

# Product Selection Guide



- Embedded Design-In
- Industrial-IoT
- Smart City Solutions

# Table of Contents

## Corporate Information

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About Advantech	1
Advantech AOnline Sales Force	3
Advantech iPlanet Care	5
One-Stop Global Services	6

## Embedded Design-In

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### Embedded Computing

About Embedded Computing	7
Embedded Boards, Systems and Modules	8
IoT Software Solutions and Platform Services	9
WISE-PaaS: IoT Software Platform Services	10
<b>Application Story</b>	
Fast-build Reliable Wireless Senor Networks for Environmental Monitoring in IoT-based Industrial Electroplating Factory	11
Electronic Bus Fare Collection System	12
Intelligent COM Module for Logistics Info System	13
Outdoor Self-service Bicycle Rental System	14
Intelligent Wayfinding Signs Enhance Drivers' Experience	15
Expansible Embedded PCs Guarantee Non-stop Recording with PoE Compliant Ethernet Ports for Video Surveillance	16
IoT-powered Logistics Monitoring Systems	17
Intelligent Agriculture System with Advantech Intelligent Gateway and Sensor Node Integration	18
<b>Selection Guide</b>	
Wireless IoT Gateways & Nodes	19
RISC Computing Platforms	20
Computer On Modules	23
MI/O Extension SBCs	27
3.5" Single Board Computers	29
5.25" Single Board Computers	31
PC/104 CPU Modules	32
3.5" SBC Chassis	34
Industrial Motherboards	35
Fanless Embedded Box PCs	41
Digital Signage Players with Ready Software	47
Gaming Platforms	49
Industrial Display Systems	51
Intelligent Module Solutions	59

### Networks & Communications

About Video Processing Solution	65
HEVC Broadcast Video Encoder Card	66

### Applied Computing

About Applied Computing	67
Industrial Tablet PCs	68
Medical & Fitness Computing Platforms	69
Rugged Computing Platforms	70
Hardware Acceleration & Graphic Technology	71

## Industrial-IoT

---

### Industrial Automation

About Industrial Automation	73
Intelligent Automation, Seamless Integration	75

#### Solution Forums

Enabling an Intelligent Planet	77
Smart Manufacturing	79
Power and Energy	81
Oil and Gas	82
Water Treatment	83
Intelligent Agriculture	84
Realizing IoT Business Success with WebAccess+ Alliance	85

<b>Selection Guide</b>	
Advantech WebAccess	86
Compact PCI Systems	87
Motion Control	88
Power & Energy Automation	93
Operator Panels	95
Automation Panels	97
Panel PCs	103
Serial Communication Cards	105
Embedded Automation Computers	107
DIN-Rail IPCs	111
Modular I/O System	115
IoT Wireless I/O Modules	119
IoT Ethernet I/O Modules	122
RS-485 I/O Modules	125
Data Acquisition Boards	130
Signal Conditioning Modules and Terminal Boards	141
Industrial USB I/O Modules	143

## Intelligent Systems

About Intelligent Systems	145
Star Products	146
<b>Selection Guide</b>	
Industrial Computer Chassis	147
Server-grade Motherboards	151
Server-grade Chassis	153
Video Wall Controller	155
GPU Server	156
Industrial Storage	157
ATX Motherboards	159
PICMG 1.3 System Host Boards	161
PICMG 1.0 Single Board Computers	163
Half-Size Single Board Computers	165
PICMG 1.3 Full-Size SHB Backplanes	167
PCI/ISA Backplanes	168
Backplanes Compatible with Half-Size SBCs	169
Extension Modules for Slot SBCs	170
PICMG 1.3 Full-Size SHB Backplanes	171
PICMG 1.0 Full-Size SBC Backplanes	177
Half-Size SBC Backplanes	181
IVS Platform Structure	183

## iConnectivity

About iConnectivity	185
Star Products	186

# Smart City Solutions

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## Intelligent Service

• <b>Digital Logistics and Fleet Management</b>	
All-in-one Mobile Data Terminal	189
Smart Display	190
In-vehicle Box Computers	191
Vehicle Mount Computers	192
Industrial Tablet PCs	193
Industrial Tablet PC Peripherals	194
• <b>Digital Healthcare</b>	
Medical Computers	197
Computerized Medical Carts	199
Medical Tablets and Clinical Display	200
Healthcare Infotainment Terminals	201
• <b>Intelligent Retail and Hospitality</b>	
Interactive Digital Signage	204
UTC Peripherals & Installation Accessories	207
POS	209

# About Advantech

## Advantech: Partnering for Smart City & IoT Solutions

Founded in 1983, Advantech is a leader in providing trusted innovative embedded and automation products and solutions. Advantech offers comprehensive system integration, hardware, software, customer-centric design services, and global logistics support; all backed by industry-leading front and back office e-business solutions. Advantech has always been an innovator in the development and manufacture of high-quality, high-performance computing platforms. We cooperate closely with our partners to help provide complete solutions for a wide array of applications across a diverse range of industries. To realize our corporate vision of Enabling an Intelligent Planet, Advantech will continue collaborating and partnering for smart city and IoT solutions.

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

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

## World-Class Recognition

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



## Quality and Environmental Compliance

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

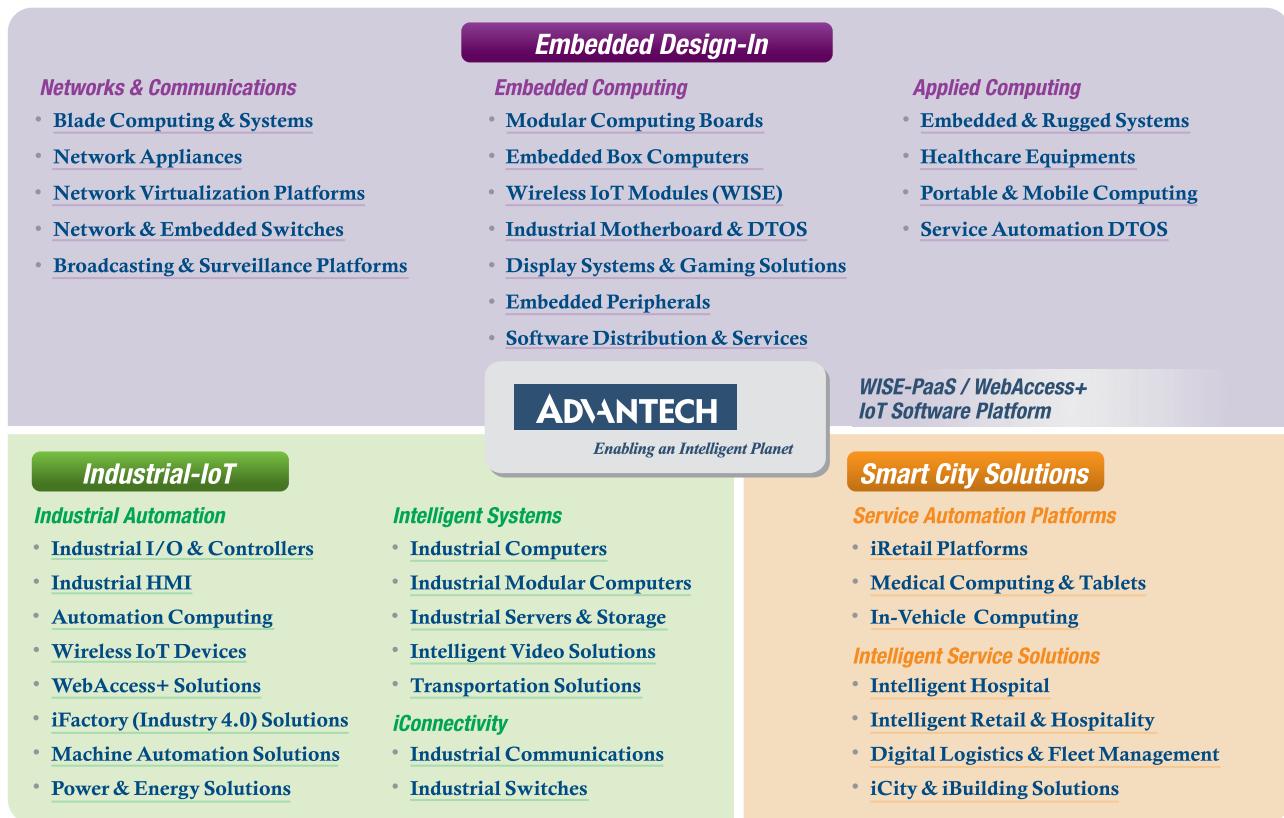
- ISO 9001 Certification
- ISO 14001 Certification
- ISO 13485 Certification
- OHSAS 18001 Certification
- TL9000 Certification
- ISO 17025 Certification
- RoHS Directive Compliance
- WEEE Directive Compliance
- Authorized Sony Green Partner
- REACH SVHC Directive Compliance
- EICC Conflict Minerals Declaration



## Timely Support at Your Convenience

Advantech has over 20 regional hotlines and offices throughout 92 cities, in 21 countries, with over 7,300 employees to provide efficient, professional services for customer care, product selection, technical support, and order handling. Through our call centers and online stores, customers worldwide enjoy the convenience of Advantech's multi-service channels to reduce business turnaround time. Together with the four customer service centers in Taiwan, China, Europe and the United States, our global service network offers an extensive spectrum of services that includes warehousing, logistics, peripheral certification, sourcing & purchasing, and RMA & value-added services, and technical support & training.

## Advantech Corporate Structure and Growth Engines



In response to Smart City and Industry 4.0 trends, Advantech has established three business groups, namely Embedded Design-In, Industrial-IoT, and Smart City Solutions. These three are aligned to three target markets: Embedded Design-In serves Industrial Equipment Manufacturers (IEMs), and is equivalent to Advantech's central kitchen. Industrial-IoT serves Industry 4.0 and IoT-related industries, and Smart City Solutions serves smart city solution providers in various fields.

In order to cater to market trends, Advantech has undergone significant transformations, from products to solutions, from regional to global consolidation, and has also implemented vertical-market oriented (sector-lead) concepts in an effort to optimize operations and enhance resource-integration benefits.



# Advantech Online Sales Force

## Enabling an Intelligent Planet

To provide fast and convenient services to our customers and users, Advantech provides several easily-accessible web portals including: the Advantech.com website, Buy.Advantech.com, and an Online Support Portal to serve different requirements. To supplement our electronic contacts, we've also built up regional call centers to take care of customers who prefer human contact. These methods allow us to deliver our services by live chat, phone line and email anytime and anywhere.

## 35 Teams in 25 Cities Serve Global Inquiries



Milpitas



Cincinnati



Düsseldorf



Beijing



Taipei



Tokyo



Victoria

## Advantech.com Website

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



## Online Store



### Buy.Advantech.com

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

## Online Support

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

- Technical Documents: Manuals, datasheets, updated drivers and utilities-all available for download through the support portal.
- 3D Product Models: Simulated products in 3D format to provide detailed visualizations for evaluation.
- Online Training: Self-training documents and videos to provide trainees with integrated information.
- Online Catalog: A comprehensive online catalog with extensive product information.



## 24/7 Online Service



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

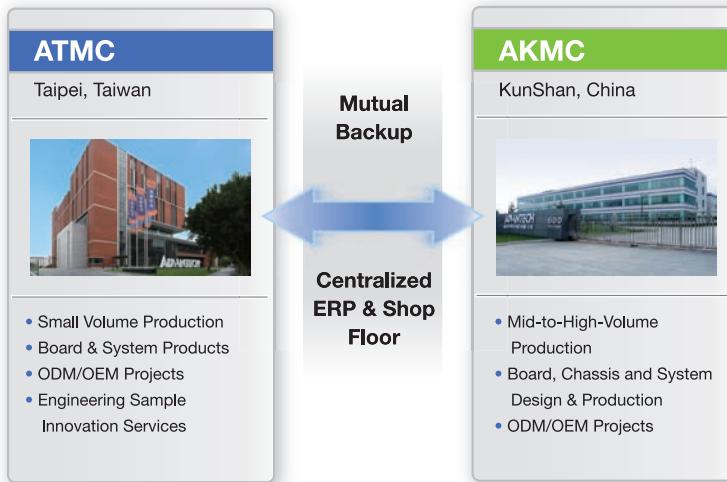
### Global Hotlines

US /Canada	1-888-576-9668	Europe	00800-2426-8080/8081	China	800-810-0345/8389
Taiwan	0800-777-111	Japan	0800-500-1055	Korea	080-363-9494/9495
Singapore	+65-6442-1000	Malaysia	1800-88-1809	Australia	1300-308-531
Thailand	66-2-248-3140	Indonesia	+62-21-7511939	Mexico	1-800-467-2415
India	1-800-425-5070/71	Brazil	0800-770-5355	Russia	8-800-555-01-50 (Moscow) 8-800-555-81-20 (St. Petersburg)
Colombia	57-1381-2858				

# Advantech iPlanet Care

## Manufacturing

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



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

## Configure To Order Services

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

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>• Online intelligent configuration</li> <li>• Comprehensive approach to complex configuration solutions</li> </ul> | <ul style="list-style-type: none"> <li>• Local customized configuration services</li> <li>• 2 year global warranty covering system &amp; peripherals integrated</li> </ul> |
|---|--|



## Certified Quality Assurance System

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

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>• Always strive for overall customer satisfaction</li> <li>• Continuous improvement</li> </ul> | <ul style="list-style-type: none"> <li>• Apply closed-loop mechanisms to resolve problems</li> </ul> |
|---|--|

At Advantech, quality is our main priority. A complete line of safety, EMC and reliability measures such as ESD, vibration, drop testing, temperature, humidity and HALT chambers are available to ensure our products meet the strictest standards. All facilities are at least ISO 9001 and 14001 certified while others hold additional certifications such as ISO 13485, 17025, TL9000 and OHSAS18001. An environmental program that focuses on reducing, reusing and recycling of materials throughout the manufacturing process is also applied at Advantech. All our products are 100% RoHS compliant and Environmental Management Systems such as QC080000 are applied to meet worldwide environmental requests. Advantech's efforts towards environmental protection have been recognized by Sony since 2004 (Sony Green Partner).

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>• Complete ISO coverage</li> <li>• Green policies</li> </ul> | <ul style="list-style-type: none"> <li>• Constant quality and reliability monitoring</li> <li>• Ease of access to quality contacts</li> </ul> |
|---|---|



# One-Stop Global Services

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



## Global Logistics Services

With strong integrated ERP and SAP supply chain solutions, our worldwide logistics network offers a wide range of options for different delivery models including local and global solutions that meet your unique needs and budget requirements.

Advantech's Logistics Service gives you the flexibility to simplify your logistical networks, bring your products to market on time, and enjoy a timely return on your investment.

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

## Global Peripheral Procurement Services

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

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

## Global Customer Support Services

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

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



# About Embedded Computing

## Worldwide Leadership in Embedded Design and Services

Founded in 1983, Advantech has provided leadership for innovative Embedded Core Computing products and services for over 30 years. With comprehensive product ranges, customer-centric design services, and an extensive global network, Advantech is your most trustworthy partner to empower numerous innovations in intelligent embedded computing. Advantech is dedicated to helping customers develop reliable and innovative embedded solutions. We not only provide the latest embedded hardware computing products, we also think about how to provide more value to embedded developers through a variety of embedded design-in and software services.

### Integrated Embedded Computing Solutions

Beyond Embedded Leadership in the IoT Era



### Embedded Boards

A full spectrum of embedded boards in multiple form factors from computer on modules, MI/O Extension single board computers, single board computers, to industrial motherboards, and continuous development of innovative form factors to meet customers changing needs.

### IoT Gateway & Intelligent Systems

Advantech embedded IoT gateways & intelligent systems analyze and transmit data from end devices, accelerating decision making that results in increased efficiencies. This helps customers acquire the intelligence to drive new design innovations, making business transformation a profitable action rather than a challenge.

### Industrial Displays and Modules

Industrial peripheral products such as storage, wireless , touch modules and displays, along with Advantech's software turn-key solutions, provide innovative choices for industrial PC applications and are fully compatible with Advantech embedded boards and systems.

### IoT Software Solutions and Platform Services

Provide integrated IoT software solutions and services to help customers develop different embedded applications. Professional services include WISE-PaaS IoT software platform services, Embedded BIOS/OS services and software API & utilities.

### Design-in Services

Streamlined design-in services fulfill engineering demands at the design-in phase and bring benefits which can shorten design and integration cycles, minimizing uncertainty and risk. Services include wide temperature and ruggedized solutions.

# Embedded Boards, Systems and Modules

## Integrated Technologies and Innovative Software Solutions

Advantech is continuously developing and delivering cutting edge solutions based on the latest platforms with proven high performance, reliability, longevity and excellent design quality to help customers speed time-to-market.



### IoT Software Platform Services

- Sensor and Device Management
- Data, System and Network Security
- Application Solution Suite
- Cloud Services & Infrastructure
- 3rd Party Cloud Platform Integration
- Integrated Development Environment



### RISC Computing Platforms

- RTX
- SMARC
- Qseven
- 2.5"/3.5" SBCs
- Box Computers
- Development Boards



### Computer On Modules

- COM Express® Basic Modules
- COM Express® Compact Modules
- COM Express® Mini Modules
- ETX/XTX Modules
- Qseven Modules



### MI/O Extension SBCs, Modules and Chassis

- MI/O Extension SBCs
- MI/O Extension Modules
- MI/O Extension Evaluation Boards



### Embedded Software Solutions

- McAfee Embedded Security
- Acronis Backup and Recovery
- Windows Embedded OS
- QNX OS
- SUSI API
- Embedded BIOS



### Wireless IoT Gateways & Nodes

- Wireless IoT Gateways
- Wireless IoT Nodes
- M2.COM IoT Modules
- Extension I/O Boards



### Fanless Embedded Box PCs

- Ultra Small Series
- Slim/ Mountable Series
- Multiple I/O Series
- Multi Expansion/High Performance Series
- High Value Series
- In-vehicle & Surveillance Series



### Digital Signage Players

- Ultra Slim Series
- OPS Series
- Cost Effective Fanless Series
- Graphic Enhanced Series
- Multi-Display Series



### Embedded Single Board Computers

- 3.5" SBCs
- PC/104 Modules
- EBX SBCs
- 5.25" SBCs



### Display Systems

- Industrial Display Kit
- High Brightness Displays
- Open Frame Monitors
- Panel Mount Monitors
- Digital Signage Displays
- Configurable Industrial Monitors



### Industrial Motherboards & Systems

- UTX and Systems
- Mini-ITX and Enclosures
- Thin Mini-ITX and Enclosures
- MicroATX • ATX



### Embedded Modules

- Storage Modules
- Memory Modules
- Wireless Modules
- Touch Modules



### Gaming Platforms

- Standalone (S Series)
- Economy (E Series)
- ConnectBus® (C Series)

# IoT Software Solutions and Platform Services

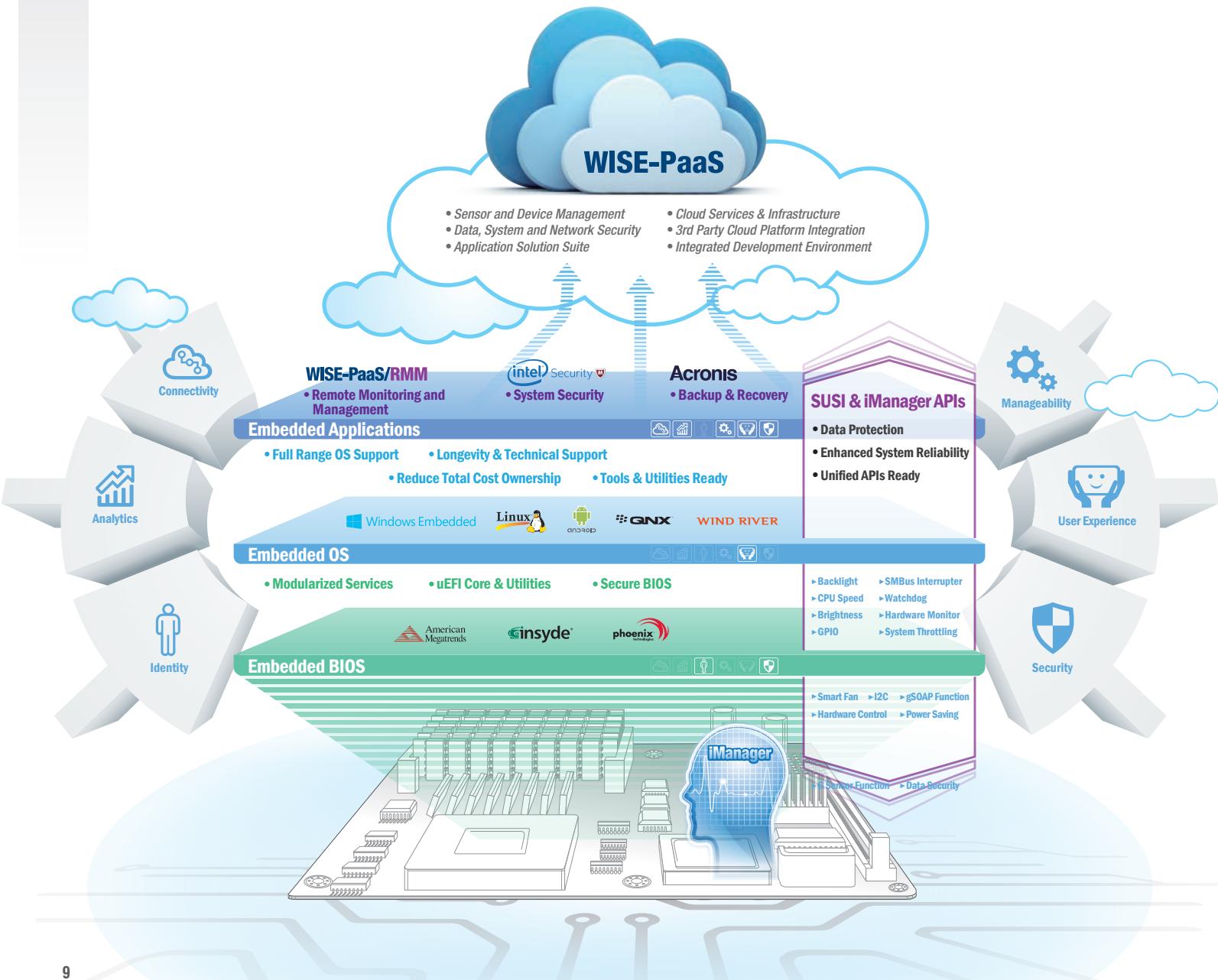
## Complete Solution for Rapid Application Development

### The Next Big Opportunity for Intelligent Systems

The next big opportunity for technology suppliers, system vendors, and service providers is being defined today by the migration from traditional embedded systems to intelligent systems. An intelligent system centers on the integration of higher plane hardware and software technologies that allow for user reconfiguration, enable autonomous operation, access the internet, and extend the usage model of the system. What is apparent is that intelligent systems, in combination with the cloud, location based services, and social networks, will be able to reach the last node or directly touch the consumer.

### Accelerating IoT Development with Complete Software Packages

Advantech provides customers with complete IoT software solutions and platform services to power, manage and connect your intelligent systems. The complete IoT software offerings - from BIOS, firmware, operating systems, software applications, and cloud platform can fully power the essential elements of intelligent systems: connectivity, manageability, identity, analytics, security, and user experience.



# WISE-PaaS: IoT Software Platform Services

## Powerful and Rapid Development Capabilities

WISE-PaaS is an integrated IoT software services and cloud platform providing an operating environment with stability, speed, integration, and modularity for system integrators. Key features include: 1) seamless sensor information gathering and transmission; 2) remote management for smart devices; 3) comprehensive protection for data, systems, and transmissions; 4) big data analytics and machine learning modules; 5) Open API/SDK and protocols conforming to industry standards. Clients can benefit from highly efficient management and fast inter connectivity among these cloud services to increase competitiveness and create new business opportunities.

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

WISE-PaaS/RMM is a powerful device management software that collects IoT terminal data through remotely managing devices and safeguarding equipment and critical data with real-time backups, and application restoration from Acronis.

### Microsoft Azure for Big Data Analytics and Machine Learning

Azure's IaaS and PaaS are pre-integrated with WISE-PaaS to provide IoT big data computing and analytics. Machine learning modules can analyze and predict market trends, helping improve products, services and strategies directly.

### WISE-PaaS/Security for System and Internet Security

World leading security brand McAfee offer Vulnerability Manager, ePolicy Orchestrator, Global Threat Intelligence to ensure top security of your systems and services.

### RESTful API for Easy Access across Different Programming Platforms

No matter which operating system or language, development can be easily integrated and information uploads through HTTP Request.

### WebAccess+ Integrated Software Suite and Solutions

WebAccess+ is an integrated software suite which combines WebAccess/SCADA, WebAccess/NMS (Network Management Software), WebAccess/IVS (Intelligent Video Software) and WebAccess/IMM (Interactive Multimedia) for diverse customers' need.

### Training and Consultancy for Lower Technical Barriers

Professional training and consultancy covering anything from sensors to the cloud facilitates the establishment of any kind of IoT solution.



# Fast-build Reliable Wireless Sensor Networks for Environmental Monitoring in IoT-based Industrial Electroplating Factory



## Introduction

The environment in electroplating factories are full of harmful chemicals such as volatile acid substances that are dangerous to workers and could damage and corrode factory equipment; so proper environmental protection for workers and their equipment is an essential requirement.

## Application Requirements

One particular electroplating factory in China was planning to improve all its manufacturing processes to make them safer. They planned to upgrade their existing equipment from traditional wired to a wireless solution to avoid chemical corrosion that could affect their wired infrastructure. They needed a reliable data acquisition solution with stable wireless connectivity that supports multiple sensor combinations.

## System Solutions

The customer chose Advantech's WISE IoT Solution which included one edge computer DS-570, and 35 sets of WPAN sensor nodes—WISE-1020 (IEEE 802.15.4e Mesh Network) to build a high-reliability wireless sensor network. Using Advantech DS-570 with simultaneous multi-display output support as a local control center, all WISE IoT Solution devices, including the WPAN control box, sensor nodes and gateway, were used for monitoring and management via the built-in remote WISE-PaaS IoT software.

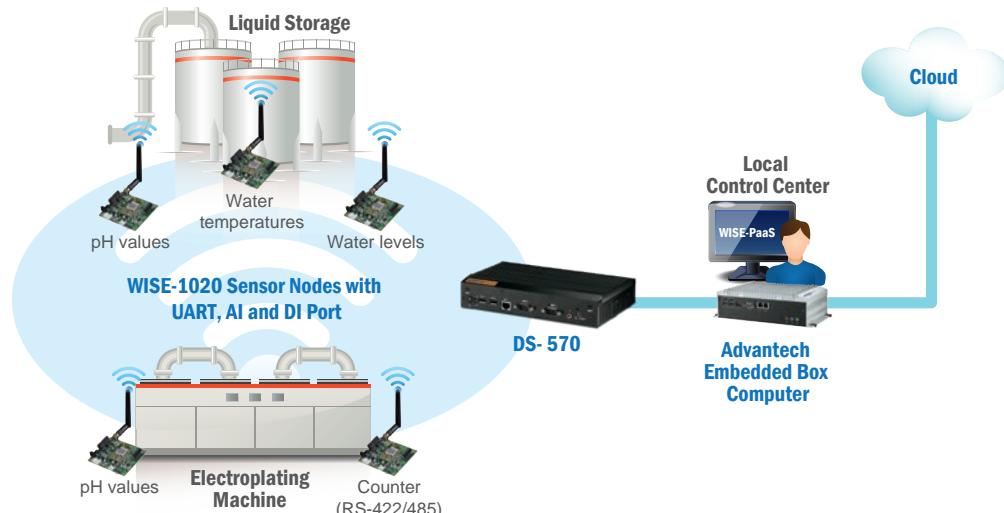
### The Advantech WISE IoT Solution includes

- Edge Computer DS-570 featuring a WPAN module:
  - Connection, control and management for up-to 100 wireless IoT nodes.
  - Centralized dynamic wireless network management for solid IoT wireless sensor networks.
- WISE-1020 WPAN sensor node with ARM Cortex-M3 MCU provides:
  - 99.999% high-reliability wireless MESH network.
  - Ease of installation and low maintenance cost.
  - Extreme Low power battery usage.
  - Multiple sensor combination.

To gather factory environment information, the customer used one edge computer DS-570 wirelessly connected to 35 sets of WISE-1020 which do the data acquisition. WISE-1020 sensor nodes are designed with multiple interfaces (UART, AI and DI port) that allow them to combine with different types of sensor-boards. Advantech co-worked with the customer to integrate all the WISE-1020 devices which are used for sensing such conditions as pH values, conductivity, water temperatures and levels. Through sensor integration, the customer's local control center can easily monitor and control all data around the factory.

### Benefits

- Easily implemented reliable Wireless Sensor Networks Solution.
- Easy installation and configuration for MESH wireless network deployment.
- Built-in WISE-PaaS IoT Software for remote monitoring and management that saves up to 50% on maintenance effort



# Electronic Bus Fare Collection System



## Introduction

A city in Latin America is rolling out a new bus fare collection system to better serve its residents and the many tourists that visit annually. The new system serves multiple purposes: protecting passengers and drivers on the road, enforcing driver and rider regulations, and helping fix responsibility after an event. These systems also help reduce, or dispatch, frivolous claims. The bus fare collection system also makes more efficient management possible; the system can integrate payment, video surveillance, passenger information, bus tracking, and infotainment. Passengers like the convenience of the Fare Collection System (FCS), and are encouraging its wider deployment throughout the city.

## Application Requirements

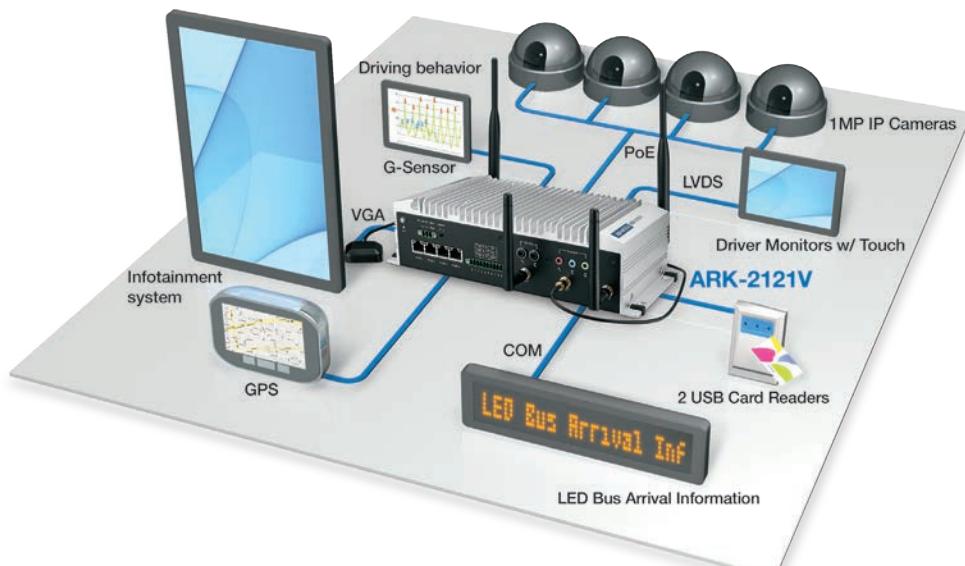
The vehicular environment is beset by electrical variations, shock and vibration, dust, and sometimes temperature extremes. To ensure safety and reliability, in-vehicle computers require special designs that combat these evils, and these design features distinguish them from standard IT products. In terms of wireless communication, the system needs to support diverse wireless communications, plus a GPS receiver for route tracking purposes.

## System Solutions

Advantech provided a mobile NVR solution, ARK-2121V, which included a vehicle-grade fanless system, 7" inch open frame touch monitor, and megapixel IP cameras. The fanless system features an on-board MCU to handle power ignition management; the system unit can be powered on and shut down automatically, triggered by either ignition signal or car battery health; the four built-in PoE ports provide for simple and easy IP camera connections through just one RJ-45 cat.6 cable per camera. Advantech SUSIAccess software provides a well-developed SDK and APIs that let system integrators conveniently develop their own remote monitoring and control functions, vehicle ignition management, and peripheral connection management such as PoE status, GPS, and G-sensor.

## Benefits

- Integrated in-vehicle NVR solution, one stop shopping for in-vehicle NVR, touch monitor and cameras
- Provides sufficient video performance with 1280 x 720 @ 60fps live view and playback
- 5-wire resistive touch solution provides quicker touch response, with high, 10-million-touch durability
- Offers 32+ device management APIs, including system health and connected device monitoring, power ignition management, GPS and G-sensor
- Isolated I/O port design ensures more stable data transmission between vehicle and system
- Covers most wireless connectivity; customer can use Wi-Fi and 3G/LTE at the same time



# Intelligent COM Module for Logistics Info System



## Introduction

Reduced goods handling is an important part of warehouse management for our customer. What they needed was an all-in-one, simple-to-use device that order pickers could use as they filled orders in a large warehouse. The hand held device should be wireless, Windows® 7 based, and be able to provide data collection and analysis, plus the ability to show warehouse locations of target items for shipping.

## Application Requirements

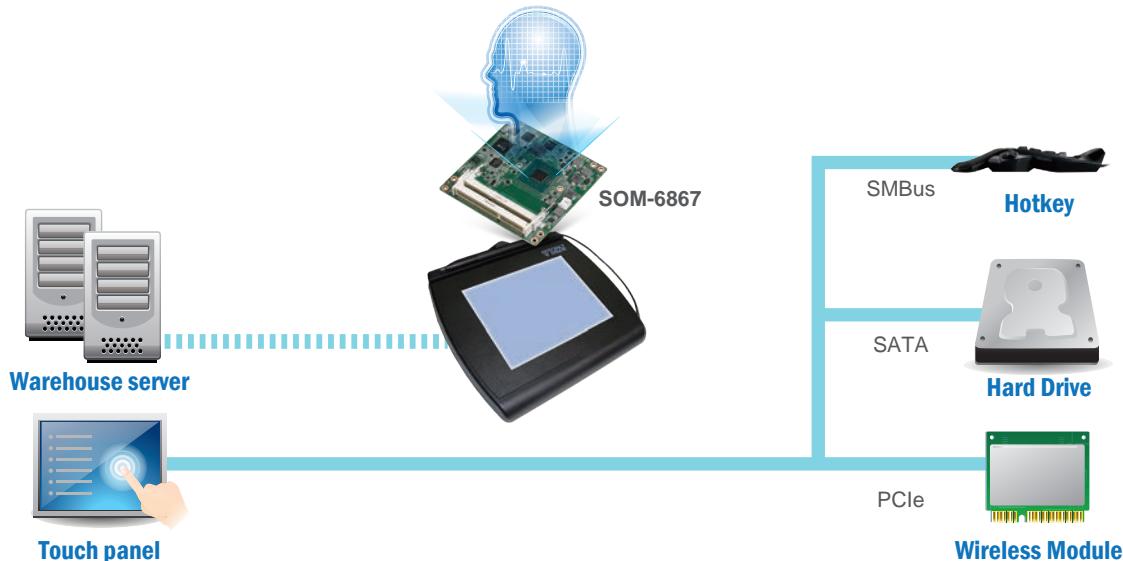
Today's customers expect to receive their orders fast. But it can take several employees in order to keep up with the latest updates on the supply of goods and logistics, and to quickly point out their locations in a warehouse. To achieve rapid response, what the customer needed was a simple, all-in-one, low power, handheld, mobile solution. And that solution needed a customized BIOS for better performance and power management setup.

## System Solutions

Advantech SOM-6867 compact type 6 module, based on the low-power, Intel® Atom™ 1.9 GHz processor E3845, is a one-chip solution that features 4 x PCIe x1, LPC, 2 x SATAII, 1 x USB3.0, 8 x USB 2.0, HDMI, and HD audio. It fully satisfied the customer's requirements for a compact board for their hand-held logistics device, and with Advantech's thermal consultation support, it provided a fanless heat sink solution and was better able to be integrated with the customer's own systems. Advantech also provided a full-featured embedded BIOS solution that delivered the superior system compatibility and functionality they needed.

### Benefits

- Simple fanless heat sink solution
- Skilled application engineers offer solid technical support that helps improve reliability
- Single contact window and total solution for special thermal design, BIOS customization, and driver development



# Outdoor Self-service Bicycle Rental System



## Introduction

In order to push energy efficiency and carbon reduction, more and more governments in different countries have built automatic bicycle rental systems and been encouraging its citizens to use non-polluting bicycles for short journeys. As the bicycle rental systems are operated in outdoor environment and 24/7 non-stop, the system would have to be rugged, reliable, accurate and enduring. Advantech IDK-2110 ultra-high brightness panel and MIO-2261 ultra-compact robust single board computer are chosen as part of the solution.

## Application Requirements

Several self-service bicycle rental stations needed to be installed in busy outdoor locations which would be exposed directly to sunlight. Therefore, clear visibility under strong sunlight was an essential priority. The stations also had to be able to resist fluctuating temperatures, sometimes extreme, with performance and stability unaffected.

## System Solutions

To solve sunlight readability issues, Advantech selected the IDK-2110, a 10.4" 1200-nit, high-brightness, industrial display kit able to withstand outdoor environmental conditions. The LCD kit solution gave the customer complete flexibility in integrating the device, and let them focus more on their system design. The IDK-2110's wide temperature operation of -20° C ~ 70° C and its low power consumption feature of just 7.1watt made the device ideal for any location. Besides, Advantech also sealed a customized edge-to-edge projected capacitive touch screen by optical bounding on IDK-2110. Even though it operates in harsh outdoor environments for long periods, the content of the panel still can be seen clearly. IDK-2110 works perfectly with Advantech's wide temperature single board computer MIO-2261. With compatible LVDS and backlight cables, Advantech provides System Integrators with a highly integrated display solution, and a foundation for efficient development.

## Benefits

- Wide temperature support: -20° C to 70° C
- 1200 nits ultra-high brightness to enhance readability in sunlight
- Sealed edge-to-edge projected capacitive touch screens on panels by optical bounding
- Protection from moisture, dust and also enhance the transparency.
- Integrated solution with MIO-2261, plus LVDS and backlight cables
- Longevity and 2-year standard warranty support



# Intelligent Wayfinding Signs Enhance Drivers' Experience



## Introduction

Parking lot signs that only display the number of available parking spaces provide limited assistance; that's why many parking lots these days use digital signage to indicate available parking spaces and more. For this project, the customer wanted to construct an intelligent parking service system at their company facilities. The required system needed to identify and transmit all visitor information to a central control room for security purposes, and display a welcome message to each arrival with a diagram showing the location of the appointed parking space. Advantech's digital signage players and displays satisfied all of the customer's requirements for real-time information with multiple displays.

## Application Requirements

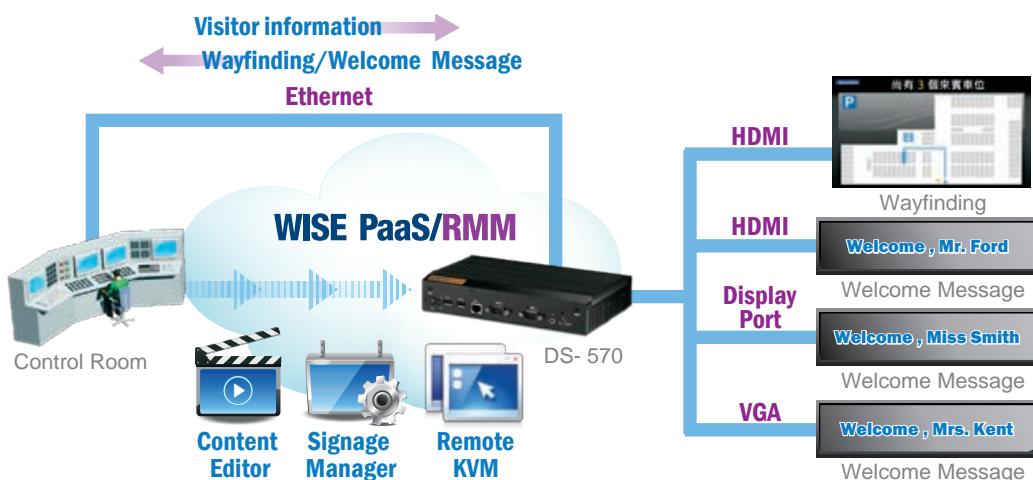
The wayfinding signage needed to be wirelessly connected to the central room identification systems so that it could instantly display the parking space directions and location dynamically. Moreover, the signage needed to be able to drive two to three 55-inch LCD screens placed on each floor of the parking lot at main intersections and turns.

## System Solutions

Numerous large-screen displays connected to an Advantech DS-570 digital signage player were installed at the parking lot entrance and aisles. Powered by an Intel® Celeron® N2930/J1900 quad-core processor with an integrated NVIDIA GeForce GT 730M graphics module, DS-570 supports not only ultra-high-definition content, but also up to four simultaneous display outputs via DP++<sup>1</sup>, HDMI<sup>2</sup>, and VGA. Because of its robust display capacity, the DS-570 drastically reduced installation costs. When a visitor vehicle is identified, real-time parking information is transmitted to the central control room via a DS-570 network connection. Once the visitor's information is confirmed, a welcome message with a diagram showing the appointed parking space is displayed. The DS-570 player was equipped with content management software that facilitates the creation, management, and dispatch of multimedia content to provide a hardware/software ready signage solution.

## Benefits

- Powerful graphics, supporting up to four displays per unit
- Integrated with signage software
- Compact, fanless design
- Wireless connection via internal Mini PCIe interface
- Easy management and maintenance



# Expansible Embedded PCs Guarantee Non-stop Recording with PoE Compliant Ethernet Ports for Video Surveillance



## Introduction

Governments in most countries have increased their spending on video surveillance in response to increasing security concerns. Today's video surveillance market is motivated by increased urbanization and prosperity and the trend towards more efficient policing strategies in our cities as public service budgets are streamlined. Because there is a greater need for security and demands for audits and operational efficiencies, monitoring and collecting vast amounts of data has become a critical requirement. Within this mix, the Network Video Recorder (NVR) plays an important role in surveillance systems, being deployed in vehicles, on the street, in the home and in public spaces.

## Application Requirements

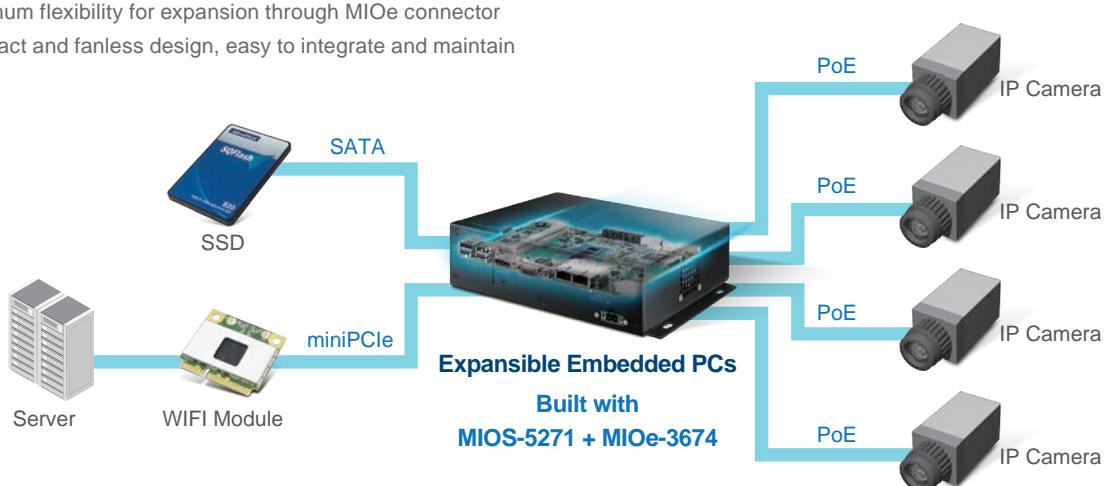
A valued customer who was in the process of designing a mobile in-vehicle NVR application, needed a system with LAN connecting to IP cameras and wireless connection to a video server. IP camera also requires a power cable to input power. Because it was a mobile solution, it needed to be small in size and easy to upgrade, and it also needed to be a high performance platform capable of the highest graphic processing and data transmission. For all these reasons, Advantech expansible embedded PC – a compact and expansible 3.5" SBC chassis ACK-A002, bundled with 3.5" single board computer MIO-5271 and MIOe-3674 PoE module, is an ideal option in the scenario.

## System Solutions

Using 4th Gen Intel® Core™ i5 embedded processors, MIO-5271 is a high-performance 3.5" MI/O-Compact SBC that ensures remote security monitoring with 4 x PoE compliant extension Ethernet ports on MIOe-3674 extension board, which enables high-speed graphics and data transmission. The expansible & fanless embedded PC offers great expansion flexibility for upgrading I/O or even a complete SBC when the latest technology becomes available, saving costs on upgrading existing chassis and extension modules. With the I/O module expansion capability, the customer chose Advantech's optional MIOe-3674 PoE module with four 10/100/1000 BaseT(X) 802.3af (PoE) compliant Ethernet ports, powered by an Intel® i350 Gigabit server-grade controller which supports PCIe Gen 2.0 (5 Gbps), giving it the capability to deliver high bandwidth power up to 15.4 watts per port. This also helps reduce cables and doesn't need extra power source for IP camera. By combining power and Ethernet via a single port and cable, with a MIOe-3674 PoE module, customers can more easily choose an appropriate SBC, and upgrade without compatibility or mechanical issues to worry about. In addition, with Advantech's WISE-PaaS/RMM remote management software built-in, customers can easily and remotely control and monitor each NVR system on each vehicle, and can easily update the software on several systems in parallel. This saves a huge amount of time and maintenance costs.

## Benefits

- Less development time, faster time-to-market
- Maximum flexibility for expansion through MIOe connector
- Compact and fanless design, easy to integrate and maintain



# IoT-powered Logistics Monitoring Systems



## Introduction

Traditional cold storage tracking systems monitor the temperature of the refrigerated container with an electronic recorder. Now an IoT-powered monitoring system requires real-time monitoring of storage and preparation areas for temperature, humidity and hygiene, and an instant, 360-degree view into goods safety which triggers alerts if problems occur so they can be caught before real damage is done.

## Application Requirements

Delivering pharmaceuticals or fresh food to consumers is popular business. By using refrigeration trucks, logistic companies can transport goods everywhere. However, it is a challenge to ensure that goods are stored in optimal conditions during transportation and are being delivered punctually. A damaged refrigeration unit, an open door, or mechanical problems with the vehicle can prove to be catastrophic for a refrigerated shipment. Therefore, the logistics companies need to build an effective system to help them closely monitor the storage temperature during transit.

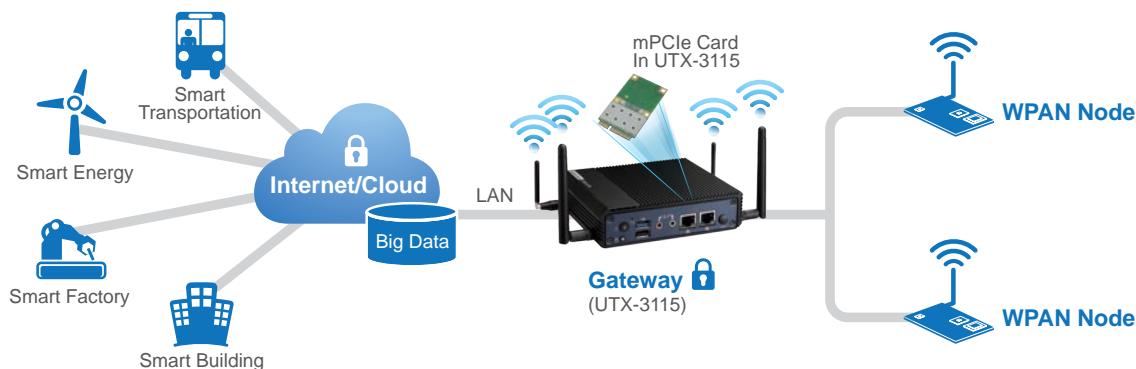
## System Solutions

Advantech provides the solution for cold chain application to deliver the highest efficiency at the lowest cost. Advantech IoT Gateway (UTX-3115 embedded box) and wireless sensor network solution can help transportation managers remotely access a variety of system and sensor data on a refrigerated truck; such as cargo temperature, door and hitch sensors, vehicle diagnostics and real-time locations. Bundled with Intel® Gateway Solutions for the IoT, a pre-integrated software and hardware platform containing a Linux operating system, security and management features, UTX-3115 is out-of-the-box gateway solution that simplifies the deployment of IoT products. It allows secure data aggregation, filtering, and analysis from edge devices to the cloud through WiFi and/or even 3G technologies. UTX-3115 is also a perfect fit for installation in a truck environment thanks to its -20 ~ 60 °C wide temperature support.

To better manage the fleet, WISE-PaaS/RMM – the remote management software developed by Advantech is preloaded in UTX-3115 to assist the fleet owner to remotely monitor the temperature, humidity and hygiene of the storage cabinet. If an application program crashes, WISE-PaaS/RMM makes it easy to terminate and reactivate this program from any remote site. And of course all these important data are all well managed with the WISE-PaaS/RMM security function.

## Benefits

- Simplifying the implementation of IoT applications with an integrated solution of hardware and software (Intel® Gateway Solutions for IoT)
- UTX-3115 is only palm-size and supports wide temperature operations of -20 ~ 60 °C which is suitable for use in extreme outdoor environments
- WISE-PaaS/RMM remote management software enables storage health monitoring, remote service maintenance and data security
- Dual miniPCIe slot supports WIFI and WWAN solution



# Intelligent Agriculture System with Advantech Intelligent Gateway and Sensor Node Integration



## Introduction

As the impacts of climate change and population explosion affect us, humans are facing unprecedented challenges and potential food crisis. In order to avoid waste, better utilize limited resources, and increase crop yields, the effective harnessing of the power of modern technology has become critical. Intelligent agriculture not only helps improve harvests but it also saves human resources, and decreases the detrimental harm from pesticides and chemical fertilizers.

## Application Requirements

One of Advantech's clients, an agriculture corporation located in the north of the U.S. has been facing serious water shortages and insufficient human resources. Although there are strong demands from the market for safe organic food products, they unfortunately suffer from serious pest infestation problems due to the nature of their production. Consequently, the industry decided that a modern, smart and more efficient method of cultivation was essential to the long-term survival of their industry.

## System Solutions

To meet these demands, Advantech introduced a series of intelligent agriculture solutions using high performance embedded RISC systems. For this customer, Advantech deployed a solution that included a UBC-330 RISC box PC with wireless IoT node solutions WISE-1000 Series, combined with WISE-Cloud software service to manage temperature/moisture optimization, remote farm management, automatic irrigation, pest control, and energy control. The totally integrated solution was able to help overcome water shortages through better resource management and bring about a more efficient profitable operation for the organic food producers.

### UBC-330 Box PC:

Powered by ARM Cortex-A8 TI Sitara processor which collects data from sensor nodes and manages the control devices accordingly.

### WISE-1021 IoT Node with WISE-1251 Extension Module:

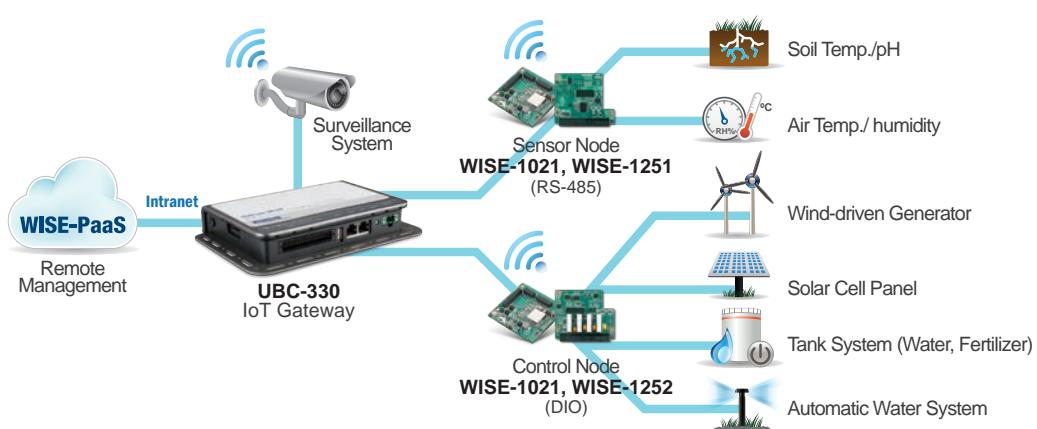
Connects temperature, humidity and PH value sensors through RS-422 or RS-485, and transforms analog data into digital data and sends it to a sensor gateway.

### WISE-1021 IoT Node with WISE-1252 Extension Module:

Controls electronic farming facilities such as water sprays and heat boosters. It receives orders/commands from the data gateway and controls devices accordingly.

## Benefits

- Integrated solutions from intelligent gateways and sensor nodes, to remote management with software built-in.
- Easily implemented reliable Wireless Sensor Networks solution.



# Wireless IoT Gateways & Nodes

## Wireless IoT Gateways

2016



Model Name		WISE-3310	WISE-3320
Process System	CPU	Freescale i.MX6 Dual 1 GHz	Ti Sitara AM3352 Dual 1 GHz
	DRAM	DDR3 1GB	DDR3 1GB
	FLASH	4GB eMMC	4GB eMMC
I/O Interface	COM	1 RS232 (CTS, RTS,Tx,Rx)	1 RS232 (CTS, RTS,Tx,Rx)
	LAN	1 10/100/1000 Mbps	10/100/1000 Mbps with 3af PoE support
	Antenna port	2 SMA (for 200-node SKU)/ 1 SMA (for 100-node SKU)	1 SMA
Wireless	Standard	IEEE 802.15.4e	IEEE 802.15.4e
	Frequency Band	2.4000 ~ 2.4835 GHz	2.4000 ~ 2.4835 GHz
	Support Nodes	up to 200 (for 200-node SKU) / up to 100 (for 100-node SKU)	up to 100
Software	OS	Linux V3.0.35	Linux V3.2.0
Mechanical	Dimensions	205 x 127 x 31 mm (LxWxH) with a metal plate 180 x 114 x 31 mm without a metal plate	Metal bracket wall mount
	Mounting	Metal bracket wall mount	Metal bracket wall mount
Environmental	Operating Temperature	0 ~ 40 °C	-10 ~ 70 °C
	Operating Humidity	5% ~ 95% Relative Humidity, non-condensing	

## Wireless IoT Nodes & Extension Modules



Model Name	WISE-1020	WISE-1021	WISE-1501
MCU	Linear/Dust LTP5800	Linear/Dust LTP5800 with Ti MSP430	TI CC3200
Wireless frequency	2.4000 ~ 2.4835 GHz	2.4000 ~ 2.4835 GHz	2.412 ~ 2.484 GHz
Standard	IEEE 802.15.4e	IEEE 802.15.4e	IEEE 802.11 b/g/n
Analog Input	3-channel (10bits) ,0 to 1.8V	10-channel (12bits), 0 to 3.6V	2-channel (12bits), 0 to 1.4V
Digital I/O	D1:4 and D0:3	6	2
UART/I2C/SPI/PWM	UART *1	UART up-to 2/ I2C up-to 2 / SPI up-to 3/ PWM up-to 1	UART 1 /I2C 1 / SPI 1 / PWM 2
Operation Temperature	-40 to +85 °C	-40 to +85 °C	-20 to +70 °C
Power Requirement	Micro-USB: DC 5V Battery/ Solar power: DC 6-12V	DC 5-30V	DC 3.3 V
Dimension	75 x 60 x 14.7 mm	65.0 x 55.0 mm	22.0 x 30.0mm



Model Name	WISE-1251	WISE-1252
Input	RS-485 (2-wire) or RS-422 (4-wire)	Digital Input 4-ch
Output	RS-485 (2-wire) or RS-422 (4-wire)	Relay Output 4-ch Contact Rating (Resistive): 250VAC @ 0.3A, 30VDC @ 2A Relay On Time: 3 ms (Typical) Maximum Operating Speed: 20 operations/min (at related load)
Isolation Protection	3500 VDC	3500 VDC
Power Requirement	DC 3.3V and 5V	DC 3.3V and 5V
Speed Modes (bps)	1,200, 2,400, 4,800, 9,600, 19.2 k, 38.4 k, 57.6 k, 115.2 k,	-
Operating temperature	-40 ~ 85° C	-40 ~ 85° C
Dimensions (W x D)	65.0 x 55.0 mm	65.0 x 55.0 mm

# RISC Computing Platforms

## Computer-on-Modules

**NEW****NEW****NEW**

Model Name		ROM-1210	ROM-3310	ROM-3420	ROM-5420	ROM-7420
Form Factor		RTX1.6	RTX 2.0	RTX2.0	SMARC	Qseven
Processor System	CPU	Freescale ARM Cortex-A8 i.MX53 800 MHz	TI AM3352 Cortex-A8 1 GHz	Freescale ARM Cortex-A9 i.MX6 1 GHz	Freescale ARM Cortex-A9 i.MX6 1 GHz	Freescale ARM Cortex-A9 i.MX6 1GHz
Memory	Technology	DDR3 800 MHz	DDR3 800 MHz	DDR3 1066 MHz	DDR3 1066 MHz	DDR3 1066 MHz
	Capacity	On-board DDR3 512 MB	On-board DDR3 512 MB	On-board DDR3 1 GB	On-board DDR3 1 GB	On-board DDR3 1 GB
	Flash	2 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader	4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader	4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader	4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader	4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader
Graphics	LVDS	2 24-bit LVDS, 1024 x 768	-	1 Single 24-bit LVDS, 1366 x 768 at 60Hz	1 Single 24-bit LVDS, 1366 x 768 at 60Hz	2 24-bit LVDS, 1366 x 768 for 1ch; 1920x1080 for 2ch at 60Hz
	HDMI	-	-	1920 x 1080 at 60Hz	1920 x 1080 at 60Hz	1920 x 1080 at 60Hz
	Parallel RGB	1 24-bit TTL, 1600 x 1200	1 24-bit TTL, 1366 x 768	1 24-bit TTL, 1920 x 1200 at 60Hz	1 24-bit TTL, 1920 x 1200 at 60Hz	-
	VGA	-	-	-	-	1920x1080 at 60Hz
	Graphics Engine	1 IPU. OpenGL ES 2.0 for 3D, BitBit for 2D and OpenVG 1.1	Integrated LCD Interface Display Driver (LIDD) Controller	2 IPUs. OpenGL ES 2.0 for 3D, BitBit for 2D and OpenVG 1.1	2 IPUs. OpenGL ES 2.0 for 3D, BitBit for 2D and OpenVG 1.1	2 IPUs. OpenGL ES 2.0 for 3D, BitBit for 2D and OpenVG 1.1
	H/W Video Codec	Decoder: MPEG-4 ASP, H.264 HP, H.263, MPEG-2 MP, MJPEG BP Encoder: MPEG-4 SP, H.264 BP, H.263, MJPEG BP	-	Decoder: MPEG-4 ASP, H.264 HP, H.263, MPEG-2 MP, MJPEG BP Encoder: MPEG-4 SP, H.264 BP, H.263, MJPEG BP	Decoder: MPEG-4 ASP, H.264 HP, H.263, MPEG-2 MP, MJPEG BP Encoder: MPEG-4 SP, H.264 BP, H.263, MJPEG BP	Decoder: MPEG-4 ASP, H.264 HP, H.263, MPEG-2 MP, MJPEG BP Encoder: MPEG-4 SP, H.264 BP, H.263, MJPEG BP
Ethernet	Chipset	Freescale i.MX53 integrated RMII	TI AM3352 Integrated RGMII	Freescale i.MX6 integrated RGMII	Freescale i.MX6 integrated RGMII	Freescale i.MX6 integrated RGMII
	Speed	1 x 10/100 Mbps	1 x 10/100/1000 Mbps	1 x 10/100/1000 Mbps	1 x 10/100/1000 Mbps	1 x 10/100/1000 Mbps
RTC		-	Yes	Yes	Yes	Yes
WatchDog Timer		256-level timer interval, from 0 ~ 128 sec	MSP430G2202 (time out : 0.1~6553.5s, power on/off 4s)	256-level timer interval, from 0 ~ 128 sec	256-level timer interval, from 0 ~ 128 sec	256-level timer interval, from 0 ~ 128 sec
I/O	PCIe	-	-	1 PCIe x 1	1 PCIe x 1	1 PCIe x 1
	SATA	1 SATA I	-	1 SATA II	1 SATA II	1 SATA II
	USB	1 USB 2.0, 1 USB 2.0 OTG	1 USB 2.0, 1 USB 2.0 OTG	1 USB 2.0, 1 USB 2.0 OTG	1 USB 2.0, 1 USB 2.0 OTG	1 USB 2.0, 1 USB 2.0 OTG
	Audio	I²S	I²S	I²S	I²S	I²S
	SPDIF	-	-	-	1	-
	SDIO	2	1	1	1	1
	Serial Port	5 UART (2 x 2 wire, 3 x 4 wire w/ 3.3V)	4 UART (1 x 4 wire, 3 x 2 wire w/ 3.3V)	3 UART (3 x 4 wire w/ 3.3V)	4 UART (2 x 2 wire, 2 x 4 wire w/ 3.3V)	4 UART (4 x 2 wire w/ 3.3V)
	SPI	1	1	2	4	1
	CAN	2 x CAN bus 2.0B	From 1~6553s, power on/off 4s	2 x CAN bus 2.0B	2 x CAN bus 2.0B	2 x CAN bus 2.0B
	GPIO	20	10	10	12	8
	I²C	2	1	4	5	3
	Camera Input	-	-	1 MIPI v1.0, 4 x Lane	1 MIPI v1.0, 4 x Lane	-
	System Bus	Address:25 bits Data:16 bits	-	Address: 26 bits Data: 16 bits	-	-
	Touch	1	-	-	-	-
	Keypad	6 x 6 Matrix	-	-	-	-
Power	Power Supply Voltage	3.3 ~ 3.6 V	5 ~ 24 V	5 ~ 24 V	3 ~ 5.25 V	5 V
	Power Consumption	2.2W	2.11W (Max)	3.3W (Max)	3.4W (Max)	3.4W (Max)
Environment	Operational Temperature	0 ~ 60° C / -40 ~ 85° C	0 ~ 60° C / -40 ~ 85° C	0 ~ 60° C / -40 ~ 85° C	0 ~ 60° C / -40 ~ 85° C	0 ~ 60° C / -40 ~ 85° C
	Operating Humidity	0% ~ 90% relative humidity, non-condensing	5%~95% Relative Humidity, non-condensing	5%~95% Relative Humidity, non-condensing	5%~95% Relative Humidity, non-condensing	5%~95% Relative Humidity, non-condensing
Mechanical	Dimensions (W x D)	68 x 68 mm	68 x 68 mm	68 x 68 mm	82 x 50 mm	70 x 70 mm
Operating System		Linux	Linux	Linux Android	Linux Android	Linux Android
Certifications		CE/FCC Class A	CE/FCC Class B	CE/FCC Class B	CE/FCC Class B	CE/FCC Class B

# RISC Computing Platforms

## Single Board Computers



Model Name		RSB-3410	RSB-3850	RSB-4210	RSB-4220	RSB-4410
Form Factor		2.5" SBC	2.5" SBC	3.5" SBC	3.5" SBC	3.5" SBC
Processor System	CPU	Freescale ARM Cortex-A9 i.MX6 Dual-Lite 1 GHz	Intel Quark x1000 400 MHz	Freescale ARM Cortex-A8 i.MX53 800 MHz	TI ARM Cortex-A8 AM3352 1 GHz	Freescale ARM Cortex-A9 i.MX6 1 GHz
Memory	Technology	DDR3 800 MHz	DDR3 800 MHz	DDR3 800 MHz	DDR3 800 MHz	DDR3 1066 MHz
	Capacity	On-board DDR3 1 GB	On-board DDR3 512 MB	On-board DDR3 512 MB	On board DDR3 512 MB	On-board DDR3 1 GB
	Flash	4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader	4 MB SPI NOR Flash for Advantech boot loader	4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader	4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader	4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader
Graphics	LVDS	1 x 18/24 bit LVDS, up to 1366x 768 at 60Hz	-	2 x 24-bit LVDS, 1280 x 768 for 1ch; 1920 x 1080 for 2ch at 60Hz	1 x 18-bit LVDS, up to 1366 x 768 at 60Hz	1 x 18/24 bit LVDS, up to 1366x 768 at 60Hz
	HDMI	1920 x 1080 at 60Hz	-	-	-	1920 x 1080 at 60Hz
	VGA	-	-	Up to 1600 x 1200 at 60Hz	-	Up to 1920 x 1080 at 60Hz
	Graphics Engine	1 IPU. OpenGL ES 2.0 for 3D, BitBlit for 2D and OpenVG 1.1	-	1 IPU. OpenGL ES 2.0 for 3D, BitBlit for 2D and OpenVG 1.1	Integrated LCD Interface Display Driver (LIID) Controller	2 IPUs. OpenGL ES 2.0 for 3D, BitBlit for 2D and OpenVG 1.1
	H/W Video Codec	Decoder: MPEG-4 ASP H.264 HP, H.263, MPEG-2 MP, MJPEG BP Encoder: MPEG-4 SP, H.264 BP, H.263, MJPEG BP	-	Decoder: MPEG-4 ASP H.264 HP, H.263, MPEG-2 MP, MJPEG BP Encoder: MPEG-4 SP, H.264 BP, H.263, MJPEG BP	-	Decoder: MPEG-4 ASP, H.264 HP, H.263, MPEG-2 MP, MJPEG BP Encoder: MPEG-4 SP, H.264 BP, H.263, MJPEG BP
Ethernet	Chipset	Freescale i.MX6 integrated RGMII	Intel Quark Integrated RMII	Freescale i.MX53 integrated RMII	TI AM3352 Integrated RGMII	Freescale i.MX6 integrated RGMII
	Speed	1 x 10/100/1000 Mbps	2 x 10/100 Mbps (one with PoE)	2 x 10/100 Mbps	2 x 10/100/1000 Mbps	1 x 10/100/1000 Mbps
WatchDog Timer		1~6553s, power on/off 4s	1~6553s, power on/off 4s	256-level timer interval from 0~128 sec	1~6553s, power on/off 4s	256-level timer interval from 0~128 sec
I/O	SATA	-	-	1	-	-
	SATA Power	-	-	Yes	-	-
	USB	1 USB 2.0 Host 1 USB OTG	1 USB 2.0 Host	3 USB 2.0 Host 1 USB 2.0 OTG	1 USB 2.0 Host/OTG (Jumper Selection)	1 USB 2.0 Host 2 USB 2.0 Pin Header
	Audio	-	-	Line-in, Speaker-out, Mic-in	-	1 x Line-out
	SPDIF	-	-	-	-	-
	SDIO	1 SD Slot	1 SD Slot	1 SD Slot, 1 Pin header	1 SD Slot	1 SD Slot
	Serial Port	1 x 4 wire RS-232	1 x 4 wire RS-232	2 x 2 wire RS-232 by pin header, 1 x 2 wire RS-232/422/485 by DB9	1x 4 wire RS-232/422/485 5x 2 wire RS-232 w/ ESD protection	2 x 2 wire RS-232 by pin header 1 x 4 wire RS-232 by DB9
	SPI	-	-	1	-	-
	CAN	-	-	1	1	-
	GPIO	-	2 GPI/ 2 GPO w/isolation	20 GPIO w/o Isolation	4 GPI / 4 GPO w/isolation	-
	I²C	-	-	1	1	-
	System Bus	-	-	Address : 25 pins Data : 16 pins	-	-
	Touch	-	-	4-wire resistive type	-	-
	Keypad	-	-	6 x 6 matrix	-	-
	Button	-	-	-	1 x Reset button	1 x Reset button
Indicator	LED	1 Power LED 1 Programmable LED	1 Power LED 1 Programmable LED	-	1 Power LED 1 RF Status LED	1 Power LED 1 RF Status LED
Expansion	Mini PCIe	2x mini PCIe slot	1x mini PCIe slot	1 x mini PCIe slot (Only USB Signal)	1 x mini PCIe slot (Only USB Signal)	1 x mini PCIe slot
	SD Socket	1x SD slot	1 x SD slot	1 x SD slot	1 x SD slot	1 x SD slot
	SIM	1x SIM slot	1 x SIM slot	1 x SIM slot	-	1 x SIM slot
Power	Power Supply Voltage	12V	12V / PoE 802.3 at Class 3	12 V , 19 V , 24 V	12 V , 19 V , 24 V	12 V
	Power Type	DC-in	DC-in / PoE 802.3 at Class 3	DC-in	DC-in	DC-in
	Power Consumption	4.4W (Max)	2.76W (Max)	3.8W (Max)	3.3W (Max)	5.6W (Max)
Environment	Operational Temperature	0 ~ 60° C	0 ~ 60° C	0 ~ 60° C / -40 ~ 85° C	0 ~ 60°C / -40 ~ 85°C	0 ~ 60°C / -40 ~ 85°C
	Operating Humidity	5%~95% Relative Humidity, non-condensing	5%~95% Relative Humidity, non-condensing	5%~95% Relative Humidity, non-condensing	5%~95% Relative Humidity, non-condensing	5%~95% Relative Humidity, non-condensing
Mechanical	Dimensions (W x D x H)	100x72x21 mm	100x72x21 mm	146 x 102 x 20 mm	146 x 102 x 20mm	146 x 102 x 20 mm
Operating System		Linux Android	Linux	Linux	Linux	Linux Android
Certifications		CE/FCC Class B	CE/FCC Class B	CE/FCC Class A	CE/FCC Class B	CE/FCC Class B

