

# 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



**ADVANTECH**

*Enabling an Intelligent Planet*

# Innovative IIoT Edge to Cloud Technologies

## Smart Cameras

ICAM-7000 Series



## EtherCAT I/O Controllers

EtherCAT Motion Controllers  
AMAX-3000/ 300 Series



EtherCAT Control IPC  
AMAX-5580



## EtherCAT

EtherCAT I/O Systems  
AMAX-5000/ 4800 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



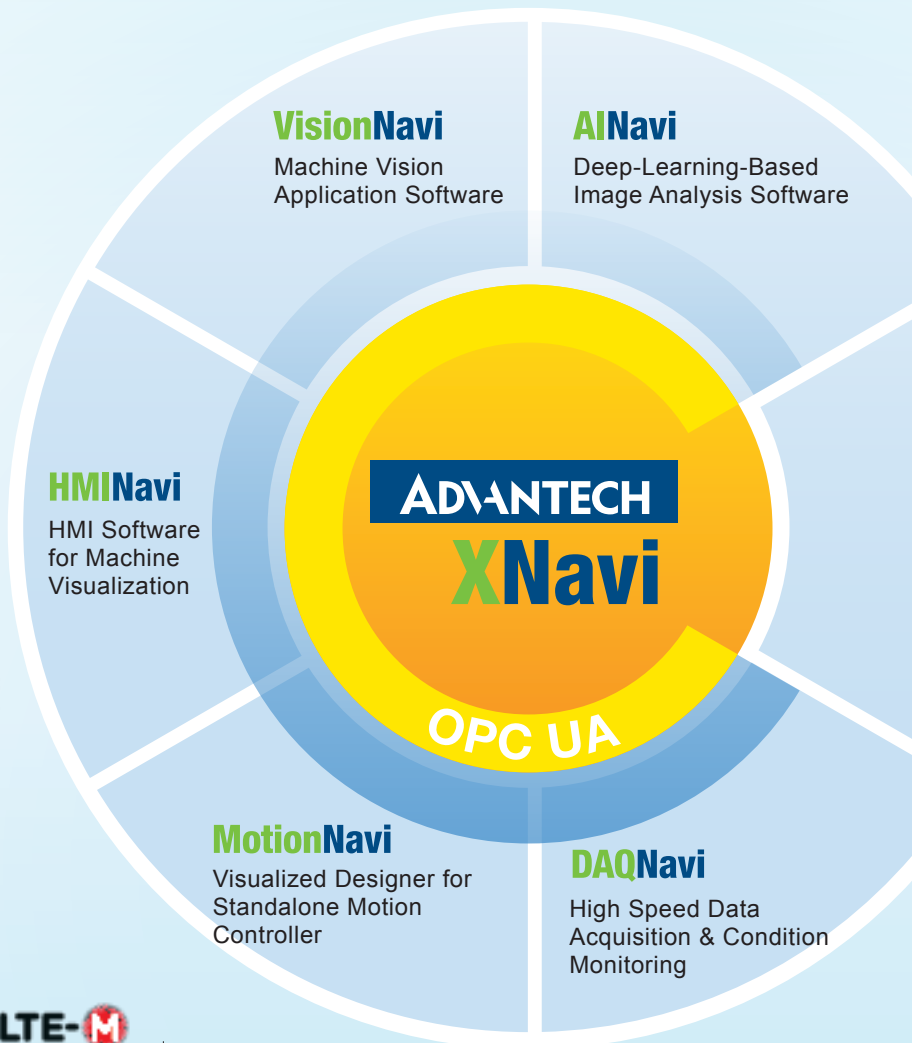
## Wireless I/O and Sensors



WISE-2000/ 4000 Series



**ADVANTECH**  
**AIWireless**  
Advantech Industrial Wireless



## DAQ and Remote I/O



iDAQ Series/ USB-5800 Series/ PCI/PCIe Cards/  
ADAM-4000/5000/6000 Series



## Edge AI Systems



AI Computing Systems  
MIC-700AI Series

AI Video Systems  
MIC-700IVA Series

NVIDIA® Jetson Xavier™ NX

NVIDIA® Jetson AGX Xavier™

NVIDIA® Jetson Nano™



## Automation Systems

UNO/ MIC/ HMI/ IPC/ WOP Series



## WebAccess/SCADA

IoT Application Software Platform

## WISE-EdgeLink

Powerful Edge-to-Cloud  
Middleware for Intelligent  
Gateway Solutions

## DeviceOn/BI

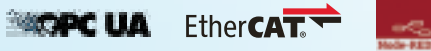
Industrial IoT Cloud-Based  
Operation & Maintenance Platform

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

**ADVANTECH**  
**WISE-PaaS**  
AIoT Solutions & Marketplace

Allen-Bradley  
Microsoft Azure  
CUMULOCITY IoT  
amazon web services  
T-Systems  
ERICSSON

## IIoT Gateways



Modbus PROFIBUS EtherNet/IP™ WISE-EdgeLink

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



## Connectivity and TSN



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





Improve Flexibility, Speed, and Quality

# Intelligent Factory

Many manufacturers are undergoing a digital transformation. Advantech seeks to help them in this endeavor by providing Overall Equipment Effectiveness 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



Enterprise Package

### iFactory/IFS-51A-AG01 iFactory/IFS-51B-AW01

#### WISE-PaaS/IoTSuite



- Adaptable and scalable industrial IoT solution
- HW: SKY-7221, includes I.Apps: OEE, EHS, and Event Notice
- Suggested connections: up to 100 devices

## Edge Intelligence Gateway Selections

### Machine Monitoring

CNC Machine Monitoring Smart Box (ESRP-CNC-UNO series)

#### 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)

#### WISE-EdgeLink



### Environment Data Collector

Modular Edge Intelligent Data Acquisition (SRP-IFS210-D36TAE)

Protocol Gateway (SRP-IFS420 series)

