated digital input (DI) with both dry and wet contact configurations
- Interrupt and noise filter for all DI channels
- Suitable for both AC (> 80 Vdc) and DC low voltage load (< 60 V) applications with frequent ON/ OFF switching
- Much less contact problems such as arcs, bounce, and noise
### Modular DAQ Chassis and Modules

#### iDAQ-934
4-Slot USB 3.0 iDAQ Chassis
- USB 3.0 with SuperSpeed USB (5Gbps)
- 1 x upstream and 1 x downstream USB port
- LED indicators for status indication
- 2 x PFP for multi-purpose software-configurable trigger/clock settings
- 4 x iDAQ slots

#### DAQ Modules
- iDAQ-731, 16-ch isolated DI and 16-ch universal isolated DO iDAQ module
- iDAQ-763D, 16-ch solid-state relay (SSR) DO iDAQ module
- iDAQ-817, 8-ch, 16-bit, 200 kS/s AI iDAQ module
- iDAQ-821, 4-ch, 16-bit, 10 kS/s/ch AO iDAQ module
- iDAQ-801, 4-ch, 24-bit, 256 kS/s/ch IEPE sensor input iDAQ module
- iDAQ-815, 8-ch, 24-bit, 400 S/s RTD input iDAQ module
- iDAQ-841, 8-ch, 16-bit, 1 MS/S/ch AI iDAQ module
- iDAQ-751, 48-ch TTL Di/O iDAQ module

### USB DAQ Modules

#### USB-5801
4-ch, 24-bit USB 3.0 DSA Module
- USB 3.0 with SuperSpeed USB (5Gbps)
- 1 x upstream and 1 x downstream USB port
- 4 x 24bit simultaneous sampling analog inputs up to 192kS/s
- IEPE excitation for every channel
- 1 x tachometer for revolution speed measurement
- Built-in USB hub

#### USB-5817
8-ch, 16-bit USB 3.0 Analog Input Module
- USB 3.0 with SuperSpeed USB (5Gbps)
- 1 x upstream and 1 x downstream USB port
- 16-bit resolution with 200kS/s sampling rate
- ±275 V high common-mode voltage range
- Measuring and output error < ±0.1%
- Built-in USB hub

#### USB-5830/ 5856
32/ 64-ch Isolated Digital I/O USB 3.0 Module
- USB 3.0 with SuperSpeed USB (5Gbps)
- 1 x upstream and 1 x downstream USB port
- Built-in USB hub
- 2,500 VDC isolation protection
- Level 3 ESD and surge protection

### DAQ-Embedded Computers

#### MIC-1810/ 1816
Data Acquisition Platform w/ Intel® Processor
- Intel® Celeron® 3955U / Core™ i3-6100U
- MIC-1810: 16x AI channels (sample rate: 500 KS/s; resolution: 12-bit), 2 x AO channels (update rate: 500 KS/s; resolution: 12-bit)
- MIC-1816: 16x AI channels (sample rate: 1 MS/s; resolution: 16-bit), 2 x AO channels (update rate: 3 MS/s; resolution: 16-bit)

#### MIC-1816R
DAQ Platform with ARM® Cortex®-A9
- i.MX6 Quad - 4x Cortex-A9 processor
- Build-in 4G EMMC NAND Flash for OS (Yotoo only)
- Sampling rate: 1MS/s
- 4 x IEPE inputs with preamp gain = 1, 10, 100
- 8 x analog inputs with voltage or 4~20mA
- 2 x analog outputs, up to 3 MS/s, 16-bit resolution
- 16 x isolated digital input and 8 x isolated digital output

#### MIC-1842
High Speed DAQ Platform w/ Intel® Processor
- Intel® Celeron® 3955SU / Core™ i5 6300U
- 8-ch simultaneous 12-bit analog input
- Sampling rate up to 20MS/s
- Analog input supports multiple input range