## Box Computers

**NEW****NEW****NEW**

Model Name		UBC-200	UBC-220	UBC-221	UBC-330	UBC-DS31
Processor System	CPU	Freescale ARM Cortex-A9 i.MX6 1 GHz	Freescale ARM Cortex-A9 i.MX6 1 GHz	Intel Quark x1000 400MHz	TI AM3352 Cortex-A8 1 GHz	Freescale ARM Cortex-A9 i.MX6 1 GHz
Memory	Technology	DDR3 1066 MHz	DDR3 800 MHz	DDR3 800 MHz	DDR3 800 MHz	DDR3 1066 MHz
	Capacity	On-board DDR3 1 GB/2 GB	On-board DDR3 1 GB	On-board DDR3 512 MB	On board DDR3 512 MB	On-board DDR3 1 GB
	Flash	4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader	4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader	4 MB SPI NOR Flash for Advantech boot loader	4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader	4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader
Graphics	LVDS	-	1 24-bit LVDS, 1366 x768 at 60Hz	-	-	-
	HDMI	1920 x 1080 at 60Hz	1920 x 1080 at 60Hz	-	-	1920 x 1080 at 60Hz
	VGA	-	-	-	-	1920 x 1080 at 60Hz
	Graphics Engine	2 IPUs. OpenGL ES 2.0 for 3D, BitBlit for 2D and OpenVG 1.1	1 IPU. OpenGL ES 2.0 for 3D, BitBlit for 2D and OpenVG 1.1	-	-	2 IPUs. OpenGL ES 2.0 for 3D, BitBlit for 2D and OpenVG 1.1
	H/W Video Codec	Decoder: MPEG-4 ASP, H.264 HP, H.263, MPEG-2 MP Encoder: MPEG-4 SP, H.264 BP, H.263	Decoder: MPEG-4 ASP, H.264 HP, H.263, MPEG-2 MP, MJPEG BP Encoder: MPEG-4 SP, H.264 BP, H.263, MJPEG BP	-	-	Decoder: MPEG-4 ASP, H.264 HP, H.263, MPEG-2 MP Encoder: MPEG-4 SP, H.264 BP, H.263
Ethernet	Chipset	Freescale i.MX6 integrated RGMII	Freescale i.MX6 integrated RGMII	Intel Quark integrated RMII	TI AM3352 Integrated RGMI	Freescale i.MX6 integrated RGMII
	Speed	1 x 10/100/1000 Mbps	1 x 10/100/1000 Mbps	2 x 10/100 Mbps (One with PoE)	2 x 10/100/1000 Mbps	1 x 10/100/1000 Mbps
WatchDog Timer		256-level timer interval from 0~128 sec	From 1~6553s, power on/off 4s	From 1~6553s, power on/off 4s	From 1~6553s, power on/off 4s	256-level timer interval from 0~128 sec
I/O	USB	1 USB 2.0 Host	1 USB 2.0 Host, 1 USB OTG	1 USB 2.0 Host	1 USB 2.0 Host	1 USB 2.0 Host
	Audio	HDMI Audio	HDMI Audio	-	-	1 x Line-out
	SDIO	1 x SD slot	1 x SD slot	1 x SD slot	1 x SD slot	1 x SD slot
	Serial Port	-	1 x 4 wire RS-232	1 x 4 wire RS-232	1 x 4 wire RS-232/422/485 5 x 2 wire RS-232 w/ ESD protection	1 x 4 wire RS-232
	GPIO	-	-	2 GPI/ 2 GPO w/isolation	4 GPI/ 4 GPO w/ isolation	-
	CANBus	-	-	-	1	-
	I2C	-	-	-	1	-
	Button	1 x Reset button	-	-	1 x Reset button	1 x Reset button
Indicator	LED	1 Green LED for power	1 Green LED for system power 1 Green LED for user define	1 Green LED for system power 1 Green LED for user define	1 Green LED for system power	1 Green LED for system power 1 Green LED for RF status
Expansion	Mini PCIe	1x mini PCIe slot	2x mini PCIe slot	1x mini PCIe slot	1x mini PCIe slot (Only USB)	1x mini PCIe slot
	SD Socket	1 x SD slot	1x SD slot	1 x SD slot	1 x SD slot	1 x SD slot
	SIM	1x SIM slot	1x SIM slot	1 x SIM slot	-	1x SIM slot
	Antenna Hole	1x Antenna hole	1 x Antenna hole	1x Antenna hole	1 x Aetenna hole	1x Antenna hole
	Others	-	1x Internal antenna support	-	-	-
Power	Power Supply Voltage	12 V , 19 V , 24 V	12V	12 V / PoE 802.3 at Class 3	12 V , 19 V , 24 V	12 V
	Power Type	DC-in	DC-in	DC-in / PoE 802.3 at Class 3	DC-in	DC-in
	Power Consumption	6.6W (Max)	4.4W (Max)	2.76W (Max)	3.3W (Max)	3.8W (Max)
Environment	Operational Temperature	0 ~ 60° C / -20 ~ 70° C	0 ~ 60° C	0 ~ 60° C	0~60°C	0 ~ 40° C
	Operating Humidity	5%~95% Relative Humidity, non-condensing	5%~95% Relative Humidity, non-condensing	5%~95% Relative Humidity, non-condensing	5%~95% Relative Humidity, non-condensing	5%~95% Relative Humidity, non-condensing
Mechanical	Dimensions (W x D x H)	108 x 79 x 30 mm	120 x 89 x 30 mm	120 x 89 x 30 mm	191 x 129 x 30 mm with metal plate 166 x 117 x 30 mm without metal plate	191 x 129 x 30 mm with metal plate 166 x 117 x 30 mm without metal plate
	Mounting	Wall mount, DIN Rail	Wall mount, DIN rail, VESA 75/100 by option	Wall mount, DIN rail, VESA 75/100 by option	Wall mount, VESA 75/100, Flexible mount with two screw holes on the metal plate	Wall mount, VESA 75/100, Flexible mount with two screw holes on the metal plate
	Weight	312g	215g	210g	265g	265g
Operating System		Linux Android	Linux Android	Linux	Linux	SUSIAccess for Signage
Certifications		CE/FCC Class B	CE/FCC Class B	CE/FCC Class B	CCC / CE / FCC Class B	CCC / CE / FCC Class B

# Computer On Modules

**NEW**

Model Name	SOM-5894	SOM-5893	SOM-5892	SOM-5890	SOM-9890
Form Factor	COM Express Basic	COM Express Basic	COM Express Basic	COM Express Basic	COM Express Basic
Pin-out Type	COM R2.1 Type 6	COM R2.1 Type6	COM R2.0 Type 6	COM R2.0 Type 6	COM R2.0 Type 6
Processor System	CPU	4th Gen. Intel Core i7/i5/i3/Celeron	AMD R-Series Bald Eagle	3rd Gen. Intel Core i7/i5/i3/Celeron	2nd Gen. Intel Core i7/i5/i3/Celeron
	Base Frequency	2.7-1.5GHz	2.7 - 2.2GHz	2.7-1.4GHz	2.5 - 1.4GHz
	Processor Core	4/2	4/2	4/2/1	4/2/1
	LLC	6/3/2MB	4/2MB	6/4/3/2/1MB	6/4/3/2/1.5MB
	CPU TDP	47/37/25W	35W/17W	45/35/25/17W	45/35/25/17W
Memory	Chipset	Intel QM87	A77E	Intel QM77	Intel QM77
	Technology	DDR3L 1600/1333	DDR3 2133 ; DDR3L 1866/1600	DDR3/DDR3L 1600/1333	DDR3 1333/1066
	ECC Support	B1 version only	-	B1 version only	B1 version only
	Max. Capacity	16GB	32GB	16GB	16GB
Graphics	Socket	2 x 204P SODIMM	2 x 204P SODIMM	2 x 204P SODIMM	2 x 204P SODIMM
	Controller	Intel HD Graphics	AMD Radeon HD9000	Intel HD Graphic	Intel HD Graphic
	Max. Frequency	1GHz - 900MHz	686MHz	1GHz - 900MHz	1.1GHz - 800MHz
	VGA	1	1	1	1
	LCD (TTL/LVDS/eDP)	LVDS 2-CH 18/24-bit	LVDS 2-CH 18-bit/24-bit	LVDS 2-CH 18/24-bit	LVDS 2-CH 18/24-bit
	DDI (HDMI/DVI/DisplayPort)	3	4	3	3
	SDVO	-	-	1	1
Expansion	TV-out	-	-	-	-
	Multiple Displays	Dual/Triple	Dual/Triple/Quad	Dual/Triple	Dual
	PCIe x16	1	1(option)	1	1
Serial Bus	PCIe x1	7	7	7	7
	PCI Masters	-	-	-	-
	ISA Bus	-	-	-	-
Ethernet	LPC	1	1	1	1
	SMBus	1	1	1	1
	I2C Bus	1	1	1	1
I/O	CAN Bus	-	-	-	-
	Controller	Intel i217LM	Intel i211AT	Intel 82579LM	Intel 82579LM
Power	Speed	10/100/1000Mbps	10/100/1000 Mbps	10/100/1000Mbps	10/100/1000Mbps
	SATA	4	4	4	4
I/O	PATA Channel	-	-	-	-
	USB3.0	4	4	4	4
	USB2.0	8	4	8	8
	Audio	HD Audio	HD Audio	HD Audio	HD Audio
	SPI Bus	1	-	1	1
	GPIO	8	8	8	8
	SDIO (GPIO pin shared)	-	-	-	-
	Watchdog	1	1	1	1
	COM Port	2 (2-wire)	2 (2-wire)	2 (2-wire)	2 (2-wire)
	LPT/FDD	-	-	-	-
Environment	PS/2	-	-	-	-
	IR	-	-	-	-
	Onboard Storage	-	-	-	-
Mechanical	TPM	Optional	1	Optional	Optional
Power	Power Type	ATX: Vin, VSB, AT: Vin	ATX: Vin, VSB, AT: Vin	ATX: Vin, VSB, AT: Vin	ATX: Vin, VSB, AT: Vin
	Supply Voltage	Vin: 8.5-20V, VSB: 4.75-5.25V	"Vin: 8.5-20V VSB: 4.75-5.25V"	Vin: 11.4-12.6V, VSB: 4.75-5.25V	Vin: 8.5-20V, VSB: 4.75-5.25V
Environment	Power Consumption Max.	41.8 Watt	TBD	41.8 Watt	41.8 Watt
	Power Consumption Idle	8.5 Watt	TBD	5.4 Watt	9.6 Watt
Mechanical	Operating Temp.	0 ~ 60° C (32 ~ 140° F)	0 ~ 60° C (32 ~ 140° F)	0 ~ 60° C (32 ~ 140° F)	0 ~ 60° C (32 ~ 140° F)
	Extended Temp. (Optional)	-40 ~ 85° C (-40 ~ 185° F)	-40 ~ 85° C (-40 ~ 185° F)	-40 ~ 85° C (-40 ~ 185° F)	-40 ~ 85° C (-40 ~ 185° F)
Mechanical	Dimensions	125 x 95mm (4.92" x 3.74")	125 x 95 mm (4.92" x 3.74")	125 x 95mm (4.92" x 3.74")	125 x 95mm (4.92" x 3.74")

**NEW****Preliminary**

<b>SOM-6896</b>	<b>SOM-6894</b>	<b>SOM-6867</b>	<b>SOM-7568</b>	<b>SOM-7567</b>	<b>SOM-7565</b>
COM Express Compact	COM Express Compact	COM Express Compact	COM Express Mini Module Compatible	COM Express Mini	COM Express Mini
COM R2.1 Type 6	COM R2.1 Type 6	COM R2.0 Type 6	COM R2.1 Type 10	COM R2.1 Type 10	COM R2.1 Type 10
Intel 5th Generation Core i Processor	4th Gen. Intel Core i7/i5/i3/Celeron (U-Processor Line)	Intel Atom E3800 & Celeron J1900	Intel® Pentium™ and Celeron™ N3000 Series SoC	Intel Atom E3845/E3825/E3815 Intel Celeron J1900/N2930	Intel Atom N2800/N2600
TBD	1.9 ~ 1.6GHz	1.91 / 2.0GHz	1.6/1.04GHz	1.33G~2GHz	1.86 - 1.6 GHz
2	2	4	4/2	4/2/1	2
TBD	4/3/2MB	2MB	2MB	2/1/0.5MB	1MB
15W	15W	10W	6/4W	10/7.5/6/5W	6.5/3.5W
N/A	-	-	-	-	Intel NM10
DDR3L 1600 MHz	DDR3L 1600/1333	DDR3L 1333	Dual Channel DDR3L-1600	DDR3L 1333/1066	DDR3 1066/800
-	-	-	-	-	-
16GB	16GB	8GB	4GB	4GB	4GB/2GB
2 x 204P SODIMM	2 x 204P SODIMM	2 x 204P SODIMM	Onboard memory	Onboard	Onboard
Intel® HD Graphics	Intel HD Graphic	Intel HD Graphic	Intel® HD Graphics	Intel HD Graphics	Intel GMA3650/3600
TBD	1.1 - 1GHz	688MHz	700MHz	400-854MHz	640 - 400MHz
1	1	1	-	-	-
LVDS 2-CH 18-bit/24-bit	LVDS 2-CH 18/24-bit	LVDS 2-CH 18-bit/24-bit	"LVDS: Single channel 18/24-bit, up to 1366 x 768 "	LVDS 1-CH 18/24-bit	LVDS 1-CH 18-bit
2 (DDI2 for option)	-	2	2	1	1
-	2 (DDI 2: Optional)	-	-	-	-
-	-	-	-	-	-
Dual/Triple	Dual/Triple	Dual	Dual	Dual	Dual
-	-	-	-	-	-
4	4	3	3	3 (Optional 4)	3 (Optional 4)
-	-	-	-	-	-
-	-	-	-	-	-
1 (24MHz)	1	1	1	1	1
1	1	1	1	1	1
1	1	1	1	1	1
-	-	1	-	Optional	-
Intel i218LM	Intel i218LM	Intel i210	Intel® i210AT	Intel i210E	Intel 82574L
10/100/1000Mbps	10/100/1000Mbps	10/100/1000 Mbps	Speed 10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps
4	4	2	2	1 (Optional 2)	1 (Optional 2)
-	-	-	-	-	-
2	2	1	2	1	-
8	8	8	8	4	8
HD Audio	HD Audio	HD Audio	HD Audio	HD Audio	HD Audio
-	1	-	-	1	1
8	8	8	8-bit GPIO	8	8
-	-	-	-	-	-
1	1	1	1	1	1
2 (2-wire)	2 (2-wire)	2 (2-wire)	2 (2-Wire)	2 (2-wire)	2 (2-wire)
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	1 (option)	-	SLC/MLC SSD	SLC/MLC SSD
Yes	-	-	-	-	-
ATX: Vin, VSB, AT: Vin	ATX: Vin, VSB, AT: Vin	ATX: Vin, VSB, AT: Vin	ATX: Vin, VSB, AT: Vin	ATX: Vin, VSB, AT: Vin	ATX: Vin, VSB, AT: Vin
"Vin: 4.75-20V VSB: 4.75-5.25V"	Vin: 4.75-20V, VSB: 4.75-5.25V	"Vin: 4.75-20V VSB: 4.75-5.25V"	Vin: 4.75 (5-5%) ~ 20V (19+5%), VSB: 5V±5%, RTC Battery: 2.0-3.3V	Vin: 4.75-20V, VSB: 4.75-5.25V	Vin: 4.75-20V, VSB: 4.75-5.25V
TBD	20.6W	TBD	TBD	TBD	8.64 Watt.
TBD	4.4W	TBD	TBD	TBD	6.96 Watt.
0 ~ 60° C (32 ~ 140° F)	0 ~ 60° C (32 ~ 140° F)	0 ~ 60° C (32 ~ 140° F)	0 ~ 60° C (32 ~ 140° F)	0 ~ 60° C (32 ~ 140° F)	0 ~ 60° C (32 ~ 140° F)
-40 ~ 85° C (-40 ~ 185° F)	-40 ~ 85° C (-40 ~ 185° F)	-40 ~ 85° C (-40 ~ 185° F)	-40 ~ 85° C (-40 ~ 185° F)	-40 ~ 85° C (-40 ~ 185° F)	-40 ~ 85° C (-40 ~ 185° F)
95 x 95 mm (3.74" x 3.74")	95 x 95 mm (3.74" x 3.74")	95 x 95 mm (3.74" x 3.74")	84 x 55 mm (3.3" x 2.17")	84 x 55 mm (3.3" x 2.17")	84 x 55mm (3.3" x 2.17")

# Computer On Modules

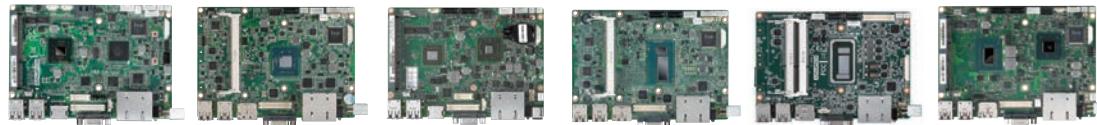


Model Name	SOM-5790	SOM-5788	SOM-6765	SOM-6763
Form Factor	COM Express Basic	COM Express Basic	COM Express Compact	COM Express Compact
Pin-out Type	COM R2.0 Type 2	COM R1.0 Type 2	COM R2.0 Type 2	COM R1.0 Type 2
Processor System	CPU	2nd Gen. Intel Core i7/i5/i3/Celeron	Intel Core i7/i5/i3/Celeron	Intel Atom D2550/N2600/N2800
	Base Frequency	2.5 - 1.4GHz	2.53 - 1.06GHz	1.86 - 1.6GHz
	Processor Core	4/2/1	2/1	2
	LLC	6/4/3/2/1.5MB	4/3/2MB	1MB
	CPU TDP	45/35/25/17W	35/25/18W	10/6.5/3.5W
Memory	Chipset	Intel QM67	Intel QM57	Intel NM10
	Technology	DDR3 1333/1066	DDR3 1333/1066/800	DDR3 1066/800
	ECC Support	-	B1 version only	-
	Max. Capacity	16GB	8GB	4GB/2GB
Graphics	Socket	2 x 204P SODIMM	2 x 204P SODIMM	1 x 204P SODIMM
	Controller	Intel HD Graphic	Intel HD Graphic	Intel GMA3650/3600
	Max. Frequency	1.1GHz - 800MHz	766 - 500MHz	640 - 400MHz
	VGA	1	1	1
	LCD (TTL/LVDS/eDP)	LVDS 2-CH 18/24-bit	LVDS 2-CH 18/24-bit	D Series: LVDS 1-CH 18/24-bit N Series: LVDS 1-CH 18-bit
	DDI (HDMI/DVI/DisplayPort)	-	2	2
	SDVO	1	-	-
Expansion	TV-out	-	Optional	-
	Multiple Displays	Dual	Dual	Dual
	PCIe x16	-	-	-
Serial Bus	PCIe x1	5	6	2 (Optional 4)
	PCI Masters	4	4	4
	ISA Bus	-	-	-
Ethernet	LPC	1	1	1
	SMBus	1	1	1
	I2C Bus	1	1	1
I/O	CAN Bus	-	-	-
	Controller	Intel 82579LM	Intel 82577LM	Intel 82583V
	Speed	10/100/1000Mbps	10/100/1000Mbps	10/100/1000 Mbps
	SATA	4	4	2
	PATA Channel	1	1	1
	USB3.0	-	-	-
	USB2.0	8	8	8
	Audio	HD Audio	HD Audio	HD Audio
	SPI Bus	1	-	1
	GPIO	8	8	8
	SDIO (GPIO pin shared)	-	-	-
	Watchdog	1	1	1
	COM Port	-	-	-
	LPT/FDD	-	-	-
Power	PS/2	-	-	-
	IR	-	-	-
	Onboard Storage	-	-	-
	TPM	-	-	-
Environment	Power Type	ATX: Vin, VSB, AT: Vin	ATX: Vin, VSB, AT: Vin	ATX: Vin, VSB, AT: Vin
	Supply Voltage	Vin: 11.4-12.6V, VSB: 4.75-5.25V	Vin: 11.4-12.6V, VSB: 4.75-5.25V	Vin: 11.4-12.6V, VSB: 4.75-5.25V
	Power Consumption Max.	40.1 Watt	42.7 Watt	10.3 W
	Power Consumption Idle	11.4 Watt	7.9 Watt	7.06 W
Mechanical	Operating Temp.	0 ~ 60° C (32 ~ 140° F)	0 ~ 60° C (32 ~ 140° F)	0 ~ 60° C (32 ~ 140° F)
	Extended Temp. (Optional)	-	-40 ~ 85° C (-40 ~ 185° F)	-40 ~ 85° C (-40 ~ 185° F)
Mechanical	Dimensions	125 x 95mm (4.92" x 3.74")	125 x 95mm (4.92" x 3.74")	95 x 95 mm (3.74" x 3.74")



SOM-3565	SOM-4466	SOM-4463	SOM-4455
Qseven	ETX	ETX	ETX
Qseven R1.2	ETX 3.0	ETX 3.0	ETX 3.0
Intel Atom N2600	AMD G-Series T16R	Intel Atom D525/N455	AMD LX800
1.6GHz	615MHz	1.8/1.66GHz	500MHz
2	1	2/1	1
1MB	512KB	1MB/512KB	128KB
3.5W	4.5W	13/6.5W	3.6W
Intel NM10	AMD A55E	Intel ICH8M	AMD CS5536
DDR3 800	DDR3 1066	DDR3 800/667	DDR 400/333
-	-	-	-
2GB	4GB	4GB/2GB	1GB
Onboard	1 x 204P SODIMM	1 x 204P SODIMM	1 x 200P SODIMM
Intel GMA3600	AMD Radeon HD6250	Intel GMA3150	AMD LX800
400MHz	276MHz	400/200MHz	-
-	1	1	1
LVDS 1-CH 18-bit	LVDS 1-CH 18/24-bit TTL 1-CH 18-bit	LVDS 1-CH 18-bit/24-bit	LVDS 1-CH 18/24-bit TTL 1-CH 18-bit
1	-	-	-
-	-	-	-
-	-	-	-
Dual	Dual	Dual	Dual
-	-	-	-
3 (Optional 4)	-	-	-
-	4	4	4
-	1	1	1
1	-	-	-
1	1	1	1
1	1	1	1
-	-	-	-
Intel 82574L	Realtek RTL8105E	Realtek RTL8103EL	Realtek RTL8100CL
10/100/1000 Mbps	10/100 Mbps	10/100 Mbps	10/100Mbps
Up to 2	2	2	2
-	2	2	2
-	-	-	-
8	4	4	4
HD Audio	Line-in/Line-out/MIC	Line-in/Line-out/MIC	Line-in/Line-out/MIC
1	-	-	-
8	1	1	1
-	-	-	-
1	1	1	1
1 (2-wire)	2	2	2
-	1	1	1
-	KB/MS	KB/MS	KB/MS
-	1	-	1
SLC/MLC SSD	mSATA socket	-	CF socket
-	-	-	-
ATX: Vin, VSB, AT: Vin	ATX: Vin, VSB, AT: Vin	ATX: Vin, VSB, AT: Vin	ATX: Vin, VSB, AT: Vin
Vin: 4.75-5.25V, VSB: 4.75-5.25V	Vin: 4.75-5.25V, VSB: 4.75-5.25V	Vin: 4.75-5.25V, VSB: 4.75-5.25V	Vin: 4.75-5.25V, VSB: 4.75-5.25V
7.8 Watt.	7.75 Watt.	13.6 Watt	10.05 Watt.
4.9 Watt.	6.1 Watt.	10.9 Watt	9.0 Watt.
0 ~ 60° C (32 ~ 140° F)	0 ~ 60° C (32 ~ 140° F)	0 ~ 60° C (32 ~ 140° F)	0 ~ 60° C (32 ~ 140° F)
-40 ~ 85° C (-40 ~ 185° F)	-40 ~ 85° C (-40 ~ 185° F)	-40 ~ 85° C (-40 ~ 185° F)	-20~80° C (-4~176° F)
70 x 70mm (2.75" x 2.75")	114 x 95 mm (3.74" x 4.5")	114 x 95mm (3.74" x 4.5")	114 x 95 mm (3.74" x 4.5")

# MI/O Extension SBCs

**NEW****NEW**

Model Name		MIO-5250	MIO-5251	MIO-5270	MIO-5271	MIO 5272	MIO-5290
Form Factor	3.5" MI/O-Compact	3.5" MI/O-Compact	3.5" MI/O-Compact	3.5" MI/O-Compact	3.5" MI/O-Compact	3.5" MI/O-Compact	3.5" MI/O-Compact
Processor System	CPU	Intel Atom D2550/ N2600	Intel Atom E3825 / E3845/Intel Celeron J1900	AMD G- Series T56N/ T40E/ T40R	Intel Core i5-4300U, Celeron 2980U	Intel Core i / Celeron	Intel Core i7-3555UE / i7-3517UE / i3-3217UE/Celeron 1047UE
	CPU TDP	10W/ 3.5W	6W/ 10W/ 10W	18 W/ 6.4 W/ 5.5 W	15W	15W	25 W/ 17 W/ 17W
	Frequency	1.86 GHz/ 1.6 GHz	1.33 GHz/ 1.91 GHz/ 2(Turbo: 2.42) GHz	1.65 GHz/ 1.0 GHz/ 1.0 GHz	1.9(Turbo: 2.9) GHz/ 1.6 GHz	2.0~2.6 GHz	2.5(Turbo: 3.0) GHz/ 1.7(Turbo: 2.6) GHz/ 1.6 GHz/ 1.4 GHz
	Core Number	2	2/ 4/ 4	2/ 2/ 1	2	2.0~2.6 GHz	2
	L2 Cache	1MB	1MB/ 2MB	1MB/ 512KB/ 512KB	-	3MB/ 2MB	-
	L3 Cache	-	-	-	-	2~4MB	-
Memory	BIOS	AMI EFI 16Mbit	AMI UEFI 64Mbit	AMI EFI 32Mbit	AMI UEFI 128 Mb	AMI UEFI 128 Mbit	AMI EFI 64Mbit
	Chipset	Intel NM10	-	AM50M	-	-	Intel QM77
	Technology	DDR3 1066 MHz/DDR3 800MHz	DDR3L 1066/1333MHz	DDR3 1066 MHz/1333MHz (T56N)	DDR3L 1333/1600 MHz	DDR3L 1333/ 1600 MHz	DDR3 1600MHz, DDR3L 1333 MHz
	Max. Capacity	4 GB	8 GB	4 GB	8 GB	16 GB	8 GB
Display	Socket	1 x 204-pin SODIMM	1 x 204-pin SODIMM	1 x 204-pin SODIMM	1 x 204-pin SODIMM	2 x 204-pin SODIMM	1 x 204-pin SODIMM
	Controller	Integrated Intel GMA 3600 series	Intel Gen7 graphic engine	AMD Radeon™ HD 6320/6250/6250	Intel® HD Graphics 4000 / Intel HD Graphics (Celeron)	Intel® HD Graphics 500 series	Intel® HD Graphics 4000 / Intel® HD Graphics (Celeron)
	Graphic Engine	DirectX® 9 and OpenGL3.0 HW Accelerated Decode: MPEG2, H.264, VC-1	DirectX11, OpenGL3.2, OpenCL1.2 HW Decode: H.264, MPEG2, MVC, VC-1, WMV9, MJPEG and VP8	DirectX® 11 and OpenGL 4.1 2D/ 3D Motion Video Acceleration, Supports DVD, Blu-ray®; Hardware decode (UDF 3); H.264 (MPEG2 and MVC only for J1900)	DirectX11.1, OpenGL 4.0, and OpenCL 1.2 Full AVC/VC1/MPEG2 HW Decode	DirectX11.2, OpenGL 5.0, and OpenCL 2.1 Full AVC/VC1/MPEG2 HW Decode	DirectX11, OpenGL 3.1, and OpenCL 11 Hardware decode acceleration: AVC/H.264, MPEG-2, VC-1
	Graphic Memory	Share with system memory up to 256 MB	Share with system memory up to 384 MB	Share with system memory up to 384MB	Share with system memory up to 1792MB	TBD	Share with system memory up to 1792MB
	VGA	Up to 1920 x 1200 at 60 Hz	Up to 2560 x 1600 at 60Hz	T56N up to 2560 x 1600, T40R & T40E up to 1920 x 1200 at 60Hz	Up to 1920 x 1200 at 60 Hz	Up to 1920 x 1200 at 60 Hz	Up to 2048 x 1536 at 75Hz
	LCD (LVDS/eDP)	LVDS1 18/24-bit, N2600: up to 1366 x 768 at 60 Hz D2550: up to 1440 x 900 at 60 Hz LVDS2 48-bit, D2550: up to 2560 x 1600 at 60Hz	LVDS 48-bit, up to 1920 x 1200 at 60Hz eDP (optional): up to 2560 x 1600 at 60Hz	LVDS 48-bit, up to 1920 x 1200 at 60Hz	LVDS 48-bit, up to 1920 x 1200 at 60Hz	LVDS 48-bit, up to 1920 x 1200 at 60Hz eDP (optional), 4096 x 2304 at 60 Hz	LVDS 48-bit, up to 2560 x 1600 at 60 Hz
Expansion Interface	DDI (HDMI/DVI/ DisplayPort)	HDMI: up to 1920 x 1200 at 60Hz	HDMI: up to 1920 x 1080 at 60Hz, DisplayPort (optional): up to 2560 x 1600 at 60Hz	HDMI: up to 1920 x 1080 at 60Hz & 36bpp	HDMI: up to 4096 x 2304 at 24 Hz	HDMI: up to 4096 x 2160 at 24 Hz	HDMI: up to 1920 x 1200 at 60Hz Displayport: up to 2560 x 1600 at 60Hz
	Multiple Display	VGA+LVDS, VGA+HDMI, HDMI+LVDS	VGA+HDMI/DP, VGA+LVDS/eDP, HDMI/DP+LVDS/eDP	VGA+LVDS, VGA+HDMI/DP, HDMI/DP+LVDS, VGA+HDMI/DP+LVDS/eDP*	VGA + HDMI, VGA + LVDS/eDP*, HDMI + LVDS, VGA + HDMI/DP+LVDS	VGA + HDMI, VGA + LVDS/eDP*, HDMI + LVDS/eDP*, VGA + HDMI + LVDS/eDP*	VGA+LVDS, VGA+HDMI/DP, HDMI+DP+LVDS, VGA/LVDS + DP (coaxial) + DP (MoE)
	Mini PCIe	1 x Full-size	1 x Full-size	1 x Full-size	1 x Full-size, 1 x Half-size	2 x Full-size	1 x Full-size, 1 x Half-size
	SIM Socket	1	1	-	1	1	-
Expansion Interface	SBus	1	1	1	1	1	1
	I2C	1 (Shares with SMBus pin)	1 (Shares with SMBus pin)	1 (Shares with SMBus pin)	1 (Shares with SMBus pin)	1 (Shares with SMBus pin)	1 (Shares with SMBus pin)
	MIOe	1 x PCIe, line-out, Displayport (optional), Reset, Power On, +5Vsb, +12Vsb	1 x PCIe, line-out, DisplayPort (optional), Reset, Power On, +5Vsb, +12Vsb	1 x PCIe, line-out, DisplayPort (optional), Reset, Power On, +5Vsb, +12Vsb	1 x PCIe, line-out, DisplayPort (optional), Reset, Power On, +5Vsb, +12Vsb	1 x PCIe, line-out, DisplayPort (optional), Reset, Power On, +5Vsb, +12Vsb	1 x PCIe, line-out, DisplayPort (optional), Reset, Power On, +5Vsb, +12Vsb
Ethernet	Controller	GbE1 & GbE2: Intel B2583V	GbE1 & GbE2: Intel I210	GbE1 & GbE2: Intel I218, GbE2: Intel I210 Realtek RTL8111E-VB-GR	GbE1: Intel I218, GbE2: Intel I210 Realtek RTL8111E-VB-GR	GbE1: Intel I219, GbE2: Intel I210	GbE1: Intel B2583V, GbE2: Intel B2583V
	Speed	10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps
Audio	Connector	RJ45 x 2	RJ45 x 2	RJ45 x 2	RJ45 x 2	RJ45 x 2	RJ45 x 2
	Audio Interface	High Definition Audio	High Definition Audio	High Definition Audio	High Definition Audio	High Definition Audio	High Definition Audio
	CODEC	Realtek ALC892	Realtek ALC888S	Realtek ALC882	Realtek ALC888S	Realtek ALC888S	Realtek ALC892
WatchDog Timer	Amplifier	Optional via MIOe	Optional via MIOe	Optional via MIOe	Optional via MIOe	Optional via MIOe	Optional via MIOe
	Connector	Line-in, Line out, Mic-in	Line-in, Line out, Mic-in	Line-in, Line out, Mic-in	Line-in, Line out, Mic-in	Line-in, Line out, Mic-in	Line-in, Line out, Mic-in
Storage	255 levels timer interval	255 levels timer interval	255 levels timer interval	255 levels timer interval	255 levels timer interval	255 levels timer interval	255 levels timer interval
	SATA	1, up to 3Gb/s (300 MB/s)	1, up to 3Gb/s (300MB/s)	2, up to 3Gb/s (300 MB/s)	2, up to 6Gb/s (600 MB/s)	2, up to 6Gb/s (600 MB/s)	2, up to 6.0 Gb/s (600 MB/s)
	mSATA	Supports either mSATA or full size miniPCIe, default support miniPCIe	1 x Full-size	Supports either mSATA or full size miniPCIe, default support miniPCIe	Supports either mSATA or full size miniPCIe, default support mSATA	Supports either mSATA or full size miniPCIe, default support mSATA	Supports either mSATA or full size miniPCIe
I/O	CFast	1	-	1	-	-	-
	USB3.0	-	1	-	2	2	2
	USB2.0	6 (4 from rear, 2 from internal)	3 (3 from rear, 1 from internal)	6 (4 from rear, 2 from internal)	3 (2 from rear, 1 from internal)	4 (2 from rear, 2 from internal)	4 (2 from rear, 2 from internal)
I/O	GPIO	8-bit general purpose input/output	8-bit general purpose input/output	8-bit general purpose input/output	8-bit general purpose input/output	8-bit general purpose input/output	8-bit general purpose input/output
	COM Port	2 x RS-232, with RS-485 auto flow control	2 x RS-232, with RS-485 auto flow control	3 x RS-232, with RS-485 auto flow control	2 x RS-232/422/485 with RS-485 auto flow control	2 x RS-232/422/485 with RS-485 auto flow control	1 x RS-232, 1 x RS-232/422/485 with RS-485 auto flow control
	Reset Button	1	1	1	1	1	1
Security	Smart Fan	-	-	1 (T56N only)	-	-	1
	TPM	-	-	-	-	TPM 2.0	-
Power	Power Type	Single 12V DC power input	Single 12V DC power input	Single 12V DC power input	Single 12V DC power input	Single 12V DC power input	Single 12V DC power input
	Power Supply Voltage	Supports single 12V input, ± 10%	Supports single 12V input, ± 10%	Supports single 12V input, ± 10%	Supports single 12V input, ± 10%	Supports single 12V input, ± 10%	Supports single 12V input, ± 10%
	Connector	ATX 2xP/ DC Jack	ATX 2xP (DC Jack optional)	ATX 2xP/ DC Jack	ATX 2xP (DC Jack optional)	ATX 2xP (DC Jack optional)	ATX 2xP/ DC Jack
Power	Power Consumption (Idle)	N2600: 0.606A @ 12V (7.27 W) D2550: 0.829A @ 12V (9.95 W)	E3825: 0.42A @ 12V (5.42 W) E3845: 0.51A @ 12V (6.12W) J1900: 0.49A @ 12V (7.88 W)	T40R: 0.59A @ 12V (7.08 W) T40E: 0.53A @ 12V (6.36 W)	2980U: 0.38A @ 12V (4.56 W) 4300U: 0.39A @ 12V (4.68 W)	TBD	3217UE: 1.507A @ 12V (18.08 W) 3517UE: 1.965A @ 12V (23.5 W) 3555UE: 2.309A @ 12V (27.7 W) 1047UE: 1.1A @ 12V (12.3 W)
	Power Consumption (Full Load)	N2600: 0.729A @ 12V (8.75 W) D2550: 1.029A @ 12V (12.35 W)	E3825: 0.81A @ 12V (9.72 W) E3845: 0.92A @ 12V (11.04W) J1900: 1.11A @ 12V (13.32 W)	T40R: 0.8A @ 12V (9.6 W) T40E: 0.82A @ 12V (9.84 W)	2980U: 1.71A @ 12V (20.52 W) 4300U: 2.46A @ 12V (29.52 W)	TBD	3217UE: 1.84A @ 12V (22.08 W) 3517UE: 2.3A @ 12V (27.6 W) 3555UE: 2.708A @ 12V (32.5 W) 1047UE: 1.49A @ 12V (17.88 W)
	Battery	Lithium 3 V / 210 mAh	Lithium 3 V / 210 mA	Lithium 3 V / 210 mA	Lithium 3 V / 210 mA	Lithium 3 V / 210 mA	Lithium 3 V / 210 mA
Environment	Operational Temperature	0 ~ 60° C (32 ~ 140° F) (Operational humidity: 40° C @ 95% RH Non-Condensing)	0 ~ 60° C (32 ~ 140° F) (Operational humidity: 40° C @ 95% RH Non-Condensing)	0 ~ 60° C (32 ~ 140° F) (Operational humidity: 40° C @ 95% RH Non-Condensing)	0 ~ 60° C (32 ~ 140° F) (Operational humidity: 40° C @ 95% RH Non-Condensing)	0 ~ 60° C (32 ~ 140° F) (Operational humidity: 40° C @ 95% RH Non-Condensing)	0 ~ 60° C (32 ~ 140° F) (Operational humidity: 40° C @ 95% RH Non-Condensing)
	Non-Operational Temperature	-40° C ~ 85° C and 60° C @ 95% RH Non-Condensing	-40° C ~ 85° C and 60° C @ 95% RH Non-Condensing	-40° C ~ 85° C and 60° C @ 95% RH Non-Condensing	-40° C ~ 85° C and 60° C @ 95% RH Non-Condensing	-40° C ~ 85° C and 60° C @ 95% RH Non-Condensing	-40° C ~ 85° C and 60° C @ 95% RH Non-Condensing
Physical Characteristics	Dimensions (LxWxH)	146 x 102 mm (5.7" x 4")	146 x 102 mm (5.7" x 4")	146 x 102 mm (5.7" x 4")	146 x 102mm (5.7" x 4")	146 x 102 mm (5.7" x 4")	146 x 102 mm (5.7" x 4")
	Weight	0.74 kg (1.63 lb), weight of total package	0.5 kg (1.1 lb), weight of total package	0.78 kg (1.72 lb), weight of total package	0.74 kg (1.63 lb), weight of total package	TBD	0.84 kg (1.72lb), weight of total package
Operating System	Microsoft Windows	Yes	Yes	Yes	Yes	Yes	Yes
	Linux	Yes	Yes	Yes	Yes	Yes	Yes
	SUSIAccess	Yes	Yes	Yes	Yes	Yes	Yes
	iManager/SUSI 4.0	Yes	Yes	Yes	Yes	Yes	Yes
Certification	EMC	CE, FCC	CE, FCC	CE, FCC	CE, FCC	CE, FCC	CE, FCC

							NEW	NEW	NEW
									
Model Name	MIO-2260	MIO-2261	MIO-2262	MIO-2263	MIO-3260	MIO-2270			
Processor System	2.5" M/I/O-Ultra (Pico-ITX)	2.5" M/I/O-Ultra (Pico-ITX)	2.5" M/I/O-Ultra (Pico-ITX)	2.5" M/I/O-Ultra (Pico-ITX)	2.5" M/I/O-Ultra (Pico-ITX)	2.5" M/I/O-Ultra (Pico-ITX)			
	CPU	Intel Atom N455	Intel Atom N2600/ N2800	Intel Atom N2600/ N2800	Intel Atom E3825/ Intel Celeron J1900	Intel Atom E3825/ Intel Celeron N2930	AMD G-Series SoC GX-415GA/ AMD G-Series SoC GX-210JA		
	CPU TDP	6.5W	3.5W/ 6.5W	3.5W/ 6.5W	6W/ 10W	6W/ 7.5W	15W/ 6W		
	Frequency	1.66 GHz	1.6 GHz/ 1.86 GHz	1.6 GHz/ 1.86 GHz	1.33 GHz/ 2.0/Turbo: 2.42) GHz	1.33 GHz/ 1.83/Turbo: 2.16) GHz	1.5 GHz/ 1.0 GHz		
	Core Number	1	2	2	2/ 4	2/ 4	4/ 2		
	L2 Cache	512 KB	1MB	1MB	1 MB/ 2 MB	1 MB/ 2 MB	2 MB/ 1 MB		
Memory	L3 Cache	-	-	-	-	-	-		
	BIOS	AMI EFI 16Mbit	AMI EFI 16Mbit	AMI EFI 16Mbit	AMI EFI 64 Mbit	AMI EFI 64 Mbit	AMI EFI 32 Mbit		
	Chipset	Intel ICH8	Intel NM10	Intel NM10	-	-	-		
	Technology	DDR3 667 MHz	DDR3 800/ DDR3 1066MHz	DDR3 800/ DDR3 1066MHz	DDR3L 1066/ 1333 MHz	DDR3L 1066/ 1333 MHz	DDR3/3L 1600/ 1066 MHz		
Memory	Max. Capacity	2 GB	4 GB	4 GB	8 GB	8 GB	8 GB		
	Socket	1 x 204-pin SODIMM	1 x 204-pin SODIMM	1 x 204-pin SODIMM	1 x 204-pin SODIMM	1 x 204-pin SODIMM	1 x 204-pin SODIMM		
Display	Controller	Integrated Intel GMA 3150	Integrated Intel GMA 3600 series	Integrated Intel GMA 3600 series	Intel Gen7 graphic engine	Intel Gen7 graphic engine	AMD Radeon HD 8330E/ 8180		
	Graphic Engine	Intel Gen 3.5 DX9, MPEG2 Decode in HW Embedded Gen3.5+ GFX Core	DirectX® 9 and OpenGL3.0 support	DirectX® 9 and OpenGL3.0 support	DirectX® 11, OGL 3.2, OCL 1.1, OGL ES 2.0.2, 2D/ 3D Acceleration, Encode:H264, H264, MPEG2 Decode:H264, MPEG2, VC-1, WMV9	DirectX®11, Open GL3.0, Open CL 1.1, OGLES 2.0, Encode:H264, H264, MPEG2 Decode:H264, MPEG2, VC-1, WMV9	DirectX®11, Open GL3.0, Open CL 1.2, OGLES 2.0, Encode:H264, H264, MPEG2 Decode:H264, MPEG2, VC-1, MVC		
	Graphic Memory	Share with system memory up to 224MB	Share with system memory up to 256MB	Share with system memory up to 256MB	Share with system memory up to 384 MB	Share with system memory up to 384 MB	Share with system memory up to 384 MB		
	VGA	Up to 1400 x 1050 at 60 Hz	Up to 1920 x 1200 at 60 Hz	Up to 1920 x 1200 at 60 Hz	Up to 2560 x 1600 at 60Hz	Up to 2560 x 1600 at 60Hz	Up to 2048 x 1536 at 60Hz		
	LCD (TTL/LVDS/ eDP)	LVDS 18-bit, up to 1366 x 768 at 60 Hz	LVDS 18/24-bit, up to 1366 x 768 at 60 Hz	LVDS 18/24-bit, up to 1366 x 768 at 60 Hz	LVDS 18/24-bit, up to 1440 x 900 at 60 Hz	LVDS 18/24-bit, up to 1440 x 900 at 60 Hz	LVDS 18-bit, up to 1600 x 900 at 60 Hz		
	DDI (HDMI/DVI/ DisplayPort)	-	-	-	HDMI 1.4a 1920x1200 at 60 Hz/ 24bpp	-	HDMI 1.4a 1920x1200 at 60 Hz/ 24bpp		
	Multiple Display	VGA+LVDS	VGA+LVDS	VGA+LVDS	VGA+LVDS, HDMI+LVDS	LVDS+VGA, LVDS+DP/HDMI, VGA+DP/HDMI	VGA+LVDS, HDMI+LVDS		
Expansion Interface	Mini PCIe	1 x Half-size	1 x Half-size	1 x Full-size (Default support mSATA, selected by BIOS)	1 x Half size	1 x Full-size	1 x Half size		
	SMBus	1	1	1 (from 64pin connector B)	1	1 (from 64pin connector B)	1		
	I²C	1 (Shares with SMBus pin, supported by request)	1 (Shares with SMBus pin, supported by request)	1 (from 64pin connector B)	-	1 (from 64pin connector B)	-		
	MIOe	SMBus, 3 x USB 2.0, 4 x PCIe1, LPC, Line-out, DP/HDMI (HDMI supported by request), Reset, PowerOn, +5Vsb, +12Vsb	SMBus, 2 x USB2.0, 2 x PCIe x1, LPC, Line-out, DP/HDMI (HDMI supported by request), Reset, PowerOn, +5Vsb, +12Vsb	SMBus, 3 x USB 2.0, 2 PCIe x1, LPC, Line out, DP/HDMI (HDMI supported by request), Reset, PowerOn, +5Vsb, +12Vsb	x1, 2 x USB2.0, 2 PCIe x1, LPC, HD Audio line-out, DP or HDMI supported by request, 5Vsb/12 Vsb power	SMBus, USB3.0, LPC, 2 x PCIe x1, Line out, DisplayPort/HDMI*, +5Vsb/+12V sb power, Power On, Reset	2 x USB2.0, 2 PCIe x1, LPC, HD Audio line-out, DP or HDMI supported by request, 5Vsb/12 Vsb power		
	64-pin connector A	-	-	12V DC input, Inverter, VGA, 2 x USB2.0, 1GbE w/ LED	-	12V DC input, Inverter, VGA, 2 x USB2.0, 1GbE	-		
	64-pin connector B	-	-	SMBus, I2C, Power/Reset button, HDD/Power LED, 2 x USB2.0, 8-bit GPIO, HD Audio Line in/out, 2 x RS-232	-	SMBus, I2C, Power/Reset button, HDD/Power LED, 2 x USB2.0, 8-bit GPIO, HD Audio Line in, Line out, Mic-in, 2 x RS-232/422/485	-		
Ethernet	Controller	Intel 82567V	Intel 82583V	Intel 82583V	Intel i210	Intel i210	Intel Realtek RTL8111E		
	Speed	10/100/1000Mbps	10/100/1000Mbps	10/100/1000Mbps	10/100/1000Mbps	10/100/1000Mbps	10/100/1000Mbps		
Audio	Connector	RJ45	RJ45	from 64pin connector A	RJ45	from 64pin connector A	RJ45		
	Audio Interface	High Definition Audio	High Definition Audio	High Definition Audio	High Definition Audio	High Definition Audio	High Definition Audio		
	CODEC	Realtek ALC892	Realtek ALC892	Realtek ALC892	Realtek ALC888S	Realtek ALC888S	Realtek ALC888S		
	Amplifier	Optional via MIOe	Optional via MIOe	Optional via MIOe	Optional via MIOe	Optional via MIOe	Optional via MIOe		
WatchDog Timer	Connector	Line-in, Line out	Line-in, Line out	Line-in, Line out (from 64pin connector B)	Line-in, Line out	Line-in, Line out (from 64pin connector B)	Line-in, Line out		
		255 levels timer interval, programmable by software	255 levels timer interval, programmable by software	255 levels timer interval, programmable by software	255 levels timer interval, programmable by software	255 levels timer interval, programmable by software	255 levels timer interval, programmable by software		
Storage	SATA	1, up to 3Gb/s (300 MB/s)	1, up to 3Gb/s (300 MB/s)	1, up to 3Gb/s (300 MB/s)	1, up to 3Gb/s (300 MB/s)	1, up to 6Gb/s (600 MB/s)	1, up to 6Gb/s (600 MB/s)		
	mSATA	-	1 (Integrates USB signal, supports either mSATA or USB interface module)	1 (Integrates USB signal, supports either mSATA or USB interface module)	-	1	1 (Integrates USB signal, supports either mSATA or USB interface module)		
	CompactFlash	1 x CompactFlash TYPE I (Primary Master PATA Channel)	-	-	-	-	1 (Integrates USB signal, supports either mSATA or USB interface module)		
I/O	USB3.0	-	-	-	1	1 (from MIOe)	2		
	USB2.0	2	4	4 (from internal)	3	4 (from internal)	2 (from internal)		
	GPIO	8-bit general purpose input/ output	8-bit general purpose input/ output	8-bit GPIO (from 64pin connector B)	8-bit general purpose input/ output	8-bit GPIO (from 64pin connector B)	8-bit general purpose input/ output		
	COM Port	2 x RS-232	2 x RS-232	2 x RS-232	1 x RS-232, 1 x RS-232/422/485 with RS-485 Auto-flow control	2 RS-232/422/485 (form 64-pin connector B)	1 x RS-232, 1 x RS-232/422/485 with RS-485 Auto-flow control		
	Reset Button	1	1	1	1	1	1		
	Fan	-	-	-	-	-	1		
Power	Power Type	Single 12V DC power input	Single 12V DC power input	Single 12V DC power input	Single 12V DC power input	Single 12V DC power input	Single 12V DC power input		
	Power Supply Voltage	Supports single 12V input, ± 10%	Supports single 12V input, ± 10%	Supports single 12V input, ± 10%	Supports single 12V input, ± 10%	Supports single 12V input, ± 10%	Supports single 12V input, ± 10%		
	Connector	ATX 2x2P/ DC Jack (optional)	ATX 1x2P/ DC Jack (optional)	From 64pin connector A	ATX 1x2P, DC Jack (optional)	From 64pin connector A	ATX 1x2P, DC Jack (optional)		
	Power Consumption (Idle)	0.64A, 12V (7.68 W)	N2600: 0.35A @ 12V (4.2 W)/ N2800: 0.46A @ 12V (5.52 W)	N2600: 0.43A @ 12V (5.24 W)/ N2800: 0.51A @ 12V (6.12 W)	J1900: 0.86A @ 12V (10.59W)/ E3825: 0.59A @ 12V (7.08W)	E3825: 0.37A @ 12V (4.47W)/ N2930: 0.42A @ 12V (5.08W)	GX-415GA: 1.05A @ 12V (12.6W)/ GX-210JA: 0.49A @ 12V (5.93W)		
Environment	Power Consumption (Full Load)	0.86A, 12V (10.32 W)	N2600: 0.76A @ 12V (9.12W)/ N2800: 0.80A @ 12V (9.6W)	N2600: 0.67A @ 12V (8.05 W)/ N2800: 0.82A @ 12V (9.8 W)	J1900: 1.04A @ 12V (12.48W)/ E3825: 0.59A @ 12V (7.13W)	E3825: 0.76A @ 12V (9.12W)/ N2930: 0.81A @ 12V (9.73W)	GX-415GA: 1.26A @ 12V (15.12W)/ GX-210JA: 0.85A @ 12V (10.2W)		
	Battery	Lithium 3 V/ 210 mA	Lithium 3 V/ 210 mA	Lithium 3 V/ 210 mA	Lithium 3 V/ 210 mA	Lithium 3 V/ 210 mA	Lithium 3 V/ 210 mA		
Physical Characteristics	Operational Temperature	0 ~ 60° C (32 ~ 140° F) (Operational humidity: 40° C @ 95% RH Non-Condensing)	0 ~ 60° C (32 ~ 140° F) (Operational humidity: 40° C @ 95% RH Non-Condensing)	0 ~ 60° C (32 ~ 140° F) (Operational humidity: 40° C @ 95% RH Non-Condensing)	0 ~ 60° C (32 ~ 140° F) (Operational humidity: 40° C @ 95% RH Non-Condensing)	0 ~ 60° C (32 ~ 140° F) (Operational humidity: 40° C @ 95% RH Non-Condensing)	0 ~ 60° C (32 ~ 140° F) (Operational humidity: 40° C @ 95% RH Non-Condensing)		
	Non-Operational Temperature	-40° C ~ 85° C and 60° C @ 95% RH Non-condensing	-40° C ~ 85° C and 60° C @ 95% RH Non-condensing	-40° C ~ 85° C and 60° C @ 95% RH Non-condensing	-40 ~ 85° C and 60° C @ 95% RH Non-condensing	-40 ~ 85° C and 60° C @ 95% RH Non-condensing	-40 ~ 85° C and 60° C @ 95% RH Non-condensing		
Operating System	Dimensions (LxWxH)	100 x 72 mm (3.9" x 2.8")	100 x 72 mm (3.9" x 2.8")	100 x 72 mm (3.9" x 2.8")	100 x 72 mm (3.9" x 2.8")	100 x 72 mm (3.9" x 2.8")	100 x 72 mm (3.9" x 2.8")		
	Weight	0.42 kg (0.93 lb), weight of total package	0.48 kg (1.06 lb), weight of total package	0.37 kg (0.82 lb), weight of total package	0.46 kg (1.01 lb), weight of total package	MIO-3260L: 0.35 kg (0.77 lb), MIO-3260C: 0.55 kg (1.21 lb), weight of total package	0.45 kg (0.99 lb), weight of total package		
Certification	Microsoft Windows	Yes	Yes	Yes	Yes	Yes	Yes		
	Linux	Yes	Yes	Yes	Yes	Yes	Yes		
	SUSIAccess	Yes	Yes	Yes	Yes	Yes	Yes		
iManager	iManager	-	-	-	-	-	-		
	EMC	CE, FCC	CE, FCC	CE, FCC	CE, FCC	CE, FCC	CE, FCC		

# 3.5" Single Board Computers

**NEW****NEW**

Model Name	PCM-9310	PCM-9343	PCM-9362	PCM-9363	PCM-9365
Form Factor	3.5" SBC	3.5" SBC	3.5" SBC	3.5" SBC	3.5" SBC
Processor System	CPU	Intel Pentium N3700/ Celeron N3150/ N3050	DM&P Vortex86X 800 MHz supports Floating Point Unit (FPU)	Intel Atom N450/ D510	Intel Atom N455/ D525
	CPU TDP	4-6W	3W	5.5W/ 13W	6.5W/ 13W
	Frequency	1.6/ 1.6/ 1.6 GHz (Burst: 2.4/ 2.08/ 2.16 GHz)	800 MHz	1.66 GHz	1.66 GHz for N455/ 1.8 GHz for D525
	Core Number	4/ 4/ 2	1	1/2	1/2
	L2 Cache	2/ 2/ 1 MB	256 KB	512 KB/ 1 MB	512 KB for N455/ 1 MB for D525
	BIOS Chipset	AMI UEFI BIOS at 64 Mb	Award integrated 16 Mbit ROM in SOC DM&P Vortex86DX + SMI SM712	AMI EFI 16 Mbit Intel ICH8M	AMI UEFI BIOS at 64 Mbit Intel ICH8M Intel Atom SoC
Memory	Technology	DDR3L-1600MHz	DDR2 333 MHz	DDR2 667 MHz	DDR3 667MHz for N455, 800MHz for D525
	Max. Capacity	8 GB	512 MB	2 GB	2 GB for N455, 4 GB for D525
	Socket	1 x 204-pin SODIMM	No	1 x 200-pin SODIMM	1 x 204-pin SODIMM
	Onboard Memory	-	On board 256 MB/ On board 512 MB	-	Onboard 2GB/ 4GB
Display	Controller	Intel Pentium/Celeron SoC	SMI SM712 2D graphics chip	Intel Atom N450/Intel Atom D510	Intel Atom N455/D525
	Graphic Engine	Intel Gen8 LP	62.5MHz single clock/cycle engine (EM+) 86MHz single clock/cycle engine (EM4+) Designed to accelerate DirectDraw	Intel 3.5 Gen. DX9, MPEG2 Decode in HW, Embedded Gen3.5+GFX Core	Intel 3.5 Gen. DX9, MPEG2 Decode in HW, Embedded Gen3.5+GFX Core
	Graphic Memory	-	4 MB internal memory	Shared system memory up to 224 MB	Shared system memory up to 224 MB
	VGA	1920 x 1200 at 60Hz	Supports up to 1024 x 768 @ 85Hz	N450 support up to 1000 x 1050 (SXGA) D510 support up to 2048 x 1536	N455 supports SXGA up to 1400 x 1050/ D525 supports up to 2048 x 1536
	LCD (TTL/LVDS/eDP)	LVDS: Single/dual-ch 18/24bit up to 1920 x 1200 at 60Hz eDP: 1.3 up to 2560x1440 (Optional) TTL: Supports up to 1024x 768 @ 24-bit	LVDS: Single channel 18/24-bit up to 1024 x 768 (1280 x 1024 supported by request) TTL: Supports up to 1024x 768 @ 24-bit	Supports single channel 18-bit LVDS up to WXGA 1366 x 768	Supports single channel 18/24-bit LVDS up to WXGA 1366 x 768
Expansion Interface	DDI (HDMI/DVI/DisplayPort)	HDMI: 1.4b up to 2560x1600 at 60Hz	-	-	HDMI 1.4a for HD video playback, 1080P at 60Hz
	Multiple Display	VGA + HDMI + LVDS/eDP	VGA + TTL, VGA + LVDS	VGA + LVDS	VGA + LVDS, HDMI* + LVDS, LVDS + LVDS*
	Mini PCIe	2x Full-size	-	1x Full-size	1x Full-size
	LPC	-	-	-	-
	SMBus	1 (shared with I2C)	-	1	1
	I2C Bus	1 (shared with SMBus)	1	-	1 (shared with SMBus pin)
Ethernet	PC/104	-	1	-	-
	PCI-104	-	-	-	1
	MIO-160	-	-	-	-
Audio	Controller	GbE1/2: RTL8111E	Ethernet1: DM&P Vortex86DX Ethernet2: Intel RTL8110SC	GbE1: Intel 82567V GbE2: Intel 82583V	Realtek RTL8111E-VL-CG
	Speed	10/100/1000 Mbps	10/100 Mbps	10/100/1000 Mbps	10/100/1000Mbps
	Connector	2x RJ45	RJ45 on Ethernet1, box header on Ethernet2	RJ45 x 2	RJ45 x 2
WatchDog Timer	Audio Interface	HD Audio	-	HD Audio	HD Audio
	CODEC	Realtek ALC892	-	Realtek ALC866	Realtek ALC888S, HD audio
	Amplifier	-	-	-	-
Storage	Connector	Line-in, line-out, mic-in	-	Pin Header (Line-in, Line out, Mic-in)	pin header (Line-in, Line out, Mic-in)
	WatchDog Timer	255 levels timer interval	Output system reset, programmable counter from 1~255 min/sec	Output system reset, programmable counter from 1~255 min/sec	Output System reset, Programmable counter from 1 ~ 255 minutes/ seconds
Storage	SATA	1x SATAII (up to 600 MB/s), 1x SATA II (optional, up to 300 MB/s)	1 x SATA (Max. Data Transfer Rate 150 MB/s)	2 x SATAII (Max. Data Transfer Rate 300 MB/s)	1, up to 3Gb/s (300 MB/s)
	mSATA	-	-	-	1 x Full-size
	IDE	-	-	-	-
	CompactFlash	-	CompactFlash Type I/II (Primary Master IDE Channel) Supports 2 channels Ultra-DMA 100	CompactFlash Type I/II (Primary Master IDE Channel)	CompactFlash Type I/II (Primary Master IDE Channel)
	Floppy	-	-	-	-
I/O	USB2.0	4	4	6	6
	GPIO	8-bit GPIO	16-bit GPIO	8-bit GPIO	8-bit
	LPT	-	1	1	1
	COM Port	4 (2x RS-232, 2x RS-232/422/485)	4 (3xRS-232, 1xRS-232/422/485)	4 (3xRS-232, 1xRS-232/422/485)	3 (2xRS-232, 1xRS-232/422/485)
	PS/2 KB/Mouse	-	1	1	1
	Reset Button	-	1	-	-
Power	Smart Fan	-	-	1	1
	Power Type	Single 12V DC power input	AT	AT/ ATX	AT
	Power Supply Voltage	12V ± 10%	Single 5V, ±5% (+12V option for LCD)	ATX 5V ±5%, 5Vsb±5%, AT 5V±5% (12V is optional for LCD inverter and add on card)/AT 12V±10%, not support ATX power supply	12V±10%
	Connector	ATX 2x2P (DC Jack Optional)	1x4pin	2x6pin for PCM-9362NC/NCF	2x2pin power connector
	Power Consumption (Idle)	TBD	PCM-9343EL: 0.44A @ 5V (2.2 W) PCM-9343EF: 0.81A @ 5V (4.05 W) PCM-9343EG: 1.02A @ 5V (5.1 W)	PCM-9362N: 0.87A @ 12V (10.44 W) PCM-9362NC/NCF: 2.31A@5V(11.55W) PCM-9362D: 1.14A @ 12V (13.68 W)	PCM-9363N: 0.74A @ 12V (8.88W) PCM-9362NC/NCF: 2.35A@5V(11.8 W) PCM-9363D: 1.18A @ 12V (14.16W)
Environment	Power Consumption (Full Load)	TBD	PCM-9343EL: 0.75A @ 5V (3.75 W) PCM-9343EF: 1.09A @ 5V (5.45 W) PCM-9343EG: 10.4A @ 5V (5.2 W)	PCM-9362N: 1.01A @ 12V (12.12 W) PCM-9362NC/NCF: 2.35A@5V(11.8 W) PCM-9362D: 1.43A @ 12V (17.16 W)	PCM-9363N: 0.86A @ 12V (10.32W) PCM-9363D: 1.18A @ 12V (14.16W)
	Battery	Lithium 3V / 210 mAh	Lithium 3V / 210 mAh	Lithium 3V / 210 mAh	Lithium 3V / 210 mAh
	Operational Temperature	0~60° C (32~140° F) (Operational humidity: 40° C @95% RH non-condensing)	0 ~ 60° C (32 ~ 140° F) (Operational humidity: 40° C @ 95% RH Non-Condensing)	0 ~ 60° C (32 ~ 140° F) (Operational humidity: 40° C @ 95% RH Non-Condensing)	0 ~ 60° C (32 ~ 140° F) (Operational humidity: 40° C @ 95% RH Non-Condensing)
	Non-Operational Temperature	-40~85° C and 60° C @ 95% RH non-condensing	-40 ~ 85° C and 60° C @ 95% RH Non-Condensing	-40 ~ 85° C and 60° C @ 95% RH Non-Condensing	-40° C ~ 85° C and 60° C @ 95% RH Non-Condensing
	Dimensions (L x W x H)	146 x 102mm	146 x 102 mm	146 x 102 mm	146 x 102 mm (5.7" x 4") same as 3.5"
Physical Characteristics	Weight	0.48 kg (1.06 lb), weight of total package	0.64kg (1.41 lb), weight of total package	0.64kg (1.41 lb), weight of total package	0.54kg (1.19lb), weight of total package
	Construction	Aluminum with fanless design	Aluminum with fanless design	Aluminum with fanless design	Aluminum with fanless design
Operating System	Microsoft Windows	Yes	Yes	Yes	Yes
	Linux	Yes	Yes	Yes	Yes
	SUSIAccess	Yes	SUSI 3.0	SUSI 3.0	SUSI4
	iManager	Yes	-	-	Yes
Certification	EMC	CE, FCC	CE, FCC	CE, FCC	CE, FCC

				<b>PCM-9375</b>	<b>PCM-9376</b>	<b>PCM-9389</b>
<b>Model Name</b>		3.5" SBC	3.5" SBC	3.5" SBC	3.5" SBC	3.5" SBC
<b>Processor System</b>	CPU	AMD Geode LX800	AMD G-Series T16R/ T40E	AMD G-Series T16R/ T40E	Intel Atom N455/ D525	Intel Atom N455/ D525
	CPU TDP	3.6 W	4.5/ 6.4 W	615 MHz/ 1.0GHz	6.5W/ 13W	6.5W/ 13W
	Frequency	500 MHz	615 MHz/ 1.0GHz	615 MHz/ 1.0GHz	1.66 GHz/ 1.8 GHz	1.66 GHz/ 1.8 GHz
	Core Number	1	1/2	1/2	1/2	1/2
	L2 Cache	128 KB	512 KB	512 KB	512 KB for N455/1 MB for D525	512 KB for N455/1 MB for D525
	BIOS	Award 4Mbit	AMI EFI 32Mbit	AMI EFI 32Mbit	AMI EFI 16Mbit	AMI EFI 16Mbit
<b>Memory</b>	Chipset	AMD CS5536	AMD A55E	AMD A55E	Intel ICH8M	Intel ICH8M
	Technology	DDR 333/400 MHz	DDR3/DDR3L 1066 MHz	DDR3/DDR3L 1066 MHz	DDR3 667 MHz for N455, 800 MHz for D525	DDR3 667 MHz for N455, 800 MHz for D525
	Max. Capacity	1 GB	4 GB	4 GB	2GB for N455, 4GB for D525	2GB for N455, 4GB for D525
	Socket	1 x 200-pin SODIMM	1 x 204-pin SODIMM	1 x 204-pin SODIMM	1 x 204-pin SODIMM	1 x 204-pin SODIMM
	Onboard Memory Controller	-	-	-	1 GB	1 GB
	Graphic Engine	AMD Geode LX800 2D engine	DirectX11 graphics with UVD3.0, Open CL 1.1, Open GL 4.0	DirectX11 graphics with UVD3.0, Open CL 1.1, Open GL 4.0	Intel 3.5 Gen. DX9, MPEG2 Decode in HW, Embedded Gen3+GFX Core	Intel 3.5 Gen. DX9, MPEG2 Decode in HW, Embedded Gen3+GFX Core
<b>Display</b>	Graphic Memory	Optimized shared memory architecture up to 64MB system memory	Optimized shared memory Architecture up to 384 Mb system memory	Optimized shared memory Architecture up to 384 Mb system memory	Shared system memory up to 224 MB	Shared system memory up to 224 MB
	VGA	Supports up to 1920 x 1440 @ 32bpp (85Hz)	Supports up to 1920 x 1200 at 85Hz	Supports up to 1920 x 1200 at 85Hz	N455 supports up to 1400 x 1050 (SXGA), D525 supports up to 2048 x 1536	N455 supports up to 1400 x 1050 (SXGA), D525 supports up to 2048 x 1536
	LCD (TTL/LVDS/eDP)	24-bit TTL (PCM-9375F) up to 1600 x 1200 @ 32bpp (60Hz) Single channel 18-bit LVDS (PCM-9375E) up to 1600 x 1200 @ 32bpp (60Hz)	Supports single/dual channel 18/24-bit LVDS up to 1920 x 1200, 24-bit TTL	Supports single channel 18/24-bit LVDS up to 1920 x 1200, 24-bit TTL	Supports single channel 18/24-bit LVDS up to WXGA 1366 x 768 18-bit TTL supported by request	Supports single channel 18/24-bit LVDS up to WXGA 1366 x 768 18-bit TTL supported by request
	DDI (HDMI/DVI/DisplayPort)	-	-	-	-	-
	Multiple Display	VGA + LVDS, VGA + TTL	VGA+LVDS, VGA+TTL, LVDS+TTL	VGA+LVDS, VGA+TTL	VGA + LVDS, VGA + TTL	VGA + LVDS, VGA + TTL
	Mini PCIe	-	1 (Half-size), Full-size supported by request	-	-	-
<b>Expansion Interface</b>	LPC	-	1	1	1	1
	SMBus	-	1 (shared with I²C)	1 (shared with SMBus)	1 (shared with SMBus)	1 (shared with SMBus)
	I²C Bus	optional	1 (shared with SMBus)	1 (shared with SMBus)	1 (shared with SMBus)	1 (shared with SMBus)
	PCI/104	1	1	1	1	1
	PCI-104	-	-	-	-	-
	MIO-160	-	-	-	-	-
<b>Ethernet</b>	Controller	Ethernet1/2 Realtek RTL8139	GbE1/2 Realtek RTL8111E	GbE1: Intel 82567V GbE2: Intel 82583V	GbE1: Intel 82567V GbE2: Intel 82583V	GbE1: Intel 82567V GbE2: Intel 82583V
	Speed	10/100 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps
	Connector	RJ45 on Ethernet1, box header on Ethernet2	RJ45 on GbE1, box header on GbE2	RJ45 on GbE1, box header on GbE2	RJ45 on GbE1, box header on GbE2	RJ45 on GbE1, box header on GbE2
<b>Audio</b>	Audio Interface	AC97	HD Audio	HD Audio	HD Audio	HD Audio
	CODEC	Realtek ALC203, AC97	Realtek ALC892, High Definition Audio (HD)	Realtek ALC892, High Definition Audio (HD)	Realtek ALC892, High Definition Audio (HD)	Realtek ALC892, High Definition Audio (HD)
	Amplifier	Max. 2.2W/ch Stereo into a 3(Ω) Load	-	-	-	-
	Connector	pin header (Line-in, Line out, Mic-in, speaker-out)	pin header (Line-in, Line out, Mic-in)	pin header (Line-in, Line out, Mic-in)	pin header (Line-in, Line out, Mic-in)	pin header (Line-in, Line out, Mic-in)
<b>WatchDog Timer</b>		Yes	Yes	Yes	Yes	Yes
<b>Storage</b>	SATA	-	2 x SATAII (Max. Data Transfer Rate 300 MB/s)	2 x SATAII (Max. Data Transfer Rate 300 MB/s)	-	-
	mSATA	-	1 (Full-size)	-	-	-
	IDE	1	-	-	-	-
	CompactFlash	CompactFlash Type I/II (Primary Master IDE Channel)	-	-	CompactFlash Type I/II (Primary Master IDE Channel)	CompactFlash Type I/II (Primary Master IDE Channel)
	Floppy	1 (Shared with LPT)	-	-	-	-
	USB2.0	4	4	4	4	4
<b>I/O</b>	GPIO	8-bit GPIO	8-bit GPIO	8-bit GPIO	8-bit GPIO	8-bit GPIO
	LPT	1 (Shared with Floppy)	-	-	-	-
	COM Port	4 (3xRS-232, 1xRS-232/422/485)	4 (2xRS-232, 2xRS-232/422/485)	4 (2xRS-232, 2xRS-232/422/485)	4 (3xRS-232, 1xRS-232/422/485)	4 (3xRS-232, 1xRS-232/422/485)
	PS/2 KB/Mouse	1	1	1	1	1
	Reset Button	1	1	1	1	1
	Smart Fan	-	-	-	-	1
<b>Power</b>	Power Type	AT/ ATX	AT/ ATX	AT/ ATX	AT/ ATX	AT/ ATX
	Power Supply Voltage	5V±5% (+12V option for LCD, PC/104)	5V±5% (+12V option for LCD, PC/104)	5V±5% (+12V option for LCD, PC/104)	5V±5% (+12V option for LCD, PC/104)	5V±5% (+12V option for LCD, PC/104)
	Connector	1x4pin power connector	1x4pin power connector	1x4pin power connector	2x6pin power connector	2x6pin power connector
	Power Consumption (Idle)	0.6 A @ 5 V, 0.03A @ 12V (3.36 W)	T40E: 1.67A @ 5V (8.35W) 1.48A @ 5V (7.4 W)	T40E: 1.67A @ 5V (8.35W) 1.48A @ 5V (7.4 W)	PCM-9389N: 1.63A @ 5V (8.15W) PCM-9389D: 1.94A @ 5V (9.7W)	PCM-9389N: 1.63A @ 5V (8.15W) PCM-9389D: 1.94A @ 5V (9.7W)
	Power Consumption (Full Load)	1.2 A @ 5 V, 0.23A @ 12V (8.76 W)	T40E: 2.34A @ 5V (11.7W) 2.28A @ 5V (11.4 W)	T40E: 2.34A @ 5V (11.7W) 2.28A @ 5V (11.4 W)	PCM-9389N: 2.23A @ 5V (11.15W) PCM-9389D: 2.9A @ 5V (14.5W)	PCM-9389N: 2.23A @ 5V (11.15W) PCM-9389D: 2.9A @ 5V (14.5W)
	Battery	Lithium 3 V / 196 mAH	Lithium 3 V / 210 mAH	Lithium 3 V / 210 mAH	Lithium 3 V / 210 mAH	Lithium 3 V / 210 mAH
<b>Environment</b>	Operational Temperature	0 ~ 60° C (32 ~ 140° F) (Operational humidity: 40° C @ 95% RH Non-Condensing)	0 ~ 60° C (32 ~ 140° F) (Operational humidity: 40° C @ 95% RH Non-Condensing)	0 ~ 60° C (32 ~ 140° F) (Operational humidity: 40° C @ 95% RH Non-Condensing)	0 ~ 60° C (32 ~ 140° F) (Operational humidity: 40° C @ 95% RH Non-Condensing)	0 ~ 60° C (32 ~ 140° F) (Operational humidity: 40° C @ 95% RH Non-Condensing)
	Non-Operational Temperature	-40 ~ 85° C and 60° C @ 95% RH Non-Condensing	-40 ~ 85° C and 60° C @ 95% RH Non-Condensing	-40 ~ 85° C and 60° C @ 95% RH Non-Condensing	-40 ~ 85° C and 60° C @ 95% RH Non-Condensing	-40 ~ 85° C and 60° C @ 95% RH Non-Condensing
<b>Physical Characteristics</b>		Dimensions (L x W x H)	148 x 102 mm	146 x 102 mm	146 x 102 mm	146 x 102 mm
<b>Operating System</b>	Weight	0.64kg (1.41 lb), weight of total package	0.51kg (1.12 lb), weight of total package	0.51kg (1.12 lb), weight of total package	0.64kg (1.41 lb), weight of total package	0.64kg (1.41 lb), weight of total package
	Construction	Aluminum with fanless design	Aluminum with fanless design	Aluminum with fanless design	Aluminum with fanless design	Aluminum with fanless design
	Microsoft Windows	Yes	Yes	Yes	Yes	Yes
	Linux	Yes	Yes	Yes	Yes	Yes
<b>SUSIAccess</b>		SUSI 1.0	iManager	iManager	iManager	iManager
<b>Certification</b>		CE, FCC	CE, FCC	CE, FCC	CE, FCC	CE, FCC