#### WISE-EdgeLink



### Machine Intelligence

Real-time Monitoring Gateway (IFS-RTM series)

#### WISE-EdgeLink



## Factory Workflow Digitalization Solutions

Starter Package

### iFactory/IFS-EWF



#### IFS-EWF

- HW: MIC-7700 i7-7700T CPU 32G DDR4, C drive: 128GB, mSATA SSD, D drive: 1T SSD storage
- Suggested connections: up to 100 devices

## Edge-Cloud Solutions



Enterprise Package

### iFactory/IFS-51A-PG01 iFactory/IFS-51B-PG01

#### WISE-PaaS/IoTSuite



- HW: SKY-7221, includes I.Apps: Andon, Shop Floor, Data Connector, and Event Notice
- Suggested connections: up to 200 devices

## Edge Intelligence Gateway Selections

### iFactory/Andon Andon Gateway

IFS-GADN-U23W3A



### iFactory/ShopFloor Shop Floor Gateway

IFS-GSFC-U23W3A



### 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



#### 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
- PoE+ compliant, dual channel 12V<sub>DC</sub> output
- 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

NEW

EtherCAT



#### 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

NEW

EtherCAT



#### Motion Control Software

#### MotionNavi



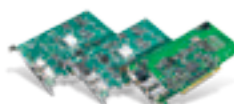
#### MotionNavi

#### Visualized Designer for Standalone Motion Controller

- Supports Advantech motion products including motion cards, PC-based and standalone controllers
- Supports BASIC, Python, and VS.Net programming languages to ease rapid development
- Provides Advantech Softmotion functions including interpolation, trajectory, position trigger, and latch
- Provides various tools such as one click helper, 3D path display, oscilloscope, and offline simulator

#### PC-Based Solutions

EtherCAT



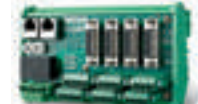
#### PCI-1203/ PCIE-1203/ PCIE-1203L

#### EtherCAT PCI/PCIE Master Cards

- Supports up to 64-axis, domain focus APIs, on board 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

EtherCAT



#### 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



**ADVANTECH**  
**WISE-PaaS**  
 AIoT Solutions & Marketplace

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



#### DeviceOn/BI

Device Management and Business Integration Platform

**Features**

- Hierarchical organization twin object management
- Dashboard wizard
- Open API plugin 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

### DeviceOn/BI



#### 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 IoT Suite, DeviceOn/BI, Patrol Inspection

### WebAccess/SCADA



#### 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

### WebAccess/SCADA



#### 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

## Environmental Facility Management

### DeviceOn/BI



#### iEnv-46A

Edge Cloud Facility Management

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

**Solution Suite Package:**

SKY-7221, WISE-PaaS/IoT Suite, 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

### DeviceOn/BI



#### iEnergy-47A

Microgrid Management

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

**Solution Suite Package:**

SKY-7221, WISE-PaaS/IoT Suite, DeviceOn/BI, 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.

### Edge Gateways

**NEW**



#### 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 4 x 2.5" hot-swappable HDD/ SSD (RAID0, 1, 5, 10)
- Up to 2 x PCIe x16 Gen3 slots, PCIe x8 Gen3 slots, PCIe x4 Gen3 slots
- IPMI 2.0-compliant management



**NEW**



#### 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



**NEW**



#### 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

### PCIe 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/ 1618D

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 V<sub>DC</sub> isolation (ECU-P1628D)
- Wide operating temperature range (-20~70 °C)



#### ECU-P1528RE/ 1528PE

8-port LAN Module

- 1528RE: 8 x RJ45 LAN gigabit module for ECU-4784
- 1528PE: 8 x SFP LAN gigabit module for ECU-4784

### 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-PCIe 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-PCIe slot for wireless expansion
- Wide operating temperature range (-40~70 °C)



**NEW**



**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)

Total Solutions for Modern Infrastructures

# Intelligent Transportation Systems

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

EN 50155



### ITA-5831

EN 50155 Compact Fanless System

- Intel® Core™ i7/ i5/ Celeron® platform with QM170
- EN 50155 TX (-40~70 °C) and IEC 61373 body mounted Class B standards
- Compliant with EMC standard EN 50121-3-2/ EN 50121-4
- Ruggedized communication and power port connectors (M12)
- Supports easy-swappable storage and I/O modules

EN 50155



### ITA-5231/ 5231S/ 5231G/ 5231W

EN 50155 Fanless System

- Intel® Core™ i7/ i5/ Celeron® platform with QM170
- EN 50155 TX (-40~70 °C) and IEC 61373 body mounted class B standards
- Compliant with EMC standard EN 50121-3-2 / EN 50121-4
- Supports easy-swappable storage and I/O modules
- Supports anti-vibration HDD tray, MXM GPU modules, and connectivity modules in specific models

NEW



### ITA-3650/ ITA-3650G/ ITA-3650N

Intel® 6<sup>th</sup> & 7<sup>th</sup> Gen Fanless System for Traffic Management

- Intel® 6<sup>th</sup> & 7<sup>th</sup> Generation Desktop Processor
- Supports onboard memory with SO-DIMM and NVRAM
- Supports 2 x GbE, 6 x USB, 6 x COM ports
- Supports 2 x 2.5" storage bay & 1 x mSATA
- Operating temperature -25 ~ 60 °C and 9-36V<sub>dc</sub> power input
- Optional expansion for MXM GPU and networking

## Rugged-Design Computer Platforms

EN 50121-4



### ITA-2231

EN 50121-4 2U Fanless System

- Intel® 6<sup>th</sup> Gen Core™ i7 processor 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 ITA-EM modules, 1 x PC/104, and 1 x Mini PCIe slots for expansion
- Wide operating temperature range (-25~60 °C)
- Supports single and dual AC/DC power modules