### Machine Condition Monitoring Software

#### DAQNavi/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

### Communication Solutions

#### PCI/PCIE-1600
PCI/PCIE Communication Cards
- 2/4/8 port PCI serial
- 2/4/8 port PCIE serial
- 2 port PCI/PCIE CAN
Improving Legacy Serial Devices with IoT

Serial and USB Communication Solutions

Serial RS-232, RS-422 and RS-485 are viable options when it comes to industrial and commercial data communications. The Advantech ULI series offers a complete line of serial-serial and serial-fiber converters as well as isolated repeaters, surge suppressors, data taps, and data splitter products to choose from, including options for harsh-duty Class 1/Division 2 oil & gas and IEC 61850-3 substation applications. Additionally, the ULI series has options for USB to serial converters as well as USB isolators and hubs.

Serial to Fiber Isolated Converters

- **ULI-211 Series**
  - RS-232/422/485 to Multi-Mode ST Fiber
  - Up to 3kV 3-way isolation and 10–48VDC power input
  - Up to 115.2kbps data rate and -40 ~ 80 °C operating temp.
  - Supports Modbus ASCII/RTU protocols
  - ULI-234TE (BB-485OPDRi-PH): IEC 61850-3 RS-232/422/485 (DB-9) isolated converter
  - ULI-234TCI (BB-485OPDRi): RS-422/485 (TB) isolated converter
  - Up to 115.2kbps data rate and -40 ~ 80 °C operating temp.
  - Up to 3kV 3-way isolation and 10~48V converter with C1D2

- **ULI-212/213 Series**
  - 3-stage surge protection on every data line
  - Protected signal ground connection with dedicated chassis ground lug
  - ULI-212CI (BB-FOSTCDRi-ST): serial/SM ST converter

- **ULI-210 Series**
  - ULI-246T (BB-485HESP): 2-wire RS-485 (TB) surge suppressor
  - ULI-244TI (BB-HESP4DR): RS-422/485 (TB) surge suppressor
  - ULI-242T (BB-232HESP): RS-232 (TB) surge suppressor

- **ULI-240 Series**
  - ULI-212CI (BB-FOSTCDRi-ST): serial/SM ST converter

- **ULI-250/260 Series**
  - ULI-262D (BB-9PMDS): RS-232 to RS-485 (DB-9) isolated converter
  - ULI-252D (BB-9PCDT): RS-232 (DB-9) data taps
  - Data splitter: enable 2 PCs to connect one RS-232 serial device without switching

USB to Serial Converters

- **ULI-300 Series**
  - Add a COM port to your PC via USB
  - Up to 4kV isolation, powered by USB port
  - Up to 921.6kbps data rate & -40 ~ 80 °C operating temp.
  - ULI-321DC (BB-US09ML2-A): USB 2.0 to RS-232 (DB-9) isolated converter
  - ULI-341TC (BB-USOPTL4): USB 2.0 to RS-422/485 (TB) isolated converter
  - ULI-361D (BB-485USB99F-2W): USB 2.0 to 2-wire RS-485 (DB-9) converter

- **ULI-410 Series**
  - ULI-211E (BB-FOSTCDRI-PH-MT): IEC 61850-3 serial/MM ST converter with C1D2
  - ULI-211CI (BB-FOSTCDRi): rugged serial/MM ST converter
  - Supports Modbus ASCII/RTU protocols
  - Up to 115.2kbps data rate and -40 ~ 80 °C operating temp.
  - Up to 3kV 3-way isolation and 10~48V

USB Isolators

- **ULI-420 Series**
  - Converts RS-232 to RS-422/485, RS-485, TTL signals
  - Various connector options: DB-9, terminal block, RJ-11
  - Up to 2kV 3-way isolation and 10–48VDC power input
  - ULI-424CI (BB-UHR402): 2-port USB 2.0 isolator
  - ULI-421C (BB-UHR401): 1-port USB 2.0 isolator