**NEW**

# 5.25" Single Board Computers



Model Name		MIO-9290	PCM-9562
Form Factor		5.25"	5.25"
Processor System	CPU	Intel Core i7-3610QE/ i5-3610ME/ i3-3120ME/ Celeron 1020E (rPGA988 socket)	Intel Atom N450/ D510
	CPU TDP	45 W/ 35 W/ 35 W/ 35 W	5.5 W/ 10 W
	Frequency	2.3(Turbo: 3.3) GHz/ 2.7(Turbo: 3.3) GHz/ 2.4 GHz/ 2.2 GHz	1.66 GHz
	Core Number	4/2/2/2	1/2
	L2 Cache	-	512 KB / 1 MB
	L3 Cache	6 MB/ 3 MB/ 3 MB/ 2 MB	-
	BIOS	AMI EFI 64Mbit	AMI 16Mbit
Memory	Chipset	Intel QM77	Intel N450/ D510+ICH8M
	Technology	DDR3/DDR3L 1333/1600 MHz	DDR2 667 MHz
	Max. Capacity	8 GB x 2	2 GB
Display	Socket	2 x 204-pin SODIMM	1 x 200-pin SODIMM
	Controller	Intel Ivy Bridge Processor + Intel QM77	Intel Atom N450/ D510
	Graphic Engine	DirectX11, OpenGL 3.1, and OpenCL 11	Embedded Gen3.5+ GFX Core, HW MPEG2 decoder
	Graphic Memory	Share with system memory up to 512 MB	Optimized Shared Memory Architecture up to 224 MB
	VGA	-	N450 Up to 1400 x 1050/ D510 Up to 2048 x 1536
	LCD (TTL/LVDS/eDP)	LVDS: Dual channel 24-bit LVDS, up to 1920 x 1200	LVDS: Single channel 18-bit up to 1366 x 768
	DDI (HDMI/DVI/DisplayPort)	DisplayPort: up to 2560 x 1600 @ 60Hz HDMI: up to 1920 x 1200 @ 60Hz DVI-I: up to 1920 x 1200 @ 60Hz	-
Expansion Interface	Multiple Display	DP + HDMI + DVI-I	VGA + LVDS
	Mini PCIe	2 (Full-size, shared with mSATA)	1 (Full-size)
	PCI	-	1
	PC/104-Plus	-	1
Ethernet	MIOe	SMBus, 3 x USB2.0, LPC, 4 x PCIe, line out, Displayport, 5 Vsb/12 Vsb power	-
	Controller	GbE1: Intel 82579LM GbE2: Intel I210	GbE1: Intel 82567 GbE2/3: Intel 82583V
	Speed	10/100/1000 Mbps	10/100/1000 Mbps
Audio	Connector	RJ45 x 2	Box header
	Audio Interface	HD Audio	HD Audio
	CODEC	Realtek ALC892	Realtek ALC888S
	Amplifier	-	Max 2.2W/ch Stereo into a 3Ω Load
WatchDog Timer	Connector	Line-in, Line out, Mic-in	Speaker out, CD-input, Line-in, Line-out, Mic-in
		Yes	Yes
Storage	SATA	2 SATA III (up to 600 MB/s)	3 SATA II (up to 300 MB/s)
	mSATA	2 (Full-size, shared with mini PCIe)	-
	CompactFlash	-	CompactFlash type I/II
	Floppy	-	1 (Optional, shared with LPT)
I/O	USB3.0	4	-
	USB2.0	2	8
	SPI Bus	-	-
	GPIO	16-bit	16-bit
	LPT	-	1
	COM Port	4 x RS-232 (2 with Tx/Rx only) 2 x RS-232/422/485	4x RS-232 2 x RS-422/485 (RS-232 with Tx/Rx support by request)
	PS/2 KB/Mouse	-	1
	Reset Button	1	1
	Power Button	1	-
	Smart Fan	Yes	Yes (only for PCM-9562D)
Power	SMBus	1	1
	I²C Bus	1 (Shares with SMBus)	1
	Power Type	AT/ ATX	AT/ ATX
	Power Supply Voltage	Single 12V input, ± 10%	ATX: 12V ±10%, 5VSB ±5% (5VSB is only for auto power off function) AT: 12V ±10% only
	Power Consumption (Idle)	i7 3610QE w/DDR3: 0.646 A @ 12 V (7.75 W) i5 3610ME w/DDR3: 0.614 A @ 12 V (7.37 W) i3 3120ME w/DDR3: 0.622 A @ 12 V (7.46 W) Celeron 1020E w/DDR3: 0.632 A @ 12 V (7.58 W)	PCM-9562N-S6A1E: 893 mA @ 12 V, 8 mA @ 5 VSB (10.8 W) PCM-9562D-S6A1E: 1130 mA @ 12 V, 10 mA @ 5 VSB (13.6 W)
	Power Consumption (Full Load)	i7 3610QE w/DDR3: 3.759 A @ 12 V (45.11 W) i5 3610ME w/DDR3: 2.375 A @ 12 V (28.5 W) i3 3120ME w/DDR3: 1.675 A @ 12 V (20.1 W) Celeron 1020E w/DDR3: 1.595 A @ 12 V (19.14 W)	PCM-9562N-S6A1E: 1159 mA @ 12 V, 6 mA @ 5 VSB (13.9 W) PCM-9562D-S6A1E: 1404 mA @ 12 V, 8 mA @ 5 VSB (16.9 W)
	Battery	Lithium 3 V / 210 mAH	Lithium 3 V / 200 mAH
Environment	Operational Temperature	0 ~ 60° C (32 ~ 140° F) (Operational humidity: 40° C @ 95% RH Non-Condensing)	0 ~ 60° C (32 ~ 140° F) (Operational humidity: 40° C @ 95% RH Non-Condensing)
	Non-Operational Temperature	-40 ~ 85° C and 60° C @ 95% RH Non-Condensing	-40 ~ 85° C and 60° C @ 95% RH Non-Condensing
Physical Characteristics	Dimensions (L x W x H)	203 x 146 mm	203 x 146 mm
	Weight	0.9 kg (1.98 lb), weight of total package	0.7 kg (1.54 lb), weight of total package
Operating System	Construction	Copper with fan design	Aluminum with fanless/with fan design
	Microsoft Windows	Yes	Yes
	Linux	Yes	Yes
	SUSI Access	Yes	Yes
	iManager	Yes	-
Certification	QNX	Yes	Yes
	EMC	CE, FCC	CE, FCC

# PC/104 CPU Modules



Model Name	PCM-3343	PCM-3353	PCM-3355
Form Factor	PC/104	PC/104-Plus	PC/104
Processor System	CPU	DM&P Vortex86DX Supports Floating Point Unit (FPU)	AMD Geode LX800, AMD Geode LX600
	Frequency	800 MHz	500 MHz/366 MHz
	Core Number	1	1
	L2 Cache	256 KB	128 KB
	BIOS	Award integrated 16 Mbit ROM in SOC	Award 4-Mbit
Memory	Chipset		AMD Geode CS5536
	Technology	DDR2 333 MHz	DDR 333 MHz
	Max. Capacity	512 MB	1 GB
	Socket	-	1 x 200-pin SODIMM
Display	Onboard Memory	Onboard 256 MB (512 MB supported by request)	-
	Controller	SMI SM712	AMD Geode LX800/LX600
	Graphics Engine	62.5 MHz single clock/cycle engine (EM+) 86 MHz single clock/cycle engine (EM4+) Designed to accelerate DirectDraw	-
	Graphics Memory	4 MB internal memory	Optimized Shared Memory Architecture up to 64 MB system memory
	VGA	Up to 1024 x 768 at 85 Hz	Up to 1920 x 1440 at 85 Hz Up to 1600 x 1200 at 100 Hz
Expansion Interface	LCD (TTL/LVDS/eDP)	LVDS: Single channel 24-bit LVDS Up to 1024 x 768 TTL: 24-bits up to 1024 x 768	LVDS: Single channel 18/24-bit (JEIDA format), Up to 1600 x 1200 at 60 Hz TTL: Supports up to 1600 x 1200 at 60 Hz for 24-bit single channel TFT Panel
	Multiple Displays	VGA+TTL, VGA+LVDS	VGA+TTL, VGA+LVDS
	Mini PCIe	-	-
	SMBus	-	1
	I <sup>2</sup> C Bus	1	-
Ethernet	PC/104	1	-
	PCI-104	-	1
	PC/104-Plus	-	-
	Controller	GbE1: Vortex86DX SOC integrated GbE2: Realtek RTL8100C-LF	GbE: Intel 82541PI
	Speed	10/100 Mbps	10/100 Mbps
Audio	Connector	Pin Header	Box Header
	Codecs	-	Realtek ALC203
WatchDog Timer	System reset Software programmable counter from 30.5μ sec. to 512 sec. x 2 sets	Output system reset, programmable counter from 1 ~ 255 minutes/ seconds	Output system reset, programmable counter from 1 ~ 255 minutes/ seconds
Storage	SATA	-	-
	mSATA	-	-
	IDE	1	-
	CompactFlash	CompactFlash socket (Type I/II), shared with primary IDE	CompactFlash socket (Type I)
	Onboard Flash	-	CompactFlash socket (Type I)
I/O	Floppy	-	1 (transfer from LPT, available by custom BIOS)
	USB2.0	4	4
	SPI Bus	Optional onboard 4 MB SPI Flash Disk (Supported by request for boot device or storage on DOS OS)	-
	GPIO	16-bit GPIO	8-bit GPIO
	LPT	-	1
	COM Port	4 (3 x RS-232, 1 x RS-232/ 422/ 485)	4 (3 RS-232, 1 RS-232/422/485)
	PS/2 KB/Mouse	1	1
Power	Power Type	AT	AT
	Power Supply Voltage	5V ± 5% only to boot up (12 V is optional for LCD inverter and add-on card)	5V ± 5% only to boot up (12 V is optional for LCD inverter and add on card)
	Power Consumption (Idle)	0.74 @ +5 V, 3.7 Watts (Vortex86DX 800 MHz, DDR2 256 MB)	LX800: 1.35 A @ +5 V, 0.1 A @ +12 V (7.95 Watts)
	Power Consumption (Full Load)	0.85 A @ +5 V, 4.25 Watts (Vortex86DX 800 MHz, DDR2 256 MB)	LX800: 1.51 A @ +5 V, 0.1 A @ +12 V (8.75 Watts)
	Battery	Lithium 3 V / 210 mAH	Lithium 3 V/210 mAH
Environment	Operational Temperature	0 ~ 60° C (32 ~ 140° F) (Operational humidity: 40° C @ 85% RH non-condensing)	0 ~ 60° C (32 ~ 140° F) (Operational humidity: 40° C @ 85% RH non-condensing)
	Non-Operational Temperature	-40° C ~ 85° C and 60° C @ 95% RH non-condensing	-40° C ~ 85° C and 60° C @ 95% RH non-condensing
Physical Characteristics	Dimensions (L x W x H)	96 x 90 mm (3.8" x 3.5")	96 x 115 mm (3.8" x 4.5")
	Weight	0.508 kg (1.12 lb)	0.574 kg (1.26 lb) (with heat-sink)
Operating System	Microsoft Windows	Yes	Yes
	Linux	Yes	Yes
	SUSIAccess	-	Yes
Certifications	EMC	CE, FCC	CE, FCC

# PC/104 CPU Modules

**NEW**

Model Name		PCM-3356	PCM-3362	PCM-3363
Form Factor		PC/104	PC/104-Plus	PCI-104
Processor System	CPU	AMD® G-Series™ Processor T16R /T40E	Intel Atom N450	Intel Atom D525/Intel Atom N455
	Frequency	615 MHZ/ 1.0 GHz	1.66 GHz	1.8 GHz/1.66 GHz
	Core Number	1/2	1	2 / 1
	L2 Cache	512 KB	512 KB	1 MB/512 KB
	BIOS	AMI 32-Mbit	AMI 16 Mbit	AMI 16 Mbit
Memory	Chipset	AMD A55E	Intel Atom N450 + ICH8M	Intel Atom N450 + ICH8M
	Technology	DDR3L 1066 MHz	DDR2 667 MHz	DDR3 800 MHz
	Max. Capacity	S0-DIMM: 4GB / On-board: 1GB	2 GB	1 GB
	Socket	1 x 204-pin SODIMM	1 x 200-pin SODIMM	-
Display	Onboard Memory	Onboard 1GB (by sku)	-	1GB DDR3 800 MHz Memory
	Controller	AMD® G-Series™ Processor T16R/T40E	Intel Atom N450	Intel Atom D525/Intel Atom N455
	Graphics Engine	DirectX 11 graphics with UVD 3.0, Open CL 1.1, Open GL 4.0 Hardware decode (UVD 3) for H.264, VC-1 and MPEG2	Intel Gen 3.5 graphic core, DX9 compliant, MPEG2 Hardware Acceleration	Gen 3.5 graphic core, DX9 compliant, MPEG2 Hardware Acceleration
	Graphics Memory	Optimized shared memory architecture up to 384 MB system memory	Shared system memory up to 224 MB	Shared system memory up to 224 MB
	VGA	Supports up to 1920 x 1200 at 85Hz	Supports up to SXGA 1400 x 1060 at 60 Hz	N455 single core up to 1400 x 1050 D525 dual core up to 2048 x 1536
Expansion Interface	LCD (TTL/LVDS/eDP)	LVDS: Supports up to 18-bit 1280 x 800	LVDS: Single channel 18-bit LVDS up to WXGA 1366 x 768	LVDS: Single channel 18/24-bit up to 1366 x 768 (WXGA)
	Multiple Displays	LVDS+VGA	VGA+LVDS	VGA+LVDS
	Mini PCIe	1 half size	-	-
	SMBus	1	-	1 (configurable to I²C by customer's request)
	I²C Bus	-	1	1 (supported by request)
Ethernet	PC/104	1	-	-
	PCI-104	-	-	1
	PC/104-Plus	-	1	-
Audio	Controller	GbE1: Realtek RTL8111E-VB-GR GbE2: Realtek RTL8111E-VB-GR	Intel 82567V (PHY)	Intel 82567V (PHY)
	Speed	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps
	Connector	Box Header	Pin Header	Locked Box Header
WatchDog Timer	Codecs	Realtek ALC892	Intel High Definition audio interface (requires an audio extension module P/N: PCA-AUDIO-HDA1E)	Intel High Definition audio interface (requires an audio extension module P/N: PCA-AUDIO-HDA1E)
		Output System reset, Programmable 1 ~ 255 sec	Output System Reset Programmable counter from 1 ~ 255 sec	Output System Reset, Programmable counter from 1 ~ 255 sec
Storage	SATA	1 SATA II	1 SATA II	1 SATA II
	mSATA	1 half size	-	-
	IDE	-	-	-
	CompactFlash	-	-	1 CompactFlash socket (Type I/II)
	Onboard Flash	-	2 GB/4 GB	-
I/O	Floppy	-	-	-
	USB2.0	4	4	4
	SPI Bus	-	-	-
	GPIO	8-bit GPIO	8-bit GPIO	8-bit GPIO
	LPT	-	-	-
Power	COM Port	3 x RS-232/422/485	3 (2 RS-232, 1 RS422/485)	3 (2 x RS-232, 1 x RS-422/485)
	PS/2 KB/Mouse	-	1	1
Environment	Power Type	AT/ATX	AT/ATX	AT/ATX
	Power Supply Voltage	5 V ± 5% only to boot up (12 V is optional for LCD inverter and add on card)	5 V ± 5% only to boot up (12 V is optional for LCD inverter and add-on card)	5 V ± 5% only to boot up (12 V is optional for LCD inverter and add on card)
	Power Consumption (Idle)	T16R: 1.17 A @ +5V (5.85 W) T40E: 1.22 A @ +5V (6.1 W)	2 A @ +5V, 5 mA @ +12V (10.06 Watts)	N455: 1.404 A @ +5V (7.02 Watts) D525: 1.85 A @ +5V (9.25 Watts)
	Power Consumption (Full Load)	T16R: 1.43 A @ +5V (7.15 W) T40E: 1.77 A @ +5V (8.85 W)	2.37 A @ +5V, 7 mA @ +12V (11.93 Watts)	N455: 2.365 A @ +5V (11.825 Watts) D525: 2.695 A @ +5V (13.475 Watts)
Physical Characteristics	Battery	Lithium 3 V / 210 mAh	Lithium 3 V / 210 mAh	Lithium 3 V / 210 mAh
	Operational Temperature	0 ~ 60° C (32 ~ 140° F) (Operational humidity: 40° C @ 85% RH non-condensing)	0 ~ 60° C (32 ~ 140° F) (Operational humidity: 40° C @ 85% RH non-condensing)	0 ~ 60° C (32 ~ 140° F) (Operational humidity: 40° C @ 85% RH non-condensing)
Operating System	Non-Operational Temperature	-40° C ~ 85° C and 60° C @ 95% RH non-condensing	-40° C ~ 85° C and 60° C @ 95% RH non-condensing	-40° C ~ 85° C and 60° C @ 95% RH non-condensing
	Dimensions (L x W x H)	96 x 115 mm (3.8" x 4.5")	96 x 90 mm (3.8" x 3.5")	96 x 90 mm (3.8" x 3.5")
	Weight	0.590 kg (1.30 lb)	0.664 kg (1.46 lb) (with heat-sink)	0.664 kg (1.46 lb) (with heat-sink)
Certifications	Microsoft Windows	Yes	Yes	Yes
	Linux	Yes	Yes	Yes
	SUSI/Access	Yes	Yes	Yes
Certifications	EMC	CE, FCC	CE, FCC	CE, FCC

# 3.5" SBC Chassis



Model Name		ACK-A001E	ACK-A002E	ACK-A004E
Form Factor Support		3.5" SBC: PCM-9363	3.5" SBC: PCM-9376	3.5" MIO-Compact SBC: MIO-5250/ 5251/ 5271
Processor System	Thermal Design	Fanless	Fanless	Fanless on MIO-5250/ 5251 w/Fan on MIO-5271
	CPU	Intel Atom N455/D525	AMD G-Series Single Core Processor T16R	w/ MIO-5250 : Intel Atom N2600/D2550 w/ MIO-5251 : Intel Celeron J1900/ Atom E3845 / Atom E3825 w/ MIO-5271 : Intel Core i5-4300U/ Celeron 2980U
	Max. Speed	1.66GHz for N455 , 1.8GHz for D525	615 MHz	w/ MIO-5250 : 1.6 GHz / 1.86 GHz w/ MIO-5251 : 2 GHz, turbo to 2.42 GHz / 1.91 GHz / 1.33 GHz w/ MIO-5271 : 1.9 GHz, turbo to 2.9 GHz / 1.6 GHz
	Chipset	Intel N455/D525 + ICH8M	AMD T16R Processor	w/ MIO-5250 : Intel Atom N2600/ D2550 +Intel NM10 w/ MIO-5251 : SoC w/ MIO-5271 : Integrated Intel 8 Series Chipset
Memory	Technology	DDR3 667 MHz for N455 , 800MHz for D525	DDR3 1066MHz	w/ MIO-5250 : DDR3 800MHz (N2600) , DDR3 1066MHz (D2550) w/ MIO-5251 : DDR3L 1333MHz (J1900/E3845) , DDR3L 1066MHz(E3825) w/ MIO-5271 : DDR3L 1600/1333 MHz
	Max. Capacity	2GB for N455 , 4GB for D525	SODIMM up to 4GB	w/ MIO-5250 : 4 GB w/ MIO-5251 : 8 GB w/ MIO-5271 : 8 GB
	Socket	1 x 204-pin SODIMM	1 x 204-pin SODIMM	1 x 204-pin SODIMM
Drive Bay	2.5" HDD	1 x 2.5" HDD/SSD	1 x 2.5" HDD/SSD	1 x 2.5" HDD/SSD
Expansion Slot	Mini PCIe	1	1 (Half-size)	w/ MIO-5250 : 1 x Full-size with SIM holder w/ MIO-5251 : 1 x Full-size with SIM holder w/ MIO-5271 : 1 x Half-size
Front Panel	I/O	2 x USB 2.0 , 1 x COM(RS-232) , 1 x VGA, 2 x LAN	1 x COM (RS232/422/485) , 1 x LAN , 1 x PS/2 , 1 x VGA	w/ MIO-5250 : 2 x LAN, 1 x VGA , 1 x HDMI , 4 x USB2.0 w/ MIO-5251 : 2 x LAN, 1 x VGA , 1 x HDMI , 3 x USB2.0 , 1 x USB3.0 w/ MIO-5271 : 2 x LAN, 1 x VGA , 1 x HDMI , 2 x USB2.0 , 2 x USB3.0
	Power switch,	1 x Power Button	1 x Power Button	1 x Power Button
	Indicators	Power , HDD	Power , HDD	Power , HDD
	Power Input	Phoenix type 12V DC in	Phoenix type 12V&5V DC in	Phoenix type 12V DC in
Rear Panel	I/O	4 x USB 2.0 , 4 x COM	4 x USB , 1 x LAN , 3 x COM and up to 7 ( 2 RS-232, 1 RS-232/422/485 , 4 reserved for PCA-COM modules to extend additional 4 COM ports)	w/ MIO-5250 : 4 x COM , 2 x USB2.0 w/ MIO-5251 : 4 x COM , 1 x USB2.0 ( 2 Ports opening, but only support 1port function ) w/ MIO-5271 : 4 x COM
	Audio	MIC , Line-out , Line-in	MIC ,Line-out , Line-in	Line-out , Line-in , MIC
	Circular cutouts	1(Reserved for LVDS , PS/2 & LPT cable)	1(Reserved for LVDS ,Inverter & PC/104 cable)	1(Reserved for LVDS cable)
Power Requirements	Power Supply Voltage	12VDC Input , ±10%	12V&5V DC Input , ±10%	12VDC Input , ±10%
Environment	Operating Temperature	0~40° C (32~104° F)	0~40° C (32~104° F)	0~40° C (32~104° F)
	Non-operating Temperature	-20~60° C (-4~140° F)	-20~60° C (-4~140° F)	-20~60° C (-4~140° F)
	Humidity	40° C @ 95%RH Non-Condensing	40° C @ 95%RH Non-Condensing	40° C @ 95%RH Non-Condensing
	Vibration (5 ~500 Hz)	1 Grms with SSD	1 Grms with SSD	1 Grms with SSD
	Shock	10 G, IEC 60068-2-27, half sine (w/ 2.5" SSD)	10 G, IEC 60068-2-27, half sine (w/ 2.5" SSD)	10 G, IEC 60068-2-27, half sine (w/ 2.5" SSD)
	Certification	CE, FCC Class A	CE, FCC Class A	CE, FCC Class A
Dimensions (W x H x D)		200 x 60 x 145 mm 230 x 65 x 145 mm (with mounting bracket)	220 x 73 x 150 mm 251 x 77 x 150 mm (with mounting bracket)	188 x 54 x 150 mm 219 x 58 x 150 mm (with mounting bracket)
Weight		0.95 kg (2.09 lb)	0.95 kg (2.09 lb)	1.11kg ( 2.44 lb )

# Mini-ITX Motherboards



Model Name	AIMB-115	AIMB-201VG	AIMB-203	AIMB-212	AIMB-213	AIMB-214	AIMB-215 B1
Form Factor	UTX MB	Mini-ITX	Mini-ITX	Mini-ITX	Mini-ITX	Mini-ITX	Mini-ITX
Processor System	CPU	Intel ATOM E3826/E3815	Intel Core i7/i5/i3/Celeron/Pentium	Intel Core i7/i5/i3/Pentium/Celeron	Intel Atom D510/N450	Intel Atom D525/N455	Intel Atom D2550/N2600
	Socket	FCCGA	μFC-PGA 988 Socket	LGA 1150	FCCGA	FCCGA	FCCGA
	Max. Speed	DC1.46GHz/SC1.46GHz	2.3/2.1/2.5/2.2/1.6 GHz	3.1/2.9/2.4 GHz	DC1.66/SC1.6 GHz	DC1.8/SC1.66 GHz	DC 1.86/1.6 GHz
	TDP	7W/5W	45 W/35 W	95 W/65 W/54 W/45 W/35 W	12 W/6 W	12 W/6 W	10 W/3.5 W
	Front Side Bus	533/400MHz	-	-	-	-	-
	L2 Cache	1 MB	-	-	1 MB /512 KB	1 MB /512 KB	1 MB
	L3 Cache	-	6 MB/6 MB/3 MB/3 MB/2 MB/2 MB	8 MB/6 MB/4 MB/3 MB	-	-	-
	Chipset	-	Intel QM77	Intel H81	Intel ICH8M	Intel ICH8M	Intel NM10
Expansion Slot	BIOS	AMI EFI 16 Mbit, SPI	AMI EFI 64 Mbit, SPI	AMI EFI 64 Mbit, SPI	AMI 16 Mbit, SPI	AMI 16 Mbit, SPI	AMI EFI 16 Mbit, SPI
	PCI	-	-	-	1	1	-
	MINI PCIe	2	1	2	1	1	1
	M.2	-	-	-	-	-	-
Memory	PCIe	-	-	PCIe x16, 1 slot	-	-	PCIE x1, 1 slot
	Technology	Dual channel DDR3L 1333 MHz SDRAM	Dual channel DDR3 1333/1600 MHz SDRAM	Dual channel DDR3 / DDR3L@1.5V 1333/1600 MHz SDRAM	Single channel DDR2 667 MHz SDRAM	Single channel DDR3 800 MHz SDRAM	Single channel DDR3 1066 MHz SDRAM
	Max. Capacity	8 GB	16 GB	16 GB	2 GB	4 GB	4 GB
Graphics	Socket	2 x 204-pin SODIMM	2 x 204-pin SODIMM	2 x 204-pin SODIMM	1 x 200-pin SODIMM	2 x 204-pin SODIMM	1 x 204-pin SODIMM
	Controller	Intel HD Graphics	Intel HD Graphics	Intel HD Graphics	Embedded Gen3.5+ GFX Core, 200/400-MHz render clock frequency for N450/D510	Embedded Gen3.5+ GFX Core, 200/400-MHz render clock frequency for N455/D525	Embedded Gen3.5+ GFX Core, 400/640-MHz render clock frequency for N2600/D2550
	LCD	Dual channel 48-bit LVDS	-	Dual channel 48-bit LVDS	Single channel 18-bit LVDS	Single channel 18/24-bit LVDS	Dual channel 48-bit LVDS; Single Channel 18/24-bit LVDS
	HDMI	2	3	-	-	-	1
Ethernet	DVI	-	-	1	-	1	-
	Interface	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps
	Controller	LAN1: Intel i210AT LAN2: Realtek RTL8111G	LAN1: Intel 82579LM	LAN1:Realtek RTL8111E LAN2: Realtek RTL8111E	LAN1: Intel 82567V LAN2: Intel 82583V	LAN1: Intel 82567V LAN2: Intel 82583V	LAN1: Intel 82574L LAN2: Intel 82583V
TPM	Connector	RJ-45 x 2	RJ-45 x 1	RJ-45 x 2	RJ-45 x 2	RJ-45 x 2	RJ-45 x 2
		Yes	-	Optional	-	Optional	optional
SATA	Max Data Transfer Rate	300 MB/s	600 MB/s	600 MB/s, 300MB/s	300 MB/s	300 MB/s	300 MB/s
	Channel	1	1	2, 1	2	3	2
	eSATA/mSATA/M.2	-/1	-	-/1	-	-/1	-/1
Rear I/O	VGA/DVI/HDMI/DP	-/-/2/-	-/-/3/-	1/1/-/1	1/-/-/-	1/-/-/-	1/-/1/-
	Ethernet	2	1	2	2	2	2
	USB	3 (1 x USB 3.0; 2 x USB 2.0)	3 (1 x USB3.0; 2 x USB2.0)	4 (2 x USB 3.0; 2 x USB 2.0)	4 (USB 2.0)	4 (USB 2.0)	4 (1 x USB 3.0, 3 x USB 2.0)
	Audio	Line-out	Line-out	Mic-in, Line-in, Line-out	Mic-in, Line-in, Line-out	Mic-in, Line-in, Line-out	Line-out
	Serial	-	1 (RS-232)	1 (RS-232)	3 (2 x RS-232; 1 x RS-232/422/485)	2 (1 x RS-232; 1 x RS-232/422/485)	2 (1 x RS-232; 1 x RS-232/422/485)
	PS/2	-	-	2	-	1	-
	DC Jack	1	1	-	1	1	1
Internal Connector	LVDS & Inverter	1	-	1	1	2	1
	DVI	-	-	-	-	-	-
	USB	-	-	4 (USB 2.0)	4 (USB 2.0)	4 (USB 2.0)	4 (USB 2.0)
	Serial	2 (1 x RS-232; 1 x RS-232/422/485)	-	8 (7 x RS-232; 1 x RS-232/422/485)	3 (RS-232)	4 (4 x RS-232)	4 (RS-232)
	Parallel	-	-	1	-	-	-
	SATA	1	1	3	2	3	2
	CompactFlash	-	CFast x 1	-	CF x 1	CF x 1	Cfast x 1
	GPIO	-	-	8-bit GPIO	8-bit GPIO	8-bit GPIO	8-bit GPIO

<b>AIMB-216</b>	<b>AIMB-223</b>	<b>AIMB-224</b>	<b>AIMB-225</b>	<b>AIMB-226</b>	<b>AIMB-230</b>	<b>AIMB-231</b>	<b>AIMB-242</b>
Mini-ITX	Mini-ITX	Mini-ITX	Mini-ITX	Mini-ITX	Mini-ITX	Thin Mini-ITX	Mini-ITX
Intel Celeron N3700/ N3150/N3000	AMD Mobile G-series	AMD R-series	AMD Mobile G-series GX-424CC/GX-412HC	AMD RX-427BB/RX- 225FB	Intel Core i5-4300U/i3- 4010U/Celeron 2980U	Intel Core i5-5350U/ i3-5010U	Intel Xeon, Core i7 / i5 / i3/ Celeron
FCBGA	FT1BGA	FS1r2	FT3b	FP3	MCPBGA	FCBGA	BGA 1440
QC 1.6/1.6 GHz; DC 1.04 GHz	DC 1.65GHz	2.3/1.9/2.7/1.5 GHz	QC 2.4 GHz/1.2 GHz	2.7GHz/ 2.2GHz	1.9 GHz / 1.7 GHz / 1.6 GHz	1.8GHz / 2.1GHz	2.8 / 2.7 / 1.9 GHz
6 W / 6 W / 4 W	18W	35 W	25W/7W	35W/ 17W	15 W / 15 W / 15W	15W / 15W	45W / 35W / 25W
-	-	-	-	-	-	-	-
2MB	512 KB	2 MB/1MB	2 MB/2 MB	2 MB	256 KB	512 KB	-
-	-	-	-	-	3 M/3M/2 M	3M /3M	8M / 6M / 3M
-	AMD A55E	AMD A75M	-	AMD A77E	Lynx Point	Wildcat Point LP	Intel CM236 & QM170
AMI EFI 16 Mbit, SPI	AMI EFI 32 Mbit, SPI	AMI EFI 16 Mbit, SPI	AMI EFI 16 Mbit, SPI	AMI EFI 64 Mbit, SPI	AMI EFI 16 Mbit, SPI	AMI EFI 128 Mbit, SPI	AMI EFI 128 Mbit, SPI
-	1	-	-	-	-	-	-
1	1	2	2	2	2	2	2
1				-		-	1
PCIe x1, 1 slot	PCIe x1, 1 slot	PCIe x8, 1 slot	PCIe x4, 1 slot	PCIe x 16, 1 slot PCIe x 1, golden-finger	-	-	PCIe x16, 1 slot
Dual channel DDR3L 1600 MHz SDRAM	Single channel DDR3 1066/1333 MHz SDRAM	Dual channel DDR3 1066/1333/1600 MHz SDRAM	Dual channel DDR3L 1600/1333 MHz SDRAM	Dual channel DDR3/ DDR3L 2133/1600 MHz SDRAM	Dual channel DDR3L 1600 MHz SDRAM	Single channel DDR3L 1600 MHz SDRAM	Dual channel DDR4 2133 MHz SDRAM
8 GB	4 GB	16 GB	16 GB	16 GB	16 GB	16 GB	32 GB
2 x 204-pin SODIMM	1 x 204-pin SODIMM	2 x 204-pin SODIMM	2 x 204-pin SODIMM	2 x 204-pin SODIMM	2 x 204-pin SODIMM	2 x 204-pin SODIMM	2 x 260-pin SODIMM
Intel HD Graphics	Integrated ATI Radeon RV7x0	Integrated Radeon HD7000 series	AMD Radeon™ HD 8000 series Graphics	AMD Radeon™ HD 9000	Intel HD Graphics	intel HD 6000/ intel HD	Intel HD Graphics
Dual channel 48-bit LVDS	Dual channel 36/48-bit LVDS	Dual channel 36/48-bit LVDS	Dual channel 48-bit LVDS	Single channel 24-bit/ dual channel 48-bit LVDS	Dual channel 48-bit LVDS	Dual channel 48-bit LVDS	Dual channel 48-bit LVDS
1	1	-	-	2	1	1	1 (HDMI2.0)
1	-	-	1	-	-	-	-
10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps
LAN1:Realtek RTL8111G LAN2:Realtek RTL8111G	LAN1: Realtek RTL8111G-CG LAN2:Realtek RTL8111G-CG	LAN1:Realtek RTL8111E LAN2:Realtek RTL8111E	LAN1: Realtek 8111G LAN2: Realtek 8111G	LAN1:Realtek 8111G LAN2:Realtek 8111G	LAN1:Realtek RTL8111E LAN2:Realtek RTL8111E	LAN1: Intel PHY i218-LM LAN2: Intel i210	LAN1: Intel PHY i219-LM LAN2: Intel i211 AT
RJ-45 x 2	RJ-45 x 2	RJ-45 x 2	RJ-45 x 2	RJ-45 x 2	RJ-45 x 2	RJ-45 x 2	RJ-45 x 2
Optional	optional	optional	Optional	Optional	Optional	Optional	Optional
600 MB/s	600 MB/s	600 MB/s	600 MB/s	600 MB/s	600 MB/s	600 MB/s	600 MB/s
2	4	3	2	3	3	3	2
- / -	-	-/1	-/1	1/1	-/1	-/1	-/1/1
-/1/1	1/-1/-	1/-/2	-/1/-1	-/-2/2	-/-1/1	-/-1/2	-/-1/2
2	2	2	2	2	2	2	2
4 ( 3USB 3.0 * 1 USB 2.0 )	4 ( USB 2.0 )	4 (2 x USB 3.0, 2 x USB 2.0)	4 (2 x USB 3.0, 2 x USB 2.0)	4 (2 x USB 2.0; 2 x USB 3.0)	4 (USB 3.0)	4 ( USB 3.0 )	8 (USB 3.0)
Line-out	Mic-in, Line-in, Line-out	Mic-in, Line-in, Line-out	Line-out	Mic in, Line-in, Line-out	Mic-in, Line-out	Mic-in, Line-out	Mic-in, Line-in, Line-out
-	2 (RS-232)	1 (RS-232)	-	1	-	-	1
-	1	1	-	-	-	-	-
1	1	1	1	1	1	1	-
1	1	1	1	1	1	1	1
-	-	-	-	-	-	-	-
2 ( USB 3.0 )	4 (USB 2.0)	6 (USB 2.0)	4 (USB 2.0)	8 ( USB 2.0 )	2 (USB 2.0)	2 ( USB 2.0 )	1 (USB 2.0)
6 (5 x RS-232; 1 x RS-232/422/485)	4 (RS-232)	5 (4 x RS-232; 1 x RS-232/422/485)	5 (4 x RS-232; 1 x RS-232/422/485)	6 (5 x RS-232; 1 x RS-232/422/485)	2 (1 x RS-232; 1 x RS-232/422/485)	2 (1 x RS-232; 1 x RS-232/422/485)	1 (RS-232/422/485)
-	-	-	1	-	-	-	-
2	4	3	2	3	3	3	2
-	Cfast x 1	-	-	-	-	-	-
8-bit GPIO	8-bit GPIO	8-bit GPIO	8-bit GPIO	16-bit GPIO	8-bit GPIO	8-bit GPIO	8 bit GPIO

# Mini-ITX Motherboards

**NEW****NEW**

Model Name	AIMB-270	AIMB-272	AIMB-273	AIMB-274	AIMB-275	AIMB-281	AIMB-285	SIMB-M02
Form Factor	Mini-ITX	Mini-ITX	Mini-ITX	Mini-ITX	Mini-ITX	Mini-ITX	Mini-ITX	Mini-ITX
Processor System	CPU	Intel Core i7/i5/3/Pentium	Intel 2nd gen. Core i7/i5/3/Celeron	Intel 3rd gen. Core i7/i5/i3/Celeron	Intel Core i7/i5/i3/Pentium/Celeron	Intel Core i7/i5/i3/Pentium/Celeron	Intel Core i7/i5/i3/Pentium/Celeron	Intel Atom D2550/N2600
	Socket	μFC-PGA 989 Socket	μFC-PGA 988 Socket	μFC-PGA 988 Socket	LGA 1150	LGA 1151	LGA 1155	LGA1151
	Max. Speed	2.66/2.4/1.86 GHz	2.1/2.5/2.2/1.6 GHz	2.3/2.1/2.5/2.2/1.6 GHz	3.7/3.1/2.9/2.4 GHz	3.4/3.2/2.8/2.7/2.6/2.4/2.3 GHz	3.5/3.0/3.1/2.7 GHz	3.4/3.2/2.8/2.7/2.6/2.4/2.3 GHz
	TDP	45 W/35 W	45 W/35 W	45 W/35 W	95 W / 65 W / 54 W / 45 W / 35 W	65 W / 35 W	95W / 45W / 65W / 55W	65W/ 35W
	Front Side Bus	-	-	-	-	-	-	-
	L2 Cache	4 MB/3 MB/2 MB	-	-	-	-	-	1 MB
	L3 Cache	-	6 MB/3 MB/2 MB	6 MB/3 MB/2 MB	8 MB/6 MB/4 MB/3 MB	8 MB/6 MB/4 MB/3 MB/2 MB	8 MB/6 MB/3 MB/2 MB	8 MB/6 MB/4 MB/3 MB/2 MB
	Chipset	Intel QM57	Intel QM67/HM65	Intel QM77	Intel Q87	Intel Q170	Intel H61	Intel H110
Expansion Slot	BIOS	AMI EFI 64 Mbit, SPI	AMI EFI 64 Mbit, SPI	AMI EFI 64 Mbit, SPI	AMI EFI 128 Mbit, SPI	AMI EFI 32 Mbit, SPI	AMI EFI 128Mbit, SPI	AMI 16 Mbit, SPI
	PCI	-	-	-	-	-	-	-
	MINI PCIe	1	1	1	2	1	1	2
	M.2	-	-	-	-	1	-	-
Memory	PCIe	PCIe x16, 1 slot	PCIe x16, 1 slot	PCIe x16, 1 slot	PCIe x16, 1 slot	PCIe x16, 1 slot	PCIe x4, 1 slot	PCIe x4, 1 slot
	Technology	Dual Channel DDR3 800/1066/1333 MHz SDRAM	Dual Channel DDR3 1066/1333 MHz SDRAM	Dual Channel DDR3 1333/1600 MHz SDRAM	Dual channel DDR3/DDR3L@1.5V 1333/1600 MHz SDRAM	Dual channel DDR4 2133 MHz SDRAM	Dual channel DDR3 1066/1333/1600 MHz SDRAM	Dual channel DDR4 2133 MHz SDRAM
	Max. Capacity	8 GB	16 GB	16 GB	16 GB	32GB	8 GB	32GB
Graphics	Socket	2x 204-pin SODIMM	2x 204-pin SODIMM	2x 204-pin SODIMM	2x 204-pin SODIMM	2x 260-pin SODIMM	2x 204-pin SODIMM	2x 260-pin SODIMM
	Controller	Intel HD Graphics	Intel HD Graphics	Intel HD Graphics	Intel HD Graphics	Intel HD Graphics	Intel HD Graphics	Intel HD Graphics
	LCD	Dual channel 48-bit LVDS	Dual channel 48-bit LVDS	Dual channel 48-bit LVDS	Dual channel 48-bit LVDS	Dual channel 48-bit LVDS; Single Channel 24-bit LVDS	Dual channel 48-bit LVDS	Single channel 18-bit LVDS
	HDMI	-	1	1	1	1 (HDMI 2.0/1.2)	-	1 (HDMI 1.4)
Ethernet	DVI	1	1	-	-	-	1	-
	Interface	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps
	Controller	LAN1: Intel 82577LM, LAN2: Intel 82583V	LAN1: Intel 82579LM, LAN2: Intel 82583V	LAN1: Intel 82579LM, LAN2: Intel 82583V	LAN1: Intel I217LM, LAN2: Intel I211AT	LAN1: Intel PHY I219-LM, LAN2: Intel I211 AT	LAN1: Realtek RTL8111E, LAN2: Realtek RTL8111E	LAN1: Realtek RTL8111G, LAN2: Realtek RTL8111G
TPM	Connector	RJ-45 x 2	RJ-45 x 2	RJ-45 x 2	RJ-45 x 2	RJ-45 x 2	RJ-45 x 2	RJ-45 x 1
	-	Optional	Optional	Optional	Optional	-	Optional	Optional
SATA	Max Data Transfer Rate	300 MB/s	600 MB/s, 300 MB/s	600 MB/s, 300 MB/s	600 MB/s	600 MB/s	300 MB/s	600 MB/s
	Channel	4	2, 2	2, 2	4	3	3	3
	eSATA/mSATA	-	-	-/1	1/1	-/1	-/1	-/1
Rear I/O	VGA/DVI/HDMI/DP	1/1/-/-	1/1/1/-	1/-/1/2	1/-/1/1	1/1/-/-	-/-/1/1	1/-/1/-
	Ethernet	2	2	2	2	2	2	1
	USB	4 (USB 2.0)	4 (USB 2.0)	4 (USB 3.0)	4 (USB 3.0)	6 (USB 2.0)	4 (UBS 3.0)	4 (USB 2.0)
	Audio	Mic-in, Line-in, Line-out	Mic-in, Line-in, Line-out	Mic-in, Line-in, Line-out	Mic-in, Line-in, Line-out	Mic-in, Line-out	Mic-in, Line-out	Mic-in, Line-in, Line-out
	Serial	2 (RS-232)	2 (RS-232)	-	1 (RS-232)	1 (1x RS-232/422/485, 1x RS-232)	-	2 (RS-232)
	PS/2	2	2	2	-	1	-	1
Internal Connector	DC Jack	-	-	-	-	1 (Phoenix)	-	1
	LVDS & Inverter	1	1	1	1	1	1 (optional)	1
	DVI	1	1	1	-	-	-	-
	USB	4 (USB 2.0)	4 (USB 2.0)	4 (USB 2.0)	6 (USB 2.0)	2 (USB 3.0), 4 (USB 2.0)	2 (USB 2.0)	4 (USB 2.0)
	Serial	4 (RS-232)	4 (RS-232)	2 (RS-232)	1 (RS-232/422/485)	1 (RS-232/422/485)	4 (RS-232)	2 (1 RS-232/ 1 RS-232/422/485)
	Parallel	-	-	-	-	-	-	-
	SATA	4	4	4	4	3	3	2
	CompactFlash	-	Cfast x 1	Cfast x 1	-	-	-	Cfast x 1
	GPIO	8-bit GPIO	8-bit GPIO	8-bit GPIO	8-bit GPIO	8-bit GPIO	8-bit GPIO	8-bit GPIO

# MicroATX Motherboards

**NEW**

Model Name		AIMB-501	AIMB-502	AIMB-503	AIMB-505	AIMB-567	AIMB-580
Form Factor		MicroATX	MicroATX	MicroATX	MicroATX	MicroATX	MicroATX
Processor System	CPU	Intel Core i7/i5/i3/Pentium/Celeron	Intel Xeon/Core i7/i5/i3/Pentium/Celeron	Intel Core i7/i5/i3/Pentium/Celeron	Intel 6th Gen Core i7/i5/i3/Celeron	Intel Core 2 Quad/Core 2 Duo/Pentium Dual-Core/Celeron	Intel Xeon/Core i7/i5/i3/Pentium/Celeron
	Socket	LGA 1155	LGA 1155	LGA 1150	LGA1151	LGA775	LGA 1156
	Max. Speed	3.4/3.1/3.2/2.9/2.5 GHz	3.5/3.4/3.0/3.2/2.9/2.5 GHz	3.5/3.1/2.9/2.4 GHz	3.4/3.2/2.8/2.7/2.6/2.4/2.3 GHz	2.66/3.16/2.6/2.2 GHz	2.93/2.66/3.3/3.06/2.8 GHz
	TDP	95 W/65 W	95 W/77 W/65 W/55 W	65 W/54 W/45 W/35 W	65 W/35 W	95 W/65 W	95 W/73 W/65 W
	L2 Cache	-	-	-	-	6 MB/512 KB	8 MB/4 MB/3 MB
	L3 Cache	8 MB/6 MB/3 MB/2 MB	8 MB/6 MB/3 MB/2 MB	8 MB/6 MB/4 MB/3 MB	8 MB/6 MB/4 MB/3 MB/2 MB	-	-
	Chipset	Intel H61/B75	Intel Q77/C216	Intel H81	Intel H110	Intel G41 + ICH7R/ICH7	Intel Q57/3450
Expansion Slot	BIOS	AMI EFI 64 Mbit, SPI	AMI EFI 64 Mbit, SPI	AMI EFI 64 Mbit, SPI	AMI EFI 128 Mbit, SPI	AMI 16 Mbit, SPI	AMI 64 Mbit, SPI
	PCI	2	1	1 (G2)	1	2	2
	PCIe x16	1	1 (OG2) 2 (WG2)	1	1	1	1
	PCIe x8	-	-	-	-	-	-
	PCIe x4	-	-	-	-	1 (G2)	1
Memory	PCIe x1	1	1	2	2	1 (VG)	-
	Technology	Dual channel DDR3 1333/1600 MHz SDRAM	Dual channel DDR3 1333/1600 MHz SDRAM	Dual channel DDR3/L 1333/1600 MHz SDRAM	Dual channel DDR4 2133 MHz SDRAM	Dual channel DDR3 800/1066/1333 MHz SDRAM	Dual channel DDR3 800/1066/1333 MHz SDRAM
	Max. Capacity	16 GB	32 GB	16 GB	32GB	8 GB	16 GB
Graphics	Socket	2 x 240-pin DIMM	4 x 240-pin DIMM	2 x 240-pin DIMM	2 x 288-pin DIMM	2 x 240-pin DIMM	4 x 240-pin DIMM
	Controller	Intel HD Graphics	Intel HD Graphics	Intel HD Graphics	Intel HD Graphics	Intel GMA X4500	Intel HD Graphics
	VRAM	Shared system memory up to 1 GB	Shared system memory up to 1 GB	Shared system memory up to 1 GB	Share with system memory up to 1GB	Share with system memory up to 325MB	Shared system memory up to 1 GB
	VGA	2 (G2)/1 (L & A2)	1	1	1	1	1
	LCD	Dual channel 48-bit LVDS	-	Dual channel 48-bit LVDS	Dual channel 48-bit LVDS	-	-
	DVI-D	1 (A2 only)	1	1	1	1	1
	HDMI	-	1	-	-	-	-
Ethernet	DP/eDP	-	-	1 / -	1 / -	-	-
	Dual Display	VGA+LVDS, VGA+DVI, VGA1 + VGA2	VGA+HDMI, VGA+DVI, HDMI+DVI	DP+DVI, VGA+DP, VGA+DVI	VGA + DVI, VGA + DP, VGA + eDP, DVI + DP, DVI + eDP, DP + eDP	CRT+DVI (G2)	VGA+DVI
	Triple Display	-	CRT + HDMI + DVI	-	-	-	-
TPM	Interface	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps
	Controller	LAN1: Realtek RTL8111E LAN2: Realtek RTL8111E	LAN1: Intel 82579LM LAN2: Intel 82574L	LAN1: Realtek RTL8111E LAN2: Realtek RTL8111E	LAN1: Realtek RLT8111G LAN2: Realtek RLT8111G	LAN1: Intel 82583V LAN2: Intel 82583V (G2)	LAN1: Intel 82578DM LAN2: Intel 82583V
	Connector	RJ-45 x2	RJ-45 x2	RJ-45 x2	RJ-45 x2	RJ-45 x2	RJ-45 x2
TPM		Optional	Optional	Optional	Optional	-	Optional
SATA	Max Data Transfer Rate	300 MB/s 600 MB/s	300 MB/s 600 MB/s	300 MB/s 600 MB/s	600 MB/s	300 MB/s	300 MB/s
	Channel	4	6 / 2	1 / 2	4	4 (SW RAID - G2)	6 (SW RAID)
	eSATA/mSATA/M.2	-	1/1/-	-/1/-	-/1/-	-	-
I/O Interface	USB	10 (USB 2.0)/8 (USB 2.0), 2 (USB 3.0)	4 (USB 3.0), 2 (USB 2.0)	2 (USB 3.0), 7 (USB 2.0)	12 (USB 2.0)	8 (USB 2.0)	10 (USB 2.0)
	Serial	10 (8 x RS-232; 2 x RS-232/422/485)	6 (5 x RS-232; 1 x RS-485)	10 (8 x RS-232; 2 x RS-232/422/485)	10 (8 x RS-232; 2 x RS-232/422/485)	4 (3 x RS-232; 1 x RS-232/422/485)	4 (3 x RS-232; 1 x RS-232/422/485)
	Parallel	1	-	1	1	1	1
	SIM Card Holder	-	-	1 (G2)	-	-	-
	PS/2	2	-	2	1	2	2
	Ethernet (GbE)	2	2	2	2	2	2
	Audio	Mic-in, Line-out	Mic-in, Line-out	Mic-in, Line-out	Mic-in, Line-out	Mic-in, Line-out	Mic-in, Line-out
	GPIO	8-bit GPIO	14-bit GPIO (6-bit non-programmable, 8-bit programmable)	8-bit GPIO	8-bit GPIO	8-bit GPIO	-

# MicroATX / ATX Motherboards

## MicroATX



## ATX



Model Name	AIMB-581	AIMB-582	AIMB-584	AIMB-585	SIMB-A21	SIMB-A31
Form Factor	MicroATX	MicroATX	MicroATX	Micro-ATX	ATX	ATX
Processor System	CPU	Intel Xeon/ Core i7/ i5/ i3/ Pentium/ Celeron	Intel Xeon/ Core i7/ i5/ i3/ Pentium/ Celeron	Intel Xeon/ Core i7/ i5/ i3/ Pentium/ Celeron	Intel Core i7/ i5/ i3/ Pentium/ Celeron	Intel Core™ i7/ i5/ i3/ Pentium
	Socket	LGA 1155	LGA 1155	LGA 1150	LGA 1155	LGA 1150
	Max. Speed	3.4/3.1/3.3/2.9/2.5 GHz	3.5/3.4/3.0/3.3/2.9/2.5 GHz	3.5/3.2/3.1/2.9/2.7/2.4/2.3 GHz	3.6/3.4/3.3/3.2/2.9/2.8/2.7/2.6/2.4/2.3 GHz	2.5 GHz ~ 3.4 GHz
	TDP	95 W/65 W	95 W/77 W/65 W/55 W	95 W/65 W/54 W/45 W/35 W	80W/65W/35W	35 W ~ 95 W
	L2 Cache	-	-	-	-	-
	L3 Cache	8 MB/6 MB/3 MB/2 MB	8 MB/6 MB/3 MB/2 MB	8 MB/6 MB/4 MB/3 MB	8 MB/6 MB/4 MB/3 MB	8 MB/6 MB/4 MB/3 MB
	Chipset	Intel Q67/C206	Intel Q77/C216	Intel Q87/C226	Intel Q170/C236/H110	Intel H61
Expansion Slot	BIOS	AMI EFI 64 Mbit, SPI	AMI EFI 64 Mbit, SPI	AMI EFI 128 Mbit, SPI	AMI EFI 128Mbits, SPI	AMI 32 Mbit, SP
	PCI	2	2	2	1	4
	PCIe x16	1	1	1	1	1
	PCIe x8	-	-	-	-	-
	PCIe x4	1	1	1	1	-
Memory	PCIe x1	-	-	-	-	1
	Technology	Dual channel DDR3 1066/1333 MHz SDRAM	Dual channel DDR3 1333/1600 MHz SDRAM	Dual channel DDR3 1333/1600 MHz SDRAM	Dual channel DDR4 2133 MHz SDRAM	Dual channel DDR3 1066/1333 MHz SDRAM
	Max. Capacity	32 GB	32 GB	32 GB	32GB	16 GB
Graphics	Socket	4 x 240-pin DIMM	4 x 240-pin DIMM	4 x 240-pin DIMM	4x288- pin DIMM	2 x 240-pin DIMM
	Controller	Intel HD Graphics	Intel HD Graphics	Intel HD Graphics	Intel HD Graphics	Intel HD Graphics
	VRAM	Shared system memory up to 1 GB	Shared system memory up to 1 GB	Shared system memory up to 1 GB	Shared system memory up to 1 GB	Shared system memory up to 1 GB
	VGA	1	1	1	1 (onboard)	1
	LCD	Dual channel 48-bit LVDS	Dual channel 48-bit LVDS	Dual channel 48-bit LVDS	-	-
	DVI-D	2	1	1	1	1
	HDMI	-	-	-	1	-
	DP/eDP	-	1 / 1 (Optional)	1 / 1 (Optional)	1/1	-
	Dual Display	VGA+LVDS, VGA+DVI, LVDS+DVI	VGA+DP, VGA+DVI, DVI+DP, VGA+LVDS (or eDP), DVI+LVDS (or eDP), DP+LVDS (or eDP)	VGA+DP, VGA+DVI, DVI+DP, VGA+LVDS (or eDP), DVI+LVDS (or eDP), DP+LVDS (or eDP)	DP++ + HDMI, DP++ + DVI-D, DP++ + eDP/VGA, HDMI + DVI-D, HDMI + eDP/VGA, eDP/VGA + DVI-D	VGA+DVI-D
	Triple Display	-	CRT+DVI+DP, CRT+LVDS (or eDP)+DP, CRT+LVDS (or eDP)+ DVI, DVI+DP+LVDS (or eDP)	CRT+DVI+DP, CRT+LVDS (or eDP)+DP, CRT+LVDS (or eDP)+ DVI, DVI+DP+LVDS (or eDP)	eDP/VGA + DP++ + HDMI, eDP/VGA + HDMI + DVI-D, DP++ + eDP/VGA + DVI-D, DVI-D + DP++ + HDMI	VGA+DVI-D
Ethernet	Interface	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps
	Controller	LAN1: Intel 82579LM LAN2: Intel 82583V	LAN1: Intel 82579LM LAN2: Intel 82583V	LAN1: Intel I217LM LAN2: Intel I211AT	LAN1: Intel I219LM LAN2: Intel I211AT	LAN1:Realtek RTL8111E LAN2:Realtek RTL8111E
	Connector	RJ-45 x2	RJ-45 x2	RJ-45 x2	RJ-45 x2	2 x RJ-45
TPM		Optional	Optional	Optional	TPM Header	Infineon® 9635 TT 1.2 on board
SATA	Max Data Transfer Rate	300 MB/s 600 MB/s	300 MB/s 600 MB/s	600 MB/s	600 MB/s	300 MB/s 600 MB/s / 300 MB/s
	Channel	4 (SW RAID) / 2 (SW RAID)	4 (SW RAID) / 2 (SW RAID)	6 (SW RAID)	4 (SW RAID)	4 2 / 1
	eSATA / mSATA / M.2	-	-	-	0/1/1	-/1/-
I/O Interface	USB	10 (USB 2.0), 2 (USB 3.0)	8 (USB 2.0), 4 (USB 3.0)	8 (USB 2.0), 4 (USB 3.0)	2(USB 2.0), 10 (USB 3.0)	10 (USB 2.0) 9 (2 USB 2.0, 7 USB 2.0)
	Serial	6 (5 x RS-232; 1 x RS-232/422/485)	6 (5 x RS-232; 1 x RS-232/422/485)	6 (5 x RS-232; 1 x RS-232/422/485)	6 (5 x RS-232; 1 x RS-232/422/485)	6 ( 1 RS-232/422/485, 5 RS-232, 1 w/ 5V & 12V)
	Parallel	1	1	1	-	-
	SIM Card Holder	-	-	-	-	1
	PS/2	2	2	2	1 (on board)	2
	Ethernet (GbE)	2	2	2	2	2
	Audio	Mic-in, Line-out	Mic-in, Line-out	Mic-in, Line-out	Mic-in, Line-in, Line-out	Mic-in, Line-in, Line-out
	GPIO	8-bit GPIO	8-bit GPIO	8-bit GPIO	16-bit GPIO	8-bit GPIO

# Mini-ITX Enclosures and Systems

## Mini-ITX Enclosure



## UTX System



NEW

Model Name		AIMB-B2000
Processor Chassis/ System	Cooling	2 x fan / 1x fan (7cm/39.45CFM each)
	CPU	
	Chipset	Base on Mini-ITX board
	memory	
Driver Bay	2.5" HDD and Slim ODD	2x2.5"HDD or 1x2.5"HDD + 1xSlim ODD
Expansion slot	Slot	Base on Mini-ITX board
Front Panel	I/O ports	Reserved 4xUSB2.0, 4xCOM 2xWLAN Antenna
	Power switch, Indicators	1xPower Switch 1xReset Button 1xPower LED Indicators 1xHDD LED Indicators
	I/O ports	Base on Mini-ITX board Reserved 1xExpansion slot (low profile)
Rear Panel	Power Input	AC Inlet / DC-in Jack
	Voltage	AC input with 150W ATX power supply / DC input with 60W or 84W power adaptor
Power Requirements	Operating Temperature	0 ~ 40°C (32 ~ 104°F)
	Non-operating Temperature	-20 ~ 60°C (-4 ~ 140°F)
	Humidity	10~85% @ 40°C, non-condensing
	Vibration (5 ~500Hz)	1 Grms (1xHDD+1xODD); 0.5 Grms (2xHDD)
Dimensions (W x H x D)		250 x 98 x 255 mm (9.84" x 3.86" x 10.04")
Weight		3.8 / 3.1 kg

Model Name		UTX-3115
Processor System	CPU	Intel ATOM E3826 DC1.46GHz / E3815 SC1.46GHz
	L2 Cache	1MB
	BIOS	AMI EFI 16 Mbit
	Technology	DDR3L 1333/1066MHz, up to 16GB
Memory	Socket	1 x 204-pin SO-DIMM
	Chipset	Intel Atom E3826 / E3815
	Graphics	VGA: 1, max resolution: 2560 x 1600 @ 60Hz HDMI: 1, max resolution: 1920 x 1080P @ 60Hz Micro HDMI: 1, max resolution: 1920 x 1080P @ 60Hz
	Interface	Support Dual 10/100/1000Mbps LAN LAN1: Intel I210AT.. LAN2: Realtek RTL8111G
I/O Interface	Ethernet	1x RS-232 with 5v/12v, or 1xRS-422/485(optional)
	Serial Ports	1x USB3.0 port, 1 USB2.0 port and 1 micro USB2.0 port
	USB Interface	1 SATA interface, support HDD or SSD
	SATA	
Expansion	Expansion	1 x Half-Size Mini PCIe support WiFi module, SIM holder 1 x Full-Size Mini PCIe support mSATA Co-lay SIM holder
	Storage	1 x SATA II HDD bay
	mSATA	1 x full-size Mini PCIe slot
	Software Support	Windows 7, Windows 8 and embedded OS, Windows 10 Linux Yocto, WR IDP2.0/3.0
Power Requirement	Power Input Voltage	12 VDC, ± 10%
	Power Adaptor	AC to DC, DC12V
	Typical	6.48W
	Max	8.4W
Power Consumption	Construction	Aluminum housing
	Mounting	Support VESA/DIN Rail/Wall mounting (Optional)
	Dimensions (W x H x D)	138.5 x 35.98 x 116.4 mm (5.5" x 1.4" x 4.6")
	Operating Temperature	With extended temperature -20 ~ 60° C
Mechanical	EMC	CE/FCC Class B, CCC, BSMI
	Safety Certifications	CB, UL

## Mini-ITX Systems



AIMB-B1230		AIMB-T1215	AIMB-T1225	AIMB-T1231
Barebone system	Description	Heatpipe cooler barebone, w/o adapter, HDD, memory	Fan-base/ Fanless barebone w/ adapter, w/o HDD, memory	Fan-base barebone, w/ adapter, w/o HDD, memory
Processor System	Compatible Motherboard	AIMB-231 with i5 Processor	AIMB-215D-S6B1E	AIMB-225G2-001A/E/ AIMB-225G2-01A1E
	Thermal solution	1x heatpipe cooler	1x chassis fan (4cm/23.8CFM each)/ Fanless (0.7 m/s air flow)	1x chassis fan (4cm/23.8CFM each)/ Fanless (0.7 m/s air flow)
	CPU	Intel Core i5-4300U (on board)	Intel® Bay Trail Quad core Celeron™ J1900 (on board)	AMD G-series Quad Core GX-424CC/ GX-412CC (on board)
	Memory	2 x 204 PIN DDR3 SODIMM (Non-ECC)	2 x 204 PIN DDR3 SODIMM (Non-ECC)	2 x 204 PIN DDR3 SODIMM (Non-ECC)
Graphics	Technology	DDR3L 1600 MHz SDRAM	DDR3L 1066/1333 MHz SDRAM	DDR3L 1333/1866 MHz SDRAM
	Max. Capacity	16 GB/up to 8 GB per SODIMM	8 GB/up to 4 GB per SODIMM	16 GB/up to 8 GB per SODIMM
Storage	Chipset integrated	Intel® HD Graphics	Integrated Intel HD Graphics	AMD Radeon™ HD 8000 series Graphics
	2.5" HDD bay	1 (support 2.5" HDD/SSD, max 9.5 mm height)	1 (support 2.5" HDD/SSD, max 9.5 mm height)	1 (support 2.5" HDD/SSD, max 9.5 mm height)
mSATA Slot	1 (share w/ full size Mini-PCIe slot)	1 (share w/ full size Mini-PCIe slot)	1 (share w/ full size Mini-PCIe slot)	1 (share w/ full size Mini-PCIe slot)
	Interface	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps
Ethernet	Controller	LAN1: Realtek RTL8111E-VB-GR; LAN2: Realtek RTL8111E-VB-GR	LAN1: Realtek RTL8111E LAN2: Realtek RTL8111E	LAN1: Realtek RTL8111G LAN2: Realtek RTL8111G
	Connector	2 (RJ-45)	2 (RJ-45)	2 (RJ-45)
Audio	Chipset	Realtek ALC892, High Definition Audio(HD)	Realtek ALC892, High Definition Audio(HD)	Realtek ALC892, High Definition Audio(HD)
	Internal expansion Slot	1+1 (Full-size, Half-size)	1+1 (Full-size, Half-size)	1+1 (Full-size, Half-size)
Front Panel	Mini-PCIe	2 (USB2.0)	4 (USB2.0)	4 (USB2.0)
	USB	2 (1 x RS-232, 1 x RS-232/422/485)	5 (RS-232)	5 (4 x RS-232, 1 x RS-232/422/485)
Antenna (optional)	COM	0	2 (Line-Out, Mic-In)	2 (Line-Out, Mic-In)
	Audio Jack	up to 1	up to 2	up to 2
Rear Panel	DP++	1	1	1
	DP/HDMI	1	0	0
VGA	USB	0	1	0
	DVI	0	0	0
Antenna (optional)	Lan	2 (RJ-45)	2 (RJ-45)	2 (RJ-45)
	USB	4 (USB3.0)	1 (USB3.0); 3 (USB2.0)	2 (USB3.0); 2 (USB2.0)
Miscellaneous	Audio Jack	2 (Line-Out, Mic-in)	1 (Line-Out)	1 (Line-Out)
	Power Input	1 (DC Jack)	1 (DC Jack)	1 (DC Jack)
Power Requirements	COM	0	1 (RS-232)	0
	Antenna (optional)	up to 2	up to 2	up to 2
Control	LED Indicators	2 (Power LED, HDD LED)	2 (Power LED, HDD LED)	2 (Power LED, HDD LED)
	Voltage Power	1 (Power Switch); 1 (Reset Switch)	1 (Power Switch); 1 (Reset Switch)	1 (Power Switch); 1 (Reset Switch)
Environment	Operating Temperature	0 ~ 40°C (32 ~ 104°F)	0 ~ 50°C (32 ~ 122°F) (Fan-base)/ 0 ~ 40°C (32 ~ 104°F) (Fanless)**	0 ~ 50°C (32 ~ 122°F) (Fan-base)/ 0 ~ 40°C (32 ~ 104°F) (Fanless)**
	Non-operating Temperature	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)
Dimensions (W x H x D)	Humidity	10~85% @ 40°C, non-condensing	10~85% @ 40°C, non-condensing	10~85% @ 40°C, non-condensing
	Vibration (5 ~ 500Hz)	0.5 Grms (HDD 1x); 1 Grms (SSD x 1)	1 Grms (HDD 1x); 3 Grms (SSD x 1)	1 Grms (HDD 1x); 3 Grms (SSD x 1)

\*\*: with extended temperature HDD or SSD/mSATA with 0.7 m/s air flow.