### ITA-1711

Intel® Celeron® J1900 Fanless Compact System

- 4 GB of DDR3 onboard 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

EN 50155



### ARS-P2800/ P3800

EN 50155 Passenger Information System Panel PC

- 28" LCD (1920x357) and 38" LCD (1920x540) resolution
- 1 x GbE (optional 2 x GbE for Daisy-Chain), 1 x USB 2.0
- EN 50155 T1 (-25 ~ 55 °C), IEC 61373 Class B
- IP54 rating ensures protection against dust/ water ingress
- Customized panel sizes available upon request

## Touch Panel PCs

EN 50155



### 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 UIC 612-01 keypad and auto brightness adjustment with light sensor
- Wide voltage input range: 24/48/72/110 V<sub>dc</sub> (±40%)
- Wide operating temperature range: -40~70 °C

## EN 50155 Switches

EN 50155



### EKI-9500 Series

8~28 Port EN 50155 Rolling Stock Switch

- EN 50155, EN 50121-3-2, IEC 61373 compliant
- Optional PoE/PoE+, Fast/ Giga Ethernet models

### EKI-9512E-4GETB

NAT Router for Ethernet Train Backbone

- EN 50155, EN 50121-3-2, IEC 61373 compliant
- IEC 61375 compliant- TRDP&TTDP
- Layer 3 routing functions- VRRP, R-NAT



### MIC-300 Series

3U CompactPCI System Solution for Railway Application

#### CPU Blade:

- MIC-3329: Intel Atom® Bay Trail low power & fan-less
- MIC-3332: Intel® 6<sup>th</sup> 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-3023: 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 (PCIe4 NVMe)
- Linux OS with board support package (BSP)
- Supports PCIe add-on card
- Supports 24/7 secure remote monitoring, control, and OTA deployment



#### MIC-710AIX

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

### GPU Server



#### SKY-640V2

4U Rackmount GPU Server (4U 4 GPUs)

- Dual 3<sup>rd</sup> 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

- 3<sup>rd</sup> 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

- 3<sup>rd</sup> 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



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

NEW



### MIC-770 V2

Compact Fanless System with 10<sup>th</sup> Gen Intel® Xeon®/ Core™ i CPU Socket

- Intel® 10<sup>th</sup> 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 GigaLAN, 2 x USB 3.2 (Gen2) and 6 x USB 3.2 (Gen1)
- ECC RAM supported, up to 64GB

NEW



### MIC-770 V2 + MIC-75G20

Desktop Compact Fanless System with GPU iModule

- Intel® 10<sup>th</sup> 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 24V<sub>DC</sub> 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® 10<sup>th</sup> 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 24V<sub>DC</sub> power inputs with reliable power and OCP solution for up to 1400W maximum peak power currency

NEW



### IPC-242

Compact Industrial Computer System with 10<sup>th</sup> Gen Intel® Core™ i CPU Socket (LGA 1200)

- Intel® 10<sup>th</sup> Gen Core™ i7/i5/i3 (LGA type) processor with Intel® Q470E/H420E chipset
- 4 x expansion slots (PCIe/ 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

NEW



### IPC-220, IPC-240

Compact Industrial Computer System with 10<sup>th</sup> Gen Intel® Core™ i CPU Socket (LGA 1200)

- Intel® 10<sup>th</sup> 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, 1x NVMe M.2, 2 x SATAIII, 2 x RS-232/422/485 serial ports
- 19 ~ 24 V<sub>DC</sub> input power range
- Supports power output 5V/12V (max. 2A)
- Compatible MB: PCE-2032/ 2132



### AIIS-3410U/ 3410P

Compact Vision System, Intel® 6<sup>th</sup>/ 7<sup>th</sup> Gen Core™ i CPU, 4-ch Camera Interface for GigE PoE or USB 3.0

- Intel® 6<sup>th</sup>/ 7<sup>th</sup> Gen Core™ i CPU (LGA1151)
- AIIS-3410P: 4-ch GbE PoE
- AIIS-3410U: 4-ch USB 3.0 with dedicated controller
- Supports 1 x expansion slot

## Industrial Computers

NEW



### 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

NEW



### 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

NEW



### 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

NEW



### AIMB-787

10<sup>th</sup> Gen Intel® Core™ i ATX Motherboard

- Intel® 10<sup>th</sup> Gen Core™ i9/i7/i5/i3 LGA1200 processor with Q470E chipset
- Up to 128 GB of dual-channel (non-ECC) DDR4 2400/2666/2933 MHz
- 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

NEW



### AIMB-707

10<sup>th</sup> Gen Intel® Core™ i ATX Motherboard

- Intel® 10<sup>th</sup> Gen Core™ i9/i7/i5/i3 LGA1200 processor with H420E chipset
- Up to 64 GB of dual-channel (non-ECC) DDR4 2400/2666/2933 MHz
- 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

NEW



### PCE-5132

10<sup>th</sup> Gen Intel® Core™ i System Host Board

- Intel® 10<sup>th</sup> Gen. Core™ i9/i7/i5/i3 LGA1200 processor with Q470E chipset
- Up to 64 GB of dual-channel (non-ECC) DDR4 2666/2933 MHz
- 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)

NEW



### 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® RTX™ A4000 PCI Express Graphic Card

- 4 x Display Port 1.4
- 16GB GDDR6 with error-correcting code (ECC)
- Max. power consumption 140 W
- PCI Express Gen 4 x 16
- H x L: 111 x 241 mm single slot

NEW



### SKY-TESLA-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

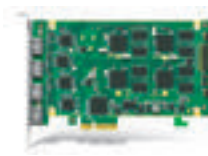
- 2-channel HDMI/DVI/VGA/S-video/YPbPr video inputs with H.264/MPEG4 hardware compression
- 60/50 fps (NTSC/PAL) at up to 1920 x 1080p resolution for recording and display for each channel
- PCIe x1 host interface
- Supports watchdog function