Serial and USB Isolators USB 2.0/ 3.0 Hubs

- **ULI-410 Series**
  - ULI-410 Series
  - ULI-414CI (BB-UHR304): 4-port USB 2.0 isolated hub module
  - ULI-417H (BB-USH207): 7-port USB 3.0 hub

- **ULI-420 Series**
  - ULI-420 Series
  - ULI-242C (BB-UHR402): 2-port USB 2.0 isolator
## Transformation for IIoT's Wider & Larger Applications

### IoT-ready Remote I/O and Intelligent I/O Gateways

Advantech’s ADAM remote I/O modules have been used by industry for over 30 years. The ADAM-4100 features robust RS-485 Modbus I/O with RFID/USB for easy configuration and diagnosis. Analogously, the ADAM-6000/6200 series is an Ethernet I/O used for IoT applications with SNMP, MQTT, RESTful API, Web Service, and Azure/AWS interfaces. Likewise, the ADAM-6300 series is an innovative OPC UA I/O with security/encryption features. In addition, the ADAM-6700 series is equipped with Node-RED or WISE-EdgeLink software and built-in I/O. It functions as an all-in-one intelligent I/O gateway solution.

### Module Selection

**ADAM-4100 Series**
- **ADAM-4115**: 6-ch RTD
- **ADAM-4117**: 8AI
- **ADAM-4118**: 8-ch thermocouple
- **ADAM-4150**: 7DI/8DO
- **ADAM-4168**: 8Relay

**ADAM-6000 Series**
- **ADAM-6010**: 7-ch RTD
- **ADAM-6015**: 8AI/2DO
- **ADAM-6050**: 12DI/6DO
- **ADAM-6060**: 6DI/6Relay

**ADAM-4000 Series**
- **ADAM-4015**: 6-ch RTD
- **ADAM-4017**: 8AI
- **ADAM-4018**: 8-ch thermocouple
- **ADAM-4024**: 4AI/4DO
- **ADAM-4051**: 16DI
- **ADAM-4055**: 8DI/8DO
- **ADAM-4080**: 2-ch counter module

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**Node-RED**

**Low-Code Programming for Event-Driven Applications**
- Node-RED 1.2.2, Node.js 10.22.1
- Browser-based editor to wire flows quickly
- Drag and drop nodes for programming
- Users can visualize the real-time data on the built-in dashboard remotely.

**Module Selection**
- **Node-RED version**
  - ADAM-6717: 8AI/5DI/4DO
  - ADAM-6750: 12DI/12DO
  - ADAM-6760D: 8SSR/8DI
  - ADAM-6766: 6Relay/12DI

**WISE-EdgeLink Version**
- ESRP-PCS-ADAM6717: 8AI/5DI/4DO
- ESRP-PCS-ADAM6750: 12DI/12DO
- ESRP-PCS-ADAM6760D: 8SSR/8DI

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**Daisy-Chain Ethernet I/Os**

**SNMP**
- ADAM-6200 Series
  - Cloud management: configuration, monitoring, and firmware updates
  - Daisy chain connectivity with auto-bypass protection
  - Supports HTML5, JavaScript, XML
  - Supports GCL and P2P functions
  - Group configuration capability
  - Supports security MQTT with TLS

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

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**Intelligent I/O Gateways**

**Smart Ethernet I/Os**
- **SNMP**
- **MQTT**
- **Modbus**
- **USB 2.0**

**ADAM-6000 Series**
- 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
- Supports security MQTT with TLS

**Module Selection**
- ADAM-6010: 7-ch RTD
- ADAM-6015: 8AI/2DO
- ADAM-6050: 12DI/6DO
- ADAM-6060: 6DI/6Relay

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**USB to MiniPCIe Adaptors**

**OPC UA Ethernet I/Os**

**ADAM-6300 Series**
- OPC UA Ethernet I/O Modules
  - Uniquely-designed remote I/O with OPC UA protocol
  - Directly links to SCADA and cloud, accelerating OT and IT convergence
  - Security certificate and encryption
  - Cost effective high I/O density
  - Supports Modbus and daisy chain