# Fanless Embedded Box PCs



Model Name		ARK-1120L ARK-1120LX	ARK-1120F	ARK-1122H ARK-1122HS	ARK-1122C	ARK-1122F
Processor System	CPU	Intel Atom N455	Intel Atom N455	Intel Atom N2600	Intel Atom N2600	Intel Atom N2800
	Frequency	1.66 GHz	1.66 GHz	1.6 GHz	1.6 GHz	1.86 GHz
	Core Number	1	1	2	2	2
	BIOS	AMI EFI 16Mbit	AMI EFI 16Mbit	AMI EFI 16Mbit	AMI EFI 16Mbit	AMI EFI 16Mbit
	Chipset	Intel ICH8-M	Intel ICH8-M	Intel NM10	Intel NM10	Intel NM10
Memory	Technology	DDR3 667MHz	DDR3 667MHz	DDR3 800MHz	DDR3 800MHz	DDR3 1066MHz
	Max. Capacity	2 GB	2 GB	4 GB	4 GB	4 GB
	Socket	1 x 204-pin SODIMM/ 2 GB Built-In (LX SKU)	1 x 204-pin SODIMM	1 x 204-pin SODIMM/ 2GB Built-In (HS SKU)	1 x 204-pin SODIMM	1 x 204-pin SODIMM
Display	VGA	Up to 1600 x 1200	Up to 1600 x 1200	Up to 1920 x 1200	Up to 1920 x 1200	Up to 1920 x 1200
	LCD (TTL/LVDS/eDP)	-	-	-	-	-
	DDI (HDMI/DVI/ DisplayPort)	-	-	Lockable HDMI: 1920 x 1200, lockable supported	-	Lockable HDMI: 1920 x 1200, lockable supported
	Multiple Display	-	-	Dual	-	Dual
Expansion Interface	Mini PCIe	1 x half-size Mini PCIe	1 x half-size Mini PCIe	1 x half-size Mini PCIe	1 x half-size Mini PCIe	1 x half-size Mini PCIe 1 x full-size Mini PCIe w/SIM Holder
	SIM Socket	-	-	-	-	1
Ethernet	Controller	GbE1: Intel 82567V, support wake on LAN	GbE1 : Intel 82567V, support wake on LAN	GbE1: Intel 82583V, support wake on LAN	GbE1: Intel 82583V, support wake on LAN	GbE1: Intel 82583V, GbE2: Intel 82583V, All support wake on LAN
	Speed	10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps
Audio	Audio Interface	HD Audio	-	HD Audio	-	HD Audio
	CODEC	Realtek ALC892	-	Realtek ALC892	-	Realtek ALC892
	Connector	2 (Line-in, Line out)	-	2 (Line-in, Line out)	-	2 (Line-in, Line out)
WatchDog Timer		Yes	Yes	Yes	Yes	Yes
Storage	SATA	1 x 2.5" SATA HDD bay 1 x 320 GB SATA II HDD Built-In (LX SKU)	1 x 2.5" SATA HDD bay	1 x 2.5" SATA HDD bay 1 x 500 GB SATA II HDD Built-In (HS SKU)	1 x 2.5" SATA HDD bay (Optional by T-PN)	-
	mSATA	-	-	Support 1 x Full Size mSATA	Support 1 x Full Size mSATA	Support 1 x Full Size mSATA
	CompactFlash/ CFast	CompactFlash Type I/II	CompactFlash Type I/II	-	-	-
I/O	USB3.0	-	-	-	-	-
	USB2.0	4	2	4	4 (Standard) or 2 (Option 2.5" drive bay version)	3
	GPIO	-	-	-	-	-
	COM Port	2 (2 x RS-232)	2 x RS-232, 2 x RS-232/422/485 (by BIOS setting)	1 (1 x RS-232)	4 (2 x RS-232, 2 x RS-232/422/485, selected by BIOS)	1 (1 x RS-232)
Power	Power Type	ATX	ATX	ATX	ATX	ATX
	Power Supply Voltage	12 V <sub>DC</sub> , ± 10%	12 V <sub>DC</sub> , ± 10%	12 V <sub>DC</sub> , ± 10%	12 V <sub>DC</sub> , ± 10%	12 V <sub>DC</sub> , ± 10%
	Connector	DC jack with power adaptor locker	DC jack with power adaptor locker	Lockable DC Jack	Lockable DC Jack	Lockable DC Jack
	Power Consumption (Idle)	9.12W	9.12W	6.89W	5.4W	7.84W
	Power Consumption (Full Load)	10.8W	10.8W	11.45W	9.47W	13.15W
	Power Adaptor	AC to DC, DC12 V/3 A, 36 W	AC to DC, DC12 V/3 A, 36 W	Lockable AC to DC, DC12 V/3 A, 36 W	Lockable AC to DC, DC12 V/3 A, 36 W	Lockable AC to DC, DC12 V/3 A, 36 W
Environment	Operating Temperature (air flow 0.7 m/sec)	0 ~ 40° C	0 ~ 40° C	With standard temperature HDD/ SSD/mSATA devices: 0 ~ 40° C With extended temperature SSD/ mSATA devices: -20 ~ 60° C	With standard temperature HDD/ SSD/mSATA devices: 0 ~ 40° C With extended temperature SSD/ mSATA devices: -20 ~ 60° C	With standard temperature mSATA devices: 0 ~ 40° C With extended temperature mSATA devices: -20 ~ 60° C
	Non-operating Temperature	-40~ 85° C and 95% @ 40° C Non-Condensing	-40~ 85° C and 95% @ 40° C Non-Condensing	-40~ 85° C and 95% @ 40° C Non-Condensing	-40~ 85° C and 95% @ 40° C Non-Condensing	-40~ 85° C and 95% @ 40° C Non-Condensing
	Vibration Resistance	With CompactFlash disk: 3Grm	With CompactFlash disk: 3Grm	With SSD/mSATA: 3Grm	With SSD/mSATA: 3Grm	With mSATA: 3Grm
	Shock Protection	With CompactFlash disk: 30G	With CompactFlash disk: 30G	With SSD/mSATA: 30G	With SSD/mSATA: 30G	With mSATA: 30G
Physical Characteristics	Dimensions (W x H x D)	133.8 x 43.1 x 94.2 mm	133.8 x 43.1 x 94.2 mm	133.8 x 43.1 x 94.2 mm	133.8 x 43.1 x 94.2 mm	133.8 x 43.1 x 94.2 mm
	Weight	1.2 kg (2.65 lb)	1.2 kg (2.65 lb)	1.2 kg (2.65 lb)	1.2 kg (2.65 lb)	1.2 kg (2.65 lb)
	Mounting	Optional DIN Rail/ VESA/ Wall mounting	Optional DIN Rail/ VESA/ Wall mounting	Optional DIN Rail/ VESA/ Wall mounting	Optional DIN Rail/ VESA/ Wall mounting	Optional DIN Rail/ VESA/ Wall mounting
Operating System	Microsoft Windows	Yes/ WES2009 Built-In (LX SKU)	Yes	Yes (WES 7 Built-In (HS SKU))	Yes (XP, XPE by project support)	Yes
	Linux	Yes (Ubuntu v10.04.1)	Yes (Ubuntu v10.04.1)	Yes (Ubuntu 12.04, Fedora 16)	Yes (Ubuntu 12.04, Fedora 16)	Yes (Ubuntu 12.04, Fedora 16)
APIs	SUSIAccess	Yes	Yes	Yes	Yes	Yes
	iManager	-	-	-	-	-
Certification	Other	McAfee, Acronis	McAfee, Acronis	McAfee, Acronis	McAfee, Acronis	McAfee, Acronis
	EMC	CE/FCC Class A, CCC, BSMI	CE/FCC Class A, CCC, BSMI	CE/FCC Class A, CCC, BSMI	CE/FCC Class A, CCC, BSMI	CE/FCC Class A, CCC, BSMI
	Safety Certifications	UL, CCC, BSMI, CB	UL, CCC, BSMI, CB	UL, CCC, BSMI, CB	UL, CCC, BSMI, CB	UL, CCC, BSMI, CB

**NEW****NEW****NEW****NEW**

<b>ARK-1123L</b>	<b>ARK-1123C</b>	<b>ARK-1123H</b>	<b>ARK-1503</b>	<b>ARK-1550</b>
Intel® Atom DC E3825	Intel® Atom DC E3825	Intel® Celeron QC J1900	Intel Atom D425/D525	Intel® Celeron 2980U Intel® Core i5 4300U
1.33 GHz	1.33 GHz	2.0 GHz	1.8 GHz	1.6 GHz / 1.9 GHz
2	2	4	1/2	2
AMI EFI 64 Mbit	AMI EFI 64 Mbit	AMI EFI 64 Mbit	AMI EFI 16Mbit	AMI EFI 128 Mbit
Intel® Atom DC E3825	Intel® Atom DC E3825	Intel® Celeron QC J1900	Intel ICH8-M	Intel® Celeron 2980U Intel® Core i5 4300U
DDR3L 1066MHz	DDR3L 1066MHz	DDR3L 1333MHz	DDR3 1066/1333MHz	DDR3L 1333/1600MHz
8GB	8GB	8GB	4 GB	8GB
1 x 204-pin SO-DIMM	1 x 204-pin SO-DIMM	1 x 204-pin SO-DIMM	1 x 204-pin SO-DIMM	1 x 204-pin SO-DIMM
Up to 1920 x 1200	Up to 1920 x 1200	-	-	Up to 1920 x 1200
-	-	-	Up to 2048 x 1536	Up to 2048 x 1536
-	-	-	LVDS: Single channel 24-bit LVDS up to WXGA 1366 x 768 (Integrated in I-Panel Link)	LVDS (optional)
-	-	2 x lockable HDMI, 1920 x 1080	-	1 x lockable HDMI, up to 4096 x 2304 at 24 Hz
-	-	-	Dual	Dual
1 x Half-size Mini PCIe	1 x Half-size Mini PCIe	1 x Half-size Mini PCIe	1 x full-size Mini PCIe	1 x Half-size Mini PCIe
1 x Full-size Mini PCIe	1 x Full-size Mini PCIe	1 x Full-size Mini PCIe	1 x Full-size Mini PCIe w/ SIM	1 x Full-size Mini PCIe
-	-	-	-	1
GbE 1 : Intel i210 support Wake On LAN	GbE 1 : Intel i210 GbE 2 : Intel i210 All support Wake On LAN	GbE 1 : Intel i210 GbE 2 : Intel i210 All support Wake On LAN	GbE1 : Intel 82567V, GbE2 : Intel 82583V, All support wake on LAN	GbE 1 : Intel i218 GbE 2 : Intel i210 All support Wake On LAN
10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps
HD Audio	HD Audio	HD Audio	HD Audio	HD Audio
Realtek ALC888S	Realtek ALC888S	Realtek ALC888S	Realtek ALC892	Realtek ALC888S
2 (Line-in, Line out)	2 (Line-in, Line out)	2 (Line-in, Line out)	1 (Line-out)	3 (Line-in, Line-out, Mic-in)
Yes	Yes	Yes	Yes	Yes
1 x 2.5" SATA HDD bay	1 x 2.5" SATA drive bay	1 x 2.5" SATA drive bay	1 x 2.5" SATA HDD bay	1 x 2.5" Hot-swappable SATA HDD bay
1 x Half-Size mSATA	1 x Half-Size mSATA	1 x Half-Size mSATA	-	1 x Full-size mSATA
-	-	-	CompactFlash Type I/II	-
1	1	1	-	2
1	2	2	4	2
8-bit Programmable DIO	-	-	8-bit Programmable DIO	8-bit Programmable DIO
2 (1 x RS-232 & 1 x RS-232/422/485)	2 (2 x RS-232/422/485)	1 (1 x RS-232/422/485)	2 (1 x RS232, 1 x RS232/422/485)	3 (1 x RS-232, 2 x RS-232/422/485)
AT/ATX	AT/ATX	AT/ATX	AT/ATX	ATX/AT
12 V <sub>DC</sub> , ± 10%	12 V <sub>DC</sub> , ± 10%	12 V <sub>DC</sub> , ± 10%	12 V <sub>DC</sub> , ± 10%	12 V <sub>DC</sub> , ± 10%
Lockable DC Jack	Lockable DC Jack	Lockable DC Jack	DC jack with power adaptor locker	DC jack with power adaptor locker
8.16W	8.16W	14.04W	10.92W (D425) / 11.88W (D525)	5.64W (2980U) / 10.56W (4300U)
5.28	5.28W	5.64W	13.08W (D425) / 16.44W (D525)	15.1W (2980U) / 28.2W (4300U)
Lockable AC to DC, DC12 V/3 A, 36 W	Lockable AC to DC, DC12 V/3 A, 36 W	Lockable AC to DC, DC12 V/3 A, 36 W	AC to DC, DC 12V/5A 60W (optional)	AC to DC, DC 12V/5A 60W (optional)
With extend temperature peripherals: -30~70° C With standard temperature peripherals: 0 ~ 40° C	With extend temperature peripherals: -30~70° C With standard temperature peripherals: 0 ~ 40° C	With extend temperature peripherals: -20 ~ 60° C With standard temperature peripherals: 0 ~ 40° C	With extended temperature peripherals: -20 ~ 60° C With standard temperature peripherals: 0 ~ 40° C	With extend temperature peripherals: -20 ~ 55° C With standard temperature peripherals: 0 ~ 40° C
-40 ~ 85° C and 40° C @ 95% RH Non-Condensing	-40 ~ 85° C and 40° C @ 95% RH Non-Condensing	-40 ~ 85° C and 40° C @ 95% RH Non-Condensing	-40 ~ 85° C and 40° C @ 95% RH Non-Condensing	-40 ~ 85° C and 40° C @ 95% RH Non-Condensing
With mSATA/SSD : 3 Grms	With mSATA/SSD : 3 Grms	With mSATA/SSD : 3 Grms	With Compact Flash/SSD: 5 Grms	With mSATA/SSD : 5 Grms
With mSATA/SSD: 30 G	With mSATA/SSD: 30 G	With mSATA/SSD: 30 G	With Compact Flash/SSD: 50G	With mSATA/SSD: 50G
133.8 x 43.1 x 94.2 mm	133.8 x 43.1 x 94.2 mm	133.8 x 43.1 x 94.2 mm	230.6 x 44.4 x 133.0 mm	223 x 46.6 x 133.0 mm
1.2 kg (2.65 lb)	1.2 kg (2.65 lb)	1.2 kg (2.65 lb)	1.9 kg (4.18 lbs)	1.9 kg (4.18 lbs)
Optional DIN Rail/ VESA/ Wall mounting	Optional DIN Rail/ VESA/ Wall mounting	Optional DIN Rail/ VESA/ Wall mounting	Wall Mounting (Standard) / VESA & DIN-Rail Mounting Kit (Optional)	Wall Mounting (Standard) / VESA & DIN-Rail Mounting Kit (Optional)
Yes (Windows 7, Windows 8)	Yes (Windows 7, Windows 8)	Yes (Windows 7, Windows 8)	Yes (Windows 7, Windows 8)	Yes (Windows 7, Windows 8)
Yes (by Project)	Yes (by Project)	Yes (by Project)	Yes (Ubuntu v10.04.1)	Yes (by Project)
Yes	Yes	Yes	Yes	Yes
McAfee, Acronis	McAfee, Acronis	McAfee, Acronis	McAfee, Acronis	McAfee, Acronis
CE/FCC Class A, CCC, BSMI	CE/FCC Class A, CCC, BSMI	CE/FCC Class A, CCC, BSMI	CE/FCC Class A, BSMI, CCC, KCC	CE/FCC Class A, CCC, BSMI
UL, CCC, BSMI, CB	UL, CCC, BSMI, CB	UL, CCC, BSMI, CB	UL, CCC, BSMI, CB	UL, CCC, BSMI, CB

# Fanless Embedded Box PCs

**NEW****NEW**

Model Name		ARK-2120L	ARK-2120F	ARK-2121L	ARK-2121F
Processor System	CPU	Intel Atom N2600 / Intel Atom D2550	Intel Atom D2550	Intel Celeron QC J1900	Intel Celeron QC J1900
	Frequency	1.6 GHz / 1.86 GHz	1.86 GHz	2.0 GHz, turbo boost to 2.4GHz	2.0 GHz, turbo boost to 2.4GHz
	Core Number	2	2	4	4
	BIOS	AMI EFI 16Mbit	AMI EFI 16Mbit	AMI UEFI 64Mbit	AMI UEFI 64Mbit
	Chipset	Intel NM10	Intel NM10	-	-
Memory	Technology	DDR3 800MHz	DDR3 800MHz	DDR3L 1333MHz	DDR3L 1333MHz
	Max. Capacity	4 GB	4 GB	8GB	8GB
	Socket	1 x 204-pin SODIMM	1 x 204pin SODIMM	1 x 204pin SODIMM	1 x 204pin SODIMM
Display	Graphic Engine	DirectX 9 and OpenGL 3.0 support	DirectX 9 and OpenGL 3.0 support	DirectX 11.1 , OCL 1.2 and OGL 3.2	DirectX 11.1 , OCL 1.2 and OGL 3.2
	VGA	Up to 1920 x 1200	Up to 1920 x 1200	up to 2048 x 1152	up to 2048 x 1152
	LCD (TTL/LVDS/eDP)	-	LVDS: Dual channel 48-bit up to 2560 x 1600	-	-
	DDI (HDMI/DVI/DisplayPort)	HDMI:1920 x 1200 @ 60Hz	HDMI:1920 x 1200 @ 60Hz	HDMI: 1.4a, 1080P@60Hz	HDMI: 1.4a, 1080P@60Hz optional 2nd HDMI Optional DVI-D
	Multiple Display	Dual	Dual	Dual	Dual
Expansion Interface	Mini PCIe	1	1	1	1
	SIM Socket	1	1	1	1
Ethernet	Controller	GbE1: Intel 82583V, GbE2: Intel 82583V, All support wake on LAN	GbE1: Intel 82583V, GbE2: Intel 82583V, GbE3: Intel 82583V, All support wake on LAN	GbE1: Intel i210 GbE2: Intel i210 All support wake on LAN	GbE1: Intel i210 GbE2: Intel i210 GbE3: Intel i210(optional) GbE4: i210(EMIO-100E, optional) All support wake on LAN
	Speed	10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps
Audio	Audio Interface	HD Audio	HD Audio	HD Audio	HD Audio
	CODEC	Realtek ALC892	Realtek ALC892	Realtek ALC88S	Realtek ALC88S
	Connector	1 (Line-in, Line out, Mic-in)	1 (Line-in, Line out, Mic-in)	1 (Line-in, Line out, Mic-in)	1 (Line-in, Line out, Mic-in)
WatchDog Timer		Yes	Yes	Yes	Yes
Storage	SATA	1 x 2.5" SATAII HDD bay	1 x 2.5" SATAII HDD bay	1 x 2.5" SATAII HDD bay	1 x 2.5" SATAII HDD bay
	mSATA	-	-	1	1
	CompactFlash/ CFast	1 CFast	1 CFast	-	-
I/O	USB3.0	-	-	1	1
	USB2.0	6	5	3	5 x external, 1 x internal
	GPIO	8-bit Programmable DIO	8-bit Programmable DIO	-	8-bit Programmable DIO, with 2.5Kv isolation
	LPT	-	-	-	-
	COM Port	4 (3 x RS232, 1 x RS232/ 422/ 485)	6 (2 x RS232, 4 x RS232/ 422/ 485)	2x RS232, 2x RS232/422/485	6 x RS232/422/485
Power	Power Type	ATX, AT	ATX, AT	ATX	ATX
	Power Supply Voltage	12 V <sub>dc</sub> , ± 10%	12 ~ 24 V <sub>dc</sub>	9 ~ 36 V <sub>dc</sub>	9 ~ 36 V <sub>dc</sub>
	Connector	Lockable DC Jack	2-pin phoenix head	2-pin phoenix head	2-pin phoenix head
	Power Consumption (Idle)	8.9W	9.2W	7.2W	8.4W
	Power Consumption (Full Load)	11W	11.59W	13.3W	16.2W
	Power Adaptor	Lockable AC to DC, DC12 V/3 A, 36 W (Optional)	Lockable AC to DC, DC19 V/3.42 A, 65 W (Optional)	Lockable AC to DC, DC19 V/3.42 A, 65 W (Optional)	Lockable AC to DC, DC19 V/3.42 A, 65 W (Optional)
Environment	Operating Temperature (air flow 0.7 m/sec)	With extend temperature peripherals: -20 ~ 60° C With HDD: 0 ~ 45° C	With extend temperature peripherals: -20 ~ 60° C With HDD: 0 ~ 45° C	With extend temperature peripherals: -20 ~ 70° C With HDD: 0 ~ 45° C	With extend temperature peripherals: -20 ~ 70° C With HDD: 0 ~ 45° C
	Non-operating Temperature	-40~ 85° C and 40° C @ 95% RH Non-Condensing	-40~ 85° C and 40° C @ 95% RH Non-Condensing	-40~ 85° C and 40° C @ 95% RH Non-Condensing	-40~ 85° C and 40° C @ 95% RH Non-Condensing
	Vibration Resistance	With SSD: 5 Grms	With SSD: 5 Grms	With SSD: 3 Grms	With SSD: 3 Grms
	Shock Protection	With SSD: 50 G	With SSD: 50 G	With SSD: 30 G	With SSD: 30 G
	Dimensions (W x H x D)	264.5 x 69.2 x 133.0 mm	264.5 x 69.2 x 133.0 mm	264.5 x 68.4 x 133.0 mm	264.5 x 68.4 x 133.0 mm
Physical Characteristics	Weight	2.3 kg (5.07 lb)	2.5 kg (5.51 lb)	2.3 kg (5.07 lb)	2.5 kg (5.07 lb)
	Construction	Aluminum/Iron	Aluminum/Iron	Aluminum/Iron	Aluminum/Iron
	Mounting	Desk/ Wall/ VESA/ DIN-Rail mounting	Desk/ Wall/ VESA/ DIN-Rail mounting	Desk/ Wall/ VESA/ DIN-Rail mounting	Desk/ Wall/ VESA/ DIN-Rail mounting
	Operating System	Microsoft Windows Linux	Yes (XP, XPE for project support) Yes (Ubuntu 12.04, Fedora 16)	WIN7, WIN8 Yes(Ubuntu 12.04, fedora 19)	WIN7, WIN8 Support by project
APIs	SUSIAccess	Yes	Yes	Yes	Yes
	iManager	Yes	Yes	Yes	Yes
	Other	McAfee, Acronis	McAfee, Acronis	McAfee, Acronis	McAfee, Acronis
Certification	EMC	CE/FCC Class A, CCC, BSMI	CE/FCC class A, CCC, BSMI	CE/FCC Class A, CCC, BSMI	CE/FCC Class A, CCC, BSMI
	Safety Certifications	UL, CB, CCC, BSMI	UL, CB, CCC, BSMI	UL, CCC, BSMI, CB	UL, CCC, BSMI, CB



ARK-2150L	ARK-2150F	ARK-3360L	ARK-3360F
3rd Gen <sup>1</sup> Intel Celeron 1047UE / Core i3-3217UE / Core i7-3517UE	3rd Gen <sup>1</sup> Intel Core i7-3517UE	Intel Atom N450/D510	Intel Atom N450/D510
1.4GHz / 1.6 GHz / 1.7 GHz (up to 2.8GHz)	1.7 GHz (up to 2.8GHz)	1.66 GHz	1.66 GHz
2	2	2	2
AMI EFI 64Mbit	AMI EFI 64Mbit	AMI EFI 16Mbit	AMI EFI 16Mbit
Intel QM77	Intel QM77	Intel ICH8-M	Intel ICH8-M
DDR3 1600MHz, DDR3L 1333 MHz	DDR3 1600MHz, DDR3L 1333 MHz	DDR2 667MHz	DDR2 667MHz
8 GB	8 GB	2 GB	2 GB
1 x 204-pin SODIMM	1 x 204-pin SODIMM	1 x 200-pin SODIMM	1 x 200-pin SODIMM
DirectX11, OpenGL 3.1, and Open CL 11	DirectX11, OpenGL 3.1, and Open CL 11	DirectX 9 and MPEG2 HW Decode	DirectX 9 and MPEG2 HW Decode
Up to 2048 x 1536	Up to 2048 x 1536	Up to 2048 x 1563	Up to 2048 x 1563
HDMI:1920 x 1200 @ 60Hz	HDMI:1920 x 1200 @ 60Hz DVI-D: 1920 x 1200	-	-
Dual	Dual	-	-
3	3	1	1
1	1	-	-
GbE1: Intel 82579LM, GbE2: Intel 82583V, All support wake on LAN	GbE1: Intel 82579LM, GbE2/ 3/ 4: Intel 82583V All support wake on LAN	GbE1: Intel 82567V, GbE2: Intel 82583V, All support wake on LAN	GbE1: Intel 82567V, GbE2: Intel 82583V, GbE3: Intel 82541PI, All support wake on LAN
10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps
HD Audio	HD Audio	HD Audio	HD Audio
Realtek ALC892	Realtek ALC892	Realtek ALC886	Realtek ALC886
1 (Line-in, Line out, Mic-in)	1 (Line-in, Line out, Mic-in)	1 (Line-in, Line out, Mic-in)	1 (Line-in, Line out, Mic-in)
Yes	Yes	Yes	Yes
1 x 2.5" SATAII HDD bay (Max. Data Transfer Rate 600 MB/s)	1 x 2.5" SATAII HDD bay (Max. Data Transfer Rate 600 MB/s)	1 x 2.5" SATAII HDD bay (Max. Data Transfer Rate 300 MB/s)	1 x 2.5" SATAII HDD bay (Max. Data Transfer Rate 300 MB/s)
1 (Supports either mSATA or full size miniPCIe, selected by BIOS, default support miniPCIe)	1 (Supports either mSATA or full size miniPCIe, selected by BIOS, default support miniPCIe)	-	-
-	-	1 CompactFlash	1 CompactFlash
2	3	-	-
4	3	6	6
8-bit Programmable DIO	4ch digital input and 4ch digital output with 2.5KV isolation	8-bit Programmable DIO	8-bit Programmable DIO
-	-	-	-
4 (2 x RS232, 2 x RS232/ 422/ 485)	4 (4 x RS232/ 422/ 485)	4 (3 x RS232, 1 x RS232/422/485)	6 (1 x RS232, 3 x RS232/ 422/ 485, 2 x RS-422/ 485 with 7.5kV isolation)
ATX, AT	ATX, AT	ATX, AT	ATX, AT
12 V <sub>dc</sub> , ± 10%	12 ~ 24 V <sub>dc</sub>	12 V <sub>dc</sub>	12 ~ 24 V <sub>dc</sub>
Lockable DC Jack	2-pin phoenix head	DC Jack	2-pin phoenix head
9.6W	10.3W	11W	12.12W
24.98W	25.7W	15W	14.96W
Lockable AC to DC, DC12 V/5 A, 60 W (Optional)	Lockable AC to DC, DC19 V/3.42 A, 65 W (Optional)	ACto DC, DC12V/3A, 36W (Optional)	Lockable AC to DC, DC19 V/3.42 A, 65 W (Optional)
With extend temperature peripherals: -20 ~ 60° C With HDD: 0 ~ 45° C	With extend temperature peripherals: -20 ~ 60° C With HDD: 0 ~ 45° C	With extend temperature peripherals: -20 ~ 60° C With HDD: 0 ~ 45° C	With extend temperature peripherals: -20 ~ 60° C With HDD: 0 ~ 45° C
-40 ~ 85° C and 40° C @ 95% RH Non-Condensing	-40 ~ 85° C and 40° C @ 95% RH Non-Condensing	-40~ 85° C and 40° C @ 95% RH Non-Condensing	-40~ 85° C and 40° C @ 95% RH Non-Condensing
With SSD: 5 Grms	With SSD: 5 Grms	With SSD: 5 Grms With HDD: 1 Grms	With SSD: 5 Grms With HDD: 1 Grms
With SSD: 50 G	With SSD: 50 G	With SSD: 50 G With HDD: 20 G	With SSD: 50 G With HDD: 20 G
264.5 x 75.1 x 133.0 mm	264.5 x 75.1 x 133.0 mm	264.5 x 69.2 x 137.25 mm	264.5 x 69.2 x 137.25 mm
2.3 kg (5.07 lb)	2.8kg (6.17lb)	2 kg (4.4 lb)	2 kg (4.4 lb)
Aluminum/Iron	Aluminum/Iron	Aluminum/Iron	Aluminum/Iron
Desk/ Wall/ VESA/ DIN-Rail mounting	Desk/ Wall/ VESA/ DIN-Rail mounting	Desk/ Wall/ VESA/ DIN-Rail mounting	Desk/ Wall/ VESA/ DIN-Rail mounting
Yes	Yes	Yes	Yes
Yes (Ubuntu v12.04/CentOS 6.6)	Yes (Ubuntu v12.04/CentOS 6.6)	Yes (Ubuntu v10.04.1)	Yes (Ubuntu v10.04.1)
Yes	Yes	Yes	Yes
Yes	Yes	-	-
Intel AMT 8.0, McAfee, Acronis	Intel AMT 8.0, McAfee, Acronis	McAfee, Acronis	McAfee, Acronis
CE/FCC class A, CCC, BSMI	CE/FCC class A, CCC, BSMI	CE/FCC class A, CCC, BSMI, KC	CE/FCC class A, CCC, BSMI, KC
UL, CB, CCC, BSMI	UL, CB, CCC, BSMI	UL, CB, CCC, BSMI, KC	UL, CB, CCC, BSMI, KC

# Fanless Embedded Box PCs

**NEW****NEW****NEW**

Model Name		ARK-3440 A2	ARK-3500	ARK-3510	ARK-6320	ARK-6322
Processor System	CPU	Intel Core i7 6100E/i5 520E/i3 330E	3rd gen' Intel Core i7-3610QE/i5-3610ME/i3-3120ME/Celeron 1020E rPGA processor support	3rd gen' Intel Core i7-3610QE/i5-3610ME/i3-3120ME/Celeron 1020E rPGA processor support	Intel Atom Processor D510/ D525	Intel Celeron J1900 SoC
	Frequency	2.53GHz/2.4GHz/2.13GHz	2.3 GHz/2.7 GHz/2.4 GHz/2.2 GHz	2.3 GHz/2.7 GHz/2.4 GHz/2.2 GHz	1.66 GHz/1.8 GHz	2.0 GHz
	Core Number	2	4/2/2	4/2/2	2	4
	BIOS	AMI SPI 16Mbit	AMI EFI 64Mbit	AMI EFI 64Mbit	AMI 16 Mbit SPI	AMI 16Mbit SPI
Memory	Chipset	Intel QM77	Intel QM77	Intel QM77	ICH8M	-
	Technology	DDR3 1066/1333	DDR3/DDR3L 1600MHz	DDR3/DDR3L 1600MHz	DDR2 667MHz / DDR3 800MHz	DDR3L 1333MHz
	Max. Capacity	8GB	16GB	16GB	2GB / 4GB	8GB
Display	Socket	2x204-pin SODIMM	2x204-pin SODIMM	2x204-pin SODIMM	1 x 200-pin SODIMM / 2 x 204-pin SODIMM	2 x 204pin SODIMM
	VGA	up to 2048x1536	VGA integrated in DVI-I port	VGA integrated in DVI-I port	Supports up to SXGA 2048 x 1536 @ 60Hz	Support up to SXGA 2048 x 1280 @ 60 MHz
	LCD (TTL/LVDS/eDP)	LVDS: 24 bit up to 1920x1200(optional)	-	-	LVDS : Single channel 18-bit and up to WXGA 1366 x 768 (Optional)	-
	DDI (HDMI/DVI/DisplayPort)	HDMI: HDMI 1.3 up to 2560x1600p75 DVI-D: up to 1920 x 1200	DVI-I: 1920 x 1200 @ 60 Hz HDMI: HDMI 1.4, 1920 x 1200 @ 60Hz Display port: 2560 x 1600 @ 60Hz (Video only, and only on 3rd gen' processor)	DVI-I: 1920 x 1200 @ 60 Hz HDMI: HDMI 1.4, 1920 x 1200 @ 60Hz Display port: 2560 x 1600 @ 60Hz (Video only, and only on 3rd gen' processor)	DVI-D:1600 x 1200	DisplayPort : DP++1.2, resolution up to 2560 x 1600 x 24bpp @ 60Hz
	Multiple Display	Dual	Triple/Dual	Triple/Dual	Dual	Dual
Expansion Interface	PCI Express x 4	1 (optional)	1 slot, ARK-3500F	-	-	-
	PCI Express x 1	1 (default)/2/-	1 slot, ARK-3500F	-	-	-
	Mini PCIe	2	2 (share with mSATA), with SIM	2 (share with mSATA), with SIM	-	2 (full size, 1 half size)
	PCI	1(default)/2/NA	2 slots, ARK-3500P	-	-	-
Ethernet	Controller	Gbe1: Intel 82577LM Gbe2: Intel 82583V	Gbe1: Intel 82579LM Gbe2: Intel I-210IT	Gbe1: Intel 82567V; Gbe2: Intel 82583V	Gbe1: RTL8111E Gbe2: RTL8111E	Gbe1: RTL8111E Gbe2: RTL8111E
	Speed	10/100/1000Mbps	10/100/1000Mbps	10/100/1000Mbps	10/100/1000 Mbps	10/100/1000 Mbps
Audio	Audio Interface	HD Audio	HD Audio	HD Audio	HD Audio	HD Audio
	CODEC	Realtek ALC888	Realtek ALC892	Realtek ALC892	Realtek ALC892	Realtek ALC892
	Connector	1 (Line-in, Line out, Mic-in)	Line out, Mic in	Line out, Mic in (Mic-In, Line-In, Line-Out)	(Line out or Mic-in) Yes	Yes
WatchDog Timer		-	Yes	Yes	Yes	Yes
Storage	SATA	2 x 2.5" SATAII HDD bay	2 x 2.5" SATAIII HDD bay	2 x 2.5" SATAIII HDD bay	1 x 2.5" SATA HDD bay	1 x 2.5" or 3.5" SATA HDD bay
	CompactFlash/ CFast	1 CompactFlash	1 CFast	1 CFast	1 CompactFlash type I/II socket (on the solder side of the motherboard)	-
	mSATA	-	2 (Share with mini-PCIe)	2 (Share with mini-PCIe)	-	1 (full-size mPCIe)
I/O	USB 3.0	-	4	4	-	1
	USB2.0	6	2	2	8	7
	LPT	1 (optional)	-	-	-	-
	COM Port	2 (2 x RS232, 1 x RS232/ 422/ 485)	4 x RS232, 4 x RS232/422/485	2 x RS-232, 2 x RS-232/422/485	5 x RS232, 1 x RS232/ 422/485	5 x RS-232 1 x RS232/422/485
Power	Power Type	ATX, AT	ATX, AT	ATX, AT	ATX	ATX
	Power Supply Voltage	9 Vdc ~ 34 Vdc	9 Vdc ~ 34 Vdc	12 Vdc, ± 10% (optional 9 ~ 34 Vdc)	12 Vdc, ± 10%	12 Vdc, ± 10%
	Connector	4-pin terminal block	4-pin terminal block	Lockable DC jack	-	-
	Power Consumption (Idle)	38W	14.8W	14.8W	23W	15.7W
	Power Consumption (Full Load)	53W	60W (w/o add on card)	60W	37W	24.7W
Environment	Power Adaptor	Optional	120W (optional)	Lockable AC to DC, 84W (Optional)	AC to DC, DC12V/5A, 60 W (Optional)	AC to DC, DC12V/5A, 60 W (Optional)
	Operating Temperature (air flow 0.7 m/sec)	With extend temp peripherals: -10 ~ 55°C With HDD: 0 ~ 45°C	With extend temp peripherals: -10 ~ 60°C With HDD: 0 ~ 40°C	With extend temp peripherals: -10 ~ 60°C With HDD: 0 ~ 40°C	0 ~ 40° C (32 ~ 104° F)	With 2.5" HDD : 0 ~ 45 ° C With 3.5" HDD : 0 ~ 40 ° C With extended temp peripherals : 0 ~ 50 ° C
	Non-operating Temperature	-40 ~ 85 ° C and 40° C @ 95% RH Non-Condensing	-40 ~ 85 ° C and 40° C @ 95% RH Non-Condensing	-40 ~ 85 ° C and 40° C @ 95% RH Non-Condensing	-40 ~ 85 ° C and 40° C @ 95% RH Non-Condensing	-40 ~ 85 ° C and 40° C @ 95% RH Non-Condensing
	Vibration Resistance	With SSD: 5 Grms With HDD: 1 Grms	With SSD: 5 Grms	With SSD : 3Grms	0.5 Grm	0.5 Grm
	Shock Protection	With SSD: 50 G With HDD: 20 G	With SSD 50G	With SSD 50G	20G	10G
Physical Characteristics	Dimensions (W x H x D)	220 x 117 x 200 mm	290 x 110 x 232 mm	290 x 90 x 232 mm	200 x 73 x 200 mm	200 x 64 x 200 mm
	Weight	4kg (8.8lb)	4.8kg (10.56lb)	4.53kg (10lb)	4.14 kg (8.8 lb)	2.0 kg (4.4lb)
Operating System	Mounting	Desk/Wallmounting	Desk/Wallmounting	Desk/Wallmounting	Desk (Optional)	VESA/Wall mounting (Optional)
	Microsoft Windows	Yes	Yes	Yes	Yes	Yes
APIs	Linux	Yes	Yes	Yes	Yes	Yes
	SUSIAccess	Yes (no HW monitor support)	Yes	Yes	Yes	Yes
	iManager	-	Yes	Yes	-	-
Certification	Other	McAfee, Acronis	McAfee, Acronis	McAfee, Acronis	McAfee, Acronis	McAfee, Acronis
	EMC	CE, FCC, CCC, BSMI, KC	CE, FCC, CCC, BSMI	CE, FCC, CCC, BSMI	CE/FCC/CCC/BSMI	CE/FCC/CCC/BSMI
	Safety Certifications	UL, CCC, BSMI, KC	UL, CCC, BSMI	UL, CCC, BSMI	CCC/BSMI	CCC/BSMI

<b>NEW</b>					
<b>NEW</b>					
<b>NEW</b>					
	ARK-2121S	ARK-2151S	ARK-2121V	ARK-2151V	ARK-VH200
<b>Processor System</b>	CPU	Intel® Atom QC E3845	4th Gen Intel® Core i5 4300U	Intel® Atom DC E3825 Intel® Atom QC E3845	4th Gen Intel® Celeron 2980U 4th Gen Intel® Core i5 4300U
	Frequency	1.91 GHz	1.9 GHz	1.33 GHz / 1.91 GHz	1.6 GHz / 1.9 GHz
	Core Number	4	2	2 / 4	2
	BIOS	AMI EFI 64 Mbit	AMI EFI 128 Mbit	AMI EFI 64 Mbit	AMI EFI 128 Mbit
	Chipset	Intel® Atom QC E3845	4th Gen Intel® Core i5 4300U	Intel® Atom DC E3825 Intel® Atom QC E3845	4th Gen Intel® Celeron 2980U 4th Gen Intel® Core i5 4300U
<b>Memory</b>	Technology	DDR3L 1333 MHz	DDR3L 1600 MHz	DDR3L 1066/1333 MHz	DDR3L 1333/1600 MHz
	Max. Capacity	8 GB	8 GB	8GB	8GB
	Socket	1 x 204-pin SO-DIMM	1 x 204-pin SO-DIMM	1 x 204-pin SO-DIMM	1 x 204-pin SO-DIMM
<b>Display</b>	Graphic Memory	Intel Gen 7 Graphics Engines	GT2-4400 Graphics	Intel Gen 7 Graphics Engines	HD Graphics / GT2-4400 Graphics
	VGA	1 up to 1920 x 1200	1 up to 1920 x 1200	1 up to 1920 x 1200	1 up to 1920 x 1200
	LCD (TTL/LVDS/eDP)	LVDS optional	LVDS optional	LVDS optional	LVDS optional
	DDI (HDMI/DVI/DisplayPort)	1 x lockable HDMI, up to 1080P	1 x lockable HDMI, up to 1080P	1 x lockable HDMI, up to 1080P	1 x lockable HDMI, up to 4K at 24 Hz
	Multiple Display	Dual	Dual	Dual	Dual
<b>Expansion Interface</b>	Mini PCIe	1 x Full-size Mini PCIe (mSATA) 1 x Full-size Mini PCIe (WLAN) 2 x Full-size Mini PCIe w/SIM holders (WWAN)	1 x Half-size Mini PCIe (mSATA) 1 x Full-size Mini PCIe (WLAN) 2 x Full-size Mini PCIe w/SIM holders (WWAN)	1 x Full-size Mini PCIe (mSATA) 1 x Full-size Mini PCIe (WLAN) 2 x Full-size Mini PCIe w/SIM holders (WWAN)	1 x Half-size Mini PCIe (WLAN) 1 x Full-size Mini PCIe (mSATA) 2 x Full-size Mini PCIe w/SIM holders (WWAN)
	SIM Socket	2	2	2	2
<b>Ethernet</b>	Controller	GbE 1 : Intel i210-IT GbE 2 : Intel i210-IT All support Wake On LAN	GbE 1 : Intel i218 GbE 2 : Intel i210-IT All support Wake On LAN	GbE 1 : Intel i210-IT GbE 2 : Intel i210-IT All support Wake On LAN	GbE 1 : Intel i218 GbE 2 : Intel i210-IT All support Wake On LAN
	Speed	10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps
<b>Audio</b>	Audio Interface	HD Audio	HD Audio	HD Audio	HD Audio
	CODEC	Realtek ALC888S	Realtek ALC888S	Realtek ALC888S	Realtek ALC888S
	Connector	3 (Line in, Line out, Mic-in)	3 (Line in, Line out, Mic-in)	3 (Line in, Line out, Mic-in)	3 (Line in, Line out, Mic-in)
	Cellular Voice	-	-	Support WWAN voice function, Line-out, Mic-in	Support WWAN voice function, Line-out, Mic-in
<b>WatchDog Timer</b>		Yes	Yes	Yes	Yes
<b>Storage</b>	SATA	1x 2.5" Hot-swappable drive bay	1x 2.5" Hot-swappable drive bay	1x 2.5" Hot-swappable drive bay	1x 2.5" SATA HDD bay
	CompactFlash/ CFast	-	-	-	CompactFlash Type I/II
	mSATA	1 x Full-size mSATA	1 x Full-size mSATA	1 x Full-size mSATA	1 x Full-size mSATA
	USB3.0	1	2	1	2
	USB2.0	3	2	3	2
<b>I/O</b>	COM Port	2 (2 RS-232/422/485)	2 (2 RS-232/422/485)	2 (2 RS-232/422/485)	2 (2 RS-232/422/485)
	GPIO	6 x DI & 2 x DO with isolation	6 x DI & 2 x DO with isolation	6 x DI & 2 x DO with isolation	6 x DI & 2 x DO with isolation
	Video Input	4 x 10/100 PoE	4 x 10/100 PoE	4 x 10/100 PoE	4 x 10/100 PoE
	Optional COM or CANBus	-	-	2 x RS-232/422/485 (Default) or 2 x CANBus 2.0/A/B (S3 SKU)	2 x RS-232/422/485 (Default) or 2 x CANBus 2.0/A/B (S6 SKU)
<b>Other</b>	GPS	-	-	On board standalone GPS, support GPS, GLONASS, GALILEO and OZSS signals	On board GPS
	G-Sensor	-	-	Yes	Yes
	PoE	4 x 10/100 Mbps - 4ports full-load, IEEE802.3af Class 2 - 2ports full-load, IEEE802.3af Class 3	4 x 10/100 Mbps - 4ports full-load, IEEE802.3af Class 2 - 2ports full-load, IEEE802.3af Class 3	4 x 10/100 Mbps - 4ports full-load, IEEE802.3af Class 2 - 2ports full-load, IEEE802.3af Class 3 (S9 SKU)	4 x 10/100 Mbps - 4ports full-load, IEEE802.3af Class 2 - 2ports full-load, IEEE802.3af Class 3 (S9 SKU)
	Power Type	ATX/AT	ATX/AT	ATX/AT	ATX, AT
<b>Power</b>	Power Supply Voltage	9 ~ 36VDC w/ isolation	9 ~ 36VDC w/ isolation	PC Mode: 9 ~ 36 Vdc VH Mode: 12 V battery (11 ~ 16 Vdc), 24 V battery (22 ~ 32 Vdc)	PC Mode: 9 ~ 36 Vdc VH Mode: 12 V battery (11 ~ 16 Vdc), 24 V battery (22 ~ 32 Vdc)
	Power Consumption (Idle)	10W	15W	12W	17W
	Power Consumption (Full Load)	80W with PoE full-load	100W with PoE full-load	80W with PoE full-load	100W with PoE full-load
	Power Adaptor	AC to DC, 24Vdc (Optional)	AC to DC, 24Vdc (Optional)	AC to DC, 24Vdc (Optional)	AC to DC, 24Vdc (Optional)
<b>Environment</b>	Operating Temperature (air flow 0.7 m/sec)	With extended temperature SSD/mSATA/RAM: -30~60° C With standard temperature HDD/SSD/mSATA/RAM peripherals: 0 ~ 40° C	With extended temperature SSD/mSATA/RAM: -20 ~ 60° C With standard temperature HDD/SSD/mSATA/RAM peripherals: 0 ~ 40° C	With extended temperature SSD/mSATA/RAM: -30~70° C / -30~60° C With standard temperature HDD/SSD/mSATA/RAM peripherals: 0 ~ 40° C	With extended temperature SSD/mSATA/RAM: -20 ~ 60° C With standard temperature HDD/SSD/mSATA/RAM peripherals: 0 ~ 40° C
	Non-operating Temperature	-40 ~ 85° C and 40° C @ 95% RH Non-Condensing	-40 ~ 85° C and 40° C @ 95% RH Non-Condensing	-40 ~ 85° C and 40° C @ 95% RH Non-Condensing	-40 ~ 85° C and 40° C @ 95% RH Non-Condensing
	Vibration Resistance	With mSATA/SSD : 3 Grms	With mSATA/SSD : 3 Grms	With mSATA/SSD: IEC 60721-3-5 Class 5M3	With mSATA/SSD: IEC 60721-3-5 Class 5M3
	Shock protection	With mSATA/SSD: 30 G	With mSATA/SSD: 30 G	With mSATA/SSD: IEC 60721-3-5 Class 5M3	With mSATA/SSD: IEC 60721-3-5 Class 5M3
<b>Physical Characteristics</b>	Dimensions (W x H x D)	264.5 x 69.2 x 133.0 mm	264.5 x 75.1 x 133.0 mm	264.5 x 69.2 x 133.0 mm	264.5 x 75.1 x 133.0 mm
	Weight	2.3 kg (5.07 lb)	2.5 kg (4.18 lbs)	2.3 kg (5.07 lb)	2.5 kg (4.18 lbs)
	Mounting	Wall Mounting (Standard) / VESA & DIN-Rail Mounting Kit (Optional)	Wall Mounting (Standard) / VESA & DIN-Rail Mounting Kit (Optional)	Wall Mounting (Standard) / VESA & DIN-Rail Mounting Kit (Optional)	Wall Mounting (Standard) / VESA & DIN-Rail Mounting Kit (Optional)
<b>Operating System</b>	Microsoft Windows	Yes (Windows 7, Windows 8)	Yes (Windows 7, Windows 8)	Yes (Windows 7, Windows 8)	Yes (Ubuntu v10.04.1)
	Linux	Yes (By Project)	Yes (By Project)	Yes (By Project)	Yes (Ubuntu v10.04.1)
<b>APIs</b>	SUSIAccess	Yes	Yes	Yes	Yes
	iManager	Yes	Yes	Yes	-
<b>Certification</b>	EMC	CE/FCC Class A, CCC, BSMI	CE/FCC Class A, CCC, BSMI	CE/FCC Class A, CCC, BSMI	CE, FCC
	Safety Certifications	UL, CCC, BSMI, CB	UL, CCC, BSMI, CB	UL, CCC, BSMI, CB, E13	UL, CCC, E13
<b>In-Vehicle Power</b>	-	-	-	ISO 7637-2 lev.4	-
				ISO 7637-2 lev.4	-

# Digital Signage Players with Ready Software

## WebAccess/IMM Built-in



Specifications\Models		DS-060/DS-061/DS-062	DS-063/DS-065	DS-080	ARK-DS262	DS-270
Processor System	CPU	Intel Core i7-3615QE/ Intel Core i7-3517UE/ Intel Celeron B810E	Intel Atom D2550/ Intel Atom N2600	Intel Core i5-3535U/ Intel Core i3-3217UE/ Intel Celeron 3765U	Intel Core i7-3555LE/ Intel Core i3-3217UE/ Intel Celeron 1020E	Intel Celeron J1900
	BIOS	AMI uEFI 64 Mbit	AMI uEFI 16 Mbit	AMI uEFI 128 Mbit	AMI uEFI 64 Mbit	AMI uEFI 64 Mbit
	Chipset	Intel QM77	Intel NM10	Integrated in SOC	Intel QM77	Integrated in CPU
Memory	Technology	DDR3 1333/1600MHz (Core i7) DDR3 1066/1333 MHz (Celeron)	DDR3 800/1066 MHz	DDR3L 1600MHz	DDR3-1066/1333/1600MHz	DDR3L 1333MHz
	Max. Capacity	8 GB	4GB	16 GB (8 GB per SODIMM)	16 GB (8 GB per SODIMM)	8 GB (4 GB per SODIMM)
Display	Socket	1 x 204-pin SODIMM	1 x 204-pin SODIMM	2 x 204-pin SODIMM	2 x 204-pin SODIMM	2 x 204-pin SODIMM
	Controller	CPU Integrated	CPU Integrated	Integrated in SOC	CPU Integrated	NVIDIA GeForce GT730M
	Graphic Engine	Intel Integrated HD 4000	Intel GMA 3650	Intel Integrated HD 6000 (Core i5-5350U) Intel Integrated HD 5500 (Core i5-5200U) Intel Integrated HD Graphics (Celeron 3765U)	Intel Integrated HD 4000	-
	Video Format	H.264, VC1, MPEG2, DivX 3.11, WMV9, MPEG4 Part 2 SP, MPEG4 ASP	H.264, VC1, MPEG2, DivX 3.11, WMV9, MPEG4 Part 2 SP, MPEG4 ASP	H.264, VC1, MPEG2, DivX 3.11, WMV9, MPEG4 Part 2 SP, MPEG4 ASP	H.264, VC1, MPEG2, DivX 3.11, WMV9, MPEG4 Part 2 SP, MPEG4 ASP	H.264, VC1, MPEG-1, MPEG2, DivX 3.11, WMV9, MPEG-4 Part 2SP, MPEG-4 ASP
	Graphic Memory	Shared system memory	Shared system memory	Shared system memory	Shared system memory	1GB (On board memory)
	Multiple Display	Dual	Dual	Dual	Dual	Dual
Expansion Interface	Interface	DisplayPort x 1, VGA x 1	HDMI x 1, VGA x 1	HDMI x 2	JAE TX25 80-pin x 1, HDMI x 1	JAE TX25 80-pin x 1, HDMI x1
	Max. Resolution	1920 X 1080	1920 X 1080	3840 x 2160 @30Hz (core i5) 1920 x 1080 @60Hz (Celeron)	1920 x 1080	3840 x 2160 @ 30Hz
Ethernet	M.2	-	-	-	-	-
	Mini PCIe	1	1	1	1	1
	PCIe x16	-	-	-	-	-
Audio	Speed	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps
	Connector	RJ-45 x 1	RJ-45 x 1	RJ-45 x 2	RJ-45 x 1	RJ-45 x 1
WatchDog Timer	Audio Interface	HD Audio	HD Audio	HD Audio	HD Audio	HD Audio
	Connector	2 (Line-out, Mic-in)	2 (Line-out, Mic-in)	1 (SPDIF/Line-out/ Mic-in), supports Jack Sense	1 (Line-out), supports Jack Sense	1 (Line-out), supports Jack Sense
Storage	Yes	Yes	Yes	Yes	Yes	Yes
	SATA	1 x 2.5-inch SATA II HDD	1 x 2.5-inch SATA II HDD	1 x 2.5-inch SATA III HDD	1 x 2.5-inch SATA III HDD	1 x 2.5-inch SATAII SSD
	mSATA	Yes	Yes	Yes	-	Yes
	CFast	-	-	-	-	-
I/O	Others	-	-	64GB On-board Micro SSD(option)	-	-
	USB3.0	2	-	4	2	2
	USB2.0	2	4	-	-	-
Power	COM Port	1 (RS-232)	1 (RS-232)	1 (RS-232/RS-422/RS-485) or 2 (RS-422/RS-485) with extension cable	1 (RS-232)	-
	Power Button	1	1	1	1	1
Environment	Smart Fan	Yes	-	-	Yes	Yes
	Power Type	ATX, AT	ATX, AT	ATX, AT	ATX	ATX, AT
	Power Supply Voltage	DC 19V input	DC 19V input	DC 19V input	DC 12V-24V input (via OPS connector)	DC 12V-24V input (via OPS connector)
	Power Consumption (Idle)	8.1W (w/o expansion) *with Core i7-3615QE	8.3W (w/o expansion) *with Atom N2600	7.0W (w/o expansion) *with Core i5-5350U	15.25W (w/o expansion)	11.82W (w/o expansion)
	Power Consumption (Full Load)	26.0W (w/o expansion) *with Core i7-3615QE	11.3W (w/o expansion) *with Atom N2600	29.2W (w/o expansion) *with Core i5-5350U	28.61W (w/o expansion)	21.84W (w/o expansion)
	Power Adaptor	Input 100-240V <sub>AC</sub> , Output 19V <sub>DC</sub> , 65W	Input 100-240V <sub>AC</sub> , Output 19V <sub>DC</sub> , 65W	Input 100-240V <sub>AC</sub> , Output 19V <sub>DC</sub> , 65W	-	-
Physical Characteristics	Operational Temperature	0 ~ 40° C (32 ~ 104° F) (w / HDD)	0 ~ 40° C (32 ~ 104° F) (w / HDD)	0 ~ 40° C (32 ~ 104° F) (w / HDD)	0 ~ 40° C (32 ~ 104° F) (w / HDD)	0° C - 40° C (32~104° F) (w/ HDD); 0° C - 50° C (32~122° F) (w/ SSD)
	Operational Humidity	40° C @ 95% RH Non-Condensing	40° C @ 95% RH Non-Condensing	40° C @ 95% RH Non-Condensing	40° C @ 95% RH Non-Condensing	40 °C @ 95% Non-Condensing
Operating System	Dimensions (L x W x H)	180 x 190 x 19 mm	180 x 190 x 19 mm	180 x 190 x 19 mm	200 x 119 x 30 mm	200 x 119 x 30 mm
	Weight	0.87 kg (1.92 lb)	0.87 kg (1.92 lb)	0.87 kg (1.92 lb)	1.5 kg (3.3 lb)	1.5kg (3.3 lb)
APIs	Mounting	VESA/Desktop/Wall/Din Rail	VESA/Desktop/Wall/Din Rail	VESA/Desktop/Wall/Din Rail	-	-
	Microsoft Windows	Yes	Yes	Yes	Yes	Yes
	Linux	Yes (support by project)	Yes (support by project)	Yes (support by project)	Yes (support by project)	Yes (support by project)
Signage Management (Content editing/Scheduling/Dispatch)	SUSIAccess	Yes	Yes	Yes	Yes	Yes
	iManager	Yes	Yes	Yes	Yes	Yes
	Others	Yes, McAfee, Acronis	Yes, McAfee, Acronis	Yes, McAfee, Acronis	Yes, McAfee, Acronis	Yes, McAfee, Acronis
Certifications	Yes	Yes	Yes	Yes	Yes	Yes
	EMC	CE, FCC Class B, CCC, BSMI	CE, FCC Class B, CCC, BSMI	CE, FCC Class B, CCC, BSMI	CE, FCC Class B, CCC, C-Tick, BSMI	CE, FCC Class B, CCC, C-Tick, BSMI
Safety	UL, CCC, BSMI	UL, CCC, BSMI	UL, CCC, BSMI	UL, CCC	UL, CCC	UL, CCC, BSMI

							Preliminary	Preliminary
								
ARK-DS306	DS-370	DS-570	ARK-DS762	DS-780	DS-862	DS-980		
AMD G-Series T40N	Intel Celeron J1900	Intel Celeron N2930/ Intel Celeron J1900	(Socket rPGA 988B) Intel Core i7-3610QE/ Intel Core i5-3610ME/ Intel Core i3-3120ME/ Intel Celeron 1020E	Intel Core i7-6600U/ Intel Core i5-6300U/ Intel Core i3-6100U	Intel Core i7-3555LE/ Intel Core i3-3217UE/ Intel Celeron 1020E	Intel Core i7-6700TE/ Intel Core i5-6500TE		
AMI uEFI 16 Mbit	AMI uEFI 64 Mbit	AMI uEFI 64 Mbit	AMI uEFI 64 Mbit	AMI uEFI 128 Mbit	AMI uEFI 64 Mbit	AMI uEFI 128 Mbit		
AMD A50M FCH	-	Integrated in CPU	Intel QM77	Integrated in CPU	Intel QM77	Intel Q170		
DDR3 800MHz	DDR3L 1333MHz	DDR3L 1333MHz	DDR3-1066/1333/1600MHz	DDR4 2133MHz	DDR3-1066/1333/1600MHz	DDR4 2133MHz		
4 GB	8 GB(4 GB per SODIMM)	8 GB (4 GB per SODIMM)	16 GB (8 GB per SODIMM)	32GB (16GB per SODIMM)	16 GB (8 GB per SODIMM)	8GB (4GB per SODIMM)/ 16GB (8GB per SODIMM)		
1 x 204-pin SODIMM	2 x 204-pin SODIMM	2 x 204-pin SODIMM	2 x 204-pin SODIMM	2 x 260-pin SODIMM	2 x 204-pin SODIMM	2 x 260-pin SODIMM		
CPU Integrated	CPU Integrated	NVIDIA GeForce GT730M	CPU Integrated	CPU Integrated	AMD Radeon E6460	CPU Integrated		
AMD Radeon HD 6290	Intel HD Graphics	-	Intel Integrated HD 4000	Intel Integrated HD graphics	-	Intel Integrated HD graphics		
H.264, VC1, MPEG2, DivX 3.11, MPEG4 Part 2 SP, MPEG4 ASP	H.264, VC1, MPEG2, DivX 3.11, WMV9, MPEG4 Part 2 SP, MPEG4 ASP	H.264, VC1, MPEG-1, MPEG2, DivX 3.11, WMV9, MPEG-4 Part 2 SP, MPEG4 ASP	H.264, VC1, MPEG2, DivX 3.11, WMV9, MPEG4 Part 2 SP, MPEG4 ASP	TBC	H.264, VC1, MPEG2 1080p video decoder	TBC		
Shared system memory	Shared system memory	1 GB (On board memory)	Shared system memory	Share System Memory	512 MB	Shared system memory		
Dual	Dual	Four	Triple	Triple	Four	Three+Four		
HDMI x 1, VGA x 1	HDMI x 1, DP++ x 1, VGA x 1	HDMI x 2, DP++ x 1, VGA x 1	HDMI x 3	HDMI 2.0 x 1, HDMI 1.4 x 2	DP++ x 2, DP x 2	HDMI 2.0 x 1, HDMI 1.4 x 6 (4 ports from optional graphic card)		
1920 x 1080	VGA: 2048 x 1280 @ 60Hz HDMI: 1920 x 1080 @ 60Hz DP++: 1920 x 1080 @ 60Hz	VGA: 2048 x 1536 @ 60Hz HDMI: 3840 x 2160 @ 30Hz DP++: 3840 x 2160 @ 30Hz	1920 x 1080	4096 x 2160	1920 x 1080	4096 x 2160		
-	-	-	-	1 (2230/1630 E-Key)	-	1 (2230 E key)		
1	2	2	1	1	1	1		
-	-	-	-	-	-	-	1 for optional graphic card (NVIDIA GeForce GT730M)	
10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps		
RJ-45 x 2	RJ-45 x 2	RJ-45 x 2	RJ-45 x 1*	RJ-45 x 2	RJ-45 x 1	RJ-45 x 2		
HD Audio	HD Audio	HD Audio	Optional RJ-45 x 2 (by project)	HD Audio	HD Audio	HD Audio		
3 (Line-in, Line-out, Mic-in)	2 (SPDIF/ Line-out, Mic-In), Supports Jack Sense	2 (SPDIF/ Line-out, Mic-in), support Jack Sense	1 (Line-out) supports Jack Sense	1(SPDIF/ Line-out/ Mic-in) supports Jack Sense	1 (Line-out) supports Jack Sense	2 (SPDIF/ Line-Out, Mic-In) supports Jack Sense		
Yes	Yes	Yes	Yes	Yes	Yes	Yes		
1 x 2.5-inch SATA II HDD	1 x 2.5-inch SATA II HDD	1 x 2.5-inch SATA II HDD	1 x 2.5-inch SATA II HDD	1 x 2.5-inch SATA III HDD / SSD	1 x 2.5-inch SATA III HDD	2 x 2.5-inch SATA III HDD		
Yes	Yes	Yes	Yes	Yes	-	Yes		
1	-	-	1	-	-	-		
-	64GB Onboard Micro SSD(Option)	-	-	-	-	-		
-	1	1	1	4	4	4		
2	3	3	2	-	-	2		
2 (RS-232)	2 (RS-232)	*Optional 1x RS-485/ RS-422/ RS-232 & 1x RS232 (by project)	1 (RS-232)	1 (RS-232)	1 (RS-232)	1 (RS-232)	1 (RS-232) / 2 (RS-485 & 482 with extension cable)	
1	1	1	1	1	1	1		
-	-	Yes	Yes	-	Yes	Yes		
ATX, AT	ATX, AT	ATX, AT	ATX, AT	ATX, AT	ATX, AT	ATX	ATX, AT	
DC 12V input	DC 19V input	DC 19V input	DC 19V input	DC 19V input	DC 19V input	DC 19V input	2x DC 12V input	
9 W (w/o expansion)	4.39W (w/o expansion)	10.5W (N2930 CPU, w/o expansion) 9.7W (J1900 CPU, w/o expansion)	17.4W (Core i7 45W CPU, w/o expansion)	TBC	10W (w/o expansion)	TBC		
13W (w/o expansion)	10.85W (w/o expansion)	15.7W (N2930 CPU, w/o expansion) 22.6W (J1900 CPU, w/o expansion)	43.8W (Core i7 45W CPU, w/o expansion)	TBC	37W (w/o expansion)	TBC		
Input 90-264 V <sub>AC</sub> , Output 12 V <sub>DC</sub> , 36W	Input 100-240 V <sub>AC</sub> , Output 19 V <sub>DC</sub> , 65W	Input 100-240 V <sub>AC</sub> , Output 19 V <sub>DC</sub> , 65W	Input 100-240 V <sub>AC</sub> , Output 19 V <sub>DC</sub> , 90W	Input 100-240V <sub>AC</sub> , Output 19V <sub>DC</sub> , 65W	Input 100-240 V <sub>AC</sub> , Output 19 V <sub>DC</sub> , 65W	Input 100-240 V <sub>AC</sub> , Output 19 V <sub>DC</sub> , 65W	Output 12VDC, 150W for M/B; Optional output 12VDC, 84W for Graphic card	
0 ~ 40° C (32 ~ 104° F) (w / HDD)	0 ~ 40° C (32 ~ 104° F) (w / HDD) 0 ~ 50° C (32 ~ 122° F) (w / On board Micro SSD)	0 ~ 40° C (32 ~ 104° F) (w / HDD) 0 ~ 65° C (32 ~ 149° F) (w / SSD)	0 ~ 40° C (32 ~ 104° F) (w / HDD)	0 ~ 40° C (32 ~ 104° F) (w / HDD) with 0.7m/s air flow	0 ~ 40° C (32 ~ 104° F) (w / HDD)	0 ~ 40° C (32 ~ 104° F) (w / HDD)	0 ~ 40° C (32 ~ 104° F) (w / HDD)	0 ~ 40° C (32 ~ 104° F) (w / HDD)
40° C @ 95% RH Non-Condensing	40° C @ 95% RH Non-Condensing	40° C @ 95% RH Non-Condensing	40° C @ 95% RH Non-Condensing	40° C @ 95% RH Non-Condensing	40° C @ 95% RH Non-Condensing	40° C @ 95% RH Non-Condensing	40° C @ 95% RH Non-Condensing	40° C @ 95% RH Non-Condensing
204 x 118.2 x 44.2 mm	204 x 118.2 x 44.2 mm	220 x 150 x 44.2 mm	250 x 190 x 35 mm	250 x 190 x 35 mm	250 x 190 x 35 mm	250 x 190 x 35 mm	267.6 x 205 x 88 mm	
1.1 kg (2.42 lb)	1.28 kg (2.81 lb)	1.7 kg (3.74 lb)	2.0 kg (4.41 lb)	2.0 kg (4.41 lb)	2.0 kg (4.41 lb)	2.0 kg (4.41 lb)	TBC	
VESA/Desktop/Wall/Din Rail	VESA/Desktop/Wall/DIN Rail	VESA/Desktop/Wall/Din Rail	VESA/Desktop/Wall/Din Rail	VESA/Desktop/Wall/Din Rail	VESA/Desktop/Wall/Din Rail	VESA/Desktop/Wall/Din Rail	VESA/Desktop/Wall	
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Yes (support by project)	Yes (support by project)	Yes (support by project)	Yes (support by project)	Yes (support by project)	Yes (support by project)	Yes (support by project)	Yes (support by project)	
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Yes, McAfee, Acronis	Yes, McAfee, Acronis	Yes, McAfee, Acronis	Yes, McAfee, Acronis	Yes, McAfee, Acronis	Yes, McAfee, Acronis	Yes, McAfee, Acronis	Yes, McAfee, Acronis	
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
CE, FCC Class A, CCC, BSMI	CE, FCC Class B, CCC, C-Tick, BSMI	CE, FCC Class B, CCC, BSMI	CE, FCC Class B, CCC, BSMI	CE/FCC Class B, CCC, C-Tick, BSMI	CE, FCC Class B, CCC, BSMI	CE, FCC Class B, CCC, C-Tick, BSMI	CE, FCC Class B, CCC, C-Tick, BSMI	
UL, CCC, BSMI	UL, CB, CCC, BSMI	UL, CB, CCC, BSMI, LVD	UL, CCC, BSMI	UL, CB, CCC, BSMI	UL, CB, CCC, BSMI	UL, CCC, BSMI	UL, CCC, BSMI	

# Gaming Platforms

○ = optional; ● = standard; "—" = not supported

	Model Name	DPX-E120	DPX-E130	DPX-S415	DPX-S430	DPX-S425	DPX-S435	DPX-C710/SC710
Family	Standalone	-	-	●	●	●	●	-
	Economy	●	●	-	-	-	-	-
	ConnectBus®	-	-	-	-	-	-	●
Market	All	All	All	All	All	All	All	All
Enclosure/System	○ S-Series	○ S-Series	○ S-Series	○ S-Series	○ S-Series	○ S-Series	○ C-Series (SC710)	
Segment	Entry	●	●	-	-	-	-	-
	Scalable	-	●	●	●	●	●	●
	Performance	-	-	●	●	●	●	●
Chipset/CPU	AMD	AMD	AMD	AMD	Intel	Intel	Intel	AMD
AMD 785E/Athlon X2, Turion Neo X2		-	-	●	-	-	-	-
Intel® HM55/ Core™ i7, Core™ i5, Celeron®		-	-	-	-	●	-	-
AMD G-Series APU		●	●	-	-	-	-	-
AMD R-Series APU		-	-	-	●	-	-	●
Intel Q87 4th Gen. Core i7, i5, i3, Celeron		-	-	-	-	-	●	-
IGP Graphics	GPU Brand Name	Radeon HD6130	Radeon HD6130	Radeon HD4270	Radeon 7660	GMA HD	Intel HD4600	Radeon 7660
	Dual Independent Screen	●	●	●	●	●	●	●
	Triple independent Screen	-	-	-	●	-	● (3rd from IGP)	●
Performance GPU	Quad Independent Screen	-	-	-	● (W/MST)	-	-	● (W/MST)
	Quad Screen Support with Select PCIe Video Cards	-	-	●	● (up to 10)	●	6 screens via Mini DP port on PCIe graphic card.	● (up to 10)
Max. RAM (GB)	PCIe x16 slot	-	-	●	● (Gen. 3)	●	● (Gen. 3)	● (Gen. 3, MXM type A)
	DDR2	-	-	-	-	-	-	-
Ethernet	DDR3	8	8	8	16	8	16	16
	LAN 1	GbE	GbE	GbE	GbE	GbE	GbE	GbE
Storage	LAN 2	GbE	-	GbE	GbE	GbE	GbE	GbE
	SATA	2	1, 0(1x mSATA)	2	3	2	3 (3.0)	2 (3.0)
Storage	Compact Flash	2	1	2	2	2	0	0
	CFast	0	1	2	2	2	2 (v1.0, v2.0)	2 (v1.0, v2.0)
Ports	USB 2.0	6	4	12	8	12	8	11
	USB 3.0	0	0	0	4	0	4	2
	eSATA	-	-	-	-	-	-	- / eSATA x 1
	RS232	3 ○ (5)	2, 0(3)	5	5	5	5	3
	RS232/TTL	2	-	2	2	2	2	2
I/O	RS232/422/485	○ (1)	-	1	1	1	1	1
	CCTALK/RS232/TTL	1 ○ (2)	1 CCTALK	2	2	2	2	2
SRAM	32/32 on board	●	JAMMA	●	●	●	●	●
	Audio Amplification on board	●	●	●	●	●	●	-
ROM Sockets	1 MB (2 x 512 KB)	●	●	-	-	-	-	-
	2 MB (2 x 1024 KB)	-	-	●	-	-	-	-
	4 MB (2 x 2048 KB)	○	○	○	●	●	-	●
	8 MB (2 x 4096 KB)	-	-	-	-	-	●	-
Serial EEPROM	PLCC 32 (8Mbit each)	1 ○ (2)	-	1	1	1	1	1
	TPM	● (v1.2)	-	● (v1.2)	● (v1.2)	● (v1.2)	● (v1.2)	● (v1.2)
Smart card socket	32 KB	●	-	●	●	●	●	●
	on-board (ISO:7810, 7816)	-	●	-	-	-	-	-
Intrusion Inputs	Battery backed	6	5	6	6	6	8	8
iButton®/GPIO		○	-	○	○	○	○	○
DPCI Expansion	Serial Bus (DPCI+)	-	-	●	●	●	●	-
Size	170 x 200 mm (6.7 x 7.9")	-	-	●	●	●	●	-
	229 x 180 x 77 mm (9.0 x 7.1 x 3.0")	●	-	-	-	-	-	-
	225 x 218 mm (8.9 x 8.6")	-	-	-	-	-	-	●
	273 x 150 mm (10.7 x 5.9")	-	●	-	-	-	-	-
Software	DPCI Advanced Gaming API & Runtime	●	●	●	●	●	●	●
	DPX®-Connector Peripherals Libraries	●	●	●	●	●	●	●
	Embedded OS Support	●	●	●	●	●	●	●
	BIOS Customization	●	●	●	●	●	●	●
	TPM Suite (Requires TPM hardware option if not standard)	○	-	○	○	○	○	○
	DPX®-SAS Connector (SAS 6.01 Driver and Libraries)	○	-	○	○	○	○	○
	SecureBoot™ (Media validation toolkit)	○	○	○	○	○	○	○

**NEW**

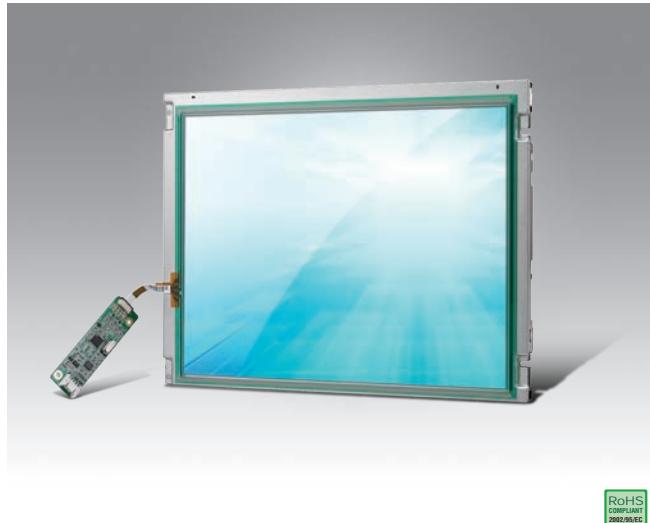
Part Number		DPX-E120	DPX-E130	DPX-S415	DPX-S430
Processor	Processor	AMD G Series APU	AMD G Series APU	AMD Mobile Athlon II Neo, Turion II Neo	AMD R Series APU
	Max Speed	1.65 GHz	1.65 GHz	2.2 GHz	2.3 (3.2) GHz
Memory	(Max)	8 GB, DDR3	8 GB, DDR3	8 GB, DDR3	16 GB, DDR3
I/O	Digital IO	32 input, 32 output	JAMMA	32 input, 32 output	32 input, 32 output
	COM	6 (2 x RS232/TTL, 3x RS232, 1x CCTALK)	3 (2 x RS232, 1x CCTALK)	10 (5 x RS232, 1x RS232/422/485, 2x CCTALK/RS232, 2x RS232/TTL)	10 (5 x RS232, 1x RS232/422/485, 2x CCTALK/RS232, 2x RS232/TTL)
	USB	6	4	12	12 (4 USB 3.0)
Network	LAN	GbE x2	Gbe x1	GbE x2	GbE x2
	SRAM	1 MB	1 MB	2 MB	4 MB
Security	Intrusion inputs	6	6	6	6
	TPM	V1.2	-	V1.2	V1.2
	EEPROM, ROM, IDROM	●	-	●	●
Video	Chipset	AMD 55E (Radeon HD6130)	AMD 55E (Radeon HD6130)	AMD 785E (Radeon HD4270)	A75 (Radeon 7660)
	Output	VGA x1, DVI x1	VGA x1, VGA2 option	VGA x2, DVI x1	VGA x2, DVI x2, DP v1.2
	Expansion	No	No	PCI-E x16 graphics card slot	PCI-E x16 graphics card slot
Audio	On board amplified audio	2.1 channel, 10W per ch.	Class AB 3W+3W, total 6W	2.1 channel, 13W per ch.	2.1 channel, 13W per ch.