### 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.



Machine Control



Data Analytics



Protocol Conversion



Visualization

## Integrated Edge Controllers

NEW



### UNO-127

Intel Atom® X Extremely Small Edge Computing DIN-Rail Controller

- Intel Atom® 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, 1x M.2 B Key expansion
- Onboard TPM 2.0, IBECC supported

NEW



### 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 mPCIe, 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

NEW



### UNO-148

Intel® Core™ i Real-Time DIN-Rail Controller

- Intel® 11<sup>th</sup> 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 PCIe4 expansion

NEW



### UNO-348

Intel® Core™ i High Performance Expandable Controller

- 10<sup>th</sup> generation Intel® Core™ i5/ i9 processor with 8G/16G DDR4 memory
- 3 x GbE, 1 x RS-232, 2 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

### WISE-EdgeLink



### 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

NEW



### UNO-430

Intel Atom® Explosion-Protected IP66 Waterproof Gateway

- Intel Atom® E3950 quad-core processor with 8GB DDR3L memory
- 2 x GbE, 2 x RS-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

NEW



### 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

**NEW**



### UNO-238

#### Intel® Core™ i Compact IoT Edge Computer

- 8<sup>th</sup> Gen Intel® Core™ i 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

**WISE-DeviceOn**



### 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

**NEW**



### 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)

**WISE-EdgeLink**



### WISE-710

#### ARM Cortex™-A9 Industrial Gateway

- NXP® ARM® Cortex™-A9 i.MX6 dual-core 1.0 GHz processor
- 2 x GbE, 3 x COM, 1 x Micro USB, and 1 x Micro SD slot
- Optional mPCIe expansion slot for wireless modules
- Operating system Linux Ubuntu 16.04 support
- ESRP package: supports WISE-Edgelink

## Modular Automation Box PCs

### Pocket-Size Modular Box PCs

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

**NEW**



**WISE-EdgeLink**

### UNO-2271G

- 2 x GbE, 1 x USB 3.0, 1 x HDMI, 2 x USB 3.2 for N6211 CPU
- ESRP package: supports Azure IoT Edge, WISE-EdgeLink
- Extension kit: UNO-2271G-EKBE (supports up to 1 x iDoor installation)

### 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

**NEW**



**WISE-EdgeLink**

### UNO-2372G

- 2 x GbE, 4 x USB 3.0, 3 x USB 2.0, 1 x HDMI, 1 x DP
- ESRP package: supports Azure IoT Edge, WISE-EdgeLink
- Extension kit: UNO-2372G-EKBE (supports up to 2 x iDoor installation)

### 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



**WISE-EdgeLink**

### UNO-2484G

- 4 x GbE, 4 x USB 3.0, 1 x HDMI, 1 x DP, 4 x RS-232/422/485
- ESRP package: supports Azure IoT Edge, WISE-EdgeLink
- Extension kit: UNO-2484G-EKBE, UNO-2484G-S2AE (supports up to 4 x iDoor installation or external swappable HDD/SSD)

## iDoor Modules

**CANopen**

**EtherCAT**

**POWERLINK**



### Industrial Fieldbus PCM-26 Series

Industrial Fieldbus iDoor Modules Support Common Automation Protocols

- CANOpen
- PROFIBUS
- PROFINET
- EtherCAT
- EtherNet/IP
- Sercos 3
- POWERLINK

**WiFi**

**3G LTE**



### Wireless Communication PCM-24S Series

Wireless Communication iDoor Modules Enhance Connectivity for Industrial IoT

- Wi-Fi/ Bluetooth
- LTE/ GPS

**GIGAVISION**

**USB VISION**



### 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
- GigaLAN
- 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.

## Modular Industrial Panel PCs

### 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

- 6<sup>th</sup> 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® i3-8145UE, 8 GB of DDR4 RAM



**TPC-B500-633AE**  
Intel® i3-6100U, 8 GB of DDR4 RAM



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



**FPM-B700-AE**  
Modular monitor box w/ 2 x I/O slots for FPM-M700 I/O modules

**TPC-B510-853AE**  
Intel® i5-8365UE, 8 GB of DDR4 RAM

**TPC-B500-653AE**  
Intel® i5-6300U, 8 GB of DDR4 RAM

**TPC-B200-E12AE**  
Intel Atom® E3940 1.60 GHz, 4G of DDR3L RAM

**TPC-B510-873AE**  
Intel® i7-8665UE, 8 GB of DDR4 RAM

**TPC-B500-673AE**  
Intel® i7-6600U, 8 GB of DDR4 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-D21W-BE**  
21.5" FHD



**FPM-D24W-BE**  
23.8" FHD

## All-in-One High Performance Control Panels

NEW



### TPC-300 Series with Intel® Core™ i3 12" / 15" / 17" / 23.8" TFT LED LCD Intel® Core™

- 8<sup>th</sup> Gen Intel® Core™ i3-8145UE / i5-8365UE / i7-8665UE processor with 8G DDR4 SDRAM
- 1 x USB 2.0, 4 x USB 3.2, 2 x RS-232/422/485, 1 x DP
- Supports dual channel memory
- Supports M.2 NVMe high speed storage
- Supports TPM 2.0, TSN

## All-in-One Industrial Thin Clients

NEW



### TPC-xx51A Series/ TPC-xx51B Series 5.7" / 6.5" / 10.1" / 12.1" / 15" / 15.6" / 17" TFT LED LCD Intel Atom® Dual-/ Quad-Core Industrial Thin Client

- Intel Atom® dual-core E3827/ E3845 Celeron® quad-core J1900
- IP66-rated front panel with durable true-flat 5-wire resistive touchscreen
- Wide operating temperature (-20 ~ 60 °C)
- Supports iDoor technology and VESA mounting (B Series)