**Module Selection**
- ADAM-6350: 18DI/18DO
- ADAM-6351: 8AI/11DI/10DO
- ADAM-6360D: 8SSR/14DI/6DO
- ADAM-6366: 6Relay/18DI/6DO
- ADAM-6315: RTD module

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**ADAM-6700 Series**
- RISC/Linux-based, Node-RED
- Multiple I/O & wireless connectivities
- Wide operating temperature range (-40 ~ 70 °C/ -40 ~158 °F)

**Module Selection**
- **Node-RED version**
  - ADAM-6717: 8AI/5DI/4DO
  - ADAM-6750: 12DI/12DO
  - ADAM-6760D: 8SSR/8DI
  - ADAM-6766: 6Relay/12DI

**WISE-EdgeLink Version**
- ESRP-PCS-ADAM6717: 8AI/5DI/4DO
- ESRP-PCS-ADAM6750: 12DI/12DO
- ESRP-PCS-ADAM6760D: 8SSR/8DI

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**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, 4-kV EFT, 8-kV ESD
  - High common mode voltage: 200 V DC
  - Power input: 10~48V DC

**Module Selection**
- ADAM-4115: 6-ch RTD
- ADAM-4117: 8AI
- ADAM-4118: 8-ch thermocouple
- ADAM-4150: 7DI/8DO
- ADAM-4168: 8Relay

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**ADAM-4000 Series**
- Robust RS-485 I/O Modules
  - Watchdog timer
  - ±35 V DC over voltage protection
  - 3,000 V DC voltage isolation

**Module Selection**
- ADAM-4015: 6-ch RTD
- ADAM-4017: 8AI
- ADAM-4018: 8-ch thermocouple
- ADAM-4024: 4AI/4DO
- ADAM-4051: 16DI
- ADAM-4055: 8DI/8DO
- ADAM-4080: 2-ch counter module
Industrial Wireless I/O and Sensor Modules for Big Data Acquisition and Cloud Integration

Nickelox IoT Sensing Devices

With developments in wireless and cloud technologies, more and more remote monitoring applications have adopted cloud services for wide area management systems. To shorten the gap between the field site data and the cloud, Advantech provides wireless I/O and sensor modules that can get and pass data directly to the cloud by utilizing wireless communication technology, such as Wi-Fi, 4G, LoRaWAN, NB-IoT/LTE-M, and proprietary LPWAN (Sub-G) through IoT protocols MQTT, CoAP and LwM2M.

### Wireless I/O Modules

- **WISE-4210**
  - Industrial Proprietary LPWAN (Sub-G) IoT Wireless I/O Module
  - Intel® Celeron® 3955U/ Core™ i5 6300U
  - 8-ch simultaneous 12-bit analog input
  - Sampling rate up to 20MS/s
  - Analog input supports multiple input range

- **WISE-4220**
  - Industrial 2.4GHz Wi-Fi IoT Wireless I/O Module
  - Wireless interface to reduce the wiring cost for data acquisition
  - Configuring by mobile devices directly without installing any apps
  - Zero data loss by using log function with RTC time stamp

- **WISE-S100**
  - Intelligent Stack Light Monitoring Sensor
  - 8 light sensors for variety stack-type light towers
  - No need to stop the machinery while deployment
  - Remote OEE solution by pairing with WISE-4000 series

### Wireless Sensor Modules

- **WISE-2210/ WISE-2211**
  - Proprietary LPWAN (Sub-G) Self-Powered Analog Input Module
  - Directly measure and transmit current transformer (CT) and transmitter (DC 4–20mA)
  - Less interference and better penetration compare with 2.4GHz spectrum
  - 3 x AI for CT and transmitter