**NEW**

Part Number		DPX-S425	DPX-S435	DPX-C710/SC710
Processor	Processor	Intel® PPGA Core i5, Core i7, Celeron P4500	Intel 4th Gen. Xeon, Core i7, i5, i3, Pentium, Celeron	AMD R Series APU
	Max Speed	2.66 GHz	2.7 (3.3) GHz	2.3 (3.2) GHz
Memory	(Max)	8 GB, DDR3	16 GB, DDR3	16 GB, DDR3
I/O	Digital IO	32 input, 32 output	32 input, 32 output	32 input, 32 output
	COM	10 (5 x RS232, 1x RS232/422/485, 2x CCTALK/RS232, 2x RS232/TTL)	10 (5 x RS232, 1x RS232/422/485, 2x CCTALK/RS232, 2x RS232/TTL)	10 (5 x RS232, 1x RS232/422/485, 2x CCTALK/RS232, 2x RS232/TTL)
	USB	12	12 (4 USB 3.0)	14 (3 USB 3.0)
Network	LAN	GbE x2	GbE x2	GbE x2
	SRAM	4 MB	8 MB	4 MB
Security	Intrusion inputs	6	8	8
	TPM	V1.2	V1.2	V1.2
	EEPROM, ROM, IDROM	●	●	●
Video	Chipset	HM55 ( GMA HD)	Intel Q87 (HD4600)	AMD A75 (Radeon 7660)
	Output	VGA x2, DVI x1	VGA x1, DVI x2, DP v1.2	DP v1.2 x 3, DVI x 4
	Expansion	PCIe x16 graphics card slot	PCIe x16 graphics card slot	MMX type A slot
Audio	On board amplified audio	2.1 channel, 13W per ch.	2.1 channel, 13W per ch.	-

# Industrial Display Systems

## IDK-1000



Industrial Touch LCD Kit with LED B/L

### Features

- 5.7" ~ 21.5" industrial-grade LCD panel with LED backlight
- Resistive / Projected Capacitive touchscreen support
- LVDS signal interface
- Perfect for industrial and indoor applications
- Full compatibility with embedded boards
- Maximum flexibility for mechanical design
- Touch controller included with USB cable
- Optional AD board solution

### Specifications

	IDK-1105	IDK-1107W	IDK-1108	IDK-1110W	IDK-1110	IDK-1110P	IDK-1112	IDK-1115	IDK-1115P	IDK-1119	IDK-1121W
LCD Display	Size	5.7"	7"	8.4"	10.1"	10.4"	10.4"	12.1"	15"	15"	19"
	Resolution	640 x 480, VGA	1024 x 600, WSVGA	800 x 600, SVGA	1024 x 600, WSVGA	800 x 600, SVGA	1024 x 768, XGA	800 x 600, SVGA	1024 x 768, XGA	1024 x 768, XGA	1280 x 1024, SXGA
	Brightness	500 cd/m <sup>2</sup>	500 cd/m <sup>2</sup>	450 cd/m <sup>2</sup>	550 cd/m <sup>2</sup>	400 cd/m <sup>2</sup>	500 cd/m <sup>2</sup>	450 cd/m <sup>2</sup>	400 cd/m <sup>2</sup>	400 cd/m <sup>2</sup>	350 cd/m <sup>2</sup>
	Colors	262 k	262K/16.2M	262K/16.2M	262K/16.2M	262K/16.2M	16.2M	262K/16.2M	262K/16.2M	16.7M	16.7M
	Viewing Angle (H/V°)	140/100	150/145	160/140	120/140	160/140	176/176	160/140	160/140	170/160	178/178
	Contrast Ratio	250 : 1	700 : 1	600 : 1	500 : 1	700 : 1	1000:1	700 : 1	700 : 1	1000 : 1	5000 : 1
	Response Time (ms)	50	50	30	25	30	25	35	16	16	5
	Touchscreen	4-Wire Resistive Touch/ Projective Capacitive Touch	4-Wire Resistive Touch	4-Wire Resistive Touch	4-Wire Resistive Touch	Protective Capacitive Touch	5-Wire Resistive Touch	5-Wire Resistive Touch	Projective Capacitive Touch	5-Wire Resistive Touch	5-Wire Resistive Touch
	Signal Interface	1 Channel LVDS	1 Channel LVDS	1 Channel LVDS	1 Channel LVDS	1 Channel LVDS	1 Channel LVDS	1 Channel LVDS	1 Channel LVDS	2 Channel LVDS	2 Channel LVDS
	Backlight Type	LED	LED	LED	LED	LED	LED	LED	LED	LED	LED
	Backlight Life (hrs)	30000	50000	50000	50000	50000	50000	50000	50000	50000	50000
	Power Consumption (W)	1.8	3.57	2.94	8.99	4.8	10	6.7	10.8	20.55	24
Touchscreen	Dimensions (mm)	127 x 98.43 x 9.1	165.5 x 104.44 x 10.52	203 x 142.5	235 x 145.8 x 10.25	243 x 184 x 10.6	251.03 x 202.42 x 11.32	276 x 209 x 11.3	326.5 x 253.5 x 14.4	323.5 x 259.7 x 14.6	396 x 324 x 20.7
	Weight (g)	200	190	250	420	530	500	980	835	990	2750
	Durability	1 million touches	1 million touches	1 million touches	1 million touches	50 million touches	10 million touches	10 million touches	50 million touches	10 million touches	10 million touches
Environment	Surface Hardness	3H	3H	3H	3H	5H	3H	3H	5H	3H	3H
	Transparency	80%	82.5%	82.5%	82.5%	82.5%	90%	80%	91%	80%	80%
Environment	Temperature (Operating)	-20 ~ 70° C	-20 ~ 70° C	-10 ~ 60° C	-5 ~ 60° C	-10 ~ 60° C	-20~70 oC	-20 ~ 70° C	-20 ~ 70° C	0 ~ 50° C	0 ~ 60° C

# IDK-2000



## Ultra High Brightness Industrial LCD Kit with LED B/L

### Features

- 7" ~ 21.5" industrial-grade LCD panel with wide operating temperature support
- 1200-cd/m<sup>2</sup> ultra high brightness with LED backlight
- Resistive / Projected Capacitive touchscreen support
- High uniformity of 85%
- Superior sunlight readability for outdoor applications
- LVDS signal interface
- Auto-dimming light sensor (optional)
- Full compatibility with embedded boards
- Optional Projected Capacitive Touch solution
- Optional AD board solution



### Specifications

	IDK-2108	IDK-2110	IDK-2112	IDK-2115	IDK-2117	IDK-2119	IDK-2121	
LCD Display	Size	8.4"	10.4"	12.1"	15"	17"	19"	21.5"
	Resolution	800 x 600, SVGA	800 x 600, SVGA	800 x 600, SVGA	1024 x 768, XGA	1280 x 1024, SXGA	1280 x 1024, SXGA	1920 x 1080, FHD
	Brightness	1200 cd/m <sup>2</sup>						
	Colors	262K/16.2M	262K/16.2M	262K/16.2M	262K/16.2M	16.7 M	16.7 M	16.7M
	Viewing Angle (H/V°)	160/140	160/130	160/140	160/140	170/160	170/160	178/178
	Contrast Ratio	600 : 1	500 : 1	700 : 1	700 : 1	1000 : 1	1100 : 1	5000:1
	Response Time (ms)	30	35	35	16	5	5	16
	Touchscreen	4-Wire Resistive Touch	4-Wire Resistive Touch	5-Wire Resistive Touch				
	Signal Interface	1 Channel LVDS	1 Channel LVDS	1 Channel LVDS	1 Channel LVDS	2 Channel LVDS	2 Channel LVDS	2 Channel LVDS
	Backlight Type	LED						
	Backlight Life (hrs)	50000	50000	50000	50000	50000	50000	50000
Touchscreen (Optional)	Power Consumption (W)	5.85	7.1	8.924	16.06	19.12	35.42	46.8
	Dimensions (mm)	203.0 x 142.5 x 8.0	236.0 x 176.9 x 5.7	279 x 209.0 x 9.0	326.5 x 253.5 x 11.5	358.5 x 296.5 x 16.65	396 x 324 x 17.8	495.6 x 292.2 x 17.7
	Weight (g)	260	350	600	1350	2200	2500	2400
Environment	Durability	1 million touches	1 million touches	10 million touches	10 million touches	10 million touches	10 million touches	10 million touches
	Surface Hardness	3H						
	Transparency	82.5%	82.5%	80%	80%	80%	80%	80%
Temperature (Operating with touchscreen)	-20 ~ 70° C	-10~60° C	-20 ~ 70° C	-20 ~ 70° C	0 ~ 50° C	0 ~ 50° C	0 ~ 50° C	0 ~ 50° C

# Industrial Display Systems

## IDS-3100

Ultra Slim Open Frame Monitors



### Features

- 6.5" ~ 21.5" LCD panel with LED backlight for 20% power saving
- -20 ~ 60° C wide operating temperature
- Resistive touchscreen support
- Combo touch interface of RS-232 and USB
- Dual signal interface with VGA/DVI
- Integrated bracket for easy installation
- Versatile mounting support of rear/VESA mounting
- Easy integration with Advantech embedded box PCs
- Optional Projected Capacitive Touch solution
- Optional high brightness solution

### Specifications

	IDS-3106	IDS-3110	IDS-3112 (SVGA)	IDS-3112 (XGA)	IDS-3115	IDS-3115P (HB)	IDS-3117	IDS-3118W	IDS-3119	IDS-3121W
LCD Display	Size	6.5"	10.4"	12.1"	12.1"	15"	15"	17"	18.5"	19"
	Resolution	640 x 480, VGA	800 x 600, SVGA	800 x 600, SVGA	1024 x 768, XGA	1024 x 768, XGA	1280 x 1024, SXGA	1366 x 768, HD	1280 x 1024, SXGA	1920 x 1080, FHD
	Colors	262K/16.2M	262K/16.2M	262K/16.2M	262K/16.2M	262K/16.2M	16.7 M	16.7 M	16.7 M	16.7M
	Viewing Angle (H/V°)	160/140	160/140	160/140	160/140	160/140	170/160	170/160	170/160	178/178
	Contrast Ratio	600 : 1	700 : 1	700 : 1	700 : 1	700 : 1	800 : 1	1000:1	1000 : 1	5000 : 1
	Response Time (ms)	25	30	35	16	16	16	30	5	5
	Brightness	800 cd/m <sup>2</sup>	400 cd/m <sup>2</sup>	450 cd/m <sup>2</sup>	600 cd/m <sup>2</sup>	400 cd/m <sup>2</sup>	1200 cd/m <sup>2</sup>	350 cd/m <sup>2</sup>	300 cd/m <sup>2</sup>	350 cd/m <sup>2</sup>
	Touchscreen	4-Wire Resistive	5-Wire Resistive	5-Wire Resistive	5-Wire Resistive	5-Wire Resistive	Projected Capacitive	5-wire resistive and P-cap	5-Wire Resistive	5-Wire Resistive
	Backlight Type	LED	LED	LED	LED	LED	LED	LED	LED	LED
	Backlight Life (hrs)	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	30,000
Touchscreen (Optional)	Dimensions (mm)	215 x 160 x 32.1	279.4 x 220 x 30	320.2 x 252 x 30.7	320.2 x 252 x 30.7	362 x 288 x 32.8	362 x 288 x 36.2	400 x 344.7 x 33.4	478 x 303 x 33	438 x 369.7 x 34.3
	Weight (kg)	0.8	1.6	2.15	2.13	4	4.5	4.05	4.69	5.14
	Durability	1 million touches	36 million touches	10 million touches	10 million touches	50 million touches	10 million touches	50 million touches	10 million touches	10 million touches
Environment	Surface Hardness	3H	3H	3H	3H	5H	3H	5H	3H	3H
	Transparency	80%	82%	80%	80%	80%	91%	80%	91%	80%
	Temperature (Operating)	0 ~ 50° C	-20 ~ 60° C	-20 ~ 60° C	-20 ~ 60° C	-20 ~ 60° C	-20 ~ 60° C	0 ~ 55° C	0 ~ 45° C	0 ~ 50° C
System	Temperature (Storage)	-20 ~ 60° C	-30 ~ 70° C	-30 ~ 70° C	-30 ~ 70° C	-30 ~ 70° C	-30 ~ 70° C	-20 ~ 60° C	-20 ~ 60° C	-20 ~ 60° C
	Humidity	5 ~ 95% @ 40° C, non-condensing	5 ~ 95% @ 40° C, non-condensing	5 ~ 95% @ 40° C, non-condensing	5 ~ 95% @ 40° C, non-condensing	5 ~ 95% @ 40° C, non-condensing	5 ~ 95% @ 40° C, non-condensing	10 ~ 90% @ 40° C, non-condensing	5 ~ 90% @ 40° C, non-condensing	5 ~ 90% @ 40° C, non-condensing
System	I/O Ports	VGA x 1; DVI x 1; 12 V <sub>dc</sub> Jack x 1; USB x 1 (USB is reserved for the connection to enable touch usage only)	VGA x 1; DVI x 1; 12 V <sub>dc</sub> Jack x 1; USB x 1; RS-232 x 1 (USB & RS-232 are reserved for the connection to enable touch usage only)	VGA x 1; DVI x 1; 12 V <sub>dc</sub> Jack x 1; USB x 1 (USB is reserved for the connection to enable touch usage only)	VGA x 1; DVI x 1; 12 V <sub>dc</sub> Jack x 1; USB x 1; RS-232 x 1 (USB & RS-232 are reserved for the connection to enable touch usage only)					
	OSD	Keys: Power on/off, Menu/Enter, Left/Up, Right/Down, Exit/Auto, Source Menu Functions: Brightness, Contrast, Screen Setting, Color Temp, OSD Language, VGA/DVI, Reset, Auto Adjust								
	Power	36W power adapter, with AC 100 ~ 240V input and DC +12V @ 3A	60W power adapter, with AC 100 ~ 240V input and DC +12V @ 5A output							

# IDS31 Series



## Configured Display Solutions - Touch Monitors and Non-Touch Monitors

### Features

- 6.5"~65" size options
- Flexible mechanical formats: open frame & closed frame, all with VESA standard mounting
- Configurable Options:
  - Brightness: 400 cd/m<sup>2</sup> ~2000 cd/m<sup>2</sup>
  - I/O: VGA,DVI,HDMI, DisplayPort
  - Touchscreen (USB and/or RS232 input):
    - 5-wire Rugged Analogue Resistive, Surface Capacitive, Projected Capacitive
- Compatibility with embedded computing platform.
- Wide temperature and 24/7 industrial operation.

### Specifications

	IDS31-070W	IDS31-104	IDS31-156W	IDS31-185W	IDS31-190	IDS31-215W	IDS31-230W	IDS31-320W
Size	7" Wide	10.4"	15.6" Wide	18.5" Wide	19"	21.5" Wide	23" Wide	32" Wide
Mechanical	Overall Size (mm)	190 x 142 x 36.5	262 x 194 x 40.3	377 x 230 x 45	455 x 276 x 45	422 x 347 x 45	516 x 320 x 46	560 x 337 x 50
	Active Area Size (mm)	152.4 x 91.44 ± 5	211.2 x 158.4 ± 5	344.2 x 193.5 ± 5	409.8 x 230.4 ± 5	377 x 301 ± 5	476.6 x 268.1 ± 5	509.2 x 286.4 ± 5
	Weight (Kg)	2.7	3.5	4	5	5	7	8
	VESA Mounting Options	75 x 75	75 x 75	100 x 100	100 x 100	100 x 100 200 x 100	100 x 100 200 x 100	200 x 100
Display	Backlight type	LED + TN	LED + TN	LED + TN	LED + TN	LED + TN	LED + MVA	LED + IPS
	Brightness (cd/m <sup>2</sup> )	400	230	300	300	350	250	300
	Viewing angle (L/R/U/D)	80,80,60,80	60,60,55,45	85,85,80,80	85,85,80,80	85,85,80,80	89,89,89,89	89,89,89,89
	Resolution	800 x 480	800 x 600	1366 x 768	1366 x 768	1280 x 1024	1920 x 1080	1920 x 1080
	Backlight Life (hours)	50000	30000	50000	50000	50000	30000	30000
	Response Time (ms)	30	35	8	5	5	16	14
	Contrast Ratio	500 : 1	500 : 1	500 : 1	1000 : 1	1000 : 1	5000 : 1	1000 : 1
Touch	Touch Options	5 wire AR	5 wire AR	Projected Capacitive	Projected Capacitive	Projected Capacitive	Projected Capacitive	Surface / Projected Capacitive
	Touches	1	1	2	2	10	10	10
	Surface	3H	3H	7H	7H	7H	7H	7H
	Transparency	81.0%	81.0%	82.0%	82.0%	82.0%	82.0%	92.0%
Environment	Operating Temp.	0 ~ +50° C	0 ~ +50° C	0 ~ +50° C	0 ~ +50° C	0 ~ +50° C	0 ~ +50° C	0 ~ +50° C
	Storage Temp.	-20 ~ +60° C	-20 ~ +60° C	-20 ~ +60° C	-20 ~ +60° C	-20 ~ +60° C	-20 ~ +60° C	-20 ~ +60° C
	Humidity (RH)	90%	90%	90%	90%	90%	90%	90%
Electrical & I/O	IO	VGA/DVI	VGA/DVI	VGA/DVI	VGA/DVI	VGA/DVI	VGA/DVI	VGA/DVI
	Power Consumption	8.0W	7.0W	19.0W	22.0W	31.0W	28.0W	38.0W
	Power Supply	12V/3.5A	12V/3.5A	12V/3.5A	12V/3.5A	12V/3.5A	12V/3.5A	24V/5A

# Industrial Display Systems

## IDS-3200



### Industrial Panel Mount Monitors

#### Features

- 6.5" ~ 19" LCD panel with LED backlight for 20% power saving
- -20 ~ 60° C wide operating temperature
- Resistive touchscreen support
- Combo touch interface of RS-232 and USB
- Dual signal interface with VGA/DVI
- Standard integrated frame
- Versatile mounting support of panel/VESA mounting
- Easy integration with Advantech embedded box PCs
- Optional Projected Capacitive Touch solution
- Optional high brightness solution



#### Specifications

	IDS-3206	IDS-3210	IDS-3212(SVGA)	IDS-3212(XGA)	IDS-3215	IDS-3217	IDS-3218W	IDS-3219
LCD Display	Size	6.5"	10.4"	12.1"	12.1"	15"	17"	18.5"
	Resolution	640 x 480, VGA	800 x 600, SVGA	800 x 600, SVGA	1024 x 768, XGA	1024 x 768, XGA	1280 x 1024, SXGA	1366 x 768, HD
	Colors	262K/16.2M	262K/16.2M	262K/16.2M	262K/16.2M	262K/16.2M	16.7 M	16.7 M
	Viewing Angle (H/V°)	160/140	160/140	160/140	160/140	160/140	170/160	170/160
	Contrast Ratio	600 : 1	700 : 1	700 : 1	700 : 1	800 : 1	1000:1	1000 : 1
	Response Time (ms)	25	30	35	16	16	30	5
	Brightness	800 cd/m <sup>2</sup>	400 cd/m <sup>2</sup>	450 cd/m <sup>2</sup>	600 cd/m <sup>2</sup>	400 cd/m <sup>2</sup>	350 cd/m <sup>2</sup>	300 cd/m <sup>2</sup>
	Touchscreen	4-Wire Resistive	5-Wire Resistive	5-Wire Resistive	5-Wire Resistive	5-Wire Resistive	5-wire resistive and P-cap	5-Wire Resistive
	Backlight Type	LED	LED	LED	LED	LED	LED	LED
	Backlight Life (hrs)	50,000	50,000	50,000	50,000	50,000	50,000	50,000
Touchscreen (Optional)	Dimensions (mm)	219 x171.8x37.6	290.2x237.6x35.1	323.7x262.4x36.5	323.7x262.4x36.5	365x291x38	425x357.5x39	478 x 303 x 38
	Weight (kg)	1.5	3.85	4.2	4.2	4.5	5.8	5.2
	Durability	1 million touches	36 million touches	10 million touches	10 million touches	10 million touches	50 million touches	10 million touches
Environment	Surface Hardness	3H	3H	3H	3H	3H	5H	3H
	Transparency	80%	82%	80%	80%	80%	91%	80%
System	Temperature (Operating)	0 ~ 50° C	- 20 ~ 60° C	-20 ~ 60° C	-20 ~ 60° C	-20 ~ 60° C	0 ~ 55° C	0 ~ 45° C
	Temperature (Storage)	-20 ~ 60° C	-30 ~ 70° C	-30 ~ 70° C	-30 ~ 70° C	-30 ~ 70° C	-20 ~ 60° C	-20 ~ 60° C
	Humidity	5 ~ 95% @ 40° C, non-condensing	5 ~ 95% @ 40° C, non-condensing	5 ~ 95% @ 40° C, non-condensing	5 ~ 95% @ 40° C, non-condensing	5 ~ 95% @ 40° C, non-condensing	5 ~ 90% @ 40° C, non-condensing	5 ~ 95% @ 40° C, non-condensing
System	I/O Ports	VGA x 1; DVI x 1; 12 Vdc Jack x 1; USB x 1 (USB is reserved for the connection to enable touch usage only)	VGA x 1; DVI x 1; 12 VDC Jack x 1; USB x 1; RS-232 x 1 (USB & RS-232 are reserved for the connection to enable touch usage only)					
	OSD	Keys: Power on/off, Menu/Enter, Left/Up, Right/Down, Exit/Auto, Source Menu Functions: Brightness, Contrast, Screen Setting, Color Temp, OSD Language, VGA/DVI, Reset, Auto Adjust						
	Power	36W power adapter, with AC 100 ~ 240V input and DC +12V @ 3A output			60W power adapter, with AC 100 ~ 240V input and DC +12V @ 5A output			

# Gaming Display Solutions



## Features

- Wide viewing angle of 178°(H) and 178°(V)
- Optional reliable surface capacitive touch solution
- Touch interface : USB
- Dual interface of DVI and VGA
- Customized mechanical design support

## Applications

- Slot machine, lottery terminals, jackpot systems

## Introduction

Designed exclusively for gaming applications, Advantech gaming display solution provides a wide range of gaming monitors to meet special requirements of applications such as slot machine, casino, etc. Our solutions include open frame monitors and stretched displays. These display solutions are featured with widescreen, reliable touchscreens and flexible mechanical design and can be integrated with Advantech gaming platforms for a total solution.

## Selection Guide



	<b>IDS-3119</b>	<b>IDS-3121GD</b>	<b>DSD-5028</b>	<b>IDS31-063W</b>	<b>IDS31-190PB</b>
LCD Display	Size	19"	21.5"	28" (16:3)	6.3"
	Resolution	add space as 1280 x 1024, SXGA	1920 x 1080, FHD	1920 x 358	800 x 256
	Colors	16.7M	16.7M	16.7M	262144
	Viewing Angle (H/V°)	160/170	178/178	178/78	170 x 170
	Contrast Ratio	1000:1	1000:1	3000:1	400:1
	Response Time (ms)	5 (Typ.)	14 (Typ.)	6.5 (Typ.)	5 (Typ.)
	Brightness	350 (Typ.)	250 (Typ.)	700 (Typ.)	340 (Typ.)
	Touchscreen	Surface Capacitive Touch	Surface Capacitive Touch	N/A	Projected Capacitive Touch
	Backlight Type	LED	LED	LED	LED
	Backlight Life (hrs)	50,000	30,000	50,000	30,000
Touchscreen	Dimensions (mm)	438 (W) x 369.7 (H) x 35.8 (D)	546.6 (W) x 299.2 (H) x 48 (D)	736.6 (W) x 167.3 (H) x 44.35(D)	173 x 100 x 40.6
	Weight (kg)	5(estimation)	6.3	3	0.51
	Type	Surface Capacitive Touch	Surface Capacitive Touch	N/A	Projected Capacitive Touch
	Durability	200 million touches	200 million touches	N/A	200 million touches
	Surface Hardness	Hardness MoHS 7	Hardness MoHS 7	N/A	Hardness MoHS 7
Environment	Transparency	91.5% ± 1.5%	91.5% ± 1.5%	N/A	90%
	Temperature (Operating)	0 ~ 45° C	0 ~ 45° C	0 ~ 45° C	0 ~ 50° C
	Temperature (Storage)	-20 ~ 60° C	-20 ~ 60° C	-20 ~ 60° C	-20 ~ 60° C
	Humidity	10 ~ 90% @ 40° C, non-condensing	10 ~ 90% @ 40° C, non-condensing	80%	10 ~ 90% @ 40° C
System	I/O Ports	VGA/DVI	VGA/DVI	VGA/DVI/RS-232	VGA, DVI, USB
	OSD	Keys: Power on/off, Menu/Enter, Left/Up, Right/Down, Exit/Auto, Source Menu Functions: Brightness, Contrast, Screen Setting, Color Temp, OSD Language, Reset, Auto Adjust	Keys: Power on/off, Source,Menu, Left/Up, Right/Down, Exit/Auto, Source Menu Functions: Brightness, Contrast, Screen Setting, Color Temp, OSD Language, Reset, Auto Adjust	Keys: Power on/off, Menu/Enter, Left/Up, Right/Down, Exit/Auto, Source Menu Functions: Brightness, Contrast, Screen Setting, Color Temp, OSD Language, Reset, Auto Adjust	
	Power	60 W power adapter, with AC 100 ~ 240 V input and DC +12 V @ 5 A output	40 W	42 W power adapter, with AC 100 ~ 240V input and DC +12V @ 3.5A output	

# Industrial Display Systems

## Medical Display Solutions



### Features

- 15"/19" LCD kit and open frame monitor solutions
- DICOM fully compliant
- Adjustable gamma levels to 72% NTSC
- Wide viewing angles of 178°(H) and 178°(V)
- High uniformity of 80%
- Dual signal interface of VGA and DVI

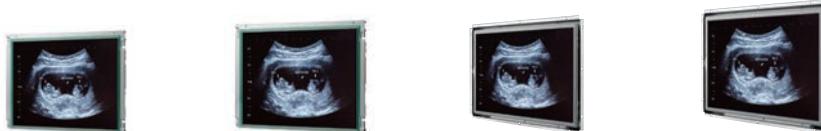
### Applications

- Ultrasound, clinical, surgical applications

## Introduction

Medical imaging applications require highly consistent image reproduction. Advantech provides sophisticated medical display solutions that can help improve performance and diagnostic accuracy through diagnostic systems. Our solutions include LCD kit with an AD board and open frame monitor both equipped with gamma correction function. All of our displays are designed with IPS technology which offers superior color accuracy and featured with high brightness stability and uniformity. Most important of all, our solution is fully compliant with the DICOM standard to assure accurate image communication and image file formats.

## Selection Guide



	IDK-1115MD	IDK-1119MD	IDS-3115MD	IDS-3119MD
LCD Display	Size	15"	19"	15"
	Resolution	1024 x 768	1280 x 1024	1024 x 768
	Brightness	300 cd/m <sup>2</sup>	300 cd/m <sup>2</sup>	300 cd/m <sup>2</sup>
	Colors	16.2M/262K colors	16.7M colors	16.2M/262K colors
	Viewing Angle (H/V°)	170/170	178/178	170/170
	Contrast Ratio	1500:1	1000:1	1500:1
	Response Time (ms)	35	TBD	35
	Backlight Type	LED	LED	LED
	Backlight Life (hrs)	50,000	50,000	50,000
System	I/O Ports	VGA / DVI	VGA / DVI	VGA / DVI
	Power	60W power adapter with AC 100-240V input and DC +12V @ 5A output		
	Dimensions (mm)	326.5 x 253.5 x 9.6	396 x 324 x 17	362 x 288 x 35.7
	Weight (g)	835	1600	4000
	Temperature (Operating)	0 ~ 60° C	0 ~ 50° C	0 ~ 60° C
	OSD	Color Management Program Color Temperature Color Gamma Gray Scale	● ● ● ●	● ● ● ●
				0 ~ 45° C

# Digital Signage Display Solutions



## Features

- Large format displays and stretched displays
- Wide viewing angle of 178°(H) and 178°(V)
- Multiple signal interface options: HDMI/VGA/DVI/DisplayPort
- Supports wall mount solution
- Supports vertical/horizontal installation
- Supports optical touchscreen(large format series)
- Fanless design

## Applications

- Retail, Transportation, Hotel, Bank, Restaurant, Education

## Introduction

Advantech digital signage displays are not only attractive, but reliable enough to hold up to constant use in public areas. Our solutions include narrow bezel large displays, large format displays with open pluggable specification designs and innovative stretched displays which can be easily integrated with Advantech signage players.

## Selection Guide



	<b>DSD-3032</b>	<b>DSD-3042</b>	<b>DSD-3055</b>	<b>DSD-5028</b>	<b>DSD-5038</b>	<b>DSD-7046</b>	<b>DSD-7055</b>
LCD Display	Size	32"	42"	55"	28"	38"	46"
	Resolution	1920 x 1080	1920 x 1080	1920 x 1080	1920 x 358	1920 x 538	1920 x 1080
	Colors	16.7 M	1073M	1073M	16.7M	16.7M	1073M (10 bit)
	Viewing Angle (H/V°)	178/178	178/178	178/178	178/178	176/176	178/178
	Contrast Ratio	3000:1	4000:1	4000:1	3000:1	4000:1	4000:1
	Response Time (ms)	8	8	6.5	6.5	9.5	6.5
	Brightness	350	500	450	700	800	500
	Backlight Type	LED	LED	LED	LED	LED	LED
	Backlight Life (hrs)	50000	50000	50000	50000	50000	50000
Touchscreen (Optional)	Dimensions (mm)	743.6 x 438.11 x 73	961 x 555 x 72.7	1238.6 x 709.4 x 72.5	736.6 x 167.3 x 44.35	980.9 x 303.2 x 44.35	1052.7 x 607.3 x 69
	Weight (kg)	14	18	31	3	6.4	22
	Type	Optical Touch	Optical Touch	Optical Touch	N/A	N/A	N/A
	Durability	10 million touches	10 million touches	10 million touches	N/A	N/A	N/A
Environment	Surface Hardness	7H	7H	7H	N/A	N/A	N/A
	Transparency	92%	92%	92%	N/A	N/A	N/A
	Temperature (Operating)	5 ~ 45° C	5 ~ 45° C	5 ~ 45° C	0 ~ 45° C	0 ~ 45° C	0 ~ 40° C
System	Temperature (Storage)	-20 ~ 55° C	-20 ~ 55° C	-20 ~ 55° C	-10 ~ 60° C	-10 ~ 60° C	-20 ~ 60° C
	Humidity	20 ~ 80 % RH	20 ~ 80 % RH	20 ~ 80 % RH	20 ~ 80 % RH	20 ~ 80 % RH	
	I/O Ports	HDMI/VGA/DisplayPort	HDMI/VGA/DisplayPort	HDMI/VGA/DisplayPort	VGA/DVI	VGA/DVI	OPS slot, VGA/DVI/HDMI/DisplayPort/Component/Composite
	OSD control	RS-232/RS-485/Remote	RS-232/RS-485/Remote	RS-232/RS-485/Remote	RS-232	RS-232	RS-232/Remote
	Power Consumption (W)	70	120	145	40	76	235
							312

# Industrial Storage Modules



Model Name	SQF-S25 830	SQF-S25 910S	SQF-SM8 830	SQF-C25 910C	SQF-CM8 910C	SQF-SMS 630	SQF-SHM 630	SQF-SLM 630
Interface	SATA	SATA	SATA	PCIe	PCIe	SATA	SATA	SATA
Transfer Protocol	SATA III (6.0Gb)	SATA III (6.0Gb)	SATA III (6.0Gb)	PCIe Gen. III x4	PCIe Gen. III x4	SATA III (6.0Gb)	SATA III (6.0Gb)	SATA III (6.0Gb)
Connector	7 + 15 pin SATA	7 + 15 pin SATA	M.2 B + M key	U.2 (SFF-8639)	M.2 B + M key	Mini PCIe with SATA pin-out	Mini PCIe with SATA pin-out	7 + 15 pin SATA
Flash Type	SLC / Ultra MLC / MLC	SLC / Ultra MLC / MLC	SLC / Ultra MLC / MLC	SLC / Ultra MLC / MLC	SLC / Ultra MLC / MLC	SLC / Ultra MLC / MLC	SLC / Ultra MLC / MLC	SLC / Ultra MLC / MLC
Maximum Power Consumption	1,000 mA	1,000 mA	500 mA	9 W	9 W	500 mA	480 mA	370 mA
Capacity	64GB ~ 2TB	200GB / 400GB / 800GB / 1600GB	64GB ~ 1TB	50GB ~ 1600GB	50GB ~ 800GB	1 GB / 2 GB / 4 GB / 8 GB / 16 GB / 32 GB / 64 GB	1 GB / 2 GB / 4 GB / 8 GB / 16 GB / 32 GB / 64 GB	1 GB / 2 GB / 4 GB / 8 GB / 16 GB / 32 GB / 64 GB
Maximum Read / Write Performance (MB/s)	Sequential: 550 / 530 Burst IOPS@4K: 100K / 100K Sustain IOPS@4K: 10K / 10K	Sequential: 550 / 530 Burst IOPS@4K: 100K / 100K Sustain IOPS@4K: 20K / 20K	Sequential: 530 / 500 Burst IOPS@4K: 90K / 90K Sustain IOPS@4K: 8K / 8K	Sequential: 2,500 / 1,300 Burst IOPS@4K: 300K / 250K Sustain IOPS@4K: 25K / 25K	Sequential: 2,500 / 1,300 Burst IOPS@4K: 300K / 250K Sustain IOPS@4K: 25K / 25K	SLC: 65/55 Ultra MLC: 500/150 MLC: 500/150	SLC: 500/150 Ultra MLC: 250/120 MLC: 250/100	SLC: 500/150 Ultra MLC: 500/150 MLC: 500/150
Op. Temperature	0 ~ 70° C / -40 ~ 85° C	0 ~ 70° C / -40 ~ 85° C	0 ~ 70° C / -40 ~ 85° C	0 ~ 70° C	0 ~ 70° C	0 ~ 70° C / -40 ~ 85° C	0 ~ 70° C / -40 ~ 85° C	0 ~ 70° C / -40 ~ 85° C
SQFlash Utility	Supported	Supported	Supported	Supported	Supported	Supported	Supported	Supported
Shock	1,500G, Peak / 0.5 ms	1,500G, Peak / 0.5 ms	1,500G, Peak / 0.5 ms	1,500G, Peak / 0.5 ms	1,500G, Peak / 0.5 ms	1,500G, Peak / 0.5 ms	1,500G, Peak / 0.5 ms	1,500G, Peak / 0.5 ms
Vibration	20G, Peak / 80 ~2,000 Hz	20G, Peak / 80 ~2,000 Hz	20G, Peak / 80 ~2,000 Hz	20G, Peak / 80 ~2,000 Hz	20G, Peak / 80 ~2,000 Hz	20G, Peak / 80 ~2,000 Hz	20G, Peak / 80 ~2,000 Hz	20G, Peak / 80 ~2,000 Hz

## Flash Lock

Bonding SQFlash with hardware platform so content is 100% secure; preventing accidental data disclosure.

## Monitoring



## SMART

Monitor the health condition of your SQFlash to help you plan your SSD maintenance schedule.

## Complete Story Security

Flash storage devices are widely adopted in different application fields such as gaming, automation, medical, military, transportation and more. Security concerns in each also vary so Advantech's industrial grade SQFlash comes equipped with multi-level security functions to help System Integrators build up a more secure and intelligent system with minimum effort.



Model Name	SQF-SDM 630	SQF-S10 630	SQF-SUS 630	SQF-P10 P8/P9	SQF-PDM	SQF-P25 P9	SQF-ISD	SQF-UDM
Interface	SATA	SATA	SATA	IDE / PCMCIA	IDE	IDE	SD	USB
Transfer Protocol	SATA III (6.0Gb)	SATA III (6.0Gb)	SATA III (6.0Gb)	UDMA 2 / UDMA 4 / UDMA 5	UDMA 2 / UDMA 4	UDMA 4	SDIO	USB 2.0
Connector	7-pin Female	CFast Type-I	Onboard	CF Type-I	44-pin Female / 40-pin Female	44-pin Male	SD 9-pin	10-pin, 2.54mm pitch
Flash Type	SLC / Ultra MLC / MLC	SLC / Ultra MLC / MLC	Ultra MLC / MLC	SLC / Ultra MLC / MLC	SLC	SLC / MLC	SLC / MLC	SLC / MLC
Maximum Power Consumption	480 mA	480 mA	500 mA	160 mA	160 mA	210 mA	100 mA	145 mA
Capacity	2 GB / 4 GB / 8 GB / 16 GB / 32 GB / 64 GB / 128 GB	1 GB / 2 GB / 4 GB / 8 GB / 16 GB / 32 GB / 64 GB	2GB ~ 64GB	256 MB / 512 GB / 1 GB / 2 GB / 4 GB / 8 GB / 16 GB / 32 GB / 64 GB	1 GB / 2 GB / 4 GB / 8 GB / 16 GB / 32 GB / 64 GB	4 GB / 8 GB / 16 GB / 32 GB / 64 GB / 128 GB / 256GB	1 GB / 2 GB / 4 GB / 8 GB / 16 GB / 32 GB / 64 GB	1 GB / 2 GB / 4 GB / 8 GB / 16 GB / 32 GB / 64 GB
Maximum Read / Write Performance (MB/s)	SLC: 500/150 Ultra MLC: 250/120 MLC: 250/100	SLC: 500/150 Ultra MLC: 520/195 MLC: 520/195	Ultra MLC: 490/190 MLC: 480/190	4 channel: 83/87 2 channel: 43/40 1 channel: 22/15	2 channel: 40/29	SLC: 65/55 MLC: 63/28	SLC: 25/15 MLC: 22/10	SLC: 32/26 MLC: 30/12
Op. Temperature	0 ~ 70° C / -40 ~ 85° C	0 ~ 70° C / -40 ~ 85° C	0 ~ 70° C / -40 ~ 85° C	0 ~ 70° C / -40 ~ 85° C	0 ~ 70° C / -40 ~ 85° C	0 ~ 70° C / -40 ~ 85° C	0 ~ 70° C / -40 ~ 85° C	0 ~ 70° C / -40 ~ 85° C
SQFlash Utility	Supported	Supported	Supported	Supported	Supported	Supported	Not Supported	Not Supported
Shock	1,500G, Peak / 0.5 ms	1,500G, Peak / 0.5 ms	1,500G, Peak / 0.5 ms	1,500G, Peak / 0.5 ms	1,500G, Peak / 0.5 ms	1,500G, Peak / 0.5 ms	1,500G, Peak / 0.5 ms	1,500G, Peak / 0.5 ms
Vibration	20G, Peak / 80 ~ 2,000 Hz	20G, Peak / 80 ~ 2,000 Hz	20G, Peak / 80 ~ 2,000 Hz	20G, Peak / 80 ~ 2,000 Hz	20G, Peak / 80 ~ 2,000 Hz	20G, Peak / 80 ~ 2,000 Hz	5G, Peak / 10 ~ 2,000 Hz	20G, Peak / 80 ~ 2,000 Hz

### AES

Real-time encrypting data before programming to Flash IC, so there's no way to acquire data even by read directly to

### Flash Vault

Protect data in SQFlash from unauthorized accessing or modification

### Software Protection

### Data Security



### Security ID

Protect software intellecture property from duplication or unauthorized usage

### Write Protect

Write protection can easily be set by jumper or SQFlash utility so your data cannot be tampered with.

### Emergency Erase

Erasing of all data within 10ms for critical situations.

# Embedded Wireless Modules

## WiFi



Model Name	EWM-W151H	EWM-W142	EWM-W135	EWM-W152H	EWM-W153H	EWM-W155H	EWM-W150H	EWM-W157H	EWM-W158F	EWM-W160M2
Form Factor	Half Size Mini PCIe Card	Full/Half size Mini PCIe Card	Full/Half size Mini PCIe Card	Half size Mini PCIe Card	Half Size Mini PCIe Card	Half Size Mini PCIe Card	Half Size Mini PCIe Card	Half Size Mini PCIe Card	Full Size Mini PCIe Card	M.2 2230 (A-E key)
Wireless Standard	802.11 b/g/n	802.11 b/g/n	802.11 a/b/g/n	802.11 ac/a/b/g/n	802.11 b/g/n	802.11 a/b/g/n	802.11 b/g/n	802.11 ac/a/b/g/n	802.11 a/b/g/n	802.11 b/g/n
Chipset	Realtek RTL8188EE	Atheros AR9287	Atheros AR9382	Broadcom BCM4352 and BCM20702	Atheros AR9485 and AR3012	Atheros AR9462	Ralink RT5390	Realtek RTL8821AE	Atheros AR9592-AR1B	Realtek RTL8188EE
Signal Protocol	PCIe Differential	PCIe Differential	PCIe Differential	WiFi: PCIe & BT: USB Differential	WiFi: PCIe & BT: USB Differential	WiFi: PCIe & BT: USB Differential	USB Differential	WiFi: PCIe & BT: USB Differential	PCIe Differential	PCIe Differential
Antenna	1 x U.FL connectors	2 x U.FL connectors	2 x U.FL connectors	2 x U.FL connectors	2 x U.FL connectors	2 x U.FL connectors	2 x U.FL connectors	2 x U.FL connectors	2 x U.FL connectors	2 x U.FL connectors
Operating Voltage	DC 3.3V ± 5%	DC 3.3V ± 5%	DC 3.3V ± 5%	DC 3.3V ± 5%	DC 3.3V ± 5%	DC 3.3V ± 5%	DC 3.3V ± 5%	DC 3.3V ± 5%	DC 3.3V ± 5%	DC 3.3V ± 5%
Temperature Range	0 ~ 80° C (Operating)	0 ~ 60° C (Operating)	-10 ~ 70° C (Operating)	0 ~ 80° C (Operating)	0 ~ 60° C (Operating)	-10 ~ 70° C (Operating)	0 ~ 70° C (Operating)	0 ~ 70° C (Operating)	-40 ~ 85° C (Operating)	0 ~ 70° C (Operating)
Dimensions (L x W x H)	26.65 x 29.85 x 3.05 mm	26.65 x 29.85 x 2.27 mm	26.65 x 29.85 x 3.25 mm	26.65 x 29.85 x 3.25 mm	26.65 x 29.85 x 3.75 mm	26.80 x 30.00 x 3.75 mm	26.65 x 29.85 x 3.05 mm	26.65 x 29.85 x 3.25 mm	50.8 x 29.85 x 2.86 mm	22 x 30 x 2.3 mm
Security	64/128-bit WEP, WPA, WPA2	64/128/152-bit WEP, WPA, WPA2, 802.1x, TKIP and AES	64/128/152-bit WEP, WPA, WPA2, 802.1x, TKIP and AES	64/128/152-bit WEP, AES-CCMP,TKIP; WPA, WPA2, 802.1X,EAP-SIM, EAP-AKA	64/128-bit WEP, AES-CCMP,TKIP; WPA, WPA2, 802.1X,EAP-SIM, EAP-AKA	64/128-bit WEP, WPA, WPA2, 802.1x, TKIP and AES	64/128-bit WEP, WPA, WPA2, 802.1x, TKIP and AES	64/128-bit WEP, WPA, WPA2, 802.1x, TKIP and AES	64/128-bit WEP, WPA, WPA2, 802.1x, TKIP and AES	64/128-bit WEP, WPA, WPA2, 802.1x, TKIP and AES
SISO/MIMO	1T1R	2T x 2R	2T x 2R	2T x 2R	1T1R	2T x 2R	1T1R	1T1R	2T2R	1T1R
Data Rate	150Mbps	300Mbps	300Mbps	867Mbps	150Mbps	300Mbps	150Mbps	433Mbps	300Mbps	150Mbps
Bluetooth	-	-	-	2.1, 2.1+EDR, 3.0, 3.0+HS, 4.0 (BLE)	2.1, 2.1+EDR, 3.0, 3.0+HS, 4.0 (BLE)	2.1, 2.1+EDR, 3.0, 3.0+HS, 4.0 (BLE)	-	2.1, 2.1+EDR, 3.0, 3.0+HS, 4.0 (BLE)	-	-
OS Supported	Win 7/ 8/ 8.1/ 10	Win 7/ 8/ 8.1	Win 7/ 8/ 8.1	Win 7/ 8/ 8.1	Win 7/ 8/ 8.1	Win 7/ 8/ 8.1	Win 7/ 8/ 8.1	Win 7/ 8/ 8.1/ 10	Win 7/ 8/ 8.1	Win 7/ 8/ 8.1/ 10
Host Type	PCIe Mini card	PCIe Mini card	PCIe Mini card	PCIe Mini card	PCIe Mini card	PCIe Mini card	PCIe Mini card	PCIe Mini card	PCIe Mini card	PCIe M.2 card

## Cellular



## GPS



Model Name	EWM-C106FT02E	EWM-C109F601E	EWM-C109F6G1E	EWM-C118HD01E
Radio Technology	HSPA	HSPA	HSPA	HSPA
Downlink/ Uplink	7.2 Mbps/ 5.76 Mbps	7.2 Mbps/ 5.76 Mbps	7.2 Mbps/ 5.76 Mbps	7.2 Mbps/ 5.76 Mbps
Frequency Band	Tri-band WCDMA 850/ 1900/ 2100 MHz, Quad-band GSM/ GPRS/ EDGE	6-band UMTS/HSPA network, 800/850/900/ 1700/1900/2100 MHz	6-band UMTS/HSPA network, 800/850/900/1700/ 1900/2100 MHz	2-band UMTS/HSPA network, 900/2100 MHz
Main Chipset	Qualcomm MDM6290	u-blox LISA-U200	u-blox LISA-U200 and MAX-6	u-blox SARA-U270
Operating Temperature	-20 to +65° C	-40 to +85° C	-40 to +85° C	-40 to +85° C
size	Full-size Mini PCIe	Full-size Mini PCIe	Full-size Mini PCIe	Half-size Mini PCIe
SIM slot	-	With SIM card slot	With SIM card slot	With SIM card slot
GPS RF Receiver Type	-	-	50-channel, GPS L1 C/A code, SBAS: WAAS, EGNOS, MSAS	-
GPS Acquisition	-	-	Cold starts: 26s/ Aided starts: 1s/ Hot starts: 1s	-
GPS Accuracy	-	-	Position 2.5m / SBAS 2.0m	-
GPS Sensitivity	-	-	Tracking: -162 dBm/ Cold starts: -148 dBm / Hot starts: -157 dBm	-
GPS Type	-	-	Hardware standalone	-

Model Name	EWM-G108H
GPS Mini Card	Half-size Mini PCIe card
GPS Type	Hardware standalone
Signal Protocol	USB
Chipset	NEO-7
Operating Temperature	-40 to +85° C
RF Receiver Type	56-channel, GPS L1 C/A, GLONASS L1 FDMA, QZSS L1 C/A, Galileo E1B/C, Compass ready SBAS: WAAS, EGNOS, MSAS
Acquisition	Cold starts: 29s / Aided starts: 5s / Reacquisition: 1s
Accuracy	Position 2.5m / SBAS 2.0m
Sensitivity	Tracking: -162 dBm/ Cold starts: -148 dBm / Reacquisition: -148 dBm

# Embedded Memory Modules



Model Name	SQR-SD4I	SQR-SD4I-ECC	SQR-UD4I	SQR-SD3M	SQR-SD3H
Category	DDR4	DDR4	DDR4	DDR3	DDR3
Clock Speed	2133Mbps	2133Mbps	2133Mbps	1600 Mbps	1600 Mbps
Pin/DIMM	260pin SO-DIMM	260pin SO-DIMM	288pin U-DIMM	204pin SO-DIMM	204pin SO-DIMM
Chip Package	FBGA	FBGA	FBGA	FBGA	FBGA
Density	4GB to 16GB	4GB to 16GB	4GB to 16GB	2GB to 8GB	2GB to 8GB
Power Supply	SSTL_12	SSTL_12	SSTL_12	SSTL_15	SSTL_15
Voltage	1.2V +/- 0.06V	1.2V +/- 0.06V	1.2V +/- 0.06V	1.35V ± 0.1V 1.5V ± 0.075V	1.35V ± 0.1V 1.5V ± 0.075V
Operation Temp	-40° C to +85° C	-40° C to +85° C	-40° C to +85° C	-20° C to +85° C	0° C to +85° C
Dimension (mm)	69.6 x 30	69.6 x 30	133.35 x 31.25	67.6 x 30	67.6 x 30



Model Name	SQR-SD3I	SQR-UD3I	SQR-SD3I-ECC	SQR-SD2I
Category	DDR3	DDR3	DDR3	DDR2
Clock Speed	1333/1600 Mbps	1333 Mbps	1333/1600 Mbps	667 Mbps
Pin/DIMM	204pin SO-DIMM	240pin DIMM	204pin SO-DIMM	200pin SO-DIMM
Chip Package	FBGA	FBGA	FBGA	FBGA
Density	1GB to 8GB	1GB to 4GB	2GB to 8GB	1GB to 2GB
Power Supply	SSTL_20	SSTL_15	SSTL_15	SSTL_18
Voltage	1.35V ± 0.1V 1.5V ± 0.075V	1.5V ± 0.075V	1.5V ± 0.075V	1.8V ± 0.1V
Operation Temp	-40° C to +85° C	-40° C to +85° C	-40° C to +85° C	-40° C to +85° C
Dimension (mm)	67.6 x 30	133.35 x 30	67.6 x 30	67.6 x 30

## SQRAM Qualification Process



Different sorting criteria enables different product specifications.



### 10G Vibration

The purpose of vibration testing is to reveal non-robust modules. All components will pass 10G vibration which is a basic industrial grade specification.



### Low Temperature Test

Low temperature testing is based on MIL-STD-105E. This narrows down only DRAM modules with perfect memory (no error bit detected).



### High Temperature Test

High temperature testing is implemented into all modules that pass the previous two stages.



### Thermal Shock Test

DRAM module testing starts from room temperature (25°C), goes to low temperature, then rises to high temperature (before back to room temp (25°C)).



### Room Temperature

Final stage is to test all DRAM modules to pass the memory test without any error bit detected under room temperature conditions.

# Embedded Extension Modules



Model Name	ETM-RES02C	ETM-RES04C	ETM-RES05C	EXM-110 (EMIO-100TL)
Type	4/5-wire Resistive type, Single Touch	5-wire Resistive type, Single Touch	4-wire Resistive type, Single Touch	LVDS to 1-Ch RGB TTL port
Communication Interface	USB & RS-232	USB & RS-232	USB & RS-232	18/24-bit LVDS
Interface Connector	Power port: 2.0 mm,2-pin, male type wafer box USB/RS232 port: 2.0 mm,4-pin, male type wafer box	Combo (USB/RS232)port: 2.0 mm, 2x5-pin,male type wafer box	Combo (USB/RS232)port: 2.0 mm, 2x5-pin,male type wafer box	External 18/24-bit LVDS, DF13-20DP-1.25V
Channel Connector	1	1	1	1
Operating Temperature	-20 to +85°C	-25 to +85°C	-25 to +85°C	-10 ~ +70°C
Storage Temperature	-40 to +85°C	-25 to +85°C	-25 to +85°C	-40 ~ +85°C
Communication Baud Rate	9,600 (default) and 19, 200	9,600 (default)	9,600 (default)	-
LED Status	Activated indicator	Activated indicator	Activated indicator	-
Dimensions (L x W x H)	62 x 33 x 10.26 mm	75 x 20 x 10 mm	75 x 20 x 10 mm	50.59 x 30 x 15 mm



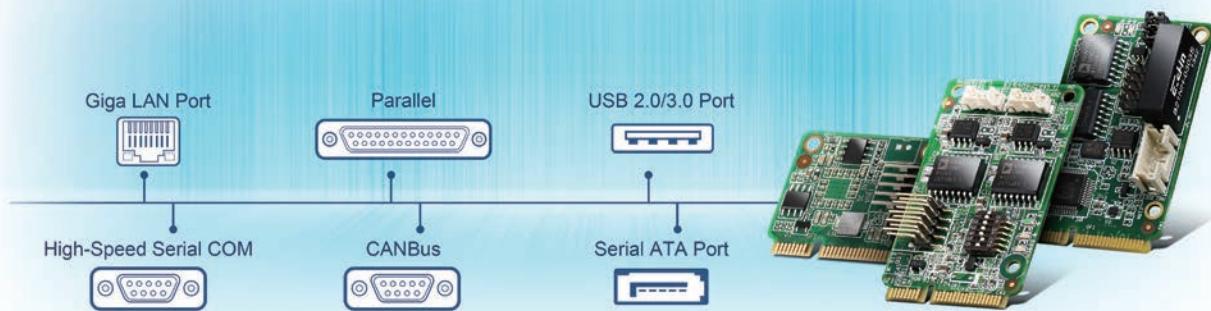
Model Name	EXM-310 (EMIO-100P)	EXM-311 (EMIO-100S)	EXM-320 (EMCB-200U)	EXM-321 (EMIO-210S)	EXM-322 (EMIO-220S)
Type	USB to 1-Ch Parallel port	USB to 1-Ch High Speed Serial COM port	USB to 2-Ch CANBus port	USB to 2-Ch High Speed RS-232 port	USB to 2-Ch High Speed RS-422/ RS-485 port
Communication Interface	Combo USB (Internal/ External)	Combo USB (Internal/ External)	Combo USB (Internal/ External)	Combo USB (Internal/ External)	Combo USB (Internal/ External)
Interface Connector	Internal USB port: MiniPCIe thru USB External USB port: 2.0 mm, 1x4-pin, male type wafer box	Internal USB port: MiniPCIe thru USB External USB port: 2.0 mm, 1x4-pin, male type wafer box	Internal USB port: MiniPCIe thru USB External USB port: 2.0 mm, 2x5-pin, male header	Internal USB port: MiniPCIe thru USB External USB port: 2.0 mm, 1x4-pin, male type wafer box	Internal USB port: MiniPCIe thru USB External USB port: 2.0 mm, 1x4-pin, male type wafer box
Channel Connector	1	1	2	2	2
Operating Temperature	0 to +70° C	-40 to +85° C	-40 to +85° C	-40 to +85° C	-40 to +85° C
Storage Temperature	-40 to +85° C	-40 to +85° C	-40 to +85° C	-40 to +85° C	-40 to +85° C
Communication Baud Rate	-	-	10, 20, 50, 125, 250, 500, 800, 1000 Kbps	-	-
LED Status	Activated indicator	Activated indicator	Activated indicator	Power On/Off: Red LED COM-1 working : Green LED COM-2 working: Green LED	Power On/Off: Red LED COM-1 working : Green LED COM-2 working: Green LED
Dimensions (L x W x H)	50.59 x 30 x 15 mm	50.59 x 30 x 20 mm	50.59 x 30 x 15 mm	50.59 x 30 x 15 mm	50.59 x 30 x 20 mm



Model Name	<b>EXM-510 (EMIO-100E)</b>	<b>EXM-520 (EMIO-200SA)</b>	<b>EXM-521 (EMIO-200U3)</b>	<b>EXM-522</b>	<b>EXM-540</b>
Type	PCIe to 1-Ch Giga LAN port	PCIe to 2-Ch SATA III port	PCIe to 2-Ch USB 3.0 port	PCIe to 2-Ch USB 2.0 port	PCIe to 4-Ch USB 2.0 port
Communication Interface	PCIe	PCIe	PCIe	PCIe	PCIe
Interface Connector	MiniPCIe thru PCIe	MiniPCIe thru PCIe	MiniPCIe thru PCIe	MiniPCIe thru PCIe	MiniPCIe thru PCIe
Channel Connector	1	2	2	2	4
Operating Temperature	-40 to +85° C	0 to +70° C	-40 to +85° C	-40 to +85° C	-40 to +85° C
Storage Temperature	-40 to +85° C	-40 to +85° C	-40 to +85° C	-40 to +85° C	-40 to +85° C
Communication Baud Rate	-	-	-	-	-
LED Status	Reserve the LED signal for external usage	Activated indicator	-	-	-
Dimensions (L x W x H)	50.59 x 30 x 20 mm	50.59 x 30 x 20 mm	50.59 x 30 x 15 mm	26.65 x 30 x 15 mm	50.59 x 30 x 15 mm

## Embedded Extension Modules

Wide Choice of Specific I/O Interface



Advantech's new embedded extension modules (EXM) are standard Half/Full-size Mini PCIe modules that come in a variety of I/O interface choices. With EXM, you can simply extend extra interface ports without customization or board modification. This makes EXM modules easier to be integrated and offers high flexibility for a diverse range of embedded, automation, transportation and networking applications.

# About Video Processing Solution

## HVC Series 4K Broadcast Video Encoder Cards

HVC-8700 and HVC-8701 enable real-time 4K UltraHD (2160p60) HEVC encoding at up to 20x less power consumption than a software-only solution. The HEVC/H.265 codec is gaining momentum because it reduces bit rates by approximately 50% when compared to an equivalent quality video stream encoded using H.264, enabling more channels or higher resolution video delivery over the same infrastructure. It is particularly relevant for 4K UltraHD transmission which requires a much higher stream capacity. These improvements are achieved at the penalty of much higher computation complexity, with up to four general purpose server class processors required to perform a 4K 60fps software-based broadcast quality HEVC encoding in real time.

HVC-8700 and HVC-8701 are tailored for professional media processing and are capable of performing professional grade 4Kp60 Main10 profile HEVC encoding at less than 15W and 35W power consumption. The HVC-8700 targets file or stream-based encoding workflows in a low profile PCIe adapter format to facilitate the integration of multiple accelerators in a range of servers and appliances. The HVC-8701 adapter additionally features 4K video capture over built-in HDMI 2.0, Display Port or 4-ch SDI-3G video inputs for acquisition-based encoding in contribution workflows. Both cards feature a simple-to-use API and example code for FFmpeg and GStreamer multimedia frameworks to streamline product development and their integration into existing applications.



### Key Feature

- 1-ch 4K (2160p) or 4-ch FHD (1080p) @ 60 fps real-time encoding in Main 8, Main 10 or Main 10 4:2:2 modes
- Less than 15W (HVC-8700) and 35W (HVC-8701)
- power consumption
- 4K video capture over built-in HDMI 2.0, Display Port 1.2 or 4-ch SDI-3G video inputs (HVC-8701)
- Simple-to-use API and example code for FFmpeg and GStreamer multimedia frameworks

### Applications

- Broadcast
- Video on Demand (VOD)
- Over-the-Top (OTT) Video
- IPTV
- Editing
- Video Ingest
- Medical

# HEVC Broadcast Video Encoder Card



	HVC-8700	HVC-8701
Video Input	Channels	1 (up to 4Kp60, 8bit/10bit, YUV) / 4 (up to 1080p60, 8bit/10bit, YUV)
	Video Formats	4K, HD, SD
	Frame Rate	PCI Express Interface 4K / 4096x2160: 60p / 59.94p / 50p / 30p / 29.97p / 25p / 24p 4K / 3840x2160: 60p / 59.94p / 50p / 30p / 29.97p / 25p / 24p 1920x1080: 60p / 59.94p / 50p / 30p / 29.97p / 25p / 24p 720x480: 60p / 59.94p / 50p / 30p / 29.97p / 25p / 24p
	Chroma Sampling Format	4:2:2, 4:2:0
	PCI Express Interfaces	PCI Express Gen2 x4
	Video Interfaces	N/A
		HDMI 2.0 / 3G-SDI / Display Port 1.2
Video Compression	Compression	H.265
	HEVC Profile	Main / Main 10
	HEVC Tier	Main / High
	HEVC Level	1.0 / 2.0 / 2.1 / 3.0 / 3.1 / 4.0 / 4.1 / 5.0 / 5.1
	Bitrate 4K format	3Mbps ~ 128Mbps
	Bit Depth	8 / 10
	Bit Rate Control	CBR / VBR
Audio	Elementary Stream	Yes
	Channels	N/A
	Format	N/A
	Operation Mode	N/A
	Sampling Frequency	N/A
	Sampling Bit Depth	N/A
Features	Connectors	N/A
	Frame rate and resolution control	Yes
	Encoding control and manipulation	Yes
	Full-feature API available	Yes
	Dual encoding (4 file from a unique video source)	Yes
	GOP definition	I, IP, IPB, IBBB
	Ancillary data and VBI	N/A
	Operating System	Windows 8 & 8.1(32-bit, 64-bit) Windows 7(32-bit, 64-bit) Windows Server 2012 & 2012 R2 (64-bit) Windows Server 2008 R2 (64-bit) Linux Kernel 3.13.0 (32-bit, 64-bit)
	Development Kits	FFmpeg Microsoft DirectShow
Physical Characteristic	Power Consumption	< 15W
	Dimensions	PCI Express Half Length Half Height 167.65 x 56 mm
PCI Express Half Length Full Height 167.65 x 111.15 mm		

\*Output: Auto scale to 4K/3840x2160p60

# About Applied Computing

## Realize Intelligent Solutions with Domain Expertise

Rising on the IoT tide, computing applications in industrial environments are evolving into sophisticated solutions. Recognizing this dynamic trend, Advantech Applied Computing Group devotes itself to delivering vertically-driven, application-specific solutions with proven domain know-how. Its dedicated R&D experts transform innovative ideas into integrated solutions for focused sectors such as gaming, healthcare, retail, transportation, rugged systems, and mobile devices. Together with its partners and customers, Advantech Applied Computing continuously explores new fields of opportunity in the IoT era.