Coming Soon



### TPC-300 Series with Intel Atom® 6.5" / 12" / 15" / 17" / 23.8" TFT LED LCD Intel Atom® (2021 Q3)

- 6.5", 12", 15", 17" & 23.8" TFT LED LCD
- Intel Atom® Elkhart Lake, 4GB DDR4
- 4 x USB 3.2, 2 x RS-232/422/485, Audio Line out, Mic in, optional Display port
- InBand ECC, TPM 2.0, Optional TSN
- IP66 and true flat design
- iDoor, M.2, mPCIe
- Wide operating temperature (-20~60 °C)

## 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/ i3-6100U processor
- 7H 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



### TPC-125H/ 815H C1D2 Certified 12.1"/15" TFT LED LCD Intel Atom® Quad-Core Industrial Thin Client

- Intel Atom® quad-core E3845 1.9GHz w/ 4GB of 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 HDD



### TPC-1881WPH C1D2 Certified 18.5" TFT LED LCD Intel® Core™ i5 Touch Panel Computer

- Intel® Core™ i5-4300U with 4GB/ 8GB DDR3L SDRAM
- Certified with UL CID2 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

## Web Browser Terminals



### 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

## Industrial Monitors



### FPM-7000 Series True-flat Industrial Grade Monitor

- 6.5" / 12" / 15" / 15.6" / 18.5" / 21.5"
- Robust design with IP65/ 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 IP65/ 66 hardened anodized front bezel & SS rear cover
- Wide operating temperature (-20 ~ 60 °C)
- Supports panel, rack, wall, desktop, and VESA arm mounting

## Semi Industrial Monitors

NEW



### 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

NEW



### 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)

## Domain Industrial Monitor



### 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/ -4~140 °F)
- Anti-glare screen with tempered glass and IP66-certified front panel
- Supports panel, VESA, wall, desktop, and stand mounting

## Panel PCs

### Configurable



### PPC-6000C Series

#### 15" / 17" / 19" 6<sup>th</sup>/ 7<sup>th</sup>/ 8<sup>th</sup>/ 9<sup>th</sup> Gen Intel® Core™ i7/ i5/ i3 Panel PC w/ Selectable Mini-ITX Motherboard

- 6<sup>th</sup>/ 7<sup>th</sup>/ 8<sup>th</sup>/ 9<sup>th</sup> Gen Intel® Core™ i, 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" 6<sup>th</sup>/ 7<sup>th</sup> Gen Intel® Core™ i5/i3 Fanless Panel PC

- Intel® Core™ i3-6100U/ 7100U/ 1115G7E, i5-6300U/ 7300U/ 1145G7E or i7-7600U/ 1185G7E optional
- Wide input voltage range (9~32 V<sub>DC</sub>) and built-in isolated RS-422/ 485
- Supports PCI/ PCIe expansion and triple display
- Supports M.2 and TPM



### PPC-3000 Series

#### 10.4" / 12.1" / 15" / 17" / 19" Intel Atom® Quad-Core Fanless Panel PC

- Intel Atom® quad-core E3940/ E3845 processor
- Wide operating temperature range (-20~60 °C)
- Wide input voltage range (9~32 V<sub>DC</sub>) and built-in isolated RS-422/ 485
- Supports PCI/ PCIe expansion and triple display

### General Purpose



### PPC-300 Series

#### 15.6" / 18.5" / 21.5" / 23.8" 6<sup>th</sup>/ 7<sup>th</sup>/ 11<sup>th</sup> Gen Intel® Core™ i3/ i5/ i7 Fanless Panel PC

- Intel® Core™ i3-6100U/ 7100U/ 1115G7E, i5-6300U/ 7300U/ 1145G7E or i7-7600U/ 1185G7E optional
- Wide input voltage range (12~24 V<sub>DC</sub>)
- Supports dual display and TPM



### PPC-3000S 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<sub>DC</sub>)





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



Active Stylus



Multi-Battery Charging Station



Multi-Tablet Charging Station



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

- 1200 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



Vehicle Docking Station



VESA Docking Station



Office Docking Station



Extension Modules



Holster



Hand Strap



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

- 1200x 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

### Modular Controllers



#### 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

### Panel Controllers (Visualization)



#### AMAX-548

Real-Time SoftPLC and SoftMotion Panel 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

## Fieldbus and I/Os

### Industrial Fieldbus I/O & Peripheral

#### PCM-26 Series

- CANOpen
- PROFIBUS
- PROFINET
- EtherNet/IP



#### PCM-24/ 27 Series

- MRAM
- Analog I/O or AI/AO
- Digital I/O or DI/DO
- PoE



### Industrial Slice I/Os

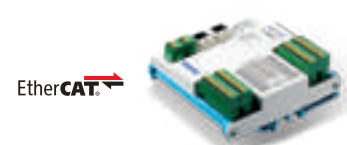


#### AMAX-5000 I/O Series

Compact Modular EtherCAT Slice I/O

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

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



### 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

## Expansion Modules



### ADAM-5091

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 modules
- 16 x DI/DO modules
- 2 x counter/ frequency modules

## WISE-EdgeLink



### 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-PCle)
- 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-3668

4-ch Relay Output Module

- 2-ch form A and 2-ch form C
- Contact rating: 0.3A@125V<sub>AC</sub>, 1A@30V<sub>DC</sub>



## Protocol Gateways



### EKI-1242 Series Modbus RTU/TCP to Various Industrial Protocols Fieldbus Gateway

- Dual power inputs
- Designed for protocol extensibility and adaptation
- Built-in real-time diagnostics
- I models support a wide operating temperature range

## Modbus Gateways/Routers



### EKI-1220(R) 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
- Optional fiber optics connectivity (1-port ST or 2-port SC)

## Serial Device Servers



### EKI-1500 Series 1/2/4/8/16-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)

## 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

## TSN Ethernet Switch



### EKI-8510G Industrial Time-Sensitive Networking (TSN) Ethernet Switch

- Fully layer 2 managed features
- IEEE 802.1AS Time Synchronization
- IEEE 802.1Qbu Frame Preemption
- IEEE 802.1Qbv Time Aware Shaper
- IEEE 802.1CB Seamless Redundancy