- **WISE-2410**
  - LoRaWAN Smart Condition Monitoring Sensor
  - Compliant with ISO 10816 (guidelines for machine vibration evaluation)
  - No power and communication wiring with LoRaWAN technology
  - Computing onboard, directly transmits vibration characteristic values to application

- **WISE-2834**
  - Intelligent RFID Gateway
  - 4-ports UHF RFID read/write function
  - Node-RED package solution
  - 4-ports antenna, 4 x DI and 4 x DO
  - Ethernet and Wi-Fi interface for up-link

- **Wzzard™ Edge Monitoring**
  - Starter Kits, Nodes, Sensors
    - Non-intrusive, non-disruptive to existing networks
    - Network overlay is self-configuring, self-healing
    - Condition-based, energy, refrigeration, HVAC/compressor starter kits are scalable at any time
    - Industrial and commercial low-power nodes
    - Humidity, vibration, current, temperature, AI, DI sensors
Remote Device Management and Data Collection

**Wireless Fleet and Industrial Networking**

Remote device management solutions from Advantech enable wireless asset monitoring, data retrieval, and control. Advantech wireless solutions offer a variety of interfaces, functionalities and smart, secure, energy-saving features – all of which contribute to transmitting data, monitoring, controlling and networking remote devices or mobile vehicle fleets. Advantech’s industry and technology expertise provides solutions that are rugged, reliable, affordable and suitable for a variety of applications.

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### Onboard Diagnostics (OBD) Vehicle Converters

**WISE-4773-S51U**  
LTE CAT-M1 Data Interface -Light/Heavy-Duty Vehicles  
- J1939, J1708/J1587, OBDII (NA)  
- GPS location, speed, altitude, heading  
- Category M1 low power  
- Digital accelerometer  
- Industry leading, proprietary OBD database, algorithms  
- Temperature range: -30 ~ 75 °C  
- Shock, vibration, and drop tested  
- SAE J1113, Industry Canada

**BB-HD3-A3**  
Intelligent Interface Adapter -Heavy-Duty Vehicles  
- J1939 protocols  
- Over-the-air (OTA) upgradeable  
- Industry leading, proprietary OBD database/algorithms  
- Temperature range: -40 ~ 85 °C  
- Shock, vibration, drop tested  
- SAE J1113/11, /13, /14

**BB-LD3IC-S**  
Intelligent Interface Adapter -Light/Medium-Duty Vehicles  
- J1939, J1962 protocols  
- ISO 15765, LSGMLAN, Ford Secondary CAN  
- Integrated Y cable  
- Industry leading, proprietary OBD database/algorithms  
- Temperature range: -40 ~ 85 °C  
- Shock, vibration, drop tested  
- SAE J1113/11, /13, /14

**BB-LD3-1939P1D**  
Intelligent Interface Adapter -Light/Medium-Duty Vehicles  
- J1939 protocol  
- ISO 15765 (CAN), LSGMLAN, Ford Secondary CAN  
- ELD, ELR (FMCSA mandate)  
- Industry leading, proprietary OBD database/algorithms  
- Temperature range: -40 ~ 85 °C  
- Shock, vibration, drop tested  
- SAE J1113/11, /13, /14

---

### Serial to BTLE 5.0 Extenders

**WISE-4520-NA, WISE-4520-EA**  
Wireless Extension of RS-232/422/485 Serial Data  
- Simple wireless extension of RS-232/422/485 data using BT 5.0 technology  
- Easy serial wired communications replacement  
- 2.4 GHz frequency band  
- Data rate: up to 115.2 kbps  
- Input power: 10-30 Vdc via terminal block  
- Range: up to 800 meters (USA version)  
- One digital I/O point  
- LED indicators: Power, Connection Status, RSSI  
- DIP switch configuration and button pairing (no software required)  
- Wide operating temperature  
- DIN rail mounting bracket included  
- Two or more extenders required  
- Power supply required for each unit, sold separately  
- Certifications for USA, Canada, Europe
### Regional Service & Customization Centers

#### World Wide Offices

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