### *Applied Computing Pushes the Boundaries*



# Industrial Tablet PCs



Model Name		MIT-M101	MIT-W101/ MED	MIT-W101/ ITE
Computing System	CPU		Intel Celeron Processor N2930	
	Max. Speed		Quad Core 1.83 GHz	
	Memory		DDR3L 1066MHz SODIMM (up to 8GB)	
Storage	SSD		mSATA SSD x1, supports up to 128GB	
Display	Display Type		10.1" TFT LCD Panel	
	Max. Resolution		1280 x 800	
	Touch Type		Projected Capacitive Multi-Touch	
	Glass Type		Enhanced Glass	
Communication	Wi-Fi		Wireless IEEE 802.11a/b/g/n	
	Bluetooth		Bluetooth v4.0 CLASS II	
	WWAN	4G LTE Gobi Solution		NA
	GPS	SIRF Star IV high performance		NA
	NFC		Read/Write device compatible with ISO15693, ISO14443A, ISO14443B, Felica	
Audio			Internal speaker x1, Internal mono microphone x1	
Connectivity	I/O Ports	Combo Audio x1, USB 3.0 x1, USB 2.0 x1, Micro HDMI x1, DC Jack x1, Expansion Port x1, Docking Port x1		
	Embedded I/O Devices	2.0M Fixed Focus camera at front, 5.0M Auto Focus camera with LED flash at rear, 2D Barcode scanner (Optional)		
Control Buttons			Power button, Programmable button x2	
System Indicators			Power / Battery Status x1, HDD x1, Wireless /BT x1	
Ingress Protection	Dust/ Water Resistance		IP-65	
Power	AC Adapter In		100 – 240 V ~ 1.5A 50/60 Hz	
	AC Adapter Out	19 V, 3.4 A Max, 65 W	18 V, 3.5 A Max, 63W	19 V, 3.4 A Max, 65 W
	Battery Capacity	Main Battery: 31.7Whrs (11.1V 2860mAh), Extended Battery: 50.3Whrs (11.1V 4540mAh) (Optional)		
	Battery Operating	Main Battery: 4 hours, Extended Battery: up to 6 hours operation time (Optional)		
Environment	Temperature	Operating: -10°C/ +14°F ~ +50°C/ +122°F, Storage: -30°C/ -22°F ~ +70°C/ 158°F		
	Humidity	Operating & Storage: 5% ~ 95% @40°C/104°F non-condensing		
	Vibration	Operating: (5-500GHz) 1G, Non-operating: (5-500GHz) 0.04PSD		
	Shock Resistance	Operating: 20 G, 11 ms, Non-operating: 40 G, 11ms		
	Handling Drop	4ft drop onto steel plate, 4ft drop onto 2inch plywood over concrete (MIL-STD 810G), 6ft drop with add-on bumper		
Physical Characteristics	Dimension (W x H x D)	292 x 196 x 20 mm/ 11.5 x 7.7 x 0.8 inches		
	Weight	1.1 kg (Base Configuration)		
Operating System		Microsoft Windows Embedded 8 (Default), Microsoft Windows Embedded 7 (Optional)		
Certifications		FCC Class B, CE, CB, UL 60950-1	FCC Class B, CE, CB, IEC/EN 60601-1	FCC Class B, CE, CB, IEC/EN 60950-1

## MIT Accessories



MIT-M101-ACCD5000E	MIT-M101-ACCEM000E	1760001962-01
Docking Station Front I/O: USB x1, Line-out x1, Mic-in x1 Rear I/O: Power Jack x1, LAN x1, USB x1, VGA x1, COM x1, Battery Charging Bay x1 Dimension: 185 x 261 x 104 mm Weight : 1 kg	Expansion Module MSR + Smart Card Reader Dimension: 193 x 17 x 5 mm Weight : 85 g	Extended Battery Pack 11.1V / 4540 mAh Dimension: 210 x 64 x 15 mm Weight : 320 g



MIT-M101-ACCVB000E	MIT-M101-ACCBH000E	9680015881	9680015882	9680015747
3-in-1 Multi-Function Cover VESA Mount (75x75 mm) + Kick Stand + Hand Strap	Rugged Bumper w/ Hand Strap L /R Rugged Bumper + Hand Strap	X-Type Hand Strap	Shoulder Strap	Capacitive Stylus Pen

# Medical & Fitness Computing Platforms

## Fitness Console Solutions



Model Name		DMS-SA16-15.6"	DMS-SA16-18.5"	DMS-ST06-15.6"	DMS-ST06-18.5"		
Computing System	CPU	Intel Celeron Processor N2930		Freescale Cortex A9 i.MX6 Dual 1GHz			
	Memory	DDR3L 1333MHz, up to 8GB		1GB DDR3 1066MHz, up to 2GB			
	Graphic Engine		DirectX 11.0, OpenGL 4.0, OpenCL 1.2	2x iPPUs (OpenGL ES 2.0 for 3D, Bit for 2D and OpenVG 1.1)			
Display	Screen Size	15.6"	18.5"	15.6"	18.5"		
	Brightness	300 cd/m2		400 cd/m2	300 cd/m2		
	Contrast Ratio	500:1	1000:1	500:1	1000:1		
	Resolution	1366 x 768					
	Touch Type	Projective capacitive touch screen					
Storage	Type/ Capacity	1 x mSATA, up to 128GB		1 x 4GB eMMC NAND Flash, up to 32GB			
I/O Interface	Rear I/O	1 x USB 3.0, 4 x USB 2.0, 1 x HDMI (output), 1 x Speaker out/ Line out, 1 x RJ45		2 x USB2.0, 1 x miniUSB, 1xRJ45(support RS485)			
	Onboard	2 x mini PCIe (1 x full size, 1 x half size), 2 x GPIO, 2 x UART, 1x C-safe, 1x I2C		4 x GPIO*, 1 x PWM (Blower Fan), 1 x Line out, 1 x BT1120, 1 x USB2.0, 1 x 12V ON/OFF switch (Safe Key)			
Communications	Wi-Fi	802.11 b/g/n		IEEE 802.11b/g/n, on-board module			
	Bluetooth	Yes		NA			
Power	AC Adaptor	100-240V 84W 12V/7A		100-240V 60W 12V/5A			
	Battery Input Connector	1 (P4 power connector)		NA			
Environment	Temperature	Operating: 0°C ~ +40°C / Storage: -20°C ~ +60°C					
	Humidity	Operating & Storage: 10% ~ 95% @ 40°C non-condensing					
Physical Characteristics	Dimensions (W x H x D)	432 x 227 x 53mm	488 x 319 x 53mm	410 x 260 x 40mm	500 x 310 x 40mm		
	Weight	5.2kg	5.6kg	3.0kg	3.3kg		
Operating System		Windows 8/ Android 4.4		Android 4.2 Jelly Bean			

\*Default: 5x5 Membrane key, Heart rate, Quick shift incline, Quick shift speed

## Panel PC



Model Name		DMS-ST07
Computing System	CPU	Freescale Cortex A9 i.MX6 Dual 1GHz
	Memory	2GB DDR3L 1333MHz
	Graphic Engine	2x iPPUs (OpenGL ES 2.0 for 3D, Bit for 2D and OpenVG 1.1)
Display	Screen Size	10.1" TFT LCD
	Brightness	200 cd/m2
	Contrast Ratio	600:1
	Resolution	1280x800
	Touch Type	Projective capacitive multi-touch screen
Storage	Type/ Capacity	4GB eMMC NAND FlashMicro SD, up to 64GB
Interface	Front	1x 1.3M webcam, 1x Microphone, 2x Speaker
	Rear	1 x USB , 1 x Mini USB , 1 x RJ45 (10/100/1000 Mbps), 1 x Micro SD slot, 1 x DC-in Jack, 1 x Reset button(hidden)
Audio	Stereo Codec	Freescale STGL5000 Stereo Codec with headset AMP
	ECHO Cancellation	ForteMedia FM2018WE-380
Power	Power Supply Voltage	DC12V Input
Environment	Temperature	Operating: 0°C ~ +40°C / Storage: -20°C ~ +60°C
	Humidity	Operating & Storage: 10% ~ 95% @ 40°C non-condensing
Physical Characteristics	Dimensions (W x H x D)	247 x 189 x 22mm
	Weight	740g
Operating System		Android 4.2

## Medical Computing Systems



Model Name		DMS-BA16
Type		Qseven RISC Computing Platform
CPU		Freescale Cortex A9 i.MX6 Dual 1GHz
Memory	Technology	DDR3 1600 MHz
	Capacity	1GB DDR3 1600MHz, up to 2GB
	Flash	8GB/16G eMMC NAND Flash for OS. And 4MB NOR Flash for boot loader
	Storage	Micro SD, up to 64GB
Graphics	LVDS	2 x 24-bit LVDS
	HDMI	1920 x 1080
	Graphic Engine	2 x iPPUs (OpenGL ES 2.0 for 3D, Bit for 2D and OpenVG 1.1)
H/W Video Code	Decoder	MPEG-4 ASP, H.264 HP, H.263, MPEG-2 MP, MJPEG BP
	Encoder	MPEG-4 SP, H.264 BP, H.263, MJPEG BP
Ethernet	Chipset	Freescale i.MX6 Integrated RGMII
	Speed	1 x 10/100/1000 Mbps
RTC	RTC	Yes
WatchDog Timer		256-level timer interval, from 0 ~ 128 sec
Expansion Interface		1 x PCIe Gen2, 1 x Lane, 1 x SATA II, 4 x USB 2.0, 1 x USB 2.0 OTG, 1 x I2S, SDIO x 1, 1 x UART, 1 x SPI, 8 x GPIO, 2 x I2C
Power	Power Supply Voltage	5V
	Power Consumption	3.8W
Environment	Operating Temperature	0°C ~ 60°C
	Operating Humidity	10% ~ 90% @ 40°C, non-condensing
Physical Characteristics	Dimensions (W x D)	70 x 70 mm
Operating System		Linux Kernel Yocto



Model Name		DMS-IR06
Type		PCIe Medical Lan Card
Chipset		Intel I210 Ethernet Controller
LAN Interfaces		2 isolated Ethernet 1000 Base-T
I/O Connectors		RJ45, 2 x unshielded connector
Connectivity Media		UTP CAT5, CAT6, CAT7
LED Indicator		LAN status: yellow LAN speed: green/ orange
Bus Type		PCIe x1 (PCIe 2.1, 2.5GT/s), shared bandwidth
Environment	Temperature	Operating: 0°C ~ +60°C Storage: -40°C ~ +85°C
	Humidity	Operating: 5% ~ 95% @ 40°C, non-condensing
Physical Characteristics	Dimensions	121 x 119.5mm w/ full-height bracket
	Weight	80.2 x 119.5mm w/ low-profile bracket
	Safety	75g (PCBA with full-height bracket) IEC 60950-1, EN 60950-1 UL 60950-1, Complaint EN60601-1
Certifications	EMC	EN60601-1-2 EN 55011; EN 55022 and EN 55024 class B EN 61000-6-2; EN 61000-6-4
	EMI	FCC 47 CFR Part 15, Class B ICES-003, Class B
	Operating System	Microsoft Windows 7, Windows 8.1 Linux Red Hat 6.3

# Rugged Computing Platforms

## Rolling Stock Controllers



	<b>Model Name</b>	<b>ARS-2510</b>	<b>ARS-2110</b>
Computing System	CPU	Intel ULV Core i7 3517UE	Intel Atom E3845
	Max Speed	Dual Core 1.7GHz (max 2.8GHz with Turbo Frequency)	Quad Core 1.91GHz
	System Chipset	Intel QM77	Intel Valleyview-D/I SoC Integrated
	Memory	DDR3 1600MHz, DDR3L 1333MHz 204-pin SODIMM (up to 8GB)	DDR3L 1333MHz 204-pin SODIMM (up to 4GB)
Storage	Internal	mSATA Socket x1, CFAST Socket x1	mSATA Socket x1
Graphics	Chipset	Intel QM77 Integrated GFX Gen 7	Intel HD Graphics
	Graphic Engine	DirectX11, OpenGL 3.1, Open CL 11	DirectX11, OpenGL 3.2/4.X
	Video Resolutions	VGA up to 2048 x 1536 @ 75Hz, DVI up to 1920 x 1080	VGA up to 2560 x 1600 @ 60Hz, LVDS up to 1920 x 1200
	Dual Display	VGA+DVI	VGA+LVDS
Ethernet	LAN1	10/100/1000 Mbps Intel 82579LM Ethernet Controller (M12 connector)	10/100/1000 Mbps Intel I210 Ethernet Controller (M12 Connector)
	LAN2	10/100/1000 Mbps Intel 82583V Ethernet Controller (M12 connector)	10/100/1000 Mbps Intel I210 Ethernet Controller (M12 Connector)
Expansion	GPS	50 channels with -160dBm Sensitivity, A-GPS and Galileo Capable (Optional)	
	Wi-Fi	Atheros AR9382 802.11 a/b/g/n (Optional)	
	WWAN	HSUPA Tri-Band and GSM Quad-band, up to 7.2Mbps downlink (Optional)	Sierra AirPrime MC7304 LTE Module (Optional)
	GSM-R / GPRS-R	Quad-band, GPRS Multi-Slot Class 10, GSM Pahse2/Phase2+ (Optional)	
	G-Sensor	Digital Accelerometer Ultra Low Power, 10-bit Resolution	
	Gyroscope	Turn Rate Sensor for Dead Reckoning (SPEED+ and FWD+ Signals on DB15 Connector)	
Audio	Codec	Realtek ACL892, High Definition Audio	Realtek ALC888S, High Definition Audio
	Interface	Line-out, Mic-in, Line-in	
I/O Interface	Serial Port	RS-232/422/485 Ports with Auto Flow Control x2	
	USB Interface	USB 3.0 x2 (Type A), USB 2.0 x1 (M12)   USB 3.0 x1 (Type A), USB 2.0 x2 (Type A x1, M12 x1)	
Software Support	Microsoft	Windows 7, Windows 7 Embedded	
	Linux	2.6.xx	
	API	Advantech SUSIAccess	
Power	Connector	M12 with 4 poles	
	Power Input Voltage	24Vdc, 48Vdc, 72Vdc, 110Vdc ( $\pm 40\%$ )(Optional)	24Vdc, 72Vdc, 110Vdc ( $\pm 40\%$ ) (Optional)
Environment	Operating Temperature	EN50155 T3: -25 ~ 70°C (85°C for 10 Minutes)	EN50155 TX: -40 ~ 70°C (85°C for 10 Minutes)
	Storage Temperature	-40 ~ 85°C	
	Vibration/ Shock	MIL-STD-810G, EN50155	
	Relative Humidity	95%@40°C (Non-Condensing)	
Physical Characteristics	Dimensions (W x H x D)	268 x 87.5 x 175 mm	
	Weight	4.25kg $\pm 0.5$ kg	4.5Kg
Certifications	Construction	Aluminum Housing	
	Railway Related	EN50155, EN50121, IEC61373	
	EMC/Safety	CE/FCC Class A, UL	

## Rugged Computing System



	<b>Model Name</b>	<b>IRS-3610</b>
Computing System	CPU	5th Generation Intel Core Processor (U-Series)
	Max Speed	1.8GHz
	System Chipset	5th Generation Intel Core Processor (U-Series) + Wildcat Point LP
	Memory	DDR3L 1333/1600MHz 2 x 204-pin SODIMM non-ECC only (up to 16GB)
Storage	Internal	1 x mSATA Socket Full
Graphics	Chipset	Intel HD Graphics 6000
	Graphic Engine	DirectX 11.1, OpenGL 4.2, OpenCL 1.3
	Dual Display	VGA + DVI (one DVI-I connector)
	DP	31 PIN connector
Ethernet	LAN1/ LAN2	Intel I210AT controller (M12 connector)
Expansion	GPS	50 channels, -160dBm Sensitivity, A-GPS and Galileo capable (Optional)
	Wi-Fi	802.11a/b/g/n (Optional)
	LTE	LTE/HSPA+ module with SIM holder (Optional)
	Audio	1 x HD Audio output w/Amplifier D-sub 15pin
I/O Interface	Serial Port	2 x COM RS-232/422/485 D-sub 9pin
	USB Interface	1 x USB2.0 on M12 connector 4pin, 2 x USB3.0 on Circular connector 12pin
	OS	Windows 7, Windows 7 Embedded, Windows 8.1, Windows Embedded 8.1
	API	Advantech SUSIAccess
Software Support	Intel iAMT	V8.0
	Power	M12 with 4 poles
Environment	Power Input Voltage	24V (14.4-33.6V power range)
	Operating Temperature	-25 ~ 70°C
	Storage Temperature	-40 ~ 85°C
	Vibration/ Shock	MIL-STD-810G
Physical Characteristics	Relative Humidity	93 %@40 °C relative humidity 1 cycle PC
	Dimensions (W x H x D)	270 x 78.3 x 247 mm
	Weight	4.1 kg
	Construction	Aluminum Housing
Certifications	Marine Related	IEC 60945
	Safety	FCC and CE
	EMC/ Safety	CE/FCC Class B, UL

## ARS Expansion Modules



<b>AIO-SSD110-00A1E</b>	<b>AIO-COM210-00A1E</b>	<b>AIO-CAN210-00A1E</b>
Single SSD Carrier with DIO	Dual COM Ports with Isolation	Dual CAN Ports with Isolation
Type: 2.5" SSD Input/ Output Channel: 5/1 Isolation: 3KV Digital	Communication: RS232/422/485 FIFO: 128bytes Isolation: 2KV Digital Flow control: RTX/CTS, Xon/Xoff	Interface: CAN 2.0 A/B Signals: CAN-H, CAN-L Isolation: 2KV Digital

# Hardware Acceleration & Graphic Technology

## Embedded Graphic Cards



Model Name	AMD Radeon E8860				AMD Radeon E6460	
	AEGX-A5T8-D0	AEGX-A5T8-H0	AEGX-A5T8-10	AEGX-A5T8-20	AEGX-A5T4-01	AEGX-A5T4-20
Form Factor	ATX(145 x111mm)				ATX/Low Profile(160x69mm)	
<b>Graphics Processing Unit</b>						
Graphics Clock	625 MHz				600 MHz	
GPU Interface	PCI Express 3.0 (X16)				PCI Express 2.1 (X16)	
UVD*	UVD3 for H.264, VC-1, MPEG-2, MPEG-4 part 2 decode				UVD3	
<b>Video Memory</b>						
Memory Clock	1125 MHz / 4.5 Gbps				800 MHz / 3.2 Gbps	
Config./ Type	128-bit wide, 2 GB, GDDR5				64-bit wide, 512 MB, GDDR5	
<b>Display Interfaces</b>						
Single / Dual-Link DVI	-				Dual-Link DVI-D x 1	-
DisplayPort 1.1a/2.0	Display Port x 4	-	Mini Display Port x 6	Mini Display Port x 4	-	Mini Display Port x 4
HDMI 1.4 / VGA	-	HDMI x 4	-	-	HDMI x 1/VGA x 1	-



Model Name	AMD Radeon E6760		AMD Radeon HD5450	AMD Radeon HD7750	Model Name	NVIDIA GeForce GT740	
	AEGX-A5T7-10	AEGX-A5T7-90	AEGX-A3T5-01	AEGX-A3T2-01		AEGX-N3A2-01	AEGX-N3A2-50
Form Factor	ATX (168 x 95 mm)	ATX (145 x110mm)	ATX/ Low Profile** (168 x 69 mm)	ATX/ Low Profile** (168 x 69 mm)	Form Factor	ATX/Low Profile** (144x68.9mm)	
<b>Graphics Processing Unit</b>							
Graphics Clock	600 MHz		650 MHz	800 MHz	Graphics Clock	933 MHz	
GPU Interface	PCI Express 2.1 (X16)		PCIe 2.1 (X16)	PCIe 2.1 (X16)	GPU Interface	PCIe 2.1 (X16)	
UVD*	UVD3 for H.264, VC-1, MPEG-2, MPEG-4 part 2 decode		UVD3	UVD3	CUDA Code	384	
<b>Video Memory</b>							
Memory Clock	800 MHz / 3.2 Gbps		500 MHz / 1 Gbps	1125 MHz / 4.5 Gbps	Memory Clock	1250 MHz / 1.8 Gbps	
Config./ Type	128-bit wide, 1 GB, GDDR5		64-bit wide, 1 GB, DDR3	128-bit wide, 1 GB, GDDR5	Config./ Type	128-bit wide, 1 GB, GDDR5	
<b>Display Interface</b>							
Single / Dual-Link DVI	-	Dual-Link DVI-I x 1, Single-Link DVI-D x 1	Dual-Link DVI-D x 1	Dual-Link DVI-D x 1	Single / Dual-Link DVI	Dual-Link DVI-D x 1	Dual-Link DVI-D x 1
DisplayPort 1.1a/2.0	Mini Display Port x 6	-	-	-	HDMI 1.4	HDMI x 1	Mini HDMI x 1
HDMI 1.4 / VGA	-	-	HDMI x 1/VGA x 1	HDMI x 1/VGA x 1	VGA	VGA x 1	-

\* UVD: Unified Video Decoder

\*\* Low profile model has no VGA port

## RISC Computer-on-Module



Model Name		AEGX-N5K1
Form Factor		RTX (NV)
Processor System	CPU	NVIDIA 4-Plus-1 Quad-Core ARM Cortex-A15 CPU - Tegra K1 processor
Memory		2GB 2x32 bit DDR3L 933Mhz on board
Memory	Technology	eMMC, USB (Recovery Mode)
Graphics		1.4b 3840x2160@30Hz
Graphics	HDMI	LVDS(24bpp) 3200x2000@60Hz
Graphics		LVDS(24bpp) 3200x2000@60Hz
Graphics	LVDS	RTL8111G
Ethernet	Chipset	PCI Express 10/100/1000
Ethernet	Speed	MII CSI 2.0 (2x4 lane + 1x1 lane @1.5Gbps)
Imaging		16GB eMMC controllers on board (supporting SD Host 4.0)
Storage Interface		HSIC, HS-UART, PCM support, SPI (master), USB, SDIO
Baseband Interface		
Security		Secure memory with video protection region/ Hardware cryptographic acceleration for RSA, AES, CMAC, SHA-1 and SHA-256/ TrustZone technology support for DRAM and peripherals
Power	Power Supply Voltage	DC 12V
Power	Power Consumption	7W
Environment	Operating Temperature	-5 °C - 85°C
Physical Characteristics	Dimension	68mm x 68mm
Operating System		Linux Ubuntu 14.04

## CUDA Box PC



Model Name		CBS-IM77		
Graphic Card Model		AEGX-NOD3-40	AEGX-A5T8-40	AEGX-A5T7-40
Processor System		2nd & 3rd Gen Intel Core i7/ i5/ i3/ Pentium/ Celeron (up to 35W)		
Processor System		Intel QM77		
Memory		2 x DDR3 1333/1600 MHz SDRAM SO-DIMM (up to 16GB)		
Memory		M x M 3.0 TDP <55W		
Display		NVIDIA GeForce GT740	AMD Radeon E8860	AMD Radeon E6760
Display		2GB GDDR5	2GB GDDR5	1G PCI-E
Display		4 x HDMI	4/6 x HDMI	4/6 x HDMI
Storage		2 x SATA III (without RAID), 2 x SATA II		
Ethernet		Intel 82579LM GbE (with iAMT)		
Ethernet		Intel 82583V GbE		
Audio		Realtek ALC892		
I/O Interface		1 x Mini PCI-E socket, 1 x MXM slot (3.0)		
I/O Interface		1 x PS/2, 1 x LPT, 1 x RS32, 1 x LVDS, 1 x VGA, 2 x USB2.0 (2 x 5 pins), 1 x DIO (2 x 6 pins)		
I/O Interface		1 x Power Button, 1 x Indicate LED for Power, 2 x USB 2.0		
I/O Interface		4/6 x HDMI, 2 x RJ45, 4 x USB3.0, 1 x 5.1 channel Audio Jack, 4 x USB 2.0, 1 x DC Jack		
Power Requirement		DC 24V, 180W		
Watchdog Timer		Interrupt, system reset. Programmable by SUSIAccess		
Physical Characteristics		Mounting		
Physical Characteristics		Easy Mounting Kits for LCD or Plasma		
Physical Characteristics		Dimensions (W x D x H)		
Physical Characteristics		300 x 236.2 x 44.5 mm		
Physical Characteristics		Weight		
Physical Characteristics		2.6 kg		
Environment		Operating Temperature		
Environment		0°C - 60°C		
Environment		Relative Humidity		
Environment		95% @ 40°C		
Environment		Vibration Resistance		
Environment		0.2Grms, IEC 6008-2-64, Random 5 ~ 500Hz, 1Hr/axis		
Operating System		Microsoft Windows8, Windows 7.		
Certifications		CE/ FCC Class A, CCC		
Certifications		CCC, BSMI		

# About Industrial Automation

## Enabling Industry 4.0 & IoT with Intelligent Automation



The future of Industry 4.0 and the Internet of Things (IoT) relies on powerful IT systems that can process and store the information in a fast and efficient manner from anywhere. Combining fast network connectivity, intelligent automation platforms and gateways, rugged automation controllers, and IoT devices and sensors, with our WebAccess IoT software framework, Advantech provides the ability for all kinds of devices to connect to the cloud to provide a range of services. Advantech is a pioneer in intelligent industrial automation and is committed to investing in R&D in new automation technologies, collaborating in vertical market solutions with partners, and connecting industrial Eco-partnerships through our WebAccess+ alliance program.

## Advantech, a Pioneer of Intelligent Automation Technology

With the goal of integrating every layer of automation architecture, the Industrial Automation Group strengthens its products and solutions capabilities to provide not only a series of industrial automation products, such as IoT software framework - WebAccess software, industrial communication, IoT gateways, PC-based control platform, energy control platform, IoT Ethernet remote I/O, etc., but also solution ready packages, such as machine status monitoring, trend analysis and production information. As well as addressing the needs of different vertical markets, Advantech leverages its WebAccess + IoT solution alliance partner program. WebAccess is an integrated IoT Software Suite & Solution Platform and is the core software component of Advantech's IoT solutions.

With more than 30 years' experience in providing a full range of products to different vertical markets, the Industrial Automation Group is a leading global Automation Product and Services provider.

## Enabling Industry 4.0 & IoT with Intelligent Automation



Robotics

Machinery

Automotive

Oil &amp; Gas

Energy

Agriculture



### Solution Ready Package



### Intelligent Automation Platform & Gateway



HMIs

IoT Gateway

Embedded Computing

DIN-rail IPC

Power &amp; Energy Gateway



MA &amp; Robot Controller



Machine Vision



Motion Control &amp; I/O



PC-based Controller



IoT Wireless I/O



Remote I/O

RTU

# Integrated Automation and Cloud Innovation for Industry 4.0

Industry 4.0 is becoming a buzzword in smart factories. For Advantech's Industrial Automation group, 2015 is the year of Industry 4.0. To understand Advantech's industry 4.0 solution, we've developed a three-layer architecture—intelligent machines and robots; connected iFactory solutions; and enabling the IIoT—as part of our Industry 4.0 blueprint. With these layers and the integration of information, quick response and flexible manufacturing, the overall effectiveness and efficiency of machine automation will be greatly improved.

As an equipment provider, Advantech's WebAccess+ software platform supports system integrator partners in integrating the various applications and hardware they develop. The platform combines smart HMI/SCADA software, remote device management software and intelligent video software. It also connects with industrial cloud platforms, and analyzes and manages large amounts of data, video and voice data, providing critical information anytime for management by industrial customers, effectively realizing the vision of Industry 4.0.

For intelligent machines and robotics, we offer a range of products and technologies including: motion control, machine vision, automation computing and integrated machine tools and robot controllers. With these advanced technologies, traditional industrial automation machines will become more intelligent and able to communicate, transforming the machines into cyber-physical systems that can become even more efficient.

In an Industry 4.0 environment, all machines and equipment are networked and contain a plethora of sensors to continuously provide status details and production information to the process control system so it can perform immediate analysis and quickly take any necessary actions. By analyzing the machines used by each operator, sensors can be developed that will adjust the settings of the machine based on who's operating it. Furthermore, this information can then be integrated into manufacturing execution systems (MES) and enterprise resource planning (ERP) systems. To reach these goals, Advantech provides solutions to enable network-connected iFactories. Our WebAccess+ Integrated IoT Software Suite and Solution Platform can connect machines, robots and equipment to the factory network and integrate them with systems such as MES and ERP systems.

Another of our efforts is to enable innovative services based on big data analysis. By continuously producing status reports of plant equipment and production information, big data analysis allows system engineers to plan for future maintenance and make changes to configurations at the most appropriate time, thereby reducing the amount of downtime. The endless stream of information is an excellent method of developing new applications and creative services and can be used to increase production and reduce overheads. Industry 4.0, IIoT, cloud services and Advantech's solutions for system integrators will help lead factories into the future.

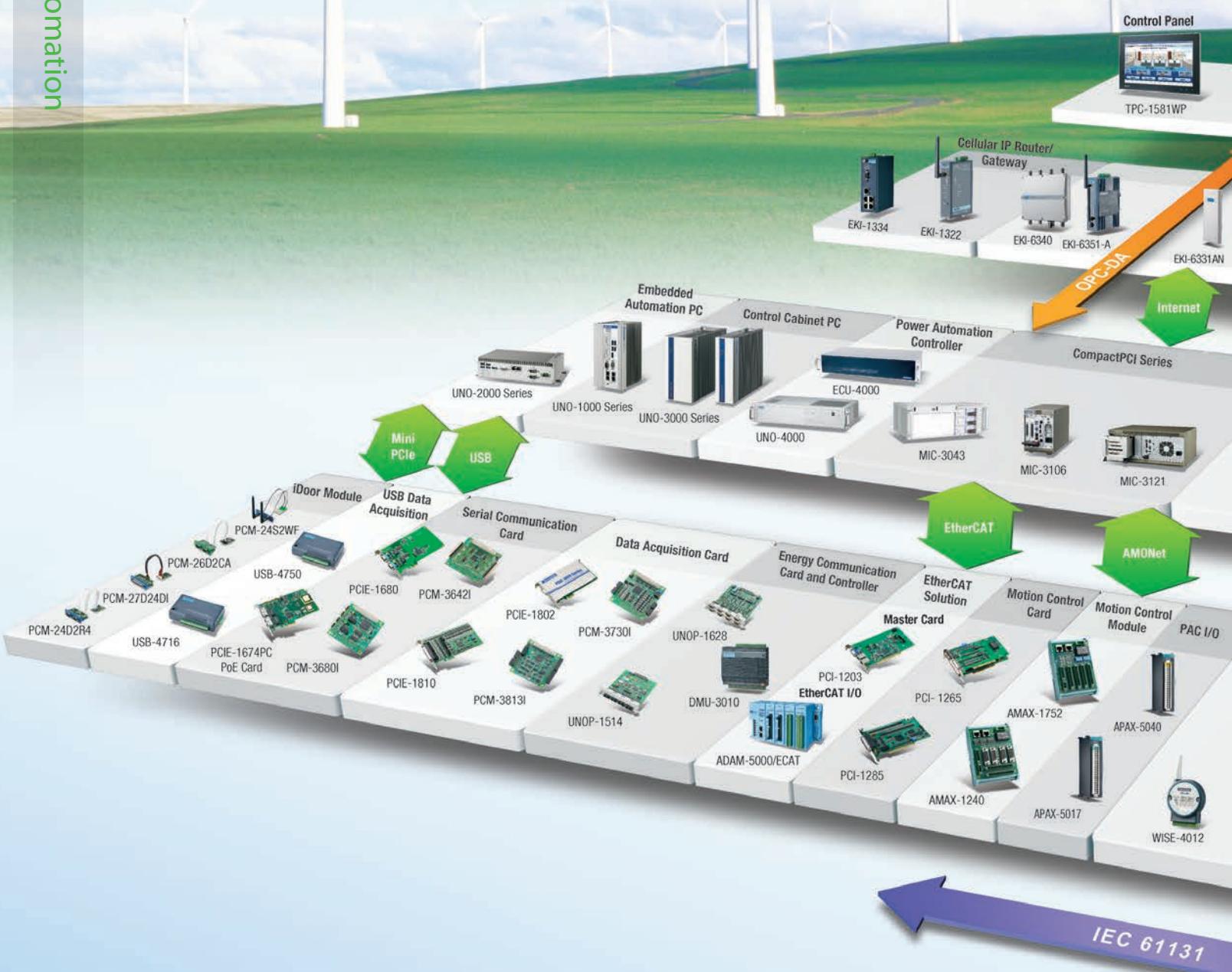
## Enabling Industry 4.0 with Integrated Automation & Cloud Innovations

## Industry 4.0

WebAccess-Enabled iFactory 4.0

<b>WebAccess Enabled iFactory 4.0</b>		<b>Semiconductor</b>  <a href="#">Predictive Maintenance</a>	<b>Food &amp; Beverage</b>  <a href="#">Product Serialization</a>	<b>Automotive</b>  <a href="#">Enterprise Resources Planning (ERP)</a>	<b>Metal Processing</b>  <a href="#">Manufacturing Execution System (MES)</a>	<b>Electronics</b>  <a href="#">Mass Customization</a>				
<b>Connected iFactory Solutions</b>		<a href="#">WebAccess+IMM</a> <a href="#">WebAccess+IVS</a> <a href="#">WebAccess/SCADA</a> <a href="#">WebAccess/NMS</a>	<a href="#">Production Performance Analysis</a> 	<a href="#">Machine Status</a> 	<a href="#">Process Optimization</a> 	<a href="#">Scheduling Management</a> 	<a href="#">Production Information</a> 	<a href="#">Status Assessment</a> 	<a href="#">Trend Analysis</a> 	<a href="#">Abnormality Diagnosis</a> 
<b>Intelligent Machinery &amp; Robotics</b>		<b>Platform</b> 	<b>Motion Control</b> 	<b>Controller</b> 	<b>Machine Vision</b> 	<b>Sensor Measurement</b> 				

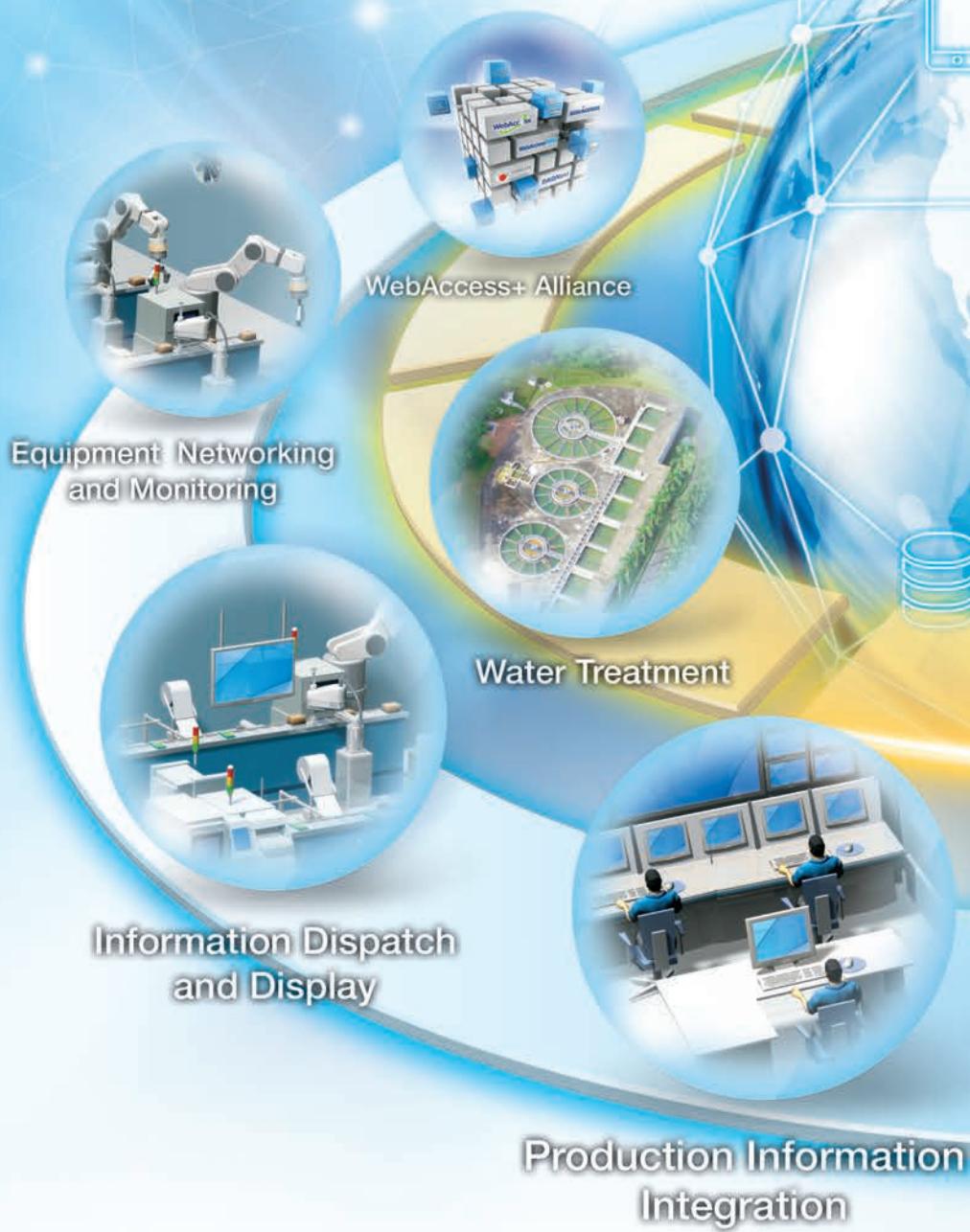
# Intelligent Automation, Seamless Integration





# Enabling an Intelligent Planet

Advancements in technology have paved the way for modern civilization; allowing us to interconnect human lives in a way never before thought possible. Advantech, a global industrial computing and automation manufacturer, continues to explore what technology can bring into our lives. With over three decades of proven experience, we combine information, automation and communication technology with efficiency, energy conservation, minimized risk, cost-effectiveness, and environmental protection to create solutions to enable an intelligent planet.



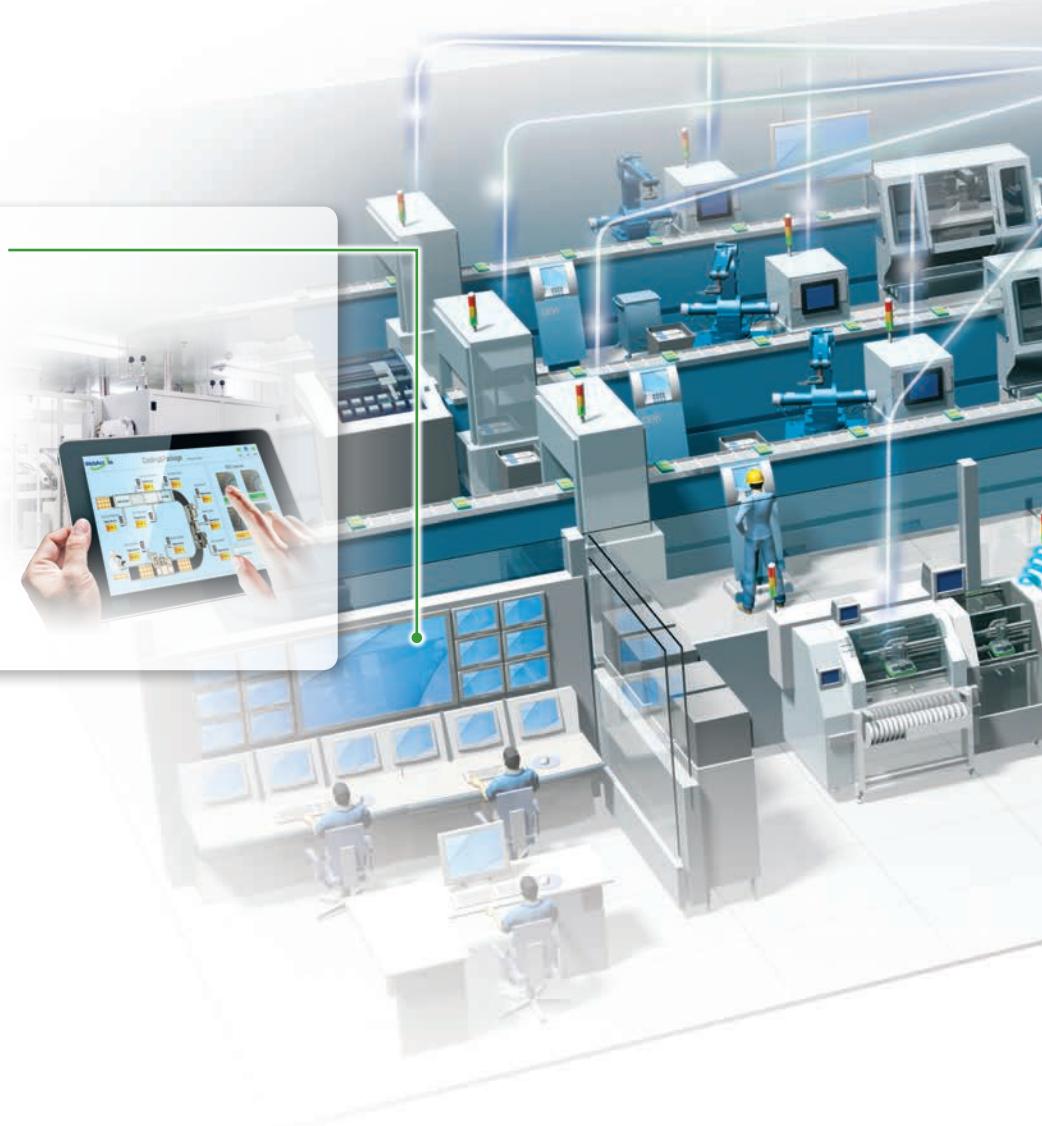


Industry 4.0

# Smart Manufacturing

The Internet of Things (IoT), which gives users the ability to control their devices from wherever they are, is moving into industrial automation. Industry 4.0 takes advantage of the IoT to become Industrial IoT (IIoT) and now gives industrial automation environments the same abilities. However, Industry 4.0 encompasses more than just IIoT and includes four core technologies: digital design & production technique; cyber-physical systems; intelligent facilities & products and unified standard communication protocols. Through these key elements, we can realize on-demand production, mixed model manufacturing and advanced applications like: machine predictive maintenance. Terabytes of data are generated in Industry 4.0 and form the basis of big data which is processed by an MES or ERP system to become valuable production information.

**Flexible Production**



## Production Information Integration

Cyber-physical systems are formed through linking the production information of isolated production stations to enable all the stations to instantly respond to changes in production variables, significantly shortening the development of the optimal production yield and building a complete production record. Using this technology, the production process can simultaneously adapt the product design and form a dynamic manufacturing execution environment.

## Product Solutions

### Production Information Integration

### Instant Information

#### Software



**Advantech WebAccess**  
Web-based HMI/  
SCADA Software

#### HMI



**TPC-1782H**  
Touch Panel Computer  
with iDoor technology

#### Communication



**EKI-9300 series**  
Full Gigabit Managed  
DIN Rail Ethernet  
Switch

#### Controller



**UNO-2483G**  
Embedded Automation  
Computer with  
iDoor Technology

#### Remote I/O



**WISE-4000 series**  
IoT Wireless I/O  
Modules



**ADAM-6200 series**  
Daisy-chain Ethernet  
I/O Modules

#### Software



**WebAccess/NMS**  
Network Management  
Software

**Mass Customization**

**On-demand Production**

**Instant Production Information Dispatch and Display**

Intelligent factories mean optimizing factory information distribution with the visualization of information, and connecting it with the shop floor and MES management system. Users from field operators to plant managers and management executives can utilize these productivity indicators and trends to organize a more accurate real-time decision making and business strategies.

**Equipment Networking and Monitoring**

Through advanced test and measurement technology and highly integrated network functionality, machines collect data during production before turning it into valuable information. Network functionality also realizes M2M communication to upgrade the flexibility and efficiency of any production line. With comprehensive DAQ product functions and a mature networking structure, Advantech has its first foray into the era of Industry 4.0.

Dispatch & Display ➔

Equipment Networking and Monitoring ➔

#### Display



**FPM-6211W**  
21.5" Full HD  
Semi-industrial  
Monitor

#### Computer



**UNO-3483G**  
Control Cabinet PC with  
flexible expansion

#### HMI



**TPC-1551T**  
Thin Client Panel  
Computer with  
iDoor technology

#### Communication



**EKI-5000 series**  
Gigabit/Fast Ethernet  
ProView Switch

#### Controller



**MIC-3100 series**  
4U Highly Robust  
Industrial PC

#### I/O



**PCIE-1802**  
24 bit Ultra-high  
Resolution  
Instrument Cards

**PCIE-1816**  
High Performance  
PCIE Multifunction  
Cards



# Power and Energy

## Building Reliable Power Automation Solutions with Trusted System Components

Power supply and demand is becoming more and more critical. Substation automation, T&D grid automation, renewable energy, power generation & transmissions, energy management systems and maintenance-free power backup systems with IEC 61850-3 compliance are the big trends in today's applications. Power Automation improves energy efficiency and intelligence while also implementing important environment protection and green powered features. Advantech is proud to develop reliable HMIs, Embedded Automation Computers, Industrial Managed Switches and DIN-rail PCs to serve this market.



## Product Solutions

HMI	Controllers	Communication	I/O
<p><b>FPM-7151T</b> 15.6" Industrial Monitor with Projected Capacitive Touchscreen</p>	<p><b>APAX-5522PE</b> IEC 61850-3 Compliant PAC with Marvel XScale® CPU</p>	<p><b>ECU-1871</b> Intel® Atom™ D510 Modular Power &amp; Energy Controller</p>	<p><b>ECU-4784</b> Intel® Haswell Core i7 Power &amp; Energy Automation Computer</p>

# Oil and Gas

## Building Digital Oilfields via the IoT

Take advantage of science and technology innovation to promote industrialization and informatization integration in the oil and gas industry. Currently in the intense competition of the international and domestic energy markets, methods of improving the management level and improving the production and economic efficiency to decrease costs is essential. To achieve this, improving the application level will strengthen management information and aid further integration.

**Oil Well Monitoring**

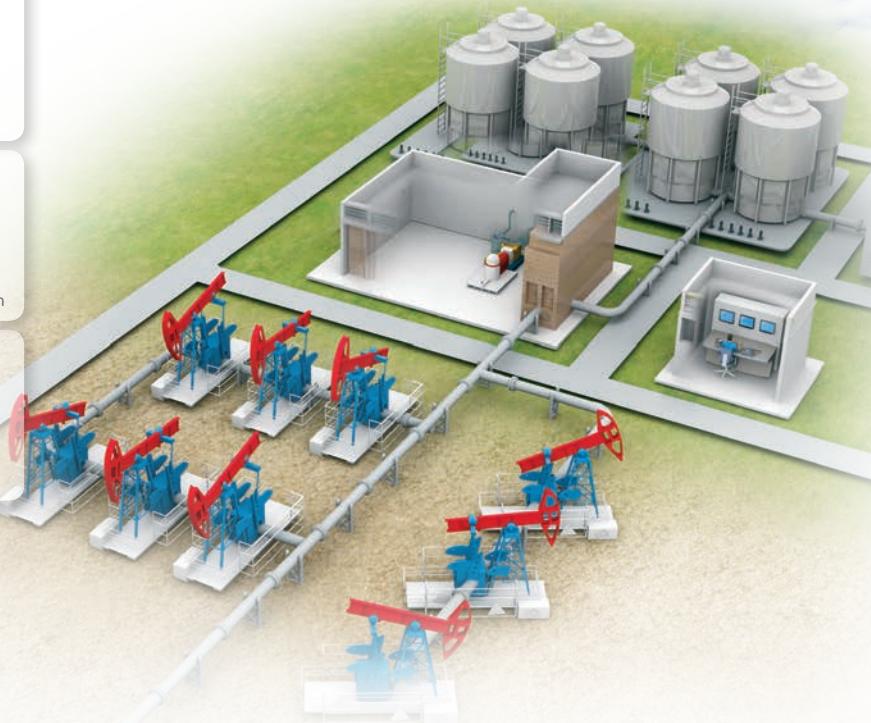
- Intelligent RTU
- Web-based HMI/SCADA software
- Industrial automation computer
- LED backlit LCD display screen

**Pipeline Monitoring**

- Intelligent pipeline RTU
- Powerful KW softlogic software
- Remote I/O monitoring
- GPRS telecommunication
- Excellent pipeline leakage detection

**Storage Tank Monitoring**

- IEC 61850 certified power automation control platform
- EN50155 certified industrial switch
- Web-based HMI/SCADA software



## Product Solutions

### Software



**Advantech WebAccess**  
Web-based HMI/  
SCADA Software

### Communication



**EKI-1331**  
RS-232/485 to  
HSPA+ IP Gateway



**EKI-5000**  
Gigabyte/Fast  
Ethernet ProView  
Switch

### Controller



**APAX-5620**  
PAC with Marvel  
XScale® CPU  
and CAN

### Computer Platform



**TPC-1551T**  
15" XGA Thin Client  
Multi-Touch Panel  
Computer

### RTU



**ADAM-3600**  
8AI/8DI/4DO/  
4-Slot Expansion  
Wireless Intelligent  
RTU

### I/O



**ADAM-  
4000/6000**  
Remote I/O  
Modules

# Water Treatment

## Water Conservation and Water Treatment Solutions

Equipment that integrates the monitoring and control, data analysis, real-time video, mass data records, data base exchange mechanism and cloud technology based system, allows water conservation experts to easily construct various modes of control and management analysis.

From the water source, to sewage treatment, reclaimed water and drinking water, Advantech provides system devices, intelligent terminals, redundancy controllers, various communication devices and cloud monitoring software, and adopts an open framework to maximize the benefits and efficiency of water resource monitoring and management experts.

### Pump Station Management

- Intelligent RTU controllers
- Flow/Pressure PID control
- Fiber optic switches
- Professional WebAccess HMI/SCADA software

### Water Treatment Plant System

- User friendly touch panel computers
- IP-based video surveillance
- Redundant network architecture

### Sewage Treatment

- Redundant automation controller architecture
- Redundant network architecture
- Professional WebAccess HMI/SCADA software

### Pipeline Monitoring

- Intelligent pipeline RTU
- Remote I/O monitoring
- GPRS telecommunication
- Excellent pipeline leak detection

## Product Solutions

### Software



**Advantech WebAccess**  
Web-based HMI/SCADA Software

### HMI



**FPM-3151G**  
15" XGA Industrial Monitor

### Controllers



**APAX-5620**  
PAC with Marvel XScale® CPU and CAN

### Intelligent RTU



**ADAM-3600**  
8AI/8DI/4DO/4-Slot Expansion Wireless Intelligent RTU

### Communication



**EKI-7659C**  
8+2G Combo Port Gigabit Managed Redundant Industrial Ethernet Switch

### I/O



**APAX-5017**  
12-ch Analog Input Module

# Intelligent Agriculture

## Providing Reliable Control and Remote Monitoring Solutions

As an enabler of IoT, Advantech aims to provide our customer a complete yet reliable system to enable our customers' business step into the next success. With cloud management and the connected system, computerized plants and managerial information can be fulfilled. The versatile product offerings can satisfy the need of the fields from fertilization and irrigation, plant tissue culture labs, plant factories, green houses and safe transportation process monitoring and control. With Advantech's control and monitoring systems, including compact embedded PC, trusted communication modules, remote data acquisition modules and web-based HMI/SCADA software – WebAccess; farm owners can get real-time information as quality data and thus takes less time to determine the next action.

### Plant Cultivated Clod Process Control

- Reliable precision control systems
- Computerized management system
- Web-based HMI/SCADA software easily integrated into ERP systems

### Plant Factory Environment Control & Monitoring

- Distributed control system for LED lighting, temperature, humidity, PH value and nutrient control
- Web-based tracking & management systems

### Intelligent Greenhouse Facility Control & Monitoring

- Scalable distributed control system for chiller, boiler, clean room, sterilization, hygrometer, fertilization, irrigation, water pump and shade net control

### Remote Management with Web-enabled SCADA Software

- Goods ID tracking recording & management system
- Powerful Remote Diagnose Maintenance Functionality

## Product Solutions

Software	HMI	Communications	Controllers and I/O	I/O
<b>Advantech WebAccess</b> Web-based HMI/SCADA Software	<b>TPC-1581WP</b> 15.6" Multi-Touch Panel Computer	<b>EKI-5728I</b> 8-port Gigabit Ethernet ProView Switch	<b>ADAM-5560KW/ ADAM-5017P</b> 7-slot DIN-Rail IPC/ 8-ch Analog Input Module	<b>WISE-4000</b> IoT Wireless I/O Modules
			<b>APAX-5620KW/ APAX-5046</b> DIN-Rail IPC/ 24-ch Digital Output Module	<b>ADAM-4000/ ADAM-6000</b> Remote I/O Modules

# Realizing IoT Business Success with WebAccess+ Alliance

Advantech's WebAccess+ IoT Solution Alliance is a market-oriented cooperation model using WebAccess, the IoT Software framework as its core – to link solutions, partners' strengths and strategic co-marketing to get into focused vertical markets, such as Intelligent factory, water, oil & gas, renewable energy, intelligent agriculture and intelligent buildings. It aims to offer complete IoT solutions for a wide array of markets and applications, also achieving win-win partnerships in the blooming IoT industries.



## WebAccess+ Training & Certificate

Advantech provides a full range of WebAccess training courses and professional certificates to help partners to build up WebAccess software technology capability. Also, Advantech sets up regional WebAccess Solution Center (WSC) to assist local partners to increase partners' technical capabilities.



## Marketing Collaboration

Advantech WebAccess+ partners can get full co-marketing supports such as co-exhibition, co-conference, seminar, roadshows, WebAccess+ website, video and co-marketing campaigns to increase company branding and awareness.



# Advantech WebAccess

## The IoT Software Framework



### Features

- Remote engineering and support with WebAccess Cloud Architecture
- Business Intelligence Dashboard - cross-browser, cross-platform WebAccess HMI based on HTML5
- Open Interfaces - Web Services, Widget Interfaces and WebAccess APIs
- Excel Report integration for report format customization
- Distributed SCADA architecture with central database server and Multi-layer inter-operable SCADA nodes
- Supports ample drivers, including Advantech I/O, controllers and major PLCs
- Open data connectivity by providing industrial protocol and ODBC integration

### Introduction

Advantech WebAccess is a 100% web browser-based software package for human-machine interfaces (HMI) and supervisory control and data acquisition (SCADA). With more and more investment and development on integrating IoT applications and cloud architecture, it has become not only a HMI/SCADA software but also an IoT software framework in the IoT era. Advantech WebAccess supports powerful remote monitoring and control functions through standard web browsers, so that users can easily monitor and control automation equipment with full featured SCADA functions by their Client or Thin Client device.

Starting from Version 8, Advantech WebAccess provides a HTML5 based Dashboard as the next generation WebAccess HMI. It helps system integrators to create their own dashboard and view their dashboard remotely via any device. Advantech WebAccess also provides open interfaces for system integrators to develop their IoT applications and widgets which can meet the needs of various applications.

### Software Specifications

#### Advantech WebAccess Professional

• I/O Tag Number	75/150/300/600/1500/5000/20K/64K
• Internal Tag Number	75/150/300/600/1500/5000/20K/64K
• Web Client	1024
• Alarm Logs	5000
• Action Logs	5000

#### Graphics

• Number of Graphic Pages	Unlimited (limited by H/D size)
• Variables per Graphic Pages	4000
• Tag Source	Global
• Multitouch Gestures	Yes

#### Dashboard

• Cross Browser and Platform	Yes
• Number of Built-in Widgets	37
• Open Widget Interface	Yes

#### Group Trend Log

• Number of Data Logging	Number of I/O tags license x 2
• Alarm Groups per SCADA	9999

#### Receipt

• Recipes per Project	Unlimited (limited by H/D size)
• Unit per Recipe	999
• Item per Unit	999

#### Scheduler

• Holiday Configuration Group	9999
• Time Zone Group	9999
• Device Loop Group	9999
• Equipment Group	9999
• Scheduler Reservation Group	9999

#### Web-enabled Integration

• Video	Yes
• Google Maps and GPS Location Tracking	Yes

#### Open Connectivity

• Modbus Server	Yes
• BACnet Server	Yes
• ODBC and SQL Query	Yes
• OPC DA/UA Server	Yes
• DDE Server	Yes

#### Others

• Centralized logs on project	Yes, node via ODBC
• SCADA Redundancy	Yes
• Script language	TclScript / VBScript / Jscript
• Data Transfer	Yes
• Report / Excel Report	Yes
• Device Redundancy	Yes
• Supports IPv6	Yes
• WebAccess Express	Yes

# Compact PCI Systems

## 3U CompactPCI Supports 2/7 Peripheral Slot



### Features

- High performance or low power consumption CPU selectable
- Lockable power on/off switch prevents inadvertent access
- 40dB Ultra low system noise for working environments
- Easy-accessible cooling fan and air filter for system maintenance
- Robust design, Anti-Vibration up to 2G with SSD

## Introduction

Engineers have been trying to apply high-performance, low-cost PC technologies to critical applications such as telecommunications and industrial automation for quite some time. Unfortunately, the characteristics of desktop PC technologies do not readily lend themselves to critical applications where high serviceability, vibration & shock resistance, and good ventilation are required. CompactPCI may be the answer.

### What is CompactPCI ?

CompactPCI is a small, rugged, high-performance industrial computer architecture based on the standard PCI bus specification. It was developed by the PCI Industrial Computers Manufacturers Group (PICMG) in late 1994, and is ideal for embedded applications.

Three important technologies form the core of CompactPCI: PCI local bus, Eurocard mechanics, and airtight pin-and-socket connectors.

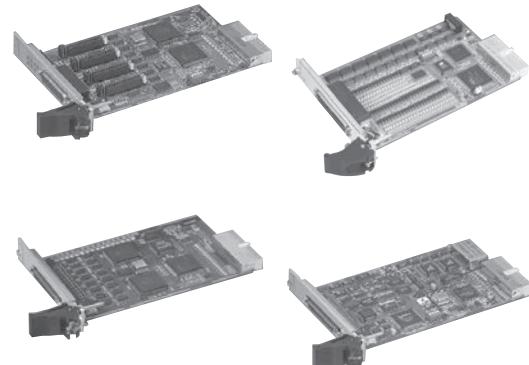
### PCI Local Bus

PCI stands for Peripheral Component Interconnect. It was published by Intel® in 1992, and soon became popular in commercial PC designs. It is a high-performance, processor-independent data bus, and most importantly, it is very inexpensive. The PCI local bus specification defines two data widths: 32-bit and 64-bit operating at a speed up to 66 MHz. This provides theoretical throughput up to 264 MB/s at 32-bit or 528 MB/s at 64-bit. Most computer systems and operating systems support the PCI bus. For example, Pentium, Alpha, PowerPC, Windows, Unix, and MacOS. Because PCI components are manufactured in large quantities, they are inexpensive and readily available. With these advantages, the PCI bus is very suitable for high speed computing and high speed data communication applications.

### Eurocard Mechanics

Eurocard is an industrial-grade packaging standard popularized by VMEbus. CompactPCI allows the use of 3U and 6U Eurocards. The dimensions of a 3U CompactPCI board are 160 mm deep x 100 mm high, while the dimensions of a 6U CompactPCI board are 160 mm deep x 233.35 mm high. The front panels of CompactPCI boards are IEEE 1101.1 and IEEE 1101.10 compliant, CompactPCI also supports rear panel I/O, which is compliant with IEEE 1101.11.

Rear panel I/O is popular for telecommunication equipment because of its easy-to-maintain characteristics. If all the wiring is done on rear transition boards (passive boards), the front CompactPCI boards (active boards), which may require maintenance, are "clean" without any connected wiring. The front CompactPCI boards can then simply be replaced without the need for rewiring.



• CompactPCI® cards

# Motion Control

## Centralized Motion Control

**NEW**    **NEW**    **NEW**



Category	Motion Control							Encoder	
Bus	PCI							ISA	PCI
Model	PCI-1220U	PCI-1240U	PCI-1243U	PCI-1245L	PCI-1245E PCI-1285E	PCI-1245 PCI-1265 PCI-1285	PCL-839+	PCI-1784U	PCL-833
Axis	Number of Axis	2	4	4	4	4/8	4/6/8	3	-
	Linear Interpolation	✓	✓	-	✓	✓	✓	-	-
	2-axis Circle Interpolation	✓	✓	-	-	-/✓	✓	-	-
	Encoder Channels	2	4	-	4	4/8	4/6/8	-	4
	Limit Switch Input Channels	4	8	8	8	8/16	8/12/16	6	-
	Home Input Channels	2	4	4	4	4/8	4/6/8	3	-
	Emergency Stop Input Channels	1	1	1	1	1	1	-	-
	Slow Down Limit Switches	4	8	-	8	8/16	8/12/16	6	-
	General Purpose DI Channels	6	12	8	16	16/32	16/32/32	16	4
	Servo On Output Channels	2	4	-	4	4/8	4/6/8	-	-
	General Purpose DO Channels	8	16	8	16	16/32	16/32/32	16	4
	Analog Input Channels	-	-	-	-	-	2 (PCI-1265 only)	-	-
	BoardID Switch	✓	✓	✓	✓	✓	✓	-	✓
	Position Compare Event	✓	✓	-	-	-	✓	-	-
	Position Latch	-	-	-	-	-	✓	-	-
Dimensions (mm)		175 x 100	175 x 100	175 x 100	175 x 100	175 x 100	175 x 100	185 x 100	185 x 100
Connector		50-pin SCSI	100-pin SCSI	DB62	100-pin/ 200-pin SCSI	100-pin SCSI 2x100-pin SCSI	100-pin SCSI 2x100-pin SCSI	1 x DB37 2 x 20-pin	DB37
Wiring Boards		ADAM-3952 ADAM-3955 ADAM-3956	ADAM-3952 ADAM-3955 ADAM-3956	ADAM-3962	ADAM-3952 ADAM-3955 ADAM-3956	ADAM-3952 ADAM-3955 ADAM-3956	ADAM-3937 ADAM-3920	ADAM-3937	ADAM-3925

## CompactPCI Machine Automation Solution



Model Name		MIC-3106 MA ARP Solution
Chassis	Power Type	ATX
	Input Voltage	100 ~ 240 VAC
	Wattage	180W
Hardware	CPU	Intel Atom D525, 1.8GHz / Intel 3rd Gen. Core i3-3217UE, 1.6GHz
	Memory	2GB / 4GB On board
	Storage	1 x CompactFlash Type II / 1 x CFast 1 x 2.5" SATA HDD
	Graphic	1 x DB15 port
Communication	Ethernet	2 x 10/100/1000 Mbps, RJ45 connector
	USB	3 x Type A / 2 x USB 3.0 Type A
	Serial	2 x RS-232, DB9 connector
Physical	Dimensions (W x H x D mm)	134 x 177 x 238
	Weight (kg)	7 Kg

# Motion Control

## Distributed Motion Control AMONet Motion Master Cards



Model	PCI-1202U	PCM-3202P
Bus	PCI	PC/104+
Advanced Functions	General Purpose DI Channels	8
	General Purpose DO Channels	4
	Remote Motion	✓
	Remote I/O	✓
Dimensions (L x H)	175 x 100 mm	96 x 90 mm
Connectors	2 x RJ45	4 x 10-pin box header
Digital I/O Slave Modules	AMAX-1752, AMAX-1754, AMAX-1756, AMAX-2752SY, AMAX-2754SY, AMAX-2756SY	
Motion Slave Modules	AMAX-1220, AMAX-1240, AMAX-2241/PMA, AMAX-2242/J2S, AMAX-2243/YS2	

## AMONet Motion Slave Modules



Model	AMAX-1220	AMAX-1240	AMAX-2241/PMA
Number of Axis	2	4	4
Linear Interpolation	✓	✓	✓
2-axis Circle Interpolation	✓	✓	✓
Encoder Channels	2	4	4
Limit Switch Input Channels	4	8	8
Home Input Channels	2	4	4
Emergency Stop Input Channels	1	1	1
Slow Down Limit Switches	4	8	8
Servo On Output Channels	2	4	4
BoardID Switch	✓	✓	✓
Position Compare Event	-	✓	✓
Position Latch	-	✓	✓
Simultaneously Start/Stop among Modules	✓	✓	-
Power Consumption	2 W @ 24 V typical		5 W @ 24 V typical
Dimensions (L x W x H)	141 x 108 x 60 mm		125 x 47.6 x 151 mm

## Isolated Digital I/O Slave Modules



Model	AMAX-1752	AMAX-1754	AMAX-1756	AMAX-2752SY	AMAX-2754SY	AMAX-2756SY
Isolated Digital Input Channels	32	-	16	32	-	16
Isolated Digital Output Channels	-	32	16	-	32	16
Typical Power Consumption	600 mW		1.2 W			
Maximum Power Consumption	2 W		5 W			
Dimensions (L x W x H)	141 x 95 x 60 mm		125 x 47.6 x 151 mm			

## EtherCAT I/O Module

### Analog Input/Output Modules



Module	ADAM-E5017	ADAM-E5017UH	ADAM-E5024H	ADAM-E5051S	ADAM-E5053S
Analog Input	Resolution	16 bit	12 bit	-	-
	Input Channel	8	8	-	-
	Sampling Rate	10 (total*)	200K**	-	-
	Voltage Input	±150 mV, ±500 mV ±1 V, ±5 V, ±10 V	±10 V, 0 ~ 10 V	-	-
	Current Input	±20 mA	0 ~ 20 mA, 4 ~ 20 mA	-	-
	Direct Sensor Input	-	-	-	-
Analog Output	Output Channels	-	-	4	-
	Resolution	-	-	12 bit	-
	Voltage Output	-	-	0 ~ 10 V	-
	Current Output	-	-	0 ~ 20 mA 4 ~ 20 mA	-
Digital Input and Digital Output	Digital Input Channels	-	-	-	16 (ADAM-5051) 16w/LED (5051D/5051S)
	Digital Output Channels	-	-	-	32
Isolation	3,000 V <sub>dc</sub>	3,000 V <sub>dc</sub>	3,000 V <sub>dc</sub>	2,500 V <sub>dc</sub> (5051S)	2,500 V <sub>dc</sub>

\*Sampling rate value depends on used channel number.

Example: Using 5 channels on ADAM-E5017, sampling rate for each used channel will be 10/5 = 2 samples/second.

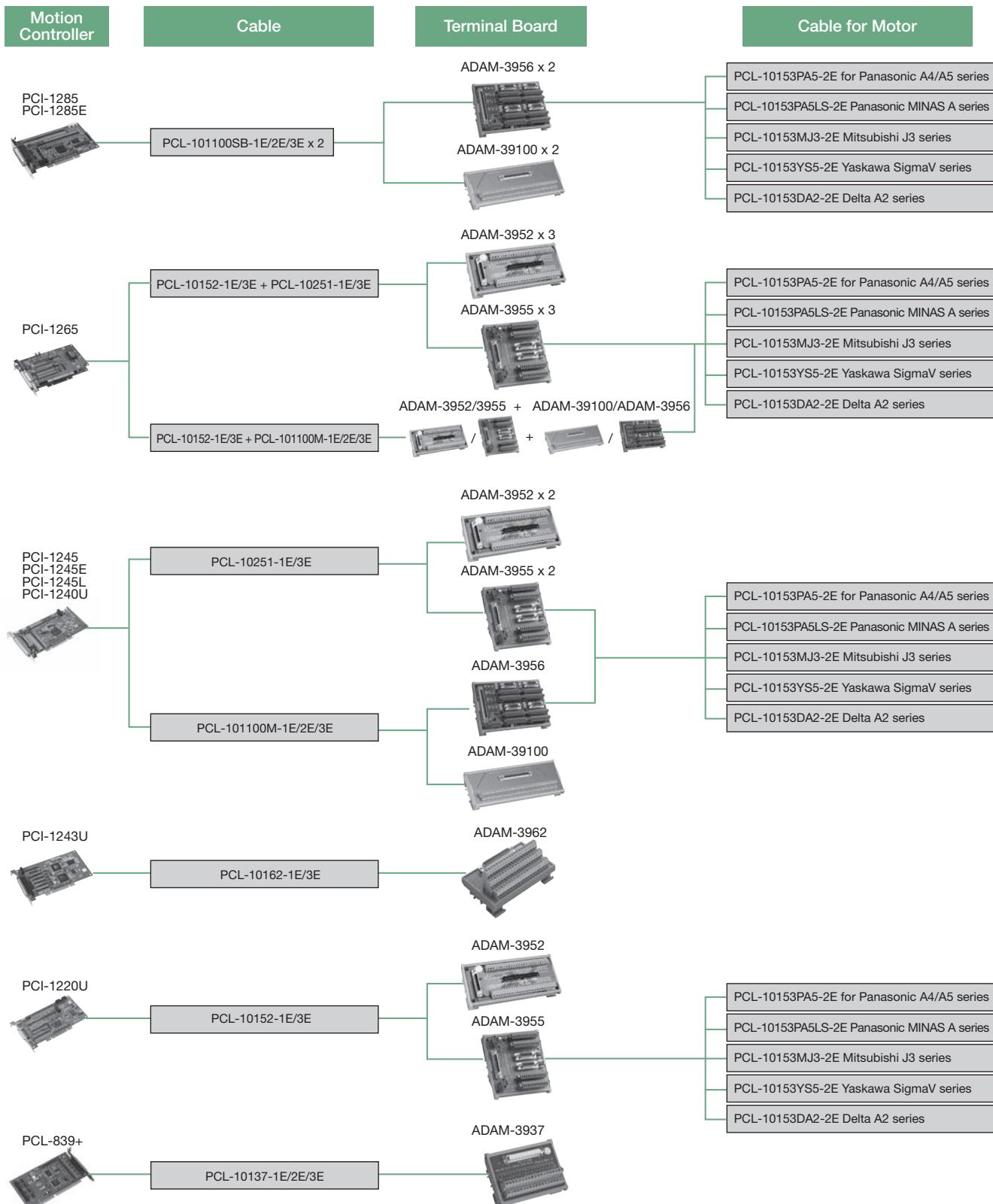
\*\*The sampling rate vary with the controller.

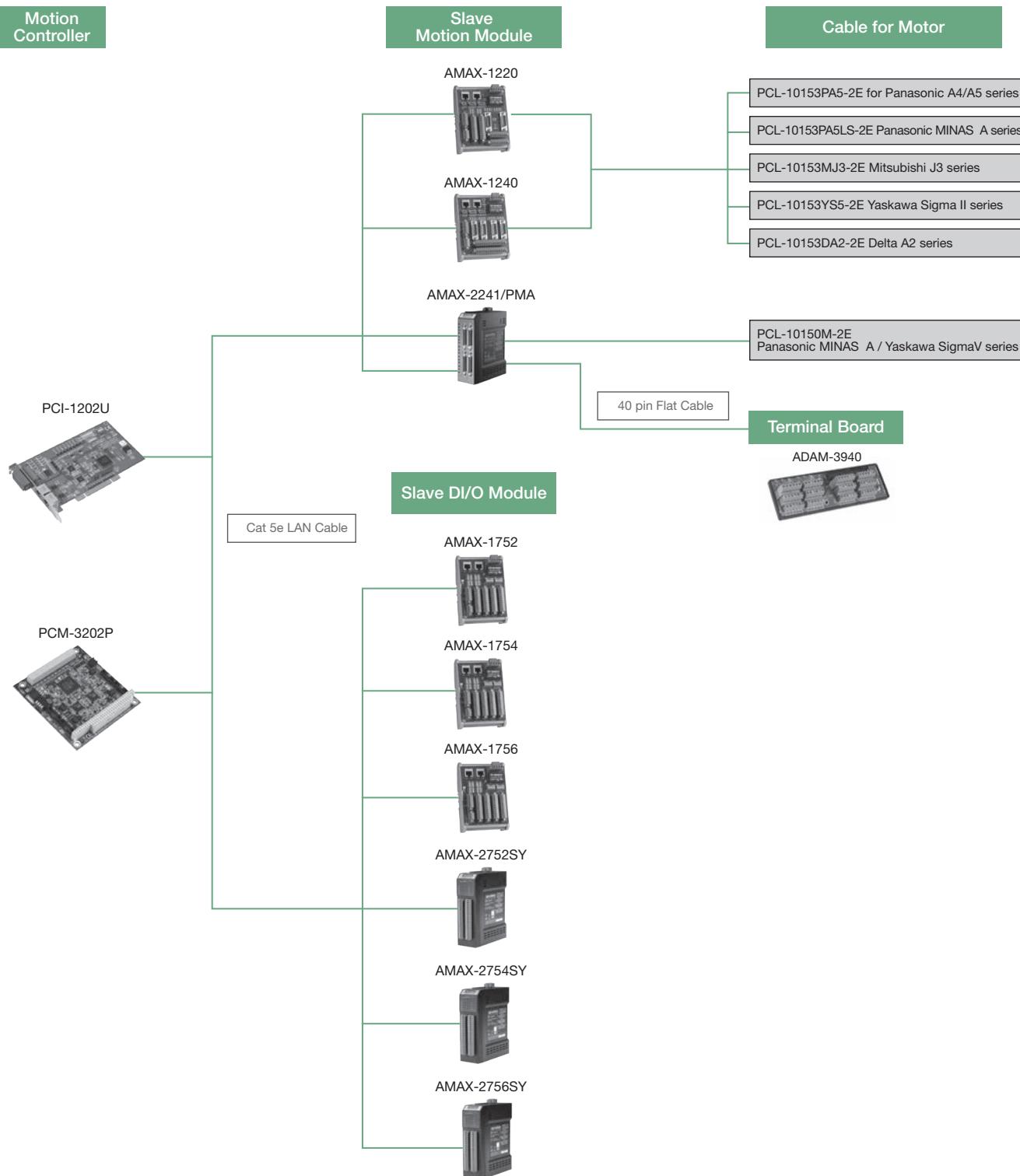
## Digital Input/Output Modules



Module	ADAM-E5056 ADAM-E5056SO	ADAM-E5057	ADAM-E5069	ADAM-E5082
Digital Input and Digital Output	Digital Input Channels	-	-	-
	Digital Output Channels	16 w/LED	32	8 power relay (form A)
Counter (32-bit)	Channels	-	-	2
	Input Frequency	-	-	5 Hz ~ 1 MHz max. (frequency mode) 1 MHz max. (counter mode)
	Mode	-	-	Frequency, Counter (Up/Down, Bi-direction, Up, A/B/Z Phase)
Communication	Channels	-	-	-
	Type	-	-	-
Isolation	2,500 V <sub>dc</sub>	2,500 V <sub>dc</sub>	-	2,500 V <sub>dc</sub>

# Motion Control





# Power & Energy Automation

## P&E Automation Computers

**NEW****NEW****NEW**

Model Name	UNO-4671A	ECU-4674	ECU-4574	UNO-4673A/4683	ECU-4784
Certification	IEC 61850-3 / IEEE 1613 Compliant China Electricity Certificate IV level	IEC 61850-3 / IEEE 1613 Compliant China Electricity Certificate IV level	IEC 61850-3/IEEE 1613 China Electricity Certificate IV level	IEC 61850-3/IEEE 1613 Compliant China Electricity Certificate IV level	IEC 61850-3/ IEEE 1613/ UL Certificate
CPU	Intel Atom D510 1.66GHz Intel Atom D525 1.8GHz	Intel Atom N2600 1.66GHz	Intel Atom N2600 1.66GHz	Intel Atom D510, 1.6 GHz Intel Core i7, 2.0 GHz	Intel Haswell Core i7-4650U 1.7 GHz
RAM	2GB DDR2 SDRAM 4GB DDR3 SDRAM	2G DDR3 SDRAM	2G DDR3 SDRAM	2GB DDR2 SDRAM 4GB DDR3 SDRAM	8G DDR3L SDRAM 16G DDR3L SDRAM
Battery-Backup RAM	-	1 MB	1 MB	1 MB	-
Display	VGA	VGA	VGA	VGA/DVI-I	VGA/DVI
Serial Ports	2 x Isolated RS-232, 4 x Isolated RS-422/485, 4 x Isolated RS-485	2 x Isolated RS-232, 16 x Isolated RS-232/485	2 x isolated RS-232 8 x isolated RS-232/485	2 x Isolated RS-232/422/485	2 x Isolated RS-232 (Standard), 8 x RS-232/422/485
Ethernet Ports	6 x 10/100Base-T RJ-45/ 2 x 10/100/1000Base-T and 4 x 10/100 Base-T RJ-45	2 x 10/100/1000Base-T 6 x 10/100Base-T	2 x 10/100/1000Base-T 6 x 10/100Base-T	2 x 10/100/1000, 4 x 10/100 Base-T RJ-45	1 x 10/100/1000 Base T RJ45 (Support AMT) 7 x 10/100/1000 Base T RJ45
Smart LAN	-	-	-	-	-
USB Ports	Four (One internal)	Five (One internal)	Four	Six (One internal)	Six (One internal)
PC/104 Expansion	PCI-104	PCI-104	-	-	-
Onboard I/O	-	8 x isolated DI, 8 x isolated DO	-	-	-
Watchdog Timer	Yes	Yes	Yes	Yes	Yes
CompactFlash Slots	One Internal	One Internal	One Internal	One Internal	One Internal
2.5" HDD Expansion	1 x SATA	2 x SATA	1 x SATA	1 x SATA	2 x SATA
Operating Systems	WES2009, WES7, Windows CE 6.0 and Linux	WES7, Windows7, Linux	WES 7, WES 2009, Windows XP, Windows CE 6.0, Linux	WES, Windows XP Embedded, Windows CE 6.0, Windows 2000/XP, Linux, QNX, Window server 2008 R2 (64bits)	WES7, Windows7, Linux Window server 2008 R2 (64bits)
Mounting	2U Rackmount	2U Rackmount	1U Rackmount	2U Rackmount	2U Rackmount
Anti-Vibration	2 G w/CF, 0.5 G w/HDD	2 G w/CF, 1 G w/HDD	2 G w/CF, 1 G w/HDD	2 G w/CF, 1 G w/HDD	2 Gw/CF, 1 Gw/HDD
Anti-Shock	30 G w/CF, 20 G w/HDD	30 G w/CF, 20 G w/HDD	30 G w/CF, 20 G w/HDD	30 G w/CF, 20 G w/HDD	30 G w/CF, 20 G w/HDD
Operating Temperature	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 70°C (-4 ~ 158°F)			
Power Consumption Typical	30 W	-	45 W	45 W	-
Power Requirements	Supports Redundant power input: Power 1:100 ~ 240 V <sub>AC</sub> or 100 ~ 240 V <sub>DC</sub> (Optional:18 ~ 30 V <sub>DC</sub> ) Power 2:100 ~ 240 V <sub>AC</sub> or 100 ~ 240 V <sub>DC</sub> (Optional:18 ~ 30 V <sub>DC</sub> )	Supports Redundant power input Power 1: 100 ~ 240 V <sub>AC</sub> or 100 ~ 240 V <sub>DC</sub> Power 2: 100 ~ 240 V <sub>AC</sub> or 100 ~ 240 V <sub>DC</sub>	Supports Redundant power input Power 1: 100 ~ 240 V <sub>AC</sub> or 100 ~ 240 V <sub>DC</sub> Power 2: 100 ~ 240 V <sub>AC</sub> or 100 ~ 240 V <sub>DC</sub>	Supports Redundant power input Power 1: 100 ~ 240 V <sub>AC</sub> or 100 ~ 240 V <sub>DC</sub> Power 2: 100 ~ 240 V <sub>AC</sub> or 100 ~ 240 V <sub>DC</sub>	Supports Redundant power input Power 1: 100 ~ 240 V <sub>AC</sub> or 100 ~ 240 V <sub>DC</sub> Power 2: 100 ~ 240 V <sub>AC</sub> or 100 ~ 240 V <sub>DC</sub>
Dimensions (W x D x H)	440 x 220 x 88 mm (17.3" x 8.6" x 3.4")	440 x 220 x 88 mm (17.3" x 8.6" x 3.4")	440 x 272 x 44 mm (17.3" x 8.6" x 3.4")	440 x 220 x 88 mm (17.3" x 8.6" x 3.4")	440 x 220 x 44 mm (17.3" x 8.6" x 1.7")
Weight	~5.5 kg	~6.0 kg	4.6 Kg	~6.0 kg	~6.0 kg