## L3 Managed Switches



### EKI-9700/ 9600 Series Industrial Layer 3 Managed Switch

- Static routing/ NAT (EKI-9612G, EKI-9628G)
- Static routing, RIP v1/ v2, OSPF v2, VRRP (EKI-9728G)
- Supports up to 4 x 10GbE fiber ports (EKI-9728G)
- -40 ~ 75 °C wide operating temperature

## L2 Managed Switches



### EKI-7700 Series Industrial Managed Switch

- High variety of port combinations
- Supports Advantech Security Pack for cyber security
- IXM function enables fast deployment
- IP30-rated chassis design
- EN 50121-4 and NEMA TS-2 certified



### EKI-5000 Series Industrial Entry-level Managed Switch

- Provides commonly used managed switch features
- ATEX, C1D2 certification
- Supports Advantech IXM/NMS technology
- Supports industrial protocols (EtherNet/IP, PROFINET, Modbus/TCP)
- Supports -40 ~ 75 °C wide operating temperatures

## 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/ Giga Ethernet options
- IP40/ IP54/ IP67 and rugged housing

## IEC 61850-3 Power Energy Switches



### EKI-9200 series Industrial IEC 61850-3 Switches

- IEC 61850-3 & IEEE1613 certified.
- Dual power inputs (90~264V<sub>AC</sub> / 88~370V<sub>DC</sub>) models available
- Flexible port options, providing up to 20 x fiber ports.
- Wide operating temperature range (-40 ~ 85 °C)

## 10G Ethernet Solutions



### EKI-7412G-4X/7428G-4X 10G Series Network Management System

- 10G uplink bandwidth supported
- Powerful and reliability managed features
- 1U 19 inch rack-mount design
- Up to 60 °C operating temperature

## 90W High Power PoE Solutions



### EKI-7712G-4FMPI/ EKI-2701MPI Industrial 802.3bt Managed Switch and Injector

- Up to 90W power transmission via 4-wire cable
- IEEE 802.3at/bt compliant
- Wide operation temperature (-40~70 °C)
- Full layer 2 managed features (EKI-7712G-4FMPI)

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



### EKI-2740 Series & IMC-390 Series

- Supports IEEE802.3 af/at PoE(+) standards
- Serves as power sourcing equipment (PSE)
- Designed with 10/100/1000Base-T and SFP or a fixed fiber transceiver

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



### EKI-2701 Series

- Supports IEEE802.3 at/af/bt standards
- Serves as power sourcing equipment (PSE)
- Extended operating temperature (-40~75 °C)
- EKI-2701MP1-5G supports 10/ 100/ 1G/ 2.5G/ 5G multi-speed data transmission

## Smart Dual Channel 802.3bt Media Converters



### IMC-595MPI

- Smart media converter with SFP uplink port and .bt 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-610-A & IMC-700 Series

- 10G standalone medial coverter (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

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.

DAQNavi



## PCI Express DAQ Cards

## Vibration Sensing Gateways

### 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



NEW

### PCIE-1805

32-ch, 16-bit Analog Input PCI Express Card

- Sample rate: 1 MS/s
- Resolution: 16-bit
- $\pm 10$  V to  $\pm 1$  V voltage measurement
- 0 ~ 20 mA or 4 ~ 20 mA current measurement
- Supports digital and analog triggers



NEW

### 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



### PCIE-1812

8-ch, 16-bit Simultaneous Sampling Multi-Function PCI Express Card

- Sample rate: 250 kS/s/ch
- Resolution: 16-bit
- Analog and digital triggers
- Waveform generator for AO channels



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



## PCI Express AO Cards

### PCIE-1824

32-ch, 16-bit Analog Output PCIe Card

- Resolution: 16-bit
- Update rate: static
- Output range:  $\pm 10$  V, 0 ~ 20 mA and 4 ~ 20 mA
- Synchronized output function
- High ESD protection (2,000 V<sub>ESD</sub>)

NEW



## PCI Express Digital I/O Cards

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



### 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 (IDI) with both dry and wet contact configurations
- Interrupt and noise filter for all IDI channels
- Suitable for both AC ( $> 80$  V<sub>AC</sub>) and DC low voltage load ( $< 60$  V) applications with frequent ON/ OFF switching
- Much less contact problems such as arcs, bounce, and noise



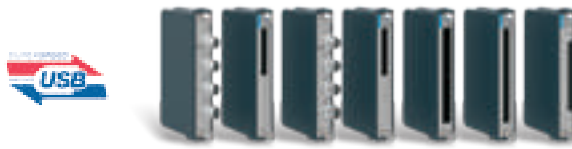
## Modular DAQ Chassis and Modules



### 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
- $\pm 27.5$  V high common-mode voltage range
- Measuring and output error  $< \pm 0.1\%$
- 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 V<sub>oc</sub> 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)
- 16 x isolated DI/O



### MIC-1816R

#### DAQ Platform with ARM® Cortex®-A9

- i.MX6 Quad - 4x Cortex-A9 processor
- Build-in 4G EMMC NAND Flash for OS (Yotco 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

NEW



### MIC-1842

#### High Speed DAQ Platform w/ Intel® Processor

- 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

## Machine Condition Monitoring Software

### DAQNavi



### 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.

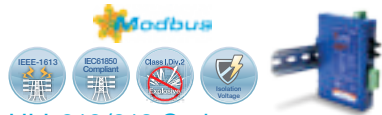
### Serial to Fiber Isolated Converters



#### ULI-211 Series

RS-232/422/485 to Multi-Mode ST Fiber

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



#### ULI-212/213 Series

RS-232/422/485 to Single-Mode ST/SC Fiber

- Up to 3kV 3-way isolation and 10~48V<sub>DC</sub> power input
- Up to 115.2 kbps data rate and -40 ~ 80 °C operating temp.
- Supports Modbus ASCII/RTU protocols
- ULI-212CI (BB-FOSTCDRI-ST): serial/SM ST converter
- ULI-213CI (BB-FOSTCDRI-SC): serial/SM SC converter
- ULI-213E (BB-FOSTCDRI-PH-SC): IEC 61850-3 serial/SM SC converter

### RS-232 to RS-422/485/TTL Converters



#### ULI-220 Series

- Converts RS-232 to RS-422, RS-422/485, RS-485, TTL signals
- Various connector options: DB-9, terminal block, RJ-11
- Up to 2kV 3-way isolation and 10~48V<sub>DC</sub> power input
- 115.2 kbps ~ 460Kbps data rate and 0 ~ 70 °C / -40 ~ 80 °C operating temp.
- Supports Modbus ASCII/RTU protocols
- ULI-223D (BB-422PP9R): RS-232 to RS-422 (DB-9) converter
- ULI-224TC (BB-485LDR9): RS-232 to RS-422/485 (TB) isolated converter
- ULI-226D (BB-485SD9R): RS-232 to RS-485 (DB-9) converter

### RS-232/422/485/CANbus Repeaters / Isolators



#### ULI-230 Series

- Extend additional distance: RS-232 15m; RS-422/485 1,200m
- Up to 2kV 3-way isolation and 10~48V<sub>DC</sub> power input
- Up to 115.2 Kbps data rate and -40 ~ 85 °C operating temperature
- ULI-232DS (BB-9SPOP2): RS-232 isolator with DB-9
- ULI-234TCI (BB-485OPDRi): RS-422/485 (TB) isolated repeater
- ULI-234TE (BB-485OPDRi-PH): IEC 61850-3 RS-422/485 (TB) isolated repeater

### RS-232/422/485 Surge Suppressors



#### ULI-240 Series

- 3-stage surge protection on every data line
- Protected signal ground connection with dedicated chassis ground lug
- Wide operation temperature up to -40 ~ 80 °C
- ULI-242T (BB-232HESP): RS-232 (TB) surge suppressor
- ULI-244TI (BB-HESP4DR): RS-422/485 (TB) surge suppressor
- ULI-246T (BB-485HESP): 2-wire RS-485 (TB) surge suppressor

### RS-232 Data Taps / Data Splitters



#### ULI-250/260 Series

- Data taps: monitor and record RS-232 data streams, no external power required
- Data splitter: enable 2 PCs to connect one RS-232 serial device without switching
- ULI-252D (BB-9PCDT): RS-232 (DB-9) data taps
- ULI-262D (BB-9PMD5): RS-232 (DB-9) data splitter

### 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-USO9ML2-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-485USB9F-2W): USB 2.0 to 2-wire RS-485 (DB-9) converter

### Industrial-Isolators USB 2.0 / 3.0 Hubs



#### ULI-410 Series

- Expand one USB port to 4 or 7 USB ports
- Up to 4kV isolation and 15kV / 8kV ESD protection
- Powered by USB port or 10-30V<sub>DC</sub> power input, -40 ~ 80 °C operating temp.
- ULI-414LIB (BB-USBHUB4OEM): 4-port USB 2.0 hub bare board
- ULI-414CI (BB-UHR304): 4-port USB 2.0 isolated hub module
- ULI-417H (BB-USH207): 7-port USB 3.0 hub

### USB Isolators



#### ULI-420 Series

- Up to 4kV isolation and 15kV / 8kV ESD protection for PCs, Laptops, Equipment
- Full (12Mbps) USB speed with high retention USB connectors
- Powered by USB port or 10-30V<sub>DC</sub> power input, -40 ~ 80 °C operating temp.
- ULI-421CL (BB-UH401): 1-port USB 2.0 isolator
- ULI-421C (BB-UHR401): 1-port USB 2.0 isolator
- ULI-422C (BB-UHR402): 2-port USB 2.0 isolator

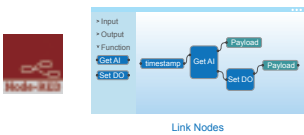


Transformation for IIoT's Wider & Larger Applications

# 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.

## Node-RED



### 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.
- ADAM-6700 series have built-in sample flows on Node-RED including cloud/database access (SQL Azure), data transmission (MQTT, Modbus), data visualization, logic control, and extended I/O

## Intelligent I/O Gateways



### 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/ 8 DI
- ADAM-6766: 6 Relay/ 12 DI

##### WISE-EdgeLink Version

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

## USB to MiniPCle Adaptors



### ADAM-6700E

- Extend wireless connectivity for ADAM-6700
- Connection between ADAM-6700 series via USB cable
- 1 x wireless communication interface (mini-PCle)
- 1 x micro-B USB
- 1 x nano SIM card slot
- LEDs for power, \* reserve LTE module (optional)
- Power reversal protection

## 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-6317: 8AI/11DI/ 10DO
- ADAM-6360D: 8SSR/ 14DI/ 6DO
- ADAM-6366: 6Relay/ 18DI/ 6DO
- ADAM-6315: RTD module

## Daisy-Chain Ethernet I/Os



### 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: 4AO/ 4DI
- ADAM-6250: 8-ch DI/ 7-ch DO module
- ADAM-6251: 16DI
- ADAM-6266: 4Relay/ 4DI

## Smart Ethernet I/Os



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

## Serial I/Os



### 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<sub>DC</sub>
- Power input: 10~48V<sub>DC</sub>

#### Module Selection

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

### ADAM-4000 Series RS-485 I/O Modules

- Watchdog timer
- ±35 V<sub>DC</sub> over voltage protection
- 3,000 V<sub>DC</sub> voltage isolation

#### Module Selection

- ADAM-4015: 6-ch RTD
- ADAM-4017+: 8AI
- ADAM-4018+: 8-ch thermocouple
- ADAM-4024: 4AO/ 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