## Energy Automation Controller

**NEW****NEW****NEW**

Model Name	ECU-1710A	ECU-1871	ECU-1911
Certification		IEC 61850-3 / IEEE 1613 Compliant China Electricity Certificate IV level	
CPU	Intel Atom D510, 1.66 GHz	Intel Atom D510, 1.66 GHz	Xscale @ PXA-270 520MHz
RAM	1GB DDR2 667MHz	2GB DDR2 SDRAM	64MB SDRAM 32 MB Flash
Battery-Backup RAM	1MB	-	-
Display	VGA	VGA	-
Serial Ports	2 x RS-232	1 x RS-232 2 x Isolated RS-485	1 x RS-232 3 x isolated RS-485
Ethernet Ports	2 x 10/100Base-T RJ-45	2 x 10/100/1000 Base-T RJ-45	2 x 10/100Base-T RJ-45
Smart LAN	-	-	-
USB Ports	Two	Two	One
PC/104 Expansion	-	PCI-104	-
Onboard I/O	8-ch AI 4-ch AO 16-ch Isolated DI/DO 1-ch Isolated Counter	Support Expansion IO: (1) ECU-P1702: 10Ms/S, 12-bit Simultaneous 4-ch PCI-104 card (2) ECU-P1706: 250Ks/S, 16-bit Simultaneous 8-ch PCI-104 card (3) ECU-P1300: Vibration Signal Modulate card	8-ch AI 32-ch isolated DI 32-ch isolated DO
Watchdog Timer	Yes	Yes	Yes
CompactFlash Slots	One Internal	One Internal	One Internal
2.5" HDD Expansion	1 x SATA	1 x SATA	-
Operating Systems	WES2009, WinCE 5.0, Linux	WES 7, WES 2009, Windows CE 5.0 & 6.0, Linux	Windows CE 5.0
Mounting	Wall & Rack Mount	Wall & Rack Mount	DIN-rail
Anti-Vibration	-	2 G w/CF, 1 G w/HDD	-
Anti-Shock	-	30 G w/CF, 20 G w/HDD	-
Operating Temperature	-20 ~ 70°C (-4 ~ 158°F)	-20 ~ 70°C (-4 ~ 158°F)	-20 ~ 70°C (-4 ~ 158°F)
Power Consumption Typical	28 W	24 W	< 10 W
Power Requirements	18 ~ 30 V <sub>DC</sub> (e.g. 24 V @ 2 A) (Min. 48 W), AT	18 ~ 30 V <sub>DC</sub> (e.g. 24 V @ 2 A) (Min. 48 W), AT	DC: 10 ~ 30 V <sub>DC</sub>
Dimensions (W x D x H)	255 x 152 x 59 mm (10" x 6.0" x 2.3")	220 x 150 x 89 mm (8.7" x 5.9" x 3.5")	266 x 146 x 45 mm (10.5" x 5.7" x 1.8")
Weight	~2.4 kg	~2.4 kg	~1.5 kg

## Extension I/O Cards



Module Name	ECU-P1706	ECU-P1702
BUS	PCI-104	PCI-104
Analog Input	Resolution	16-bit
	Channels	8
	Onboard FIFO	8K samples/total
	Sampling Rate	250KS/s
	Input Range/ Bipolar Inputs	±10, 5, 2.5, 1.25
Timer/ Counter	Channels	2 channels (Isolation)
	Resolution	32-bit
	Max. Input Frequency	1 M Hz
	Isolation Voltage	2500 V <sub>DC</sub>



Module Name	ECU-P1300
Inputs	Voltage Input Range
	±5 V Maximum*
	Channels
	8
Outputs	Amplifier Input Impedance
	20k (min)
	Input Coupling
Outputs	Maximum Output Voltage
	±10V
Accelerometer Input	4 mA ±1% , 24 V compliant

# Operator Panels

**NEW****NEW****NEW**

Model	TPC-31T	TPC-61T	WOP-3070T	WOP-3100T	WOP-3120T
<b>Ordering Information</b>	TPC-31T-E3AE	TPC-61T-E3AE	WOP-3070T-C4AE	WOP-3100T-C4AE	WOP-3120T-C4AE
<b>CPU</b>	RISC 32 bits, 600 MHz (ARM® Cortex™-A8)	RISC 32 bits, 600 MHz (ARM® Cortex™-A8)	RISC 32 bits, 600 MHz (ARM® Cortex™-A8)	RISC 32 bits, 600 MHz (ARM® Cortex™-A8)	RISC 32 bits, 600 MHz (ARM® Cortex™-A8)
<b>Backup Memory</b>	FRAM 128KB	FRAM 128KB	FRAM 1M bit (=128K Byte, 64word)	FRAM 1M bit (=128K Byte, 64word)	FRAM 1M bit (=128K Byte, 64word)
<b>Working Memory</b>	DDR2 256M Bytes	DDR2 256M Bytes	DDR2 256M Bytes	DDR2 256M Bytes	DDR2 256M Bytes
<b>Storage</b>	512MB on board SLC type	512MB on board SLC type	512MB on board SLC type	512MB on board SLC type	512MB on board SLC type
<b>Operating System</b>	Microsoft® Windows CE 6.0	Microsoft® Windows CE 6.0	Microsoft® Windows CE 6.0	Microsoft® Windows CE 6.0	Microsoft® Windows CE 6.0
	-	-	Panel Express 300 Tags	Panel Express 300 Tags	Panel Express 300 Tags
<b>Display</b>	Type	QVGA TFT LCD	QVGA TFT LCD	WVGA (16:9) TFT LCD	XGA TFT LCD
	Size	3.5"	5.7"	7"	10.1"
	Max. Resolution	320 x 240	320 x 240	800 x 480	1024 x 768
	Max. Colors	65,536 colors	65,536 colors	65,536 colors	65,536 colors
	Luminance (cd/m²)	450	800	500	550
	Viewing Angle (H/V°)	160/140	160/140	140/120	140/110
	Backlight Life (hr)	LED, 30,000	LED, 50,000	LED, 50,000	LED, 50,000
	Dimming	-	-	Adjustable	Adjustable
Touchscreen	4 wires Analog resistive	4 wires Analog resistive	5 wire Analog Resistive	5 wire Analog Resistive	5 wire Analog Resistive
Power-On LED	-	-	Yes	Yes	Yes
Communication LED	-	-	-	-	-
Front USB Access	-	-	-	-	-
<b>Communication Interface</b>	COM1	RS-232/485 (DB9)	RS-232 (DB9)	RS-232/422485 (DB9)	RS-232/422485 (DB9)
	COM2	-	RS-232 (DB9)	RS-422/485 (Terminal 4pin+Ground)	RS-422/485 (Terminal 4pin+Ground)
	COM3	-	RS-422/485 (DB9)	RS-485 (Terminal 2pin)	RS-485 (Terminal 2pin)
	CAN	CAN (DB9)	-	Terminal 2pin	Terminal 2pin
	Ethernet (RJ45)	10/100-BaseT	10/100-BaseT	10/100-BaseT	10/100-BaseT
<b>I/Os</b>	USB Client	-	USB 2.0	USB 2.0 Client x 1	USB 2.0 Client x 1
	USB Host	USB 2.0	USB 2.0	USB 2.0 Host x 1 (Top)	USB 2.0 Host x 1 (Top)
	Micro-SD Slot	-	-	Yes	Yes
	SD Slot	Yes	Yes	-	-
	Audio	-	-	1 Lin out / 1 Mic in	1 Lin out / 1 Mic in
	Power Isolation	-	-	Yes	Yes
	I/O Isolation	-	-	Yes	Yes
Power Supply Voltage	18 ~ 32 V <sub>DC</sub>	18 ~ 32 V <sub>DC</sub>	24VDC ± 10%	24VDC ± 10%	24VDC ± 10%
Power Consumption	8W	12W	7W Typical	9W Typical	12W Typical
Dimensions W x H x D (mm)	120.79 x 85.5 x 26.5 mm (4.76" x 3.37" x 1.04")	195 x 148 x 44.4 mm (7.68" x 5.83" x 1.75")	203.4 x 150 x 43.7 mm (8.01" x 5.91" x 1.72")	271.5 x 213.5 x 43.2 mm (10.69" x 8.41" x 1.7")	311 x 237 x 46.8 mm (12.24" x 9.33" x 1.84")
Cut-out Dimensions W x H (mm)	115 x 79.5 mm (4.6" x 3.18")	189 x 142 mm (7.56" x 5.68")	192 x 138.5 mm (7.56" x 5.45")	259.5 x 201.5 mm (10.22" x 7.93")	302.5 x 228.5 mm (12.1" x 9.14")
Front Panel thickness (mm)	6 mm	6 mm	6 mm	6 mm	6 mm
Enclosure	PC + ABS	PC + ABS	Die-cast aluminum alloy front bezel	Die-cast aluminum alloy front bezel	Die-cast aluminum alloy front bezel
Net Weight	0.25 kg (0.55 lbs)	0.8 kg (1.76 lb)	1 kg (2.20 lbs)	1.2 kg (2.65 lbs)	2.5 kg (5.51 lb)
Operating Temperature	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)
Storage Temperature	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	-30 ~ 70°C (-22 ~ 158°F)	-30 ~ 70°C (-22 ~ 158°F)	-30 ~ 70°C (-22 ~ 158°F)
Humidity	10% ~ 90% RH @ 40°C, non-condensing	10% ~ 90% RH @ 40°C, non-condensing	10% ~ 90% RH @ 40°C, non-condensing	10% ~ 90% RH @ 40°C, non-condensing	10% ~ 90% RH @ 40°C, non-condensing
Ingress Protection	Front panel: IP65	Front panel: IP65	Front panel: IP66	Front panel: IP66	Front panel: IP66
Certification	CE / FCC / BSMI / UL	CE / FCC / BSMI / UL	CE / FCC / BSMI / CCC / UL-508	CE / FCC / BSMI / CCC / UL-508	CE / FCC / BSMI / CCC / UL-508



<b>WOP-2040T</b>		<b>WOP-2050T</b>		<b>WOP-2070T</b>		<b>WOP-2080T</b>		<b>WOP-2100T</b>	
WOP-2040T-S1AE	WOP-2040T-N1AE	WOP-2050T-S1AE		WOP-2070T-S2AE	WOP-2070T-N2AE	WOP-2080T-S2AE	WOP-2080T-N2AE	WOP-2100T-S2AE	WOP-2100T-N2AE
RISC 32bits, 200MHz		RISC 32bits, 200MHz		RISC 32bits, 200MHz		RISC 32bits, 200MHz		RISC 32bits, 200MHz	
128KB		128KB		128KB		128KB		128KB	
32 MB SDRAM		32 MB SDRAM		64 MB SDRAM		64 MB SDRAM		64 MB SDRAM	
8MB NOR Flash	8MB NOR Flash	8MB NOR Flash		8MB NOR Flash	8MB NOR Flash	8MB NOR Flash	8MB NOR Flash	8MB NOR Flash	8MB NOR Flash
-	128M NAND Flash	128M NAND Flash		-	128M NAND Flash	-	128M NAND Flash	-	128M NAND Flash
HMI RTOS, WebOP Designer 2.0									
WQVGA(16:9) TFT LCD		QVGA TFT LCD		WVGA(16:9) TFT LCD		SVGA TFT LCD		WSVGA(16:9) TFT LCD	
4.3"		5.6"		7"		8"		10.1"	
480 x 272		320 x 234		800 x 480		800 x 600		1024 x 600	
65,536 colors		65,536 colors		65,536 colors		65,536 colors		65,536 colors	
400		330		300		250		250	
100/95		130/110		140/130		140/130		140/110	
LED, 20,000		LED, 20,000		LED, 20,000		LED, 30,000		LED, 20,000	
-		-		-		-		-	
4 wires Analog resistive		4 wires Analog resistive		4 wires Analog resistive		4 wires Analog resistive		4 wires Analog resistive	
Yes		Yes		Yes		Yes		Yes	
-		-		-		-		-	
-		-		-		-		-	
RS232/422/485		RS232/422/485 (DB9)		RS232/422/485 (DB9)		RS232/422/485 (DB9)		RS232/422/485 (DB9)	
RS422/485 (Terminal 5pin)		RS422/485 (Terminal 5pin)		RS422/485 (Terminal 5pin)		RS422/485 (Terminal 5pin)		RS422/485 (Terminal 5pin)	
RS232 (COM1: Pin5; 7; 8)		RS232 (COM1: Pin5; 7; 8)		RS232 (COM1: Pin5; 7; 8)		RS232 (COM1: Pin5; 7; 8)		RS232 (COM1: Pin5; 7; 8)	
-		-		-		-		-	
-	10/100-BaseT	-		-	10/100-BaseT	-	10/100-BaseT	-	10/100-BaseT
Yes		Yes		Yes		Yes		Yes	
Yes		Yes		Yes		Yes		Yes	
-	Yes	Yes		-	Yes	-	Yes	-	Yes
-	-	-		-	-	-	-	-	-
-	-	-		-	-	-	-	-	-
-	-	-		-	-	-	-	-	-
24 V <sub>DC</sub> ± 10%		24 V <sub>DC</sub> ± 10%		24 V <sub>DC</sub> ± 10%		24 V <sub>DC</sub> ± 10%		24 V <sub>DC</sub> ± 10%	
5W		10W		10W		10W		10W	
130 x 106.2 x 36.4 mm (5.11" x 4.18" x 1.43")		188 x 143.3 x 30 mm (7.4" x 5.64" x 1.18")		188 x 143.3 x 30 mm (7.4" x 5.64" x 1.18")		231.5 x 174.6 x 37 mm (9.11" x 6.87" x 1.46")		269.8 x 212 x 37.4 mm (10.62" x 8.35" x 1.47")	
118.5 x 92.5 mm (4.66" x 3.64")		175 x 132.5 mm (6.89" x 5.21")		175 x 132.5 mm (6.89" x 5.21")		221 x 164 mm (8.70" x 6.46")		259.5 x 201.5 mm (10.22" x 7.93")	
5 mm		6 mm		6 mm		6 mm		6 mm	
PC + ABS		PC + ABS		PC + ABS		PC + ABS		PC + ABS	
0.3 kg (0.66 lbs)		0.51 kg (1.12 lbs)		0.6 kg (1.32 lbs)		0.93 kg (2.05 lbs)		1.2 kg (2.64 lbs)	
0 ~ 50°C (32 ~ 122°F)		0 ~ 50°C (32 ~ 122°F)		0 ~ 50°C (32 ~ 122°F)		0 ~ 50°C (32 ~ 122°F)		0 ~ 50°C (32 ~ 122°F)	
-20 ~ 60°C (-4 ~ 140°F)		-20 ~ 60°C (-4 ~ 140°F)		-20 ~ 60°C (-4 ~ 140°F)		-20 ~ 60°C (-4 ~ 140°F)		-20 ~ 60°C (-4 ~ 140°F)	
10% ~ 90% RH @ 40°C, non-condensing		10% ~ 90% RH @ 40°C, non-condensing		10% ~ 90% RH @ 40°C, non-condensing		10% ~ 90% RH @ 40°C, non-condensing		10% ~ 90% RH @ 40°C, non-condensing	
Front panel: IP66		Front panel: IP66		Front panel: IP66		Front panel: IP66		Front panel: IP66	
CE / FCC / BSMI / CCC / UL		CE / FCC / BSMI / CCC / UL		CE / FCC / BSMI / CCC / UL		CE / FCC / BSMI / CCC / UL		CE / FCC / BSMI / CCC / UL	

# Automation Panels

## Control Panel Computers



Model	TPC-1881WP	TPC-1581WP	TPC-1782H	TPC-1582H	TPC-1282T	TPC-1071H
CPU	4th Gen. Intel® Core™ i7 / i3 Processor	4th Gen. Intel® Core™ i3 Processor	4th Gen. Intel® Core™ i7 / i3 Processor	4th Gen. Intel® Core™ i3 Processor	5th Gen. Intel® Core™ i3 Processor	Intel® Atom™ 1.8 GHz Processor
Memory	4GB DDR3L 1600MHz SO-DIMM SDRAM	4GB SO-DIMM DDR3 SDRAM				
Display Type	TFT LED LCD	TFT LED LCD				
Display Size	18.5"	15.6"	17"	15"	12.1"	10.4"
Max. Resolution	1366 x 768	1366 x 768	1280 x 1024	1024 x 768	1024 x 768	800x600
Max. Colors	16.7M	16.7M	16.7M	16.2M	16.2M	262 K
Luminance cd/m <sup>2</sup>	300 nits	300 nits	350 nits	400 nits	600 nits	400 nits
Viewing Angle (H/V°)	170/160	170/160	170/160	160/140	160/140	120/100
Backlight MTBF (hrs)	50,000 hrs	50,000 hrs				
Touchscreen	Projected capacitive touch	Projected capacitive touch	Resistive	Resistive	Resistive	Resistive
Network (LAN)	10/100/1000 Base-T x 2	10/100/1000 Base-T x 2				
I/O Ports	RS-232/422/485 x 1 USB 3.0 x 2, HDMI 1.4 x 1 Audio Line out x 1, USB 2.0 x 1 (optional) Audio MIC x 1 (optional)	RS-232/422/485 x 1 USB 3.0 x 2, HDMI 1.4 x 1 Audio Line out x 1, USB 2.0 x 1 (optional) Audio MIC x 1 (optional)	RS-232/422/485 x 1 USB 3.0 x 2, HDMI 1.4 x 1 Audio Line out x 1, USB 2.0 x 1 (optional) Audio MIC x 1 (optional)	RS-232/422/485 x 1 USB 3.0 x 2, HDMI 1.4 x 1 Audio Line out x 1, USB 2.0 x 1 (optional) Audio MIC x 1 (optional)	RS-232/422/485 x 1 USB 3.0 x 2, HDMI 1.4 x 1 Audio Line out x 1, USB 2.0 x 1 (optional) Audio MIC x 1 (optional)	RS-232 x 2 (with isolation) RS-422/485 x 1 (with isolation) USB 2.0 x 2 (Host) PS/2 x 1
HDD (Optional)	2.5" SATA HDD	2.5" SATA HDD				
Intelligent Keys	Quick access through built-in front bezel function and home key button	Quick access through built-in front bezel function and home key button	N/A	N/A	N/A	N/A
CompactFlash Slots	CFast slot x 1	CFast slot x 1				
Expansion Slots	Full-size Mini PCI-E	Full-size Mini PCI-E	Full-size Mini PCI-E/Half-size PCI-E	Full-size Mini PCI-E/Half-size PCI-E	Full-size Mini PCI-E/Half-size PCI-E	Full-size Mini PCI-E/Half-size PCI-E
Digital Input/Output	N/A	N/A	N/A	N/A	N/A	16-channel Digital I/O with isolation
Ingress Protection	Front panel: IP66	Front panel: IP66	Front panel: IP65	Front panel: IP65	Front panel: IP66	Front panel: IP65
DC Power Input (Voltage)	24 V <sub>dc</sub> ± 20%	10 ~ 29V				
Enclosure	Front bezel: Die-cast Aluminum alloy Back housing: PC/ABS Resin	Front bezel: Die-cast Aluminum alloy Back housing: PC/ABS Resin	Front bezel: Die-cast Aluminum alloy Back housing: PC/ABS Resin	Front bezel: Die-cast Aluminum alloy Back housing: PC/ABS Resin	Front bezel: Die-cast Aluminum alloy Back housing: PC/ABS Resin	Front bezel: Die-cast Aluminum alloy Back housing: PC/ABS Resin
Mounting	Panel Mount	Panel Mount	Desktop, Wall or Panel Mount	Desktop, Wall or Panel Mount	Desktop, Wall or Panel Mount	Desktop, Wall or Panel Mount
Weight	6 kg (13.22 lbs)	7kg (15.44 lbs)	6 kg (13.23 lbs)	5.5 kg (12.13 lbs)	3.2 kg (7.02 lbs)	3.5 kg (7.72 lbs)
Operating Temperature	0 ~ 55°C (32 ~ 131°F)	0 ~ 55°C (32 ~ 131°F)				
Dimensions	488.1 x 309.1 x 56.7 mm (19.2" x 12.2" x 2.2")	419.7 x 269 x 56.7 mm (16.52" x 10.59" x 2.23")	414 x 347.5 x 84 mm (16.3" x 13.68" x 3.31")	383 x 307 x 78.5 mm (15.08" x 12.09" x 3.09")	311.8 x 238 x 77.2 mm (12.28" x 9.38" x 3.04")	287 x 227 x 72.3 mm (11.30" x 8.94" x 2.85")
Certification	BSMI, CCC, CE, FCC Class A, UL	BSMI, CCC, CE, FCC Class A, UL				
Operating System	WIN 7/8/WES7/Linux	WIN 7/WES7/WES 2009/XPE/CE 6.0/Linux/ Android				

## Thin Client Panel Computers



Model	TPC-1551WP	TPC-1051WP	TPC-1751T	TPC-1551T	TPC-1251T	TPC-651T
CPU	Intel® Atom™ E3827 1.75 GHz Processor					
Memory	4GB (8GB optional) DDR3L 1600MHz SO-DIMM SDRAM					
Display Type	WXGA TFT LED LCD	WXGA TFT LED LCD	SXGA TFT LED LCD	XGA TFT LED LCD	XGA TFT LED LCD	VGA TFT LED LCD
Display Size	15.6"	10.1"	17"	15"	12.1"	5.7"
Max. Resolution	1366 x 768	1280 x 800	1280 x 1024	1024 x 768	1024 x 768	640 x 480
Max. Colors	16.2 M	262 K	16.7 M	16.2 M	16.2 M	262 K
Luminance cd/m <sup>2</sup>	300 nits	300 nits	350 nits	400 nits	600 nits	550 nits
Viewing Angle (H/V°)	170/160	170/170	160/140	160/140	160/140	160/140
Backlight MTBF(hrs)	50,000 hrs	25,000 hrs	50,000 hrs	50,000 hrs	50,000 hrs	50,000 hrs
Touchscreen	Projected capacitive	Projected capacitive	Resistive	Resistive	Resistive	Resistive
HDD (Optional)	2.5" SATA x 1					
Network (LAN)	10/100/1000 Base-T x 2					
I/O Ports	RS-232 x 1, RS-232/422/485 x 1 USB 3.0 x 1 USB 2.0 x 1	RS-232 x 1, RS-232/422/485 x 1 USB 3.0 x 1 USB 2.0 x 1	RS-232 x 1, RS-232/422/485 x 1 USB 3.0 x 1 USB 2.0 x 1	RS-232 x 1, RS-232/422/485 x 1 USB 3.0 x 1 USB 2.0 x 1	RS-232 x 1, RS-232/422/485 x 1 USB 3.0 x 1 USB 2.0 x 1	RS-232 x 1, RS-232/422/485 x 1 USB 3.0 x 1 USB 2.0 x 1
CompactFlash Slots	CFast slot x 1					
Expansion Slots	Full-size Mini PCI-E					
DC Power Input (Voltage)	24 V <sub>DC</sub> ± 20%					
Dimensions	419.7 x 269 x 61.9 mm (16.52" x 10.59" x 2.44")	283.1 x 202.3 x 61.4 mm (11.15" x 7.96" x 2.42")	413.7 x 347.2 x 63.8 mm (16.28" x 13.68" x 2.5")	383.20 x 307.30 x 61.10 mm (15.09" x 12.10" x 2.41")	311.80 x 238 x 57.2 mm (12.28" x 9.37" x 22.52")	199 x 152 x 58.9 mm (7.83" x 5.98" x 2.32")
Weight	5.0 KG	2.6 KG	6.0 KG	3.9KG	2.5KG	1.5 KG
Front cover	Front bezel: Die-cast Aluminum alloy					
Operating Temperature	0 ~ 55°C (32 ~ 131°F)	-20 ~ 55°C (-4 ~ 131°F)	-20 ~ 60°C (-4 ~ 140°F)			
Ingress Protection (Front Panel)	IP66	IP66	IP66	IP66	IP66	IP66
Certification	BSMI, CCC, CE, FCC Class A, UL					
Operating System	WIN 7/8/WES7/WES8/ Linux					

# Automation Panels

## Stationary and Domain-focus Panel Computers



Model	SPC-2140WP	FPM-8151H	TPC-8100TR	IPPC-5211WS	UNO-1172AH	IPPC-3152WH
CPU	AMD® G-series T56N 1.6GHz Processor	N/A	Intel® Atom™ 1.6 GHz Processor	Intel® Celeron Processor	Intel® Atom™ 1.66 GHz Processor	Intel® Core™ i7 / Celeron® Processor
Memory	4GB DDR3 SO-DIMM	N/A	4GB DDR3 SO-DIMM	4GB DDR3L SO-DIMM	2 GB DDR2 SDRAM built-in	4GB/8GB DDR3L 1333 MHz
Display Type	TFT LED LCD	XGA TFT LED LCD	SVGA TFT LCD	Full HD TFT LCD	N/A	HD TFT LED LCD
Display Size	21.5"	15"	10.4"	21.5" : :	N/A	15.6"
Max. Resolution	1920x1080	1024 x 768	800x600	1920 x 1080	N/A	1366 x 768
Max. Colors	16.7M	16.2M	262k	16.7M	N/A	16.7M
Luminance cd/m²	300 nits	350 nits	400 nits	300 nits	N/A	300 nits
Viewing Angle (H/V°)	178/178	160/140	160/140	178/178	N/A	170/160
Backlight MTBF (hrs)	50K hrs	50K hrs	50K hrs	50K hrs	N/A	50K hrs
Touchscreen	Projected capacitive touch	Resistive	Resistive	Projected capacitive touch	N/A	Projected capacitive touch
Network (LAN)	10/100/1000Base-T x 2, M12 connector	N/A	2 x 10/100/1000 Mbps (M12 A-coded, 8-pin female)	2 x 10/100/1000 Mbps	3 x 10/100/1000 Mbps	2 x 10/100/1000 Mbps
I/O ports	RS-232 x 1, M12 connector USB 2.0 x 1, M12 connector 24VDC connector, M12 connector	1 x VGA 2 x DVI-D	2 x RS-232 (connection: M12 A-coded, 8-pin male) 2 x 422/485 (with isolation, connection: M12 A-coded, 8-pin male) 2 x USB2.0 (connection: M12 A-coded, 8-pin female) 1 x Audio (with Internal Buzzer, Line out, connection: M12 A-coded, 8-pin female) 1 x Power connector (connection: M12 A-coded, 5-pin male)	1 x RS232 1 x RS232/RS485/RS422 2 x USB(1 x USB2.0, 1 x USB3.0) 1 x i Door (optional) 1 x Antenna(optional)	1 x RS-232 1 x 422/485 4 x USB 2.0	4 x USB Ports (2 x USB 2.0, 2 x USB 3.0) 1 x HDMI 1 x DP
HDD (Optional)	1 x 2.5" SATA	NA	N/A	1 x 2.5" SATA	1 x SSD slot 1 x 2.5" SATA	2 x 2.5" SATA
Optical Drive	N/A	NA	N/A	N/A	N/A	N/A
CompactFlash Slots	N/A	NA	1x 16G Cfast	1 x CFast® (optional)	N/A	1 x CFast
Expansion Slots	Full-size Mini PCI-E	NA	2x full-size mini PCIe	NA	N/A	NA
Power Input	24V DC	Phoenix Jack: 24 VDC input DC Jack: external 57 W power adapter, with 100 ~ 240 VAC input and 12 VDC @ 4.75 A output (Optional)	72V~110V DC 24V DC (Optional)	24V DC	10 ~ 36 V DC	18 ~ 36V DC
Ingress Protection	All around: IP65	Front panel: IP65	All around: IP65	Front panel: IP69k All around: IP69k (Optional)	IP40	Front panel: IP66
Enclosure	Front bezel: Die-cast aluminum alloy Back housing: Die-cast aluminum alloy	Stainless steel	Front bezel: Die-cast Aluminium alloy Back housing: Die-cast Aluminium alloy	Front bezel: Stainless steel Rear cover: Aluminum alloy/ Stainless steel(optional)	Aluminum + SECC	Aluminum alloy
Mounting	Desktop, Wall, VESA arm	Panel, wall, desktop, VESA arm	Panel/VESA Mount	VESA and Flange connection adapter for arm and foot system	DIN-rail, Wallmount	Panel, VESA (Optional) mount
Operating Temperature	0 ~ 55°C (32 ~ 131°F)	-20 ~ 60°C (-4 ~ 140°F)	-30 ~ 70°C (-22 ~ 158°F)	0 ~ 50°C (32 ~ 122°F)	-10 ~ 60°C (14 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)
Dimensions	558.4 x 349.8 x 65 mm (21.98" x 13.77" x 2.56")	422 x 338 x 68 mm (16.61" x 13.31" x 2.68")	345 x 227 x 85 mm (13.58" x 8.94" x 33.46")	555 x 346.5 x 81 mm (21.85" x 13.64" x 3.19")	85 x 152 x 139 mm (3.4" x 6" x 5.5")	419.7 x 269 x 93 mm (16.5" x 10.59" x 3.66")
Weight	9 kg (19.8 lbs)	8.5 kg (18.74 lbs)	5kg	18kg(39.68 lbs)	1.6 kg	5.8 kg (12.79 lbs)
Certification	BSMI, CCC, CE, FCC Class A, UL, C1D2, CB, BSMI, CCC	CE, FCC, CCC, EN50155, EN45545 Compliance	IP69K, CE, FCC, UL, CB, BSMI, CCC	CE, FCC Class A, UL, CCC	C1D2, ATEX, CE, FCC, UL, CCC, BSMI	
Operating System	WIN XP/7/8/WES7/WES2009/CE 6.0/Linux	Windows 2000, XP, Vista, 7, XPe, CE and Linux	WES 7/WES 2009/ WIN CE 7.0/ Linux	WIN 7 64bit/ 8 64bit/ CE 7.0/ Linux	WES2009, WIN XP/7/CE 5.0/6.0, Linux, QNX	WIN7/8, WES7, WES-2009, Linux

**NEW**

<b>IPPC-3152H</b>	<b>IPPC-6192A</b>	<b>IPPC-6172A</b>	<b>IPPC-6152A</b>	<b>IPPC-9171G</b>	<b>IPPC-9151G</b>
Intel® Core™ i7 / Celeron® Processor	Intel® Core™ i7/i5/i3 processor	Intel® Core™ i7/i5/i3 processor	Intel® Core™ i7/i5/i3 processor	Intel® Core™ i7/i5/i3 / Celeron Processor	Intel® Core™ i7/i5/i3 / Celeron Processor
4GB/8GB DDR3L 1333 MHz	Up to 32 GB DDR3 1333/1600 MHz	Up to 32 GB DDR3 1333/1600 MHz	Up to 32 GB DDR3 1333/1600 MHz	Up to 8GB DDR3 SO-DIMM 1333MHz/1066MHz	Up to 8GB DDR3 SO-DIMM 1333MHz/1066MHz
XGA TFT LED LCD	SXGA TFT LED LCD	SXGA TFT LED LCD	XGA TFT LED LCD	SXGA TFT LED LCD	XGA TFT LED LCD
15"	19"	17"	15"	17"	15"
1024 x 768	1280 x 1024	1280 x 1024	1024 x 768	1280 x 1024	1024 x 768
16.2M	16.7M	16.7M	16.2M	16.7M	16.2M
350 nits	350 nits	350 nits	400 nits	380 nits	350 nits
160/140	170/160	170/160	160/140	170/160	160/140
50K hrs	50K hrs	50K hrs	50K hrs	50K hrs	50K hrs
Resistive	Resistive	Resistive	Resistive	Resistive	Resistive
2 x 10/100/1000 Mbps	2 x 10/100/1000 Mbps	2 x 10/100/1000 Mbps	2 x 10/100/1000 Mbps	2 x 10/100/1000 Mbps	2 x 10/100/1000 Mbps
4 x USB Ports (2 x USB 2.0, 2 x USB 3.0) 1 x HDMI 1 x DP	4 (3 x RS-232, 1 x RS-232/422/485 ) 1 x GPIO 2 x Reservation ports 5 x USB (1 X USB 2.0 front, 4 x USB 3.0) 2 x GbE LAN 1 x VGA; 1 x DVI; 1 x DP 2 (1 x keyboard and 1 x mouse) 2 (Mic-in, Line-out)	4 (3 x RS-232, 1 x RS-232/422/485 ) 1 x GPIO 2 x Reservation ports 5 x USB (1 X USB 2.0 front, 4 x USB 3.0) 2 x GbE LAN 1 x VGA; 1 x DVI; 1 x DP 2 (1 x keyboard and 1 x mouse) 2 (Mic-in, Line-out)	4 (3 x RS-232, 1 x RS-232/422/485 ) 1 x GPIO 2 x Reservation ports 5 x USB (1 X USB 2.0 front, 4 x USB 3.0) 2 x GbE LAN 1 x VGA; 1 x DVI; 1 x DP 2 (1 x keyboard and 1 x mouse) 2 (Mic-in, Line-out)	4 x RS-232, 1 x VGA, 1 x HDMI 5 x USB 2.0 (one at front), 1 x CFast slot, 1 x keyboard and 1 x mouse, Mic-in, Line-out, Line-in	4 x RS-232, 1 x VGA, 1 x HDMI 5 x USB 2.0 (one at front), 1 x CFast slot, 1 x keyboard and 1 x mouse, Mic-in, Line-out, Line-in
2 x 2.5" SATA	2 x 2.5" SATA	2 x 2.5" SATA	2 x 2.5" SATA	1 x 2.5" SATA	1 x 2.5" SATA
N/A	1 x Slim Type DVD-RW (optional)	1 x Slim Type DVD-RW (optional)	1 x Slim Type DVD-RW (optional)	N/A	N/A
1 x CFast	1 x CFast® (optional)	1 x CFast® (optional)	1 x CFast® (optional)	1 x CFast®	1 x CFast®
NA	2 x half-length PCI Slot	2 x half-length PCI Slot	2 x half-length PCI Slot	1 x PCIe (x1 or x4, PCI optional)	1 x PCIe (x1 or x4, PCI optional)
18 ~ 36V DC	100 ~ 240V AC	100 ~ 240V AC	100 ~ 240V AC	100 ~ 240V AC	100 ~ 240V AC
Front panel: IP66	Front panel: IP65	Front panel: IP65	Front panel: IP65	Front panel: IP65	Front panel: IP65
Aluminum alloy	Front bezel: Aluminum alloy Back housing: SGCC	Front bezel: Aluminum alloy Back housing: SGCC	Front bezel: Aluminum alloy Back housing: SGCC	Front bezel: Aluminum alloy Back housing: Stainless steel	Front bezel: Aluminum alloy Back housing: Stainless steel
Panel, VESA (Optional) mount	Panel, Rack (Optional) mount	Panel, Rack (Optional) mount	Panel, Rack (Optional) mount	Panel, Rack mount <small>NOTE: It is different from other products of the same series</small>	Panel, Rack (Optional) mount
-20 ~ 60°C (-4 ~ 140°F)	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)
390.7 x 289.8 x 93 mm (15.38" x 11.41" x 3.66")	481.93 x 384.6 x 135.5 mm (18.97" x 15.14" x 5.33")	481.93 x 355.87 x 132.5 mm (18.97" x 14.01" x 5.22")	449.92 x 315.63 x 126.4 mm (17.71" x 12.43" x 4.98")	482 x 354.8 x 98 mm (19" x 14" x 4")	28 x 310 x 96.5 mm (16.4" x 12.2" x 3.8")
5.4 kg (11.9 lbs)	16.6 Kg (35.6 lbs)	15 Kg (33.04 lb)	13 Kg (28.6 lbs)	14 Kg (30.86 lbs)	10.52 Kg (23.19 lbs)
C1D2, ATEX, CE, FCC, UL, CCC, BSMI	CE, FCC, UL, CCC, BSMI	CE, FCC, UL, CCC, BSMI	CE, FCC, UL, CCC, BSMI	CE, FCC, UL, CCC, BSMI	CE, FCC, UL, CCC, BSMI
WIN7/8, WEST7, WES-2009, Linux	WIN XP / 7 / 8	WIN XP / 7 / 8	WIN XP / 7 / 8	WIN 7/XP	WIN 7/XP

# Automation Panels

## Industrial Monitors

### Robust and Wide Temperature Monitors



Model		FPM-3191G	FPM-3171G	FPM-3151G	FPM-3121G
Display	Display Type	SXGA	SXGA	XGA	SVGA
	Display Size	19"	17"	15"	12"
	Max.Resolution	1280x1024	1280x1024	1024x768	800x600
	Max.Colors	16.7M	16.7M	16.2M	16.2M
	Luminance cd/m <sup>2</sup>	350	350	350	450
	Viewing Angle (H/V°)	170/160	160/140	160/140	160/140
	Backlight MTBF (hrs)	50,000	50,000	50,000	50,000
Video Port		VGA/DVI	VGA/DVI	VGA/DVI	VGA/DVI
Touchscreen		Combo	Combo	Combo	Combo
OSD (onscreen display)		On front Panel with lockable function	On front Panel with lockable function	On front Panel with lockable function	On front Panel with lockable function
Power Input Voltage		100~240v (Adapter)	100~240v (Adapter)	100~240v (Adapter)	100~240v (Adapter)
DC Power Input(voltage)		12v & 24v	12v & 24v	12v & 24v	12v & 24v
Operating Temperature (°C)		0 ~ 50	-20 ~ 60	-20 ~ 60	-20 ~ 60
Storage Temperature (°C)		-20 ~ 60	-30 ~ 80	-30 ~ 80	-30 ~ 80
Dimension		482 x 399 x 67 mm	482 x 354.8 x 63.9 mm	422 x 310 x 70 mm	312 x 224 x 60.5 mm
Cut-out Dimension	Cut-out Dimension	444 x 376.4 mm	447.5 x 329.5 mm	396 x 296 mm	303.5 x 229.5 mm
Weight		10.65kg	9.25kg	7.73kg	4.07kg
Certification		BSMI, CCC, CE, FCC Class A, UL	BSMI, CCC, CE, FCC Class A, UL	CE, FCC Class A, BSMI, CCC, UL, Energy Star	CE, FCC Class A, BSMI, CCC, UL, Energy Star
Operating System		WIN XP/Vista/7/8/XPE/Linux	WIN XP/Vista/7/8/XPE/Linux	WIN XP/Vista/7/8/XPE/Linux	WIN XP/Vista/7/8/XPE/Linux
Touch Operation System		Elo Touch	Elo Touch	PenMount 6000	PenMount 6000

## Robust and True-flat IP66 Monitors



Model		FPM-7211W	FPM-7181W	FPM-7151W	FPM-7151T	FPM-7121T
Display	Display Type	Full HD	WXGA	WXGA	XGA	XGA
	Display Size	21.5"	18.5"	15.6"	15"	12.1"
	Max.Resolution	1920x1080	1366 x 768	1366 x 768	1024 x 768	1024 x 768
	Max.Colors	16.7M	16.7M	16.7M	16.7M	16.2M
	Luminance cd/m <sup>2</sup>	300	300	400	400	600
	Viewing Angle (H/V°)	178/178	170/160	170/160	160/140	160/140
	Backlight MTBF (hrs)	50,000	50,000	50,000	50,000	50,000
Video Port		VGA/DVI-D	VGA/DVI-D	VGA/DVI-D	VGA/DP	VGA/DP
Touchscreen		Combo	Combo	Combo	Combo	Combo
OSD (onscreen display)		On rear side with lockable function				
Power Input Voltage		100~240v (Adapter)	100~240v (Adapter)	100~240v (Adapter)	100~240v (Adapter optional)	100~240v (Adapter optional)
DC Power Input(voltage)		12v/24v	12v/24v	12v/24v	24v	24v
Operating Temperature (°C)		0 ~ 55	0 ~ 55	0 ~ 55	-20 ~ 60	-20 ~ 60
Storage Temperature (°C)		-20~60	-20~60	-20~60	-30 ~ 70	-30 ~ 70
Dimension		558.4 x 349.8 x 47.7 mm	488 x 309 x 47.7 mm	419.7 x 269 x 47.7 mm	383.2 x 307.3 x 48.2 mm	311.8 x 238 x 44.6 mm
Cut-out Dimension	Cut-out Dimension	550.3 x 341.8 mm	479.3 x 300.3 mm	412.4 x 261.7 mm	372.9 x 296.9 mm	301.6 x 227.6 mm
Weight		8kg	6kg	5kg	4.2kg	2.6kg
Certification		BSMI, CCC, CE, FCC Class A, UL				
Operating System		WIN XP/Vista/7/8/XPE/Linux				
Touch Operation System		PenMount 6000				

## Regular Level Monitors



Model		FPM-5191G	FPM-5171G	FPM-5151G
Display	Display Type	SXGA	SXGA	XGA
	Display Size	19"	17"	15"
	Max.Resolution	1280 x 1024	1280 x 1024	1024 x 768
	Max.Colors	16.7M	16.7M	16.2M
	Luminance cd/m <sup>2</sup>	350	350	400
	Viewing Angle (H/V°)	170/160	160/140	160/140
	Backlight MTBF (hrs)	50,000	50,000	50,000
Video Port		VGA/DVI	VGA/DVI	VGA/DVI
Touchscreen		Combo	Combo	Combo
OSD (onscreen display)		On rear side with lockable function	On rear side with lockable function	On rear side with lockable function
Power Input Voltage		100~240v (Adapter Optional)	100~240v (Adapter Optional)	100~240v (Adapter Optional)
DC Power Input(voltage)		10-30v	10-30v	10-30v
Operating Temperature (°C)		0 ~ 50	0 ~ 50	0 ~ 50
Storage Temperature (°C)		-20~60	-20~60	-20~60
Dimension		481.93 x 384.6 x 59 mm	481.9 x 355.9 x 55 mm	449.92 x 315.63 x 50.5 mm
Cut-out Dimension	Cut-out Dimension	454 x 338 mm	454 x 338 mm	424 x 293 mm
Weight		10kg	8kg	6kg
Certification		BSMI, CCC, CE, FCC Class A, UL	BSMI, CCC, CE, FCC Class A, UL	BSMI, CCC, CE, FCC Class A, UL
Operating System		WIN XP/Vista/7/8/XPE/Linux	WIN XP/Vista/7/8/XPE/Linux	WIN XP/Vista/7/8/XPE/Linux
Touch Operation System		PenMount 6000	PenMount 6000	PenMount 6000



Model		FPM-2170G	FPM-2150G	FPM-2120G
Display	Display Type	SXGA	XGA	SVGA
	Display Size	17"	15"	12"
	Max.Resolution	1280x1024	1024x768	800x600
	Max.Colors	16.7M	16.2M	16.2M
	Luminance cd/m <sup>2</sup>	350	400	450
	Viewing Angle (H/V°)	160/140	160/140	160/140
	Backlight MTBF (hrs)	50,000	50,000	50,000
Video Port		VGA	VGA	VGA
Touchscreen		Combo	Combo	Combo
OSD (onscreen display)		On rear side with lockable function	On rear side with lockable function	On rear side with lockable function
Power Input Voltage		100 ~ 240V (Adapter)	100 ~ 240V (Adapter)	100 ~ 240V (Adapter)
DC Power Input(voltage)		12V	12V	12V
Operating Temperature (°C)		0 ~ 50	0 ~ 50	0 ~ 50
Storage Temperature (°C)		-20 ~ 60	-20 ~ 60	-20 ~ 60
Dimension		413.72 x 347.22 x 52.13 mm	383 x 307 x 48 mm	311 x 237 x 40.63 mm
Cut-out Dimension	Cut-out Dimension	400.92 x 334.42 mm	374.6 x 298.6 mm	303.3 x 229.3 mm
Weight		5.6kg	4.5kg	4kg
Certification		BSMI, CCC, CE, FCC, UL	BSMI, CCC, CE, FCC, UL	BSMI, CCC, CE, FCC, UL
Operating System		WIN XP/Vista/7/8/XPE/Linux	WIN XP/Vista/7/8/XPE/Linux	WIN XP/Vista/7/8/XPE/Linux
Touch Operation System		PenMount 6000	PenMount 6000	PenMount 6000

# Selection Guide

## Panel PCs

### Regular Panel PC



Model	PPC-3190	PPC-3170	PPC-3150	PPC-3120	PPC-3100	PPC-L62T
CPU	Intel® Atom™ 1.91 GHz Processor	Intel® Atom™ 1.91 GHz Processor	Intel® Atom™ 1.91 GHz Processor	Intel® Atom™ 1.86 GHz Processor	Intel® Atom™ 1.86 GHz Processor	Intel® Atom™ 1.66 GHz Processor
Memory	1 x 204-pin SODIMM DDR3L support up to 8GB	1 x 204-pin SODIMM DDR3L support up to 8GB	1 x 204-pin SODIMM DDR3L support up to 8GB	1 x 204-pin SODIMM, DDR3/DDR3L (1066MHz), supports up to 4 GB	1 x 204-pin SODIMM, DDR3/DDR3L (1066MHz), supports up to 4 GB	1 x SO-DIMM DDR3 667 support up to 2GB
Display Type	TFT LED LCD	TFT LED LCD	TFT LED LCD	TFT LED LCD	TFT LED LCD	TFT LED LCD
Display Size	19"	17"	15"	12.1"	10.4"	6.5"
Max. Resolution	1280 x 1024	1280 x 1024	1024 x 768	1024 x 768	800 x 600	640 x 480
Max. Colors	16.7M	16.7M	16.7M	262K	16.2 M	262K
Luminance cd/m <sup>2</sup>	350 nits	350 nits	400 nits	600 nits	400 nits	700 nits
Viewing Angle (H/V°)	85 (left), 85 (right), 80 (up), 80 (down)	80 (left), 80 (right), 60 (up), 80 (down)	80 (left), 80 (right), 70 (up), 70 (down)	80 (left), 80 (right), 70 (up), 70 (down)	80 (left), 80 (right), 70 (up), 70 (down)	80 (left), 80 (right), 70 (up), 70 (down)
Backlight MTBF (hrs)	50K hrs	50K hrs	50K hrs	50K hrs	30K hrs	50K hrs
Touchscreen	Analog Resistive 5-wire	Analog Resistive 5-wire	Analog Resistive 5-wire	Analog Resistive 5-wire	Analog Resistive 5-wire	Analog Resistive 5-wire
Network (LAN)	2 x GbE (Intel I210)	2 x GbE (Intel I210)	2 x GbE (Intel I210)	2 x 10/100/1000 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet
I/O Ports	1 x isolated RS-422/485 (terminal block) 4 x RS-232, two external and two by internal pin header (need optional module) 1 x GPIO (8 channels, TTL level) by internal pin header (need optional module) 1 x USB3.0 + 3 x USB2.0 2 x Gigabit Ethernet 1 x D-SUB VGA port 1 x DP1.1a 1 x Line-out, 1 x Mic-in, 2 x 1W speaker	1 x isolated RS-422/485 (terminal block) 4 x RS-232, two external and two by internal pin header (need optional module) 1 x GPIO (8 channels, TTL level) by internal pin header (need optional module) 1 x USB3.0 + 3 x USB2.0 2 x Gigabit Ethernet 1 x D-SUB VGA port 1 x DP1.1a 1 x Line-out, 1 x Mic-in, 2 x 1W speaker	1 x isolated RS-422/485 (terminal block) 4 x RS-232, two external and two by internal pin header (need optional module) 1 x GPIO (8 channels, TTL level) by internal pin header (need optional module) 1 x USB3.0 + 3 x USB2.0 2 x Gigabit Ethernet 1 x D-SUB VGA port 1 x DP1.1a 1 x Line-out, 1 x Mic-in, 2 x 1W speaker	4 x Serial ports: 3 x RS-232, 1x RS-232/422/485 (Adjustable through BIOS) 4 x USB 2.0 ports 1 x Line-out, 1x MIC-in 1 x DB15 VGA 1 x DB9 GPIO port (8 pin programmable)	4 x Serial ports: 3 x RS-232, 1x RS-232/422/485 (Adjustable through BIOS) 4 x USB 2.0 ports 1 x Line-out, 1x MIC-in 1 x DB15 VGA 1 x DB9 GPIO port (8 pin programmable)	2 x Serial ports: RS-232 x 1; RS-232/422/485 x 1; 4 x USB; 1 x Line-out
HDD (Optional)	2.5" SATA HDD/1 x Full size mSATA	2.5" SATA HDD/1 x Full size mSATA	2.5" SATA HDD/1 x Full size mSATA	1 x 2.5" SATA HDD Bay 1 x Full size mSATA	1 x 2.5" SATA HDD Bay 1 x Full size mSATA	1 x 2.5" SATA HDD Bay
Expansion Slots	One PCI (standard) One PCIe x 1 (in the accessory box)	One PCI (standard) One PCIe x 1 (in the accessory box)	One PCI (standard) One PCIe x 1 (in the accessory box)	1 x PCI/ 1 x PCI-e through riser (Optional)	-	-
Additional Expansion	1 x Full-Size Mini PCIe	1 x Full-size Mini PCIe	1 x Full-size Mini PCIe	1x MINI PCI-e (Standard)	1x MINI PCI-e (Standard)	1x MINI PCI-e (Standard)
Power Input (Voltage)	9 ~ 32 V <sub>DC</sub>	9 ~ 32 V <sub>DC</sub>	9 ~ 32 V <sub>DC</sub>	12 ~ 30 V <sub>DC</sub>	12 ~ 30 V <sub>DC</sub>	15 ~ 24 V <sub>DC</sub>
Ingress Protection	Front panel: IP65	Front panel: IP65	Front panel: IP65	Front panel: IP65	Front panel: IP65	Front panel: IP65
Mounting	PanMount, VESA 75/100, wall mount, stand, ARM	PanMount, VESA 75/100, wall mount, stand, ARM	PanMount, VESA 75/100, wall mount, stand, ARM	PanMount, VESA 75, wall mount, stand, ARM	PanMount, VESA 75, wall mount, stand, ARM	PanMount, VESA 75, wall mount, stand, ARM
Operating Temperature	0 ~ 50°C (32 ~ 122°F) with 2.5" SATA HDD -20 ~ 60°C (-4 ~ 140°F) with -40 ~ 85°C mSATA or 2.5" SATA SSD	0 ~ 50°C (32 ~ 122°F) with 2.5" SATA HDD -20 ~ 60°C (-4 ~ 140°F) with -40 ~ 85°C mSATA or 2.5" SATA SSD	0 ~ 50°C (32 ~ 122°F) with 2.5" SATA HDD -20 ~ 60°C (-4 ~ 140°F) with -40 ~ 85°C mSATA or 2.5" SATA SSD	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)
Storage Temperature	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)
Dimensions	458.2 x 384 x 67.3 mm (18" x 15" x 2.6")	442.0 x 362.0 x 69.5 mm (17.4" x 14.3" x 2.74")	396.5 x 317.6 x 65.3 mm (15.6" x 12.5" x 2.57")	325 x 253.8 x 58.4 mm (12.79" x 10" x 2.3")	275 x 220 x 64.3 mm (10.83" x 8.74" x 2.53")	202 x 148 x 49 mm (7.9" x 5.82" x 1.92")
Weight	7.9 Kg	6.3 Kg	5.3 Kg	3.3 Kg	2.5 Kg	1.5 kg
Certification	BSMI, CE, FCC Class A CB, CCC, BSMI, UL	BSMI, CE, FCC Class A CB, CCC, BSMI, UL	BSMI, CE, FCC Class A CB, CCC, BSMI, UL	BSMI, CE, FCC Class B, CB, CCC, BSMI, UL	BSMI, CE, FCC Class B, CB, CCC, BSMI, UL	BSMI, CE, FCC Class B, CB, CCC, BSMI, UL
Operating System	WES7/ WIN 7/ WIN 8 32, 64 bit	WES7/ WIN 7/ WIN 8 32, 64 bit	WES7/ WIN 7/ WIN 8 32, 64 bit	WIN XPE/ XP Pro/ 7/ WES7 / CE 7.0	WIN XPE/ XP Pro/ 7/ WES7 / CE 7.0	WIN XPE/ XP Pro/ WES7/ CE 6.0

## Performance Panel PC



Model	PPC-4211W	PPC-4151W	PPC-6170	PPC-6150	PPC-6120	PPC-8170	PPC-8150
CPU	4th Gen. Intel® Core™ i5/Celeron® Processor	4th Gen. Intel® Core™ i5/Celeron® Processor	3rd Gen. Intel® Core™ i5/i3/Celeron Processor	3rd Gen. Intel® Core™ i5/i3/Celeron Processor	4th Gen. Intel® Core™ i/i3/Celeron® Processor	3rd Gen. Intel® Core™ i5/i3 Processor	3rd Gen. Intel® Core™ i5/i3 Processor
Memory	SO-DIMM x 1, DDR3L1333/1600, Max 8GB	SO-DIMM x 1, DDR3L1333/1600, Max 8GB	1 x 204-pin SODIMM, DDR3 (1600 MHz)/ DDRL (1333 MHz), supports up to 8 GB	1 x 204-pin SODIMM, DDR3 (1600 MHz)/ DDRL (1333 MHz), supports up to 8 GB	2 x 204-pin SODIMM, DDR3/DDR3L (1600 MHz) total up to 16G	2 x 204 PIN DDR3 SO-DIMM, DDR3 1066/ 1333/ 1600MHz SDRAM, up to 8 GB/ 4 GB per SO-DIMM	2 x 204 PIN DDR3 SO-DIMM, DDR3 1066/ 1333/ 1600MHz SDRAM, up to 8 GB/ 4 GB per SO-DIMM
Display Type	TFT LED LCD	TFT LED LCD	TFT LED LCD	TFT LED LCD	TFT LED LCD	TFT LED LCD	TFT LED LCD
Display Size	21.5"	15.6"	17"	15"	12.1"	17"	15"
Max. Resolution	1920 x 1080	1366 x 768	1280 x 1024	1024 x 768	1024 x 768	1280 x 1024	1024 x 768
Max. Colors	16.7 M	16.7 M	262 K	262K	262K	16.7 M	262 K
Luminance cd/m <sup>2</sup>	300 nits	300 nits	350 nits	350 nits	600 nits	350 nits	400 nits
Viewing Angle (H/V°)	178°/ 178°	160°/ 170°	85 (left), 85 (right), 80 (up), 80 (down)	80 (left), 80 (right), 70 (up), 70 (down)	80 (left), 80 (right), 70 (up), 70 (down)	80 (left), 80 (right), 60 (up), 80 (down)	80 (left), 80 (right), 70 (up), 70 (down)
Backlight MTBF (hrs)	50K hrs	50K hrs	50K hrs	50K hrs	50K hrs	50K hrs	50K hrs
Touchscreen	PCT Multi Touch or Analog Resistive 5-wire	PCT Multi Touch or Analog Resistive 5-wire	Analog Resistive 5-wire	Analog Resistive 5-wire	Analog Resistive 5-wire	Analog Resistive 5-wire	Analog Resistive 5-wire
Network (LAN)	2 x 10/100/1000 Mbps Ethernet, Intel I211-AT, Intel I218LM	2 x 10/100/1000 Mbps Ethernet, Intel I211-AT, Intel I218LM	2 x GbE, supports Intel AMT9.0	2 x GbE, supports Intel AMT9.0	2 x GbE, supports Intel AMT9.0	2 x GbE connectors (RTL8111E)	2 x GbE connectors (RTL8111E)
I/O Ports	5 x Serial ports: 4 x RS-232, 1 x RS-422/485 with isolation 1K V <sub>dc</sub> 4 x USB 3.0 ports in rear side, 1 x USB 2.0 in right side 1 x Line-out, 1x MIC-in 1 x DB15 VGA 1 x Display Port (1.2)	5 x Serial ports: 4 x RS-232, 1 x RS-422/485 with isolation 1K V <sub>dc</sub> 4 x USB 3.0 ports in rear side, 1 x USB 2.0 in right side 1 x Line-out, 1x MIC-in 1 x DB15 VGA 1 x Display Port (1.2)	4 x COM ports, 1 x isolated RS-232/422/485, 3 x RS-232 1 x GPIO/RS-232 (8 channels, TTL level); by pin header 3 x USB3.0 + 2 x USB2.0 ports	4 x COM ports, 1 x isolated RS-232/422/485, 3 x RS-232 1 x GPIO/RS-232 (8 channels, TTL level); by pin header 3 x USB3.0 + 2 x USB2.0 ports	4 x USB3.0 (Ext.), 2 x USB2.0 (Int. pin head) 4 x RS-232 Serial ports, 1 x isolated RS422/485 (1KVDC) 1 x Display Port 1.2 1 x DB15 VGA out 3 x USB3.0 + 2 x USB2.0 ports	6 COMs, 1 x RS-232/422/485, 5 x RS-232 6 x USB2.0 1 x VGA, 1 x DVI 1 x GPIO 8 bits (internal pin header) 1 x Mic-in, 1 x Line-out 1 x PS/2 2 x 1.5W speaker	6 COMs, 1 x RS-232/422/485, 5 x RS-232 6 x USB2.0 1 x VGA, 1 x DVI 1 x GPIO 8 bits (internal pin header) 1 x Mic-in, 1 x Line-out 1 x PS/2 2 x 1.5W speaker
HDD (Optional)	2.5" SATA HDD	2.5" SATA HDD	1 x 2.5" SATA bay/Second 2.5" SATA bay (Intel RAID supported, optional)	1 x 2.5" SATA bay/Second 2.5" SATA bay (Intel RAID supported, optional)	2.5" SATA HDD bay x1 mSATA x1	2.5" SATA HDD	2.5" SATA HDD
Expansion Slots	1 x PCIe x1 (standard) 1 x PCI (in the accessory box)	1 x PCIe x1 (standard) 1 x PCI (in the accessory box)	one PCI + one PCIe x1 (standard) one x PCIe x 4 (in the accessory box)	one PCI + one PCIe x1 (standard) one x PCIe x 4 (in the accessory box)	1 x PCIe by 1/ 1 x PCI through riser (Optional)	One PCIe x 4 (pre-installed) One PCI (in the accessory box)	One PCIe x 4 (pre-installed) One PCI (in the accessory box)
Additional Expansion	1 x Mini PCIe slot 1 x mSATA card slot	1 x Mini PCIe slot 1 x mSATA card slot	1 x full-size mini PCIe (Supports mSATA) 1 x half-size mini PCIe	1 x full-size mini PCIe (Supports mSATA) 1 x half-size mini PCIe	1 x Mini PCIe (Standard)	1 x Mini PCIe	1 x Mini PCIe
Power Input (Voltage)	9 ~ 32 V <sub>dc</sub>	9 ~ 32 V <sub>dc</sub>	100 - 240 V <sub>AC</sub>	100 - 240 V <sub>AC</sub>	12 ~ 30 V <sub>dc</sub>	100 - 240 V <sub>AC</sub>	100 - 240 V <sub>AC</sub>
Ingress Protection	Front panel: IP65	Front panel: IP65	Front panel: IP65	Front panel: IP65	Front panel: IP65	Front panel: IP65	Front panel: IP65
Mounting	Panel Mount, VESA 75/100, wall mount, stand, ARM	Panel Mount, VESA 75/100, wall mount, stand, ARM	Panel Mount, VESA 75/100, wall mount, stand, ARM	Panel Mount, VESA 75/100, wall mount, stand, ARM	Panel Mount, VESA 75/100, wall mount, stand, ARM	Panel Mount, VESA 75/100, wall mount, stand, ARM	Panel Mount, VESA 75/100, wall mount, stand, ARM
Operating Temperature	0 ~ 50°C (32 ~ 122°F) for SSD, 0~45°C for HDD	0 ~ 50°C (32 ~ 122°F) for SSD, 0~45°C for HDD	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)	0 ~ 50°C (32 ~ 122°F)
Storage Temperature	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)
Dimensions	419.7 x 269 x 59 mm (16.52" x 10.59" x 2.32")	419.7 x 269 x 59 mm (16.52" x 10.59" x 2.32")	442.0 x 362.0 x 113.5 mm (17.4" x 14.25" x 4.47")	395.5 x 316.8 x 105.5 mm (15.6" x 12.5" x 4.15")	325.0 x 253.80 x 73.80 mm (12.80" x 9.99" x 2.91")	442.0 x 362.0 x 113.5 mm (17.4" x 14.25" x 4.47")	395.5 x 316.8 x 110.5 mm (15.6" x 12.5" x 4.35")
Weight	7.8 Kg	5.69 Kg	7.5 Kg	6.5 Kg	3.8 Kg	9.2 Kg	6.98 Kg
Certification	BSMI, CCC, CE, FCC Class B, UL	BSMI, CCC, CE, FCC Class B, UL	BSMI, CE, FCC Class A CB, CCC, BSMI, UL	BSMI, CE, FCC Class A CB, CCC, BSMI, UL	BSMI, CE, FCC Class A, CB, CCC, BSMI, UL	BSMI, CCC, CE, FCC Class A, UL	BSMI, CCC, CE, FCC Class A, UL
Operating System	WIN 7/ 8 /Linux	WIN 7/ 8 /Linux	WIN XPE/ XP Pro/ WEST 32, 64 bit/ 7 32, 64 bit	WIN XPE/ XP Pro/ WES7 32, 64 bit/ 8 32, 64bit/ Linux	WIN 7 32, 64bit/ 8 32, 64bit/ Linux	WIN XP Pro/ 7 32, 64 bit	WIN XP Pro/ 7 32, 64 bit

# Serial Communication Cards

## Serial Communication Cards



Bus		Universal Low-Profile PCI		Universal PCI				
Model Name		PCI-1602UP	PCI-1604UP	PCI-1601A/B	PCI-1602	PCI-1603	PCI-1610A/B	PCI-1610C
Number of Ports		2	2	2	2	2	4	4
Communication Interfaces	Current Loop	-	-	-	-	V	-	-
	RS-232	-	V	-	-	V	V	V
	RS-422	V	-	V	V	-	-	-
	RS-485	V	-	V	V	-	-	-
	CAN	-	-	-	-	-	-	-
Driver		32-bit/64-bit Windows 2000/XP/Vista/7, Windows CE 5.0/6.0, Linux, and QNX						
Protection	ESD	8KV (air), 4KV (contact)						
	Isolation	2,500 V <sub>dc</sub>	2,500 V <sub>dc</sub>	-	2,500 V <sub>dc</sub>	2,500 V <sub>dc</sub>	-	2,500 V <sub>dc</sub>
Cable Connector Type		DB9 Male	DB9 Male	-	-	-	DB9 Male	DB9 Male



Bus		Universal PCI						
Model Name		PCI-1620A/B	PCI-1612C	PCI-1612A/B	PCI-1622B	PCI-1622C		
Number of Ports		4	4	8	8	8		
Communication Interfaces	Current Loop	-	-	-	-	-		
	RS-232	V	V	V	-	-		
	RS-422	V	V	-	V	V		
	RS-485	V	V	-	V	V		
	CAN	-	-	-	-	-		
Driver		32-bit/64-bit Windows 2000/XP/Vista/7, Windows CE 5.0/6.0, Linux, and QNX						
Protection	ESD	8KV (air), 4KV (contact)						
	Isolation	-	2,500 V <sub>dc</sub>	-	-	-	2,500 V <sub>dc</sub>	-
Cable Connector Type		DB9 Male	DB9 Male	-	-	-	-	-



Bus		PCI Express							CAN-bus PCI	CAN-bus ISA
Model Name		PCIE-1602	PCIE-1604	PCIE-1610	PCIE-1612	PCIE-1620	PCIE-1622	PCIE-1680	PCI-1680U	PCL-841
Number of Ports		2	2	4	4	8	8	2	2	2
Communication Interfaces	RS-232	V	V	V	V	V	V	-	-	-
	RS-422	V	-	-	V	-	V	-	-	-
	RS-485	V	-	-	V	-	V	-	-	-
	CAN	-	-	-	-	-	-	V	V	V
	Driver	Windows Xp, 7, 8, 8.1, 10, server 2008, server2012, Linux, Qnx and Vxworks							32-bit/64-bit Windows 2000/XP/Vista/7, Linux, and QNX	
Protection	ESD	15KV (air), 8KV (contact)							8KV (air), 4KV (contact)	
	Isolation	3,000 V <sub>dc</sub>	3,000 V <sub>dc</sub>	3,000 V <sub>dc</sub>	3,000 V <sub>dc</sub>	3,000 V <sub>dc</sub>	3,000 V <sub>dc</sub>	2,500 V <sub>dc</sub>	1,000 V <sub>dc</sub>	1,000 V <sub>dc</sub>
Cable Connector Type		-	-	-	-	-	-	-	-	-

## PC/104 Communication Modules



Bus		PC/104						
Model Name		PCM-3680	PCM-3660	PCM-3610	PCM-3612	PCM-3614	PCM-3618	PCM-3640/3641
Ports		2	2	2	2	4	8	4
Communication Interfaces	Ethernet	-	V	-	-	-	-	-
	RS-232	-	-	V	-	-	-	V
	RS-422	-	-	V	V	V	V	-
	RS-485	-	-	V	V	V	V	-
	CAN	V	-	-	-	-	-	-
Protection	ESD	8KV (air), 4KV (contact)						
	Isolation	2,500 V <sub>dc</sub>	-	2,500 V <sub>dc</sub>	-	-	-	-
Cable Connector Type		-	-	-	-	-	-	-

## PCI-104 Communication Modules



Bus		PCI-104		
Model Name		PCM-3680I	PCM-3614I	PCM-3641I
Ports		2	4	4
Communication Interfaces	Current Loop	-	-	-
	RS-232	-	V	V
	RS-422	-	V	-
	RS-485	-	V	-
	CAN	V	-	-
Protection	ESD	8KV (air), 4KV (contact)		
	Isolation	2,500 V <sub>dc</sub>	-	-
Cable Connector Type		-	-	-

## Accessories



Model Name		1700018791	OPT4A	OPT8C	OPT8H	OPT8J
Length		30 cm	30 cm	1 m	1 m	1 m
Communication Interfaces	Connector Type	DB37 Male	DB37 Male	DB62 Male	DB62 Male	DB78
	Qty	1	1	1	1	1
	Connector Type	DB25 Male	DB9 Male	DB25 Male	DB9 Male	DB9 Male
	Qty	4	4	8	8	8
	Where Used	PCI-1610, PCI-1610C, PCI-1612, PCI-1612C, PCIE-1610B, PCI-1612B, PCI-1612C	PCI-1610, PCI-1610C, PCI-1612, PCI-1612C, PCIE-1610B, PCI-1612B, PCI-1612C	PCI-1620, PCIE-1620A, PCIE-1622A, PCIE-1622B	PCI-1620, PCIE-1620A, PCIE-1622A, PCIE-1622B	PCI-1622, PC-1622C, PCIE-1622C

# Embedded Automation Computers

## Embedded Automation PCs

**NEW****NEW****NEW****NEW**

Model Name	<b>UNO-2272G</b>	<b>UNO-2362G</b>	<b>UNO-2483G / UNO-2473G</b>	<b>UNO-2483P</b>	<b>UNO-2174G/GL UNO-2184G</b>
CPU	Intel® Atom™ N2800, 1.86GHz Intel® Atom™ J1900, 2GHz	AMD G-Series APU T40E 1.0GHz Dual Core	Intel® Core™ i7-4650U ULT 1.7GHz Dual Core Intel® Core™ i3-4010U ULT 1.7GHz Dual Core Intel® Celeron® 2980U ULT 1.6GHz Dual Core Intel® Atom™ E3845 1.91GHz Quad Core	Intel® Core™ i7-4650U ULT 1.7GHz Dual Core Intel® Celeron® 2980U ULT 1.6GHz Dual Core	UNO-2174G/GL: Intel® Celeron™ 847/807UE, 1.1/1.0 GHz UNO-2184G: Intel® Core™ i7-3555LE/ i7-2655LE 2.5/2.2 GHz
Onboard RAM	2G DDR3/DDR3L SDRAM	2G DDR3 SDRAM	8G/4G DDR3L SDRAM	8G/4G DDR3L SDRAM	4 GB/8 GB DDR3 SDRAM
Battery-Backup RAM	-	-	-	-	-
Display	VGA for N2800 HDMI for J1900	HDMI/DP	HDMI/VGA	HDMI/VGA	DVI-I/HDMI/DP
Audio	Yes	-	Yes	Yes	Yes
Serial Ports	1 x RS-232	1 x RS-232, 1 x RS-485	2 x RS-232, 2 x RS-422/485	2 x RS-232, 2 x RS-422/485	2 x RS-232 2 x RS-232/422/485
Ethernet Ports	1 x 10/100/1000Base-T	2 x 10/100/1000Base-T, (1 x Giga Ethernet switch with daisy chain technology)	4 x 10/100/1000Base-T	4 x 10/100/1000Base-T 4 x POE	4 x 10/100/1000Base-T
USB Ports	3 external for N2800 3 external (1 x USB3.0) for J1900	4 external	4 external (2 x USB3.0)	4 external (2 x USB3.0)	6 external
PC Card Slots	-	-	-	-	-
Printer Ports	-	-	-	-	-
PCI/104 Expansion	-	-	-	-	PCI-104 (optional)
PCIe/PCI Expansion	1 x Mini PCIe, 1 x Half-size Mini PCIe with 1 x SIM slot for N2800 2 x Mini PCIe with 1 x SIM slot for J1900	1 x Mini PCIe with 1 x SIM slot	2 x mPCIe, 1 x Half-size mPCIe	1 x Half-size Mini PCIe	2 x Mini PCIe with 1 x SIM slot
Onboard I/O	-	-	-	-	-
Watchdog Timer	Yes	Yes	Yes	Yes	Yes
CompactFlash Slots	1 x mSATA	1 x mSATA	1 x mSATA	1 x mSATA	1x CFast
2.5" HDD Expansion	-	1 x SATA (optional)	1 x SATA for UNO-2473G 2 x SATA for UNO-2483G	2 x SATA	2 x SATA (optional)
Operating Systems	Microsoft® Windows 7, WES7, Linux	Microsoft® Windows XP/7/8 WES7, Linux	Microsoft® Windows 7/8, WES7, Linux	Microsoft® Windows 7/8, WES7, Linux	Windows XP/7, WES7, WES-2009, Linux
Mounting	Stand, Wall, VESA (Optional)	Stand, Wall, VESA (Optional)	Stand, Wall, VESA (Optional)	Stand, Wall, VESA (Optional)	DIN-rail/Wall/VESA
Anti-Vibration	0.75G w/mSATA, 2G w/HDD	0.75G w/mSATA, 2G w/HDD	0.7G w/mSATA, 2G w/HDD	0.7G w/mSATA, 2G w/HDD	2 G w/CF, 1 G w/HDD
Anti-Shock	50G w/mSata, 20G w/HDD	50G w/mSata, 20G w/HDD	50G w/mSata, 20G w/HDD	50G w/CF, 20 G w/HDD	50 G w/CF, 20 G w/HDD
Power Input Range*	24V ± 20%	24V ± 15%	24V ± 20%	24V ± 20%	9 ~ 36 V <sub>DC</sub>
Operating Temperature	- 20 ~ 60°C (-4 ~ 140°F) for N2800, 0 ~ 50°C (32 ~ 122°F) for J1900	- 10 ~ 60°C (14 ~ 140°F)	- 20 ~ 60°C (-4 ~ 140°F)	- 20 ~ 50°C (-4 ~ 122°F)	-10 ~ 60°C (14 ~ 140°F)
Power Consumption Typical	10 W	14 W	28 W	48 W	UNO-2174G/GL: 30 W/ 20 W UNO-2184G: 40 W
Power Requirements	12W, +24 V @ 0.5 A power input	24W, +24 V @ 1A power input	72 W, +24 V @ 3A power input	134W, +24 V @ 5.6A power input	72 W, +24 V @ 3 A power input
Dimensions (W x D x H)	157 x 88 x 50 mm (6.2" x 3.5" x 2.0")	190 x 107 x 47 mm (7.5" x 4.2" x 1.8")	252 x 149 x 62 mm (9.9" x 5.9" x 2.4")	252 x 149 x 68 mm (9.9" x 5.9" x 2.7")	255 x 152 x 69 mm (10" x 6.0" x 2.7")
Weight	0.8kg	1.0kg	1.6kg	1.6kg	3.0 kg

\* All power input ranges represent the minimum and maximum values recommended for these devices.

## Control DIN-Rail PCs



Model Name	UNO-1110	UNO-1252G	UNO-1372G	UNO-1483G
CPU	TI Cortex A8 AM3505, 600 MHz	Intel® Quark 400 MHz	Intel® Atom™ E3845 1.91 GHz	4th Gen. Intel® Core™ i3-4010U 1.7 GHz
Onboard RAM	256 MB DDR2 SDRAM	256 MB DDR3 SDRAM	4 GB DDR3L SDRAM	8 GB DDR3L SDRAM
Battery-Backup SRAM	-	-	-	-
Display	VGA	-	HDMI, VGA	DP, VGA
Audio	-	-	Line-out	Line-out
Serial Ports	4 x RS-232/422/485 (2 x Isolation, optional) 1 x RS-485	1 x RS-232, 1 x RS-485	1 x RS-232, 1 x RS-422/485	1 x RS-232, 2 x RS-422/485
Ethernet Ports	2 x 10/100Base-T	2 x 10/100 Base-T	3 x 10/100/1000 Base-T	4 x 10/100/1000 Base-T
USB Ports	2 x USB 2.0	1 x USB 2.0 1 x USB 2.0 client	2 x USB 2.0 1 x USB 3.0	2 x USB 2.0 2 x USB 3.0
PC Card Slots	-	-	-	-
Printer Ports	-	-	-	-
PC/104 Expansion	-	-	-	-
PCIe/PCI Expansion	1 x Mini PCIe (w/ USB signal only)	2 x Mini PCIe	2 x Mini PCIe	1 x PClex1 2 x Mini PCIe, mPCIe 2.0 (1 supports mSATA / SIM card)
Onboard I/O	4-ch DI, 2-ch DO	4-ch DI, 4-ch DO	4-ch DI, 4-ch DO	4-ch DI, 4-ch DO
Watchdog Timer	Yes	-	-	Yes
CompactFlash Slots	-	-	-	-
2.5" HDD Expansion	-	-	1 x SATA 6Gb/s	1 x SATA 6Gb/s
Operating Systems	Windows CE 6.0, Linux	Linux	Windows 7/8, WES7/WES8s, Linux	Windows 7/8, WES7/8, Linux
Mounting	DIN-rail/Wall	DIN-rail Mount	DIN-rail/Wall Mount	DIN-rail/Wall
Anti-Vibration	-	-	-	2 G w/ mSATA, 1 G w/ HDD
Anti-Shock	-	-	-	50 G w/ mSATA, 20 G w/ HDD
Power Input Range*	10 ~ 30 V <sub>DC</sub>	9 ~ 36 V <sub>DC</sub>	9 ~ 36 V <sub>DC</sub>	12/24 V <sub>DC</sub>
Operating Temperature	-10 ~ 70°C @ 5 ~ 85% RH	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)
Power Consumption Typical	Min. 8.5 W	6 W	24 W	41 W
Power Requirements	Min. 13 W	12 W, 24 V <sub>DC</sub> @ 0.5A	36 W, 24 V <sub>DC</sub> @ 1.5A	60 W, 24 V <sub>DC</sub> @ 2.5A
Dimensions (W x D x H)	48 x 127 x 152 mm (1.9" x 5" x 6")	70 x 90 x 100 mm (2.76" x 3.54" x 3.94")	85 x 139 x 152 mm (3.3" x 5.5" x 6.0")	110 x 198 x 139 mm (4.3" x 7.8" x 5.8")
Weight	0.45 kg	0.6 kg	1.6 kg	1.6kg (3.5 lbs)

\* All power input ranges represent the minimum and maximum values recommended for these devices.

# Embedded Automation Computers

## Control Cabinet PCs



Model Name	UNO-3083G/3085G UNO-3073G/3075G UNO-3073GL	UNO-3283G/UNO-3273G	UNO-3382G/3384G	UNO-3483G
CPU	UNO-3073GL: Intel Celeron 807UE 1GHz UNO-3073G: Intel Celeron 847 1.1GHz UNO-3083G/3085G : Intel Core i7 3555 LE 2.5 GHz or -2655LE 2.2 GHz	UNO-3283G: Intel® Skylake CPU UNO-3273G: Intel® Celeron® J1900 2.0GHz	Intel® Core™ i7-4650U 1.7Hz	Intel® Core™ i7-3612QE
Onboard RAM	4GB DDR3 SDRAM	UNO-3283G: 8GB DDR3L SDRAM UNO-3273G: 4GB DDR3L SDRAM	8GB DDR3L SDRAM	8GB DDR3/DDR3L SDRAM
Battery-Backup RAM			On board MRAM 512K	-
Display	1 x DVI-I, 1 x HDMI	UNO-3283G: DVI, HDMI UNO-3273G: VGA, HDMI	HDMI, DP (disabled when attached to display module)	VGA, HDMI
Audio	Mic in, Line Out	N/A (built-in Line-in/out/Mic, I/O through iDoor)	N/A (built-in Line-in/out/Mic, I/O through iDoor)	Mic in, Line out (pin header)
Serial Ports	2 x RS-232/422/485 2 x RS-232 (optional)	2 x RS-232/422/485	RS-232/422/485 x 1 (isolation)	1 x RS-232, 1 x RS-232/422/485 with DB9 connection (pin header)
Ethernet Ports	2 x 10/100/1000 Base-T RJ-45 ports Supports AMT (UNO-3083G/3085G only)	2 x 10/100/1000 Base-T RJ-45 (support IEEE1588)	2 x 10/100/1000 Base-T RJ-45 (support IEEE1588)	2 x 10/100/1000 Base-T RJ-45 (support IEEE1588)
USB Ports	Nine (One Internal)	UNO-3283G: 2 x USB 2.0, 4 x USB 3.0 UNO-3273G: 5 x USB 2.0, 1 x USB 3.0	2 x USB 2.0 2 x USB 3.0	2 x USB 2.0 2 x USB 3.0
Printer Ports	-	-	-	-
PC/104 Expansion	-	-	-	-
PCIe/PCI Expansion	UNO-3073G/UNO-3073GL/ 3083G: 3 slots 3085G: 5 slots	UNO-3283G: 2x PCIe or 2x PCI or 1x PCI/1x PCIe UNO-3273G: 2x PCI	UNO-3382G: 2 x Mini PCIe UNO-3384G: 2 x Mini PCIe, 2 x PCI/PCIe (2 x PCI, 1 x PCIe x1+1 x PCIe x4, 1 x PCI + 1 x PCIe 4)	1 x PCIe 4, 3 x Mini PCIe (2 x full, 1 x half)
Onboard I/O	-	-	-	-
Watchdog Timer	Yes	-	-	-
CompactFlash Slots	Two internal	-	-	-
2.5" HDD Expansion	2 x SATA, support RAID 0/1 (except UNO-3073GL)	Two built-in 2.5" SATA HDD brackets with support for RAID 0/1	Two built-in 2.5" SATA HDD brackets with support for RAID 0/1	Two built-in 2.5" SATA HDD brackets with support for RAID 0/1
Operating Systems	Windows XP/Windows 7/8, WES7, WES-2009, Linus	WIN7/8, WES7, WES-2009, Linux	Linux, Win 7, WES 7, Win 8, Win Emb 8.1 Industry	WIN7/8, WES7, WES-2009, Linux
Mounting	Wall/Stand/Panel	Wall/Stand	Book Mount	Enclosure Mount
Anti-Vibration	-	-	-	-
Anti-Shock	50 G w/CF 20 G w/HDD	-	-	-
Power Input Range*	9 ~ 36 V <sub>DC</sub>	9 ~ 36 V <sub>DC</sub>	18 ~ 36 V <sub>DC</sub>	12/24 V <sub>DC</sub> ± 20%
Operating Temperature	-10 ~ 60°C (14 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 60°C (-4 ~ 140°F)
Power Consumption Typical	UNO-3073GL: 25W (Typical) UNO-3073G: 35W (Typical) UNO-3083G/3085G: 45W (Typical)	45W (Typical)	45W	50W
Power Requirements	12V ±20%, 24V ±20%	12V/24V <sub>DC</sub> ± 20% (24V@5A)	24V <sub>DC</sub> @ 4.5A	12V/24V <sub>DC</sub> @ 4A
Dimensions (W x D x H)	UNO-3083G/3073G/GL: 148 x 238 x 177 mm (5.8" x 9.3" x 7.0") UNO-3085G: 193 x 238 x 177 mm (7.6" x 9.3" x 7.0")	157 x 238 x 177 mm	UNO-3382G: 254 x 207 x 65.2 mm (100" x 81.5" x 25.7") UNO-3384G: 254 x 207 x 103.2 mm (100" x 81.5" x 40.6")	305 x 82 x 225 mm (120.1" x 32.3" x 88.6")
Weight	UNO-3083G/3073G/GL: 4.5 kg UNO-3085G: 5.0 kg	4.5 kg	UNO-3382G: 3.1 kg UNO-3384G: 3.9 kg	4.9 kg

\* All power input ranges represent the minimum and maximum values recommended for these devices.

## iDoor Module

### Multiple I/O & Peripheral



Model Name	PCM-2300MR	PCM-23C1CF	PCM-23U1DG	PCM-24R1TP	PCM-24U2U3	PCM-24R2PE	PCM-24R2GL	PCM-28P1AD	PCM-28P1BK
Description	MR4A16B, MRAM, 2 MByte, mPCIe	1 CFast Slot with Cover Protection	USB Slot w/ Lock for USB Dongle	1-Port Gigabit Ethernet, Intel® 82574L, mPCIe, RJ45	2-Port USB 3.0, mPCIe, USB-A type	2-Port Gigabit Ethernet, IEEE 802.3af (PoE) Compliant, mPCIe, RJ45	2-Port Gigabit Ethernet, mPCIe, RJ45	PCIe to mPCIe, 2-Slots mPCIe, iDoor I/O plate expansion	iDoor PCIe I/O Plate

### Smart I/O & Comm.



Model Name	PCM-24D2R4	PCM-24D2R2	PCM-24D4R4	PCM-24D4R2	PCM-27D24DI
Description	2-Port Isolated RS-422/485 mPCIe, DB9	2-Port Isolated RS-232 mPCIe, DB9	4-Port Non-Isolated RS-422/485 mPCIe, DB37	4-Port Non-Isolated RS-232 mPCIe, DB37	24-Channel Isolated Digital I/O w/ counter mPCIe, DB37

### Communication



Model Name	PCM-24S2ZB	PCM-24S2WF	PCM-24S33G	PCM-24S34G
Description	Wireless Zigbee Gateway, mPCIe, 1-port SMA	WiFi 802.11 a/b/g/n 2T2R w/ Bluetooth4.0, Half-size mPCIe, 2-port SMA	Wide-Temp 3.75G HSPA and GPS, 2-in-1, Full-size mPCIe w/ Redundant SIM Card holder, 2-port SMA	LTE Bands, UMTS/HSPA Bands, GPS/GPRS Bands, 2-port SMA

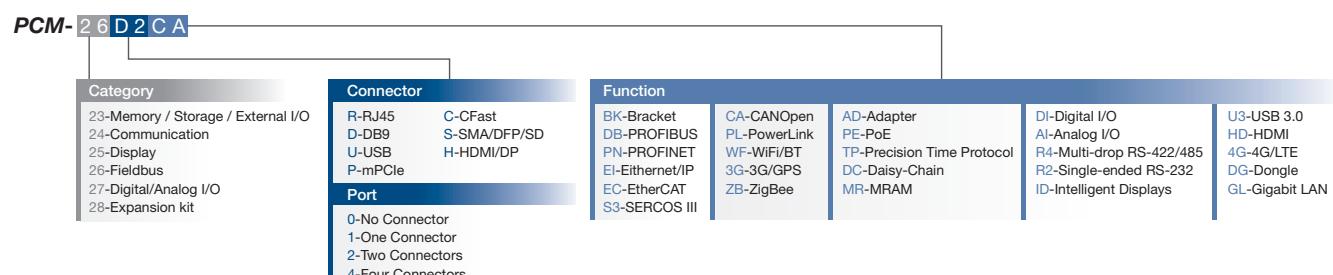
For the information of regulation, please refer to the product page of each model  
(Wifi Accessory kit- PCM-24S200, 3G/ 4G Accessory kit- PCM-24S300)

### Industrial Fieldbus



Model Name	PCM-26D2CA	PCM-26D1DB	PCM-26R2PN	PCM-26R2EC	PCM-26R2EI	PCM-26R2S3	PCM-26R2PL
Description	2-Port Isolated CANBus mPCIe, CANOpen, DB9	1-Port Hilscher netX100 FieldBus mPCIe, PROFIBUS, DB9	2-Port Hilscher netX100 FieldBus mPCIe, PROFINET, RJ45	2-Port Hilscher netX100 FieldBus mPCIe, EtherCAT, RJ45	2-Port Hilscher netX100 FieldBus mPCIe, EtherNet/IP, RJ45	2-Port Hilscher netX100 FieldBus mPCIe, Sercos III, RJ45	2-Port Hilscher netX100 FieldBus mPCIe, POWERLINK, RJ45

### Naming Convention



# DIN-Rail IPCs

## APAX Controller

NEW


System	APAX-5620	APAX-5580
CPU	XScale PXA270 520 MHz	Intel Core i7-4650U 1.7GHz Dual Core Intel Core i3-4010U 1.7GHz Dual Core Intel Celeron 2980U 1.6GHz Dual Core
Memory	Flash 32 MB, SDRAM 64 MB	4GB DDR3L SDRAM
Storage	1 x CF slot	1 x mSATA slot 2 x SD card slots
Local Display	VGA	VGA
USB Ports	1 x USB 1.1	2 x USB 2.0, 2 x USB 3.0
Audio	-	Line Out
Cooling System	Fanless	Fanless
Power Input	18 ~ 30 V <sub>DC</sub>	24V ± 20%
Diagnostics LED	Power, Battery, Run, Error	PWR, RUN, SATA, UPS, ERR, Over Temp., Abnormal Volt, SYS Recovery
Real-time Clock		Yes
Watchdog Timer		Yes
Control Software	C/C++ library and .NET class library for C and .NET programming environment KW IEC 61131-3 SoftLogic programming tool	C/C++ library and .NET class library for C and .NET programming environment CODESYS IEC 61131-3 SoftLogic S/W
Local Real-time I/O Modules		32 (max.)*
Digital I/O Points		2048 (max.)
Analog I/O points		512 (max.)
Communication (Ethernet)	LAN Ports: 2 Speed: 10/100 Mbps Protocol: Modbus/TCP	2 10/100/1000Mbps RS-232/422/485
Communication (Serial)	COM 1: RS-485 COM 2: RS-485 COM 3: - CAN Bus: 2 Protocol: Modbus/RTU, CANopen (APAX-5620 only)	- - - - Modbus/RTU, CANopen (APAX-5620 only)
Isolation	Communication: 2500 V <sub>DC</sub> (CAN & RS-485)	-
Environment	Operating Temperature (when mounted vertically): -10 ~ 55°C Storage Temperature: -40 ~ 70°C Relative Humidity: 0 ~ 95 % (non-condensing) Vibration Protection: IEC 60068-2-64/60068-2-6: 1 Grms @ 5 ~ 500 Hz (Random, operating) 2 G @ 5 ~ 500 Hz (Sine, non-operating) Shock Protection: IEC 60068-2-27: 20 G @ wall mount	-10 ~ 60°C IEC 60068-2-64: 2 Grms @ 5 ~ 500 Hz (Random, operating) IEC 60068-2-27: 50 G @ wall mount
Power Supply Module (Optional)	APAX-5343E	APAX-5343

\*APAX DI/O modules can use ID numbers 0 ~ 31, while AI/O modules and counter modules can only use ID numbers 0 ~ 15

## APAX Communication Module Coupler Modules



Module Name	APAX-5070	APAX-5071	APAX-5072
Description	Modbus/TCP Communication Coupler	PROFINET Communication Coupler	EtherNet/IP Communication Coupler
Communication	Protocol	Modbus/TCP	PROFINET RT
	Data Transfer Rates	10/100 Mbps	100 Mbps
	Connected I/O Modules		32 (max.)*
	Digital Signals		768 (max.)
	Analog Signals		192 (max.)
General	Connector	2 x RJ-45 (2-channel switch, share same IP address)	
	Topology	Line or star wiring	
	Operating Temperature	-10 ~ 60°C (when mounted vertically)	
	Storage Temperature	-40 ~ 85°C	
	Relative Humidity	5 ~ 95% (non-condensing)	

\*APAX DI/O modules can use ID number 0 ~ 31, while AI/O modules and counter modules can only use ID numbers 0 ~ 15

## Communication Modules



Module Name	APAX-5490	APAX-5090
Description	4-port RS-232/422/485 Communication Module	4-port RS-232/422/485 Communication Module
Serial Communication	Baud Rate	50 bps ~ 230.4 kbps
	Data Bits	5, 6, 7, 8
	Stop Bits	1, 1.5, 2
	Parity	None, even, odd
CANopen Communication	Data Transfer Rates	-
Motion	Transmission Speed	-
	Slaves Number	-
General	Interface	4 x RS-232/422/485 2 x RS-422/485
	Connector	26-pin clamp-type terminal
	Operating Temperature	0 ~ 60°C (when mounted vertically)
	Storage Temperature	-40 ~ 70°C
	Relative Humidity	5 ~ 95% (non-condensing)

Note: APAX-5090P, APAX-5095P and APAX-5202P can only be used by controller with a PCI interface

# DIN-Rail IPCs

## APAX I/O Module



Module Name	APAX-5013	APAX-5017	APAX-5017H	APAX-5018	APAX-5028
Description	8-ch RTD Module	12-ch AI Module	12-ch High Speed AI Module	12-ch Thermocouple Module	8-ch AO Module
Analog Input	AI Channels	8	12	12	-
	Input Type*	RTD (2-wire or 3-wire)	V, mV, mA	V, mV, mA	V, mV, mA, Thermocouple
	Sampling Rate (Samples/second)	50 Hz filter: 8 (Total)** 60 Hz filter: 10 (Total**)	12/120 selectable (Total**)	1000 (per channel)	12 (Total**)
	Input Resolution	16-bit	16-bit (voltage) 14 ~ 15-bit (current)	12-bit	16-bit (voltage) 14 ~ 15-bit (current, thermocouple)
	Input Accuracy	$\pm 0.1\%$ of FSR	$\pm 0.1\%$ of FSR (Voltage) $\pm 0.2\%$ of FSR (Current)	$\pm 0.1\%$ of FSR (Voltage) $\pm 0.2\%$ of FSR (Current)	$\pm 0.1\%$ of FSR (Voltage) $\pm 0.2\%$ of FSR (Current)
	Voltage Input	-	$\pm 150\text{ mV}$ , $\pm 500\text{ mV}$ , $\pm 1\text{ V}$ , $\pm 5\text{ V}$ , $\pm 10\text{ V}$	$0 \sim 500\text{ mV}$ , $\pm 10\text{ V}$ , $0 \sim 10\text{ V}$	$\pm 50\text{ mV}$ , $\pm 100\text{ mV}$ , $\pm 500\text{ mV}$ , $\pm 1\text{ V}$ , $\pm 2.5\text{ V}$
	Current Input	-	$\pm 20\text{ mA}$ , $0 \sim 20\text{ mA}$ , $4 \sim 20\text{ mA}$	$0 \sim 20\text{ mA}$ , $4 \sim 20\text{ mA}$	$\pm 20\text{ mA}$ , $0 \sim 20\text{ mA}$ , $4 \sim 20\text{ mA}$
	Direct Sensor Input	RTD (Pt-100, Pt-200, Pt-500, Pt-1000, Balco, Ni 518)	-	-	Thermocouple (Type J, K, T, E, R, S, B)
	Wire Burnout Detection	All RTD range	4 ~ 20 mA	4 ~ 20 mA	4 ~ 20 mA and all Thermocouple range
Analog Output	AO Channels	-	-	-	8
	Output Type*	-	-	-	V, mA
	Output Resolution	-	-	-	14-bit
	Output Accuracy	-	-	-	$\pm 0.1\%$ of FSR
	Output Slew Rate	-	-	-	$0.7\text{ V}/\mu\text{s}$ (per channel)
	Voltage Output	-	-	-	$\pm 2.5\text{ V}$ , $\pm 5\text{ V}$ , $\pm 10\text{ V}$ , $0 \sim 2.5\text{ V}$ , $0 \sim 5\text{ V}$ , $0 \sim 10\text{ V}$
	Current Output	-	-	-	$0 \sim 20\text{ mA}$ , $4 \sim 20\text{ mA}$
	Short Circuit Protection	-	-	-	Yes
	Fail Safe Value	-	-	-	Yes
General	Weight	170 g	170 g	175 g	175 g
	Operating Temperature	-10 ~ 60°C (when mounted vertically)			
	Storage Temperature	-40 ~ 85°C			
	Relative Humidity (non-condensing)	5 ~ 95%			
	Power Consumption (typical)	2.5 W @ 24 V <sub>DC</sub>	4 W @ 24 V <sub>DC</sub>	3.5 W @ 24 V <sub>DC</sub>	3.5 W @ 24 V <sub>DC</sub>
	Isolation between channels and backplane	2500 V <sub>DC</sub>			
	Power Supply Module (optional)	APAX-5343E			

\*Each channel can be configured with different type and range

\*\*Sampling rate value depends on used channel number.

Example: Using 6 channels on APAX-5017, sampling rate for each used channel will be 12/6 = 2 samples/second.



Module Name	APAX-5040	APAX-5045	APAX-5046/SO	APAX-5060	APAX-5080
Digital Input	Description	24-ch DI Module	24-ch DI/O Module	24/20-ch DO Module	12-ch Relay Module
	DI Channels	24	12	-	4
	Input Type	Sink or Source Load	Sink or Source Load	-	Source Load
	Rated Input Voltage	24 V <sub>DC</sub>	24 V <sub>DC</sub>	-	24 V <sub>DC</sub>
	Input Voltage Range (signal "0")	-5 ~ 5 V <sub>DC</sub>	-5 ~ 5 V <sub>DC</sub>	-	0 ~ 3 V <sub>DC</sub>
	Input Voltage Range (signal "1")	15 ~ 30 V <sub>DC</sub> -15 ~ -30 V <sub>DC</sub>	15 ~ 30 V <sub>DC</sub> -15 ~ -30 V <sub>DC</sub>	-	10 ~ 30 V <sub>DC</sub>
	Rated Input Current	4.4 mA (typical)	4.4 mA (typical)	-	10 mA (typical)
	Input Filter	3 ms	3 ms	-	3 ms
Counter Input	Over Voltage Protection	Yes	Yes	-	Yes
	Counter Channels	-	-	-	8 (Up and Frequency mode) 4 (Pulse/Direction, Up/Down, A/B phase mode)
	Rated Input Voltage	-	-	-	24 V <sub>DC</sub>
	Input Voltage Range (signal "0")	-	-	-	0 ~ 3 V <sub>DC</sub>
	Input Voltage Range (signal "1")	-	-	-	10 ~ 30 V <sub>DC</sub>
	Rated Input Current (signal "1")	-	-	-	5 ~ 15 mA (typical)
	Counting Range	-	-	-	32-bit + 1-bit overflow/underflow
	Counter Frequency	-	-	-	1 MHz (max.)
Digital Output	Counter Gate and Alarm Function	-	-	-	Yes
	DO Channels	-	12	24/20	12
	Output Type	-	Sink	Sink/Source	Sink
	Rated Output Voltage	-	24 V <sub>DC</sub>	24 V <sub>DC</sub>	250 V <sub>AC</sub> , 30 V <sub>DC</sub>
	Rated Output Current (signal "1")	-	0.5 A	0.5A/1A	5 A
	Short Circuit Protection	-	Yes	Yes	-
	Thermal Shutdown Protection	-	Yes	Yes	-
	Weight	160 g	165 g	165 g	195 g
General	Operating Temperature	-10 ~ 60°C (when mounted vertically)			
	Storage Temperature	-40 ~ 85°C			
	Relative Humidity (non-condensing)	5 ~ 95%			
	Power Consumption (typical)	2 W @ 24 V <sub>DC</sub>	2.5 W @ 24 V <sub>DC</sub>	2.5 W @ 24 V <sub>DC</sub>	2 W @ 24 V <sub>DC</sub>
	Isolation between channels and backplane	2500 V <sub>DC</sub>			
	Channel Status LED	Yes (per channel)			
	Fail Safe Value	-	Yes (DO channel)	Yes	Yes (DO channel)
	Power Supply Module (optional)	APAX-5343E			

# Modular I/O System

## ADAM-5000 Controller

NEW



System	ADAM-5510M ADAM-5510KW	ADAM-5510E	ADAM-5510/TCP ADAM-5510KW/TCP	ADAM-5510E/TCP ADAM-5510EKW/TP	ADAM-5560
CPU			80188		Intel Atom Z510P 1.1 GHz
RAM			640 KB		1 GB DDR2 SDRAM
Flash ROM			256 KB		-
Flash Memory			256 KB		-
Flash Disk			1 MB		-
OS			ROM-DOS		WinCE5.0/XP embedded
Control Software	ADAM-5510M: Borland C ADAM-5510KW: KW SoftLogic	Borland C	ADAM-5510/TCP: Borland C ADAM-5510KW/TCP: KW SoftLogic	ADAM-5510E/TCP: Borland C ADAM-5510EKW/TP: KW SoftLogic	ADAM-5560CE: C/C++ and .NET ADAM-5560KW: KW SoftLogic
Real-time Clock			Yes		
Watchdog Timer			Yes		
COM1	RS-232	RS-232/485	RS-232	RS-232/RS-485	RS-232/485
COM2			RS-485		
COM3 (Programming)			RS-232 (TX, RX, GND)		RS-232/485
COM4			RS-232/485		
I/O Slots	4	8	4	8	7
Power Consumption			4 W		17 W
Isolation	Communication		2,500 V <sub>DC</sub> (COM2 RS-485)		2,500 V <sub>DC</sub> (COM2 RS-485) 1,500 V <sub>DC</sub> (COM1, COM3, COM4 RS-485)
	Communication Power		3,000 V <sub>DC</sub>		
	I/O Module		3,000 V <sub>DC</sub>		
Diagnosis	Status Display		Power, CPU, Communication, Battery		Power, User Define
	Self Test		Yes, while ON		
	Software Diagnosis		Yes		
Communication	Interface	RS-232/485		Ethernet (RJ-45)	Ethernet (2 x RJ-45)
	Speeds	1,200 bps ~ 115.2 kbps		10/100 Mbps	10/100 Mbps
	Max. Distance	4,000 feet (1.2 km)		100 m	100 m
	Data Format	N, 8, 1, 1		-	-
	Max. Nodes	32	32	256 for Ethernet, 32 for RS-485	256 for Ethernet, 32 for RS-485 256 for Ethernet, 32 for RS-485
	Protocol	User Defined, Modbus/RTU	User Defined, Modbus/RTU	User Defined, Modbus/RTU, Modbus/TCP	Modbus/RTU, Modbus/TCP
	Remote I/O			Modbus Device	
	Power Requirements			10 ~ +30 V <sub>DC</sub>	
Environment	Operating Temperature		-10 ~ 70°C (14 ~ 158°F)		0 ~ 55°C (32 ~ 131°F)
	Storage Temperature		-25 ~ 85°C (-13 ~ 185°F)		
	Humidity		5 ~ 95%		
Dimensions (mm)	231 x 110 x 75	355 x 110 x 75	231 x 110 x 75	355 x 110 x 75	355 x 110 x 75

## ADAM-5000 I/O Rack



System	ADAM-5000/485	ADAM-5000E	ADAM-5000L/TCP	ADAM-5000/TCP
CPU	80188	80188		RISC CPU
RAM	-	-		4 MB
Flash ROM (User AP)	-	-		512 KB
Flash Memory (Data Storage)	-	-		-
Flash Disk	-	-		-
OS	-	-		real-time OS
Timer BIOS	-	-		-
Real-time Clock	-	-		-
Watchdog Timer			Yes	
I/O Slots	4	8	4	8
Power Consumption		3 W	4.0 W	5.0 W
Isolation	Communication	2,500 V <sub>dc</sub>	3,000 V <sub>dc</sub>	RS-485: 1,500 V <sub>dc</sub>
	Communication Power		3,000 V <sub>dc</sub>	
	I/O Module		3,000 V <sub>dc</sub>	
Diagnosis	Status Display	Power, CPU, Communication		Power, CPU, Error Diagnostic, Communication
	Self Test		Yes, while ON	
	Software Diagnosis		Yes	
Communication	Interface	RS-232/485 (2-wire)	RS-232/485 (2-wire)	Ethernet
	Speeds (bps)	1,200, 2,400, 4,800, 9,600, 19.2 K, 38.4 K, 57.6 K, 115.2 K	1,200, 2,400, 4,800, 9,600, 19.2 K, 38.4 K, 57.6 K, 115.2 K	10 M, 100 M
	Max. Distance	4,000 feet (1.2 km)	4,000 feet (1.2 km)	100 m without repeater
	Data Format	Advantech protocol: N, 8, 1 Modbus protocol: N, 8, 1 N, 8, 2 E, 8, 1 O, 8, 1	Advantech protocol: N, 8, 1 Modbus protocol: N, 8, 1 N, 8, 2 E, 8, 1	TCP/IP
	Max. Nodes	128	128	Depend on IP address
	Protocols	ADAM ASCII/Modbus Protocol	ADAM ASCII/Modbus Protocol	Modbus/TCP
	Remote I/O	-	-	20 nodes Modbus devices
	Power Requirements		+10 ~ +30 V <sub>dc</sub>	
Environment	Operating Temperature		-10 ~ 70°C (14 ~ 158°F)	
	Storage Temperature		-25 ~ 85°C (-13 ~ 185°F)	
	Humidity		5 ~ 95%	
Dimensions (mm)	231 x 110 x 75	355 x 110 x 75	231 x 110 x 75	355 x 110 x 75

# Modular I/O System

## ADAM-5000 I/O Module

### Analog Input/Output Modules



Module	ADAM-5013	ADAM-5017	ADAM-5017P	ADAM-5017UH	ADAM-5018
Analog Input	Resolution	16 bit	16 bit	16 bit	16 bit
	Input Channel	3	8	8	7
	Sampling Rate	10 (total*)	10 (total*)	10 (total*)	200K**
	Voltage Input	-	$\pm 150 \text{ mV}, \pm 500 \text{ mV}$ $\pm 1 \text{ V}, \pm 5 \text{ V}, \pm 10 \text{ V}$	$\pm 150 \text{ mV}, \pm 500 \text{ mV}$ $\pm 15 \text{ V}, \pm 10 \text{ V}, \pm 5 \text{ V}, \pm 1 \text{ V}$ $0 \sim 150\text{mV}, 0 \sim 500\text{mV}$ $0 \sim 1\text{V}, 0 \sim 5\text{V}, 0 \sim 10\text{V}$ $0 \sim 15\text{V}$	$\pm 10 \text{ V}, 0 \sim 10 \text{ V}$
	Current Input	-	$\pm 20 \text{ mA}$	$\pm 20 \text{ mA}, 4 \sim 20\text{mA}$	$0 \sim 20 \text{ mA}, 4 \sim 20 \text{ mA}$
	Direct Sensor Input	Pt or Ni RTD	-	-	J, K, T, E, R, S, B
Isolation	3,000 V <sub>dc</sub>	3,000 V <sub>dc</sub>	3,000 V <sub>dc</sub>	3,000 V <sub>dc</sub>	3,000 V <sub>dc</sub>

\*Sampling rate value depends on used channel number.

Example: Using 5 channels on ADAM-5017, sampling rate for each used channel will be  $10/5 = 2$  samples/second.

\*\*The sampling rate vary with the controller.



Module	ADAM-5018P	ADAM-5024	ADAM-5050	ADAM-5051/ ADAM-5051D/ ADAM-5051S	ADAM-5052	ADAM-5053S
Analog Input	Resolution	16 bit	-	-	-	-
	Input Channel	7	-	-	-	-
	Sampling Rate	10 (total*)	-	-	-	-
	Voltage Input	$\pm 15 \text{ mV}, \pm 50 \text{ mV}$ $\pm 100 \text{ mV}, \pm 500 \text{ mV}$ $\pm 1 \text{ V}, \pm 2.5 \text{ V}$	-	-	-	-
	Current Input	$4 \sim 20 \text{ mA}$	-	-	-	-
	Direct Sensor Input	J, K, T, E, R, S, B	-	-	-	-
Analog Output	Output Channels	-	4	-	-	-
	Resolution	-	12 bit	-	-	-
	Voltage Output	-	$0 \sim 10 \text{ V}$	-	-	-
	Current Output	-	$0 \sim 20 \text{ mA}$ $4 \sim 20 \text{ mA}$	-	-	-
Digital Input and Digital Output	Digital Input Channels	-	-	16 D/I/O (bit-wise selectable)	16 (ADAM-5051) 16w/LED (5051D/5051S)	8
	Digital Output Channels	-	-		-	32
Isolation	3,000 V <sub>dc</sub>	3,000 V <sub>dc</sub>	-	2,500 V <sub>dc</sub> (5051S)	5,000 V <sub>RMS</sub>	2,500 V <sub>dc</sub>

\*Sampling rate value depends on used channel number.

Example: Using 6 channels on ADAM-5017, sampling rate for each used channel will be  $12/6 = 2$  samples/second.

## Digital Input/Output Modules



Module	ADAM-5055S	ADAM-5056/ ADAM-5056D	ADAM-5056S/ ADAM-5056SO	ADAM-5057S	ADAM-5060
Digital Input and Digital Output	Digital Input Channels	8 w/LED	-	-	-
	Digital Output Channels	8 w/LED	16 (ADAM-5056) 16 w/LED (ADAM-5056D)	16 w/LED	32 6 relay (2 form A/4 form C)
Isolation	2,500 V <sub>dc</sub>	-	2,500 V <sub>dc</sub>	2,500 V <sub>dc</sub>	-



Module	ADAM-5069	ADAM-5080	ADAM-5081	ADAM-5090/ ADAM-5091	ADAM-5095
Digital Input and Digital Output	Digital Input Channels	-	-	-	-
	Digital Output Channels	8 power relay (form A)	-	-	-
Counter (32-bit)	Channels	-	4	4/8	-
	Input Frequency	-	0.3 ~ 1000 Hz max. (frequency mode) 5000 Hz max. (counter mode)	5 Hz ~ 1 MHz max. (frequency mode) 1 MHz max. (counter mode)	-
	Mode	-	Frequency, Up/Down Counter, Bi-direction Counter	Frequency, Counter (Up/Down, Bi-direction, Up, A/B Phase)	-
Communication	Channels	-	-	-	4
	Type	-	-	RS-232	CAN
Isolation	-	1,000 V <sub>rms</sub>	2,500 V <sub>dc</sub>	-	1,000 V <sub>dc</sub>

# IoT Wireless I/O Modules

## WISE-4000 IoT Wireless I/O Modules



Model	WISE-4012E	WISE-4012	WISE-4050	WISE-4060
Description	6-ch Input/Output IoT Wireless I/O Module for IoT Developer	4-ch Universal Input and 2-ch Relay Output IoT Wireless I/O Module	4-ch Digital Input and 4-ch Digital Output IoT Wireless I/O Module	4-ch Digital Input and 4-ch Relay Output IoT Wireless I/O Module
Wireless Network	IEEE Standard	IEEE 802.11b/g/n		
	Frequency Band	2.4GHz		
	Network Mode	Limited AP, Infrastructure		
	Wireless Security	WPA2 Personal, WPA2 Enterprise		
	Antenna Connector	Reverse SMA		
	Outdoor Range	100m		
Analog I/O	Channels	2	4	-
	Resolution	12-bit	16-bit	-
	Accuracy	1% of FSR	0.1% of FSR	-
	Sampling Rate	10Hz/Channel	100Hz/Total	-
	Voltage Input	0~10V	0~5V, 0~10V, ±5V, ±10V	-
	Current Input	-	0~20mA, 4~20mA	-
	Digital Input	-	Dry Contact	-
Digital I/O	Input Channel	2 (Dry Contact)	-	4
	Output Channel	2 (Form A Relay)	2 (Form A Power Relay)	4 (Form A Power Relay)
	Counter Input	-	-	3k Hz
	Frequency Input	-	-	3k Hz
	Pulse Output	-	1 Hz	1k Hz
Isolation Protection	No	3,000 V <sub>rms</sub>	3,000 V <sub>rms</sub>	3,000 V <sub>rms</sub>
LED Indicator	Status, Comm, Mode, Wireless Signal			
Power Requirement	5V <sub>DC</sub> Micro-B USB	10~30V <sub>DC</sub> (24V <sub>DC</sub> Standard)		
Power Consumption	2.5W @ 24V <sub>DC</sub>	2.5W @ 24V <sub>DC</sub>	2.2W @ 24V <sub>DC</sub>	2.5W @ 24V <sub>DC</sub>
Operating Temperature	-25 ~ 70°C (-13~158°F)			
Storage Temperature	-40 ~ 85°C (-40~185°F)			
Operating Humidity	20 ~ 95% RH (non-condensing)			
Storage Humidity	0 ~ 95% RH (non-condensing)			

## ADAM-2000 M2M I/O Modules



Model	ADAM-2510Z	ADAM-2520Z	ADAM-2031Z
Description	Wireless Router	Wireless Modbus RTU Gateway	Wireless Temperature & Humidity Sensor Node
Wireless Network	IEEE Standard	IEEE 802.15.4	
	Modulation Type	DSSS (OQPSK)	
	Frequency Band	ISM 2.4 GHz (2.4 GHz ~ 2.4835 GHz)	
	Channels	11 - 26	
	Topology	Star / Tree / Mesh	
	Transmit Power	19 ± 1 dBm	19 ± 1 dBm
	Receiver Sensitivity	-97 dBm	
	Outdoor Range *	1000 m (with 2 dBi Antenna)	110 m
	RF Data Rate	250 Kbps	
	Function	Router	Coordinator
Network	Interface	-	RS-485/USB
	Communication Protocol	-	Modbus RTU
Analog Input	Resolution	-	-
	Channels	-	-
	Sampling Rate	-	-
	Voltage Input	-	-
	Current Input	-	-
Thermocouple Type	-	-	-
Digital Input and Digital Output	Input Channels	-	-
	Output Channels	-	-
Sensor Input	Temperature	-	-20°C ~ 70°C (-4°F ~ 157.9°F)
	Humidity	-	0 ~ 100% RH
	CO2	-	-
LED Indicator	External PWR/Error/Status/Level Index		
Power Requirement	Power Input: Unregulated 10 ~ 30 V <sub>dc</sub> Battery Input: 2 x AA Alkaline 3 V <sub>dc</sub>		
Operating Temperature	External Power	-20°C ~ 70°C (-4°F ~ 157.9°F)	
	Battery Power	0°C ~ 50°C (32°F ~ 122°F)	
Power Consumption	Power Supply	0.8 W @ 24 V <sub>dc</sub>	0.3 W @ 24 V <sub>dc</sub>
	USB	-	0.5 W @ 5 V <sub>dc</sub>
	Battery AA * 2	0.3 W @ 3 V <sub>dc</sub>	420 uW @ 3 V <sub>dc</sub> (1 minute Tx Interval) 240 uW @ 3 V <sub>dc</sub> (2 minute Tx Interval) 150 uW @ 3 V <sub>dc</sub> (5 minute Tx Interval)
Storage Temperature	-40°C~ 85°C (-40°F ~ 184°F)		
Operating Humidity	20~95% RH		
Storage Humidity	0~95% RH		

# IoT Wireless I/O Modules

## ADAM-2000 M2M I/O Modules



Model	ADAM-2017PZ	ADAM-201Z	ADAM-2051PZ		
Description	Wireless 6-ch Analog Input Node with Power Amplifier	Wireless 8-ch Digital Input Node	Wireless 8-ch Digital Input Node with Power Amplifier		
Wireless Network	IEEE Standard	IEEE 802.15.4			
	Modulation Type	DSSS (OQPSK)			
	Frequency Band	ISM 2.4 GHz (2.4 GHz ~ 2.4835 GHz)			
	Channels	11 - 26			
	Topology	Star / Tree / Mesh			
	Transmit Power	15 ± 1 dBm	3 ± 1 dBm		
	Receiver Sensitivity	-97 dBm			
	Outdoor Range *	1000 m	110 m		
	RF Data Rate	250 Kbps	1000 m		
	Function	End Device			
Network	Interface	-	-		
	Communication Protocol	-	-		
Analog Input	Resolution	16-bit	-		
	Channels	6 Non-Isolation (Differential)	-		
	Sampling Rate	12 samples/second (total)	-		
	Voltage Input	±150mV, ±500mV ±1V, ±5V, ±10V	-		
	Current Input	±20mA, 0~20mA, 4~20 mA	-		
Thermocouple Type	-	-	-		
Digital Input and Digital Output	Input Channels	-	8		
	Output Channels	-	-		
Sensor Input	Temperature	-	-		
	Humidity	-	-		
	CO2	-	-		
LED Indicator	External PWR/Error/Status/Level Index				
Power Requirement	Power Input: Unregulated 10 ~ 30 V <sub>DC</sub> Battery Input: 2 x AA Alkaline 3 V <sub>DC</sub>				
Operating Temperature	External Power	-20°C ~ 70°C (-4°F ~ 157.9°F)			
	Battery Power	0°C ~ 50°C (32°F ~ 122°F)			
Power Consumption	Power Supply	0.5 W @ 24 V <sub>DC</sub>	0.3 W @ 24 V <sub>DC</sub>		
	USB	-	-		
	Battery AA * 2	380 μW @ 3 V <sub>DC</sub> (1 minute Tx Interval) 220 μW @ 3 V <sub>DC</sub> (2 minute Tx Interval) 130 μW @ 3 V <sub>DC</sub> (5 minute Tx Interval)			
Storage Temperature	-40°C ~ 85°C (-40°F ~ 184°F)				
Operating Humidity	20~95% RH				
Storage Humidity	0~95% RH				

# IoT Ethernet I/O Modules

## ADAM-6000 Ethernet I/O Modules



Model	ADAM-6015	ADAM-6017	ADAM-6018	ADAM-6022	ADAM-6024
Interface	10/100 Mbps Ethernet				
Peer-to-Peer <sup>1</sup>	Yes		No		Receiver Only <sup>2</sup>
GCL <sup>1</sup>	Yes		No		Receiver Only <sup>2</sup>
Resolution	16 bit				
	Channels	7	8	8	6
Analog Input	Sampling Rate	10 S/s			
	Voltage Input	-	±150mV, ±500mV, ±1 V, ±5V, ±10V, 0~150mV, 0~500mV, 0~1V, 0~5V, 0~10V	-	±10 V
	Current Input	-	0~20mA 4~20mA ±20mA	-	0 ~ 20 mA 4 ~ 20 mA
	Direct Sensor Input	Pt, Balco and NI RTD	-	J, K, T, E, R, S, B Thermocouple	-
	Burn-out Detection	Yes	Yes (4~20mA only)	Yes	-
	Math. Functions	Max. Min. Avg.	Max. Min. Avg.	Max. Min. Avg.	-
Analog Output	Channels	-	-	-	2
	Current Output	-	-	-	0 ~ 20 mA, 4 ~ 20 mA with 15 V <sub>DC</sub>
	Voltage Output	-	-	-	0 ~ 10 V <sub>DC</sub> with 30 mA
Digital Input/Output	Input Channels	-	-	-	2
	Output Channels	-	2 (Sink)	8 (Sink)	2 (Sink)
	Extra Counter Channels	-	-	-	-
	Counter Input	-	-	-	-
	Frequency Input	-	-	-	-
	Pulse Output	-	-	-	-
	High/Low Alarm Settings	Yes	Yes	Yes	-
Isolation Protection	2,000 V <sub>DC</sub>			2,000 V <sub>DC</sub> <sup>3</sup>	2,000 V <sub>DC</sub> <sup>3</sup>
Remark	-	-	-	Built-in Dual Loop PID Control Algorithm	-

Model	ADAM-6050	ADAM-6051	ADAM-6052	ADAM-6060	ADAM-6066
Interface	10/100 Mbps Ethernet				
Peer-to-Peer <sup>1</sup>	Yes				
GCL <sup>1</sup>	Yes				
Digital Input/Output	Input Channels	12	12	8	6
	Output Channels	6 (Sink)	2 (Sink)	8 (Source)	6-channel relay
	Extra Counter Channels	-	2	-	6-channel power relay
	Counter Input	3 kHz	4.5 kHz	3 kHz	3 kHz
	Frequency Input	3 kHz	4.5 kHz	3 kHz	3 kHz
	Pulse Output	Yes			
	High/Low Alarm Settings	-	-	-	-
Isolation Protection	2,000 V <sub>DC</sub>				

Note 1: Peer-to-Peer and GCL cannot run simultaneously, only one feature is enabled at one time.

Note 2: ADAM-6024 can only act as a receiver and generate analog output when using Peer-to-Peer or GCL.

Note 3: Only for analog input and analog output channels.

# IoT Ethernet I/O Modules

## ADAM-6200 Intelligent Ethernet I/O Modules



Model	ADAM-6217	ADAM-6224	ADAM-6250	ADAM-6251	ADAM-6256	ADAM-6260	ADAM-6266
Interface	10/100Mbps Ethernet						
Analog Input	Channels	8	-	-	-	-	-
	Input Impedance	>10MΩ (voltage) 120 Ω (current)	-	-	-	-	-
	Voltage Input	± 150mV, ± 500mV, ± 1V, ± 5V, ± 10V	-	-	-	-	-
	Current Input	0 ~ 20 mA, 4 ~ 20mA, ± 20mA	-	-	-	-	-
	Sampling Rate (sample/second)	10	-	-	-	-	-
	Direct Sensor Input	-	-	-	-	-	-
	Burn-out Detection	Yes (4~20 mA)	-	-	-	-	-
	Resolution	16-bit	-	-	-	-	-
	Accuracy	± 0.1% of FSR (Voltage) at 25°C ± 0.2% of FSR (Current) at 25°C	-	-	-	-	-
	Channels	-	4	-	-	-	-
Analog Output	Voltage Output	-	0 ~ 5V, 0 ~ 10V, ± 5V, ± 10V	-	-	-	-
	Current Output	-	0 ~ 20mA, 4 ~ 20mA	-	-	-	-
	Resolution	-	12-bit	-	-	-	-
	Input Channels	-	4 (Dry contact only)	8	16	-	4
Digital Input/Output	Output Channels	-	-	7 (Sink)	-	16 (Sink)	-
	Relay Output	-	-	-	-	-	6 (5 Form C + 1 Form A)      4 (Form C)
	Contact Rating	-	-	-	-	-	250 V <sub>AC</sub> @ 5A 30 V <sub>DC</sub> @ 5A
	Counter Input	-	-	3kHz	3kHz	-	3kHz
	Frequency Input	-	-	3kHz	3kHz	-	3kHz
	Pulse Output	-	-	5kHz	-	5kHz	5kHz
	LED Indicator	-	-	8 DI, 7 DO	16 DI	16 DO	6 RL
Power Consumption	3.5W	6W	3W	2.7W	3.2W	4.5W	4.2W
Isolation Voltage	2,500 V <sub>DC</sub>						
Watchdog Timer	System (1.6 seconds) Communication (Programmable)						
Communication Protocol	Modbus TCP, TCP/IP, UDP, HTTP, DHCP						
Power Requirements	10 - 30 V <sub>DC</sub> (24 V <sub>DC</sub> standard)						
Operating Temperature	-10 ~ 70°C (14 ~ 158°F)						
Storage Temperature	-20 ~ 80°C (-4 ~ 176°F)						
Operating Humidity	20 ~ 95% RH (non-condensing)						
Storage Humidity	0 ~ 95% RH (non-condensing)						

## ADAM-6100 Real-time Ethernet I/O Modules



Model	ADAM-6117	ADAM-6150	ADAM-6151	ADAM-6156	ADAM-6160
Interface	10/100 Mbps Ethernet				
Support Protocol	ADAM-6100EI: EtherNet/IP				
Analog Input	Resolution	16-bit	-	-	-
	Channels	8	-	-	-
	Sampling Rate (sample/second)	10	-	-	-
	Voltage Input	±150 mV ±500 mV ±1 V ±5 V ±10 V	-	-	-
	Current Input	0 ~ 20 mA 4 ~ 20 mA ±20 mA	-	-	-
	Direct Sensor Input	-	-	-	-
Analog Output	Resolution	-	-	-	-
	Channels	-	-	-	-
	Current Output	-	-	-	-
	Voltage Output	-	-	-	-
Digital Input/Output	Input Channels	-	8	16	-
	Output Channels	-	7	-	16 6-ch power relay
Isolation Protection		2,500 V <sub>dc</sub>	2,500 V <sub>dc</sub>	2,500 V <sub>dc</sub>	2,500 V <sub>dc</sub>
Connectors		2 x RJ-45 LAN (Daisy Chain) Plug-in screw terminal block (I/O and power)			

# RS-485 I/O Modules

## Communication and Controller Modules Controllers

### Repeaters



Model	ADAM-4501	ADAM-4502	ADAM-4022T	ADAM-4510 ADAM-4510S
Network	Ethernet: RS-232, RS-485		RS-485	RS-422 RS-485
Comm. Protocol	Modbus/RTU, Modbus/TCP TCP/IP, UDP, ICMP, ARP, DHCP		ASCII Command/ Modbus	-
Comm. Speed (bps)	Ethernet: 10/100M Serial: From 1,200 to 115.2 kbps		Serial: From 1,200 to 115.2 k	Serial: From 1,200 to 115.2 k
Comm. Distance	Ethernet: 100 m Serial: 1.2 Km		Serial: 1.2 km	Serial: 1.2 km
Interface Connectors	Ethernet: RJ-45 RS-485: plug-in screw terminal RS-232: RJ-48		RS-485: plug-in screw terminal	RS-422/485: plug-in screw terminal
LED Indicators	Communication & Power		Power	Communication & Power
Data Flow Control	Yes		Yes	-
Watchdog Timer	Yes		Yes	-
Isolation Voltage	-	1,000 V <sub>DC</sub>	3,000 V <sub>DC</sub>	ADAM-4510: - ADAM-4510S: 3,000 V <sub>DC</sub>
Special Features	Email function Built-in HTTP and FTP Server		PID Control	-
Built-in I/O	4DI/4DO	1AI/1AO/2DI/2DO	-	-
Power Requirements	10 ~ 30 V <sub>DC</sub>			10 ~ 30 V <sub>DC</sub>
Operating Temperature	-10 ~ 70°C (14 ~ 158°F)			-10 ~ 70°C (14 ~ 158°F)
Operating Humidity	5 ~ 95% RH			5 ~ 95% RH
Power Consumption	4 W @ 24 V <sub>DC</sub>			1.4 W @ 24 V <sub>DC</sub>

## Converters



Model	ADAM-4520	ADAM-4521	ADAM-4541 ADAM-4542+	ADAM-4561 ADAM-4562
Network	RS-232 to RS-422/485		Fiber Optic to RS-232/422/485	USB to RS-232/485/422
Comm. Protocol				-
Comm. Speed (bps)		Serial: From 1,200 to 115.2 k		
Comm. Distance	Serial: 1.2 km	Serial: 1.2 km	ADAM-4541: 2.5 km ADAM-4542+: 15 km	Serial: 1.2 km
Interface Connectors	RS-232: female DB9 RS-422/485: plug-in screw terminal	RS-232: female DB9 RS-422/485: plug-in screw terminal	RS-232/422/485: plug-in screw terminal Fiber: ADAM-4541: ST connector ADAM-4542+: SC connector	USB: type A client connector Serial: ADAM-4561: plug-in screw terminal (RS-232/422/485) ADAM-4562: DB9 (RS-232)
LED Indicators		Communication & Power		
Data Flow Control	-	Yes	-	Yes
Watchdog Timer	-	Yes	-	Yes
Isolation Voltage	3,000 V <sub>DC</sub>	1,000 V <sub>DC</sub>	-	ADAM-4561: 3,000 V <sub>DC</sub> ADAM-4562: 2,500 V <sub>DC</sub>
Power Requirements	10 ~ 30 V <sub>DC</sub>			
Operating Temperature	-10 ~ 70°C (14 ~ 158°F)			
Operating Humidity	5 ~ 95% RH			
Power Consumption	1.2 W @ 24 V <sub>DC</sub>	1 W @ 24 V <sub>DC</sub>	ADAM-4541: 1.5 W @ 24 V <sub>DC</sub> ADAM-4542+: 3 W @ 24 V <sub>DC</sub>	ADAM-4561: 1.5 W @ 5 V <sub>DC</sub> ADAM-4562: 1.1 W @ 5 V <sub>DC</sub>

# I/O Modules

## Analog Input



Model	ADAM-4011	ADAM-4012	ADAM-4013	ADAM-4015 ADAM-4015T	ADAM-4016	ADAM-4017+
Resolution	16 bit					
Analog Input	Channels	1 differential	1 differential	1 differential	6 differential	1 differential
	Sampling Rate	10 Hz				
	Voltage Input	±15 mV ±50 mV ±100 mV ±500 mV ±1 V ±5 V ±10 V	±150 mV ±500 mV ±1 V ±5 V ±10 V	-	-	±15 mV ±50 mV ±100 mV ±500 mV
	Current Input	±20 mA	±20 mA	-	-	±20 mA
	Direct Sensor Input	J, K, T, E, R, S, B Thermocouple	-	RTD	ADAM-4015: RTD ADAM-4015T: Thermistor	-
	Burn-out Detection	Yes	-	-	Yes	-
	Channel Independent Configuration	-	-	-	Yes	-
Analog Output	Channels	-	-	-	-	1
	Voltage Output	-	-	-	-	0 - 10 V
	Current Output	-	-	-	-	-
Digital Input/ Output	Input Channels	1	1	-	-	-
	Output Channels	2	2	-	-	4
	Alarm Settings	Yes	Yes	-	-	-
Counter (32-bit)	Channels	-	-	-	-	-
	Input Frequency	-	-	-	-	-
Isolation Voltage	3,000 V <sub>dc</sub>					
Digital LED Indicator	-					
Watchdog Timer	Yes (System)	Yes (System)	Yes (System)	Yes (System & Comm.)	Yes (System)	Yes (System & Comm.)
Safety Setting	-					
Modbus Support *	-	-	-	Yes	-	Yes

\*: All ADAM-4000 I/O Modules support ASCII Commands

# RS-485 I/O Modules

## I/O Modules

### Analog Input



Model	ADAM-4018+	ADAM-4019+
Resolution	16 bit	
Analog Input	Channels	8 differential
	Sampling Rate	10 Hz
	Voltage Input	$\pm 100 \text{ mV}$ $\pm 500 \text{ mV}$ $\pm 1 \text{ V}$ $\pm 2.5 \text{ V}$ $\pm 5 \text{ V}$ $\pm 10 \text{ V}$
	Current Input	4 ~ 20 mA $\pm 20 \text{ mA}$
	Direct Sensor Input	J, K, T, E, R, S, B Thermocouple
	Burn-out Detection	Yes (4 ~ 20 mA & All T/C)
	Channel Independent Configuration	Yes
	Channels	-
Analog Output	Voltage Output	-
	Current Output	-
	Input Channels	-
Digital Input/ Output	Output Channels	-
	Alarm Settings	-
	Channels	-
Counter (32-bit)	Input Frequency	-
Isolation Voltage	3,000 V <sub>dc</sub>	3,000 V <sub>dc</sub>
Digital LED Indicator	-	-
Watchdog Timer	Yes (System & Comm.)	Yes (System & Comm.)
Safety Setting	-	-
Modbus Support *	Yes	Yes

\*: All ADAM-4000 I/O Modules support ASCII Commands

### Analog Output



Model	ADAM-4021	ADAM-4024
Resolution	12 bit	12 bit
Channels	-	-
Voltage Output	-	-
Current Output	-	-
Input Channels	1	4
Output Channels	0 ~ 10 V	$\pm 10 \text{ V}$
Alarm Settings	0 ~ 20 mA 4 ~ 20 mA	0 ~ 20 mA 4 ~ 20 mA
Safety Setting	-	4
Modbus Support *	-	Yes

### Digital Input/Output



Model	ADAM-4050	ADAM-4051
Resolution	-	-
Channels	-	-
Voltage Output	-	-
Current Output	-	-
Input Channels	7	16
Output Channels	8	-
Alarm Settings	-	-
Safety Setting	-	-
Modbus Support *	-	Yes

## Counter

## Relay Output



Model	ADAM-4052	ADAM-4053	ADAM-4055	ADAM-4056S/ 4056SO	ADAM-4060	ADAM-4068	ADAM-4069	ADAM-4080
Resolution	-	-	-	-	-	-	-	-
Analog Input	Channels	-	-	-	-	-	-	-
	Sampling Rate	-	-	-	-	-	-	-
	Voltage Input	-	-	-	-	-	-	-
	Current Input	-	-	-	-	-	-	-
	Direct Sensor Input	-	-	-	-	-	-	-
	Burn-out Detection	-	-	-	-	-	-	-
	Channel Independent Configuration	-	-	-	-	-	-	-
Analog Output	Channels	-	-	-	-	-	-	-
	Voltage Output	-	-	-	-	-	-	-
	Current Output	-	-	-	-	-	-	-
Digital Input/ Output	Input Channels	8	16	8	-	-	-	-
	Output Channels	-	-	8	12	4-ch relay	8-ch relay	8-ch power relay
	Alarm Settings	-	-	-	-	-	-	-
Counter (32-bit)	Channels	-	-	-	-	-	-	-
	Input Frequency	-	-	-	-	-	-	-
Isolation Voltage	5,000 V <sub>RMS</sub>	-	2,500 V <sub>DC</sub>	5,000 V <sub>DC</sub>	-	-	-	-
Digital LED Indicator	-	-	Yes	Yes	-	Yes	-	-
Watchdog Timer	Yes (System)	Yes (System)	Yes (System & Comm.)	Yes (System & Comm.)	Yes (System)	Yes (System & Comm.)	Yes (System & Comm.)	Yes (System)
Safety Setting	-	-	Yes	-	Yes	Yes	Yes	-
Modbus Support *	-	-	Yes	Yes	-	Yes	Yes	-

\*: All ADAM-4000 I/O Modules support ASCII Commands

# RS-485 I/O Modules

## Robust RS-485 I/O Modules



Model	ADAM-4117	ADAM-4118	ADAM-4150	ADAM-4168
Resolution	16 bit		-	-
Channels	8 differential		-	-
Sampling Rate	10/100 Hz (total)		-	-
Voltage Input	0 ~ 150 mV, 0 ~ 500 mV, 0 ~ 1 V, 0 ~ 5 V, 0 ~ 10 V, 0 ~ 15 V, ±150 mV, ±500 mV, ±1 V, ±5 V, ±10 V, ±15V	±15 mV, ±50 mV, ±100 mV, ±500 mV, ±1 V, ±2.5V	-	-
Current Input	0 ~ 20 mA, ±20 mA, 4 ~ 20 mA	±20 mA, 4 ~ 20 mA	-	-
Direct Sensor Input	-	J, K, T, E, R, S, B Thermocouple	-	-
Burn-out Detection	Yes (mA)	Yes (mA and All T/C)	-	-
Channel Independent Configuration	Yes		-	-
Digital Input/Output	Input Channels Output Channels	-	7 8	- 8-ch relay
Counter	Channels Input Frequency	-	7 3 kHz	-
Isolation Voltage	3,000 V <sub>dc</sub>			
Digital LED Indicator	Communication and Power			
Watchdog Timer	Yes (System & Communication)			
Safety Setting	-	-	Yes	Yes
Communication Protocol	ASCII Command/Modbus			
Power Requirements	10 ~ 48 V <sub>dc</sub>			
Operating Temperature	-40 ~ 85°C (-40 ~ 185°F)			
Storage Temperature	-40 ~ 85°C (-40 ~ 185°F)			
Operating Humidity	5 ~ 95% RH			
Power Consumption	1.2 W @ 24 V <sub>dc</sub>	0.5 W @ 24 V <sub>dc</sub>	0.7 W @ 24 V <sub>dc</sub>	1.8 W @ 24 V <sub>dc</sub>



Model	ADAM-4510I	ADAM-4520I
Network	RS-422/485	RS-232 to RS-422/485
Communication Speed (bps)	From 1,200 to 115.2k	
Communication Distance	Serial: 1.2 km	
Interface Connectors	RS-422/485: plug-in screw terminal	RS-232: female DB9 RS-422/485: plug-in screw terminal
Digital LED Indicators	Communication and Power	
Auto Data Flow Control	Yes	
Isolation Voltage	3,000 V <sub>dc</sub>	
Power Requirement	10 ~ 48 V <sub>dc</sub>	
Operating Temperature	-40 ~ 85°C (-40 ~ 185°F)	
Storage Temperature	-40 ~ 85°C (-40 ~ 185°F)	
Operating Humidity	5 ~ 95%	
Power Consumption	1.4 W @ 24 V <sub>dc</sub>	1.2 W @ 24 V <sub>dc</sub>

# Data Acquisition Boards

## Analog I/O & Multifunction Card



Category		Multifunction						
Bus			PCI					
Model		PCI-1710U/UL	PCI-1710HGU	PCI-1711U/UL	PCI-1712/L	PCI-1716/L	PCI-1706U/UL	PCI-1718HDU
Analog Input	General Spec.	Resolution	12 bits	12 bits	12 bits	12 bits	16 bits	16 bits
	Input Ranges	Channels	16 SE/8 Diff.	16 SE/8 Diff.	16 SE	16 SE/8 Diff.	16 SE/8 Diff.	8 Diff.
		Onboard FIFO	4,096 samples	4,096 samples	1,024 samples	1,024 samples	8,192 samples	1,024 samples
		Sampling Rate	100 kS/s	100 kS/s	100 kS/s	1 MS/s	250 kS/s	250 kS/s
		Unipolar Inputs (V)	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25	0 ~ 10, 0 ~ 1, 0 ~ 0.1, 0 ~ 0.01	-	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25
		Bipolar Inputs (V)	±10, 5, 2.5, 1.25, 0.625	±10, 5, 1, 0.5, 0.1, 0.05, 0.01, 0.005	±10, 5, 2.5, 1.25, 0.625	±10, 5, 2.5, 1.25, 0.625	±10, 5, 2.5, 1.25, 0.625	±10, 5, 2.5, 1.25, 0.625
		Configurable Per-Channel	✓	✓	✓	✓	✓	✓
	Trigger Modes	Pacer/Software/ External Pulse	✓	✓	✓	✓	✓	✓
		Analog Slope	-	-	-	✓	-	✓
Analog Output		Advanced Trigger	-	-	-	✓	-	✓
	Data Transfer Modes	Software	✓	✓	✓	✓	✓	✓
		DMA	-	-	-	Bus-mastering	Bus-mastering	✓
		Resolution	12 bits	12 bits	12 bits	12 bits	16 bits	12 bits
		Channels	2 (PCI-1710U only)	2	2 (PCI-1711U only)	2 (PCI-1712 only)	2 (PCI-1716 only)	2 (PCI-1706U only)
		Onboard FIFO	-	-	-	32,768 samples	-	-
		Output Range (V)	0 ~ 5, 0 ~ 10	0 ~ 5, 0 ~ 10	0 ~ 5, 0 ~ 10	0 ~ 5, 0 ~ 10, ±5, ±10	0 ~ 5, 0 ~ 10, ±5, ±10	0 ~ 5, 0 ~ 10, ±5, ±10, 0 ~ 20 mA, 0 ~ 24 mA, 4 ~ 20 mA
		Output Rate	Static update	Static update	Static update	1 MS/s	Static update	Static update
		DMA Transfer	-	-	-	✓	-	-
Digital I/O	Input Channels	16	16	16	16 (shared)	16	16 (shared)	16
	Output Channels	16	16	16		16		16
	Channels	1	1	1	3	1	2	1
	Resolution	16 bits	16 bits	16 bits	16 bits	16 bits	32 bits	16 bits
	Max. Input Frequency	10 MHz	10 MHz	10 MHz	10 MHz	10 MHz	10 MHz	10 MHz
	Isolation Voltage	-	-	-	-	-	-	-
	Auto Calibration	-	-	-	✓	✓	✓	-
	BoardID Switch	✓	✓	✓	-	✓	✓	✓
	Dimensions (mm)	175 x 100	175 x 100	175 x 100	175 x 100	175 x 100	175 x 100	175 x 100
DAQNavi API Driver	Connector	68-pin SCSI	68-pin SCSI	68-pin SCSI	68-pin SCSI	68-pin SCSI	68-pin SCSI	DB37
	Windows XP/2000	✓	✓	✓	✓	✓	✓	✓
	WinCE	✓	-	-	-	-	-	-
	Linux	✓	✓	✓	✓	✓	✓	✓
	Windows 8/7/Vista/XP/2000	✓	✓	✓	✓	✓	✓	✓
	WinCE	✓	-	-	-	-	-	-
	Linux	-	-	✓	-	-	-	-
	LabVIEW Driver	✓	✓	✓	✓	✓	✓	✓

\* All channels should be set to the same range.

\*\* SS: Single DMA channel, Single A/D channel scan; SM: Single DMA channel, Multiple A/D channel scan

# Data Acquisition Boards

## Analog I/O & Multifunction Card



Category		Multifunction						
Bus		PCI		ISA				
Model		PCI-1741U	PCI-1742U	PCL-711B	PCL-812PG	PCL-818L	PCL-818HD	PCL-818HG
General Spec.	Resolution	16 bits	16 bits	12 bits	12 bits	12 bits	12 bits	12 bits
	Channels	16 SE/8 Diff.	16 SE/8 Diff.	8 SE	16 SE	16 SE/8 Diff	16 SE/8 Diff	16 SE/8 Diff
	Onboard FIFO	1,024 samples	1,024 samples	-	-	-	1,024 samples	1,024 samples
	Sampling Rate	200 kS/s	1 MS/s	40 kS/s	30 kS/s	40 kS/s	100 kS/s	100 kS/s
	Unipolar Inputs (V)	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25*	0 ~ 10, 0 ~ 5 0 ~ 2.5, 0 ~ 1.25	-	-	-	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25	0 ~ 10, 0 ~ 1, 0 ~ 0.1, 0 ~ 0.01
	Bipolar Inputs (V)	±10, 5, 2.5, 1.25, 0.625*	±10, 5, 2.5, 1.25, 0.625	±5, 2.5, 1.25, 0.625, 0.3125	±10, 5, 2.5, 1.25, 0.625, 0.3125	±10, 5, 2.5, 1.25, 0.625	±10, 5, 2.5, 1.25, 0.625	±10, 5, 1, 0.5, 0.1, 0.05, 0.01, 0.005
	Configurable Per-Channel	-	✓	✓	✓	✓	✓	✓
	Trigger Modes	✓	✓	✓	✓	✓	✓	✓
	Analog Slope	-	-	-	-	-	-	-
	Advanced Trigger	-	-	-	-	-	-	-
Analog Input	Data Transfer Modes	Software	✓	✓	✓	✓	✓	✓
	DMA	-	Bus-mastering	-	SS**	SM**	SM**	SM**
	Resolution	16 bits	16 bits	12 bits	12 bits	12 bits	12 bits	12 bits
	Channels	1	2	1	2	1	1	1
	Onboard FIFO	-	-	-	-	-	-	-
Analog Output	Output Range (V)	±5, ±10	0 ~ 5, 0 ~ 10, ±5, ±10	0 ~ 5, 0 ~ 10	0 ~ 5, 0 ~ 10	0 ~ 5, 0 ~ 10	0 ~ 5, 0 ~ 10, ±10	0 ~ 5, 0 ~ 10, ±10
	Output Rate	Static update	Static update	Static update	Static update	Static update	Static update	Static update
	DMA Transfer	-	-	-	-	-	-	-
	Input Channels	16	16	16	16	16	16	16
	Output Channels	16	16	16	16	16	16	16
Digital I/O	Channels	1	1	-	1	1	1	1
	Resolution	16 bits	16 bits	-	16 bits	16 bits	16 bits	16 bits
	Max. Input Frequency	10 MHz	10 MHz	-	2 MHz	10 MHz	10 MHz	10 MHz
Isolation Voltage								
Auto Calibration								
BoardID Switch								
Dimensions (mm)								
Connector								
Legacy Driver	Windows XP/2000	✓	✓	✓	✓	✓	✓	✓
	WinCE	-	-	-	-	-	-	-
	Linux	✓	✓	-	-	-	-	-
DAQNavi Driver	Windows 8/7/Vista/XP/2000	✓	✓	-	-	✓	✓	✓
	WinCE	-	-	-	-	-	-	-
	Linux	✓	-	-	-	-	-	-
LabVIEW Driver								

\* All channels should be set to the same range.

\*\* SS: Single DMA channel, Single A/D channel scan; SM: Single DMA channel, Multiple A/D channel scan



Category		Multifunction						
Bus		PC/104		PCI-104		PCIE		
Model		PCM-3718H	PCM-3718HG	PCM-3718HO	PCM-3810I	PCIE-1810	PCIE-1816	PCIE-1816H
Analog Input	General Spec.	Resolution	12 bits	12 bits	12 bits	12 bits	16 bits	16 bits
		Channels	16 SE/8 Diff.	16 SE/8 Diff.	16 SE/8 Diff.	16 SE/8 Diff.	16 SE/8 Diff.	16 SE/8 Diff.
		Onboard FIFO	-	-	1,024 samples	4,096 samples	4,096 samples	4,096 samples
		Sampling Rate	100 kS/s	100 kS/s	100 kS/s*	250 kS/s	800 kS/s	1 MS/s
	Input Ranges	Unipolar Inputs (V)	0 ~ 10, 0 ~ 5 0 ~ 2.5, 0 ~ 1.25	0 ~ 10, 0 ~ 1 0 ~ 0.1, 0 ~ 0.01	0 ~ 10, 0 ~ 5 0 ~ 2.5, 0 ~ 1.25	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25
		Bipolar Inputs (V)	±10, 5, 2.5, 1.25, 0.625	±10, 5, 1, 0.5, 0.1, 0.05, 0.01, 0.005	±10, 5, 2.5, 1.25, 0.625	±10, 5, 2.5, 1.25, 0.625	±10, 5, 2.5, 1.25, 0.625	±10, 5, 2.5, 1.25, 0.625
		Configurable Per-Channel	✓	✓	✓	✓	✓	✓
	Trigger Modes	Pacer/Software/External Pulse	✓	✓	✓	✓	✓	✓
		Analog Slope	-	-	-	-	✓	✓
		Advanced Trigger	-	-	-	✓	Start/ Stop/ Delay to Start/ Delay to Stop	Start/ Stop/ Delay to Start/ Delay to Stop
	Data Transfer Modes	Software	✓	✓	✓	✓	✓	✓
		DMA	SS**	SS**	SS**	-	Bus-mastering	Bus-mastering
Analog Output	Resolution	-	-	12 bits	12 bits	12 bits	16 bits	16 bits
	Channels	-	-	1	2	2 (Waveform Output)	2 (Waveform Output)	2 (Waveform Output)
	Onboard FIFO	-	-	-	-	4,096 samples	4,096 samples	