# Wireless 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-4471/ WISE-4671**  
Industrial NB-IoT/LTE-M IoT Wireless I/O Module

- Dual mode support with global coverage in NB-IoT and LTE-M
- Faster and easier deployment with existing infrastructures
- Supports direct public cloud service for IoT integration



**WISE-4610**  
Advanced Industrial LoRaWAN IoT Wireless I/O Module

- Longer communication range compare with 2.4GHz for wide range outdoor application
- Better penetration through concrete and steel with less interference
- Rechargeable battery inside with solar panel charging



**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



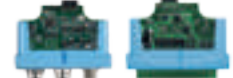
**WISE-S200**  
I/O and Sensor Module for WISE-4200/4400 Series

- WISE-S214 4 x AI & 4 x DI
- WISE-S215 4 x RTD
- WISE-S231 temperature & humidity sensor
- WISE-S250 6 x DI, 2 x DO, 1 x RS-485
- WISE-S251 6 x DI & 1-port RS-485



**WISE-S400**  
I/O and Sensor Module for WISE-4400 Series

- WISE-S414 4 x AI (upon request)
- WISE-S472 1 x D1, 1-port RS-485 & 1-port RS-485/232



**WISE-S600/ WISE-S600T**  
I/O Module for WISE-4600 Series

- |                                                          |                                                                  |
|----------------------------------------------------------|------------------------------------------------------------------|
| M12:                                                     | Block:                                                           |
| • WISE-S614 4 x AI & 4 x DI                              | • WISE-S615T 4 x RTD                                             |
| • WISE-S615 4 x RTD                                      | • WISE-S617T 2 x AI, 2 x DI, 1 x DO & 1-port RS-485/232 terminal |
| • WISE-S672 6 x DI, 1 x RS-485 & 1 x RS-485/232 terminal |                                                                  |

### 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



**Wizzard™ 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.

### 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 (250k & 500k) & J1708/J1587 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

- J1979, 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



NEW



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

<b>China</b>	Kunshan 86-512-5777-5666	<b>Taiwan</b>	Taipei 886-2-7732-3399	<b>Netherlands</b>	Eindhoven 31-40-267-7000	<b>Poland</b>	Warsaw 00800-2426-8080	<b>USA</b>	Milpitas, CA 1-408-519-3898
--------------	-----------------------------	---------------	---------------------------	--------------------	-----------------------------	---------------	---------------------------	------------	--------------------------------

## Worldwide Offices

### Asia Pacific

<b>Taiwan</b>	
Toll Free	0800-777-111
Taipei & IoT Campus	886-2-2792-7818
Taichung	886-4-2372-5058
Kaohsiung	886-7-392-3600

<b>China</b>	
Toll Free	800-810-0345
Beijing	86-10-6298-4346
Shanghai	86-21-3632-1616
Shenzhen	86-755-8212-4222
Chengdu	86-28-8545-0198
Hong Kong	852-2720-5118

### Asia Pacific

<b>Japan</b>	
Toll Free	0800-500-1055
Tokyo	81-3-6802-1021
Osaka	81-6-6267-1887
Nagoya	81-0800-500-1055
Nogata	81-949-22-2890

<b>Korea</b>	
Toll Free	080-363-9494/5
Seoul	82-2-3660-9255

<b>Singapore</b>	
Singapore	65-6442-1000

<b>Malaysia</b>	
Kuala Lumpur	60-3-7725-4188
Penang	60-4-537-9188

<b>Thailand</b>	
Bangkok	66-02-2488306-9

<b>Vietnam</b>	
Hanoi	84-24-3399-1155
Hochiminh	84-28-3836-5856

<b>Indonesia</b>	
Jakarta	62-21-751-1939

<b>Australia</b>	
Toll Free	1300-308-531
Melbourne	61-3-9797-0100

<b>India</b>	
Bangalore	91-94-4839-7300
Pune	91-94-2260-2349

### Europe

<b>Netherlands</b>	
Eindhoven	31-40-267-7000
Breda	31-76-523-3100

<b>Germany</b>	
Toll Free	00800-2426-8080/81
Munich	49-89-12599-0
Düsseldorf	49-2103-97-855-0

<b>France</b>	
Paris	33-1-4119-4666

<b>Italy</b>	
Milan	39-02-9544-961

<b>UK</b>	
Newcastle	44-0-191-262-4844
London	44-0-870-493-1433

<b>Spain</b>	
Madrid	34-91-668-86-76

<b>Sweden</b>	
Stockholm	46-0-864-60-500

<b>Poland</b>	
Warsaw	48-22-31-51-100

<b>Russia</b>	
Moscow	8-800-555-01-50
St. Petersburg	8-812-332-57-27
	8-921-575-13-59

<b>Czech Republic</b>	
Ústí nad Orlicí	420-465-524-421

<b>Ireland</b>	
Galway	353-91-792444

### Americas

<b>North America</b>	
Toll Free	1-888-576-9668
Cincinnati	1-513-742-8895
Milpitas	1-408-519-3898
Irvine	1-949-420-2500
Ottawa	1-815-433-5100
Chicago	1-888-576-9668
Boston	1-800-866-6008

<b>Brazil</b>	
Toll Free	0800-770-5355
São Paulo	55-11-5592-5367

<b>Mexico</b>	
Toll Free	1-800-467-2415
Mexico City	52-55-6275-2777
Guadalajara	52-33-3169-7670

### Middle East and Africa

Israel	072-2410527
Turkey	90-212-222-0422
Turkey-Bursa	90-224-413-3134

# ADVANTECH

Enabling an Intelligent Planet

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

Please verify specifications before quoting. This guide is intended for reference purposes only.

All product specifications are subject to change without notice.

No part of this publication may be reproduced in any form or by any means, electronic, photocopying, recording or otherwise, without prior written permission of the publisher.

All brand and product names are trademarks or registered trademarks of their respective companies.

© Advantech Co., Ltd. 2021



8600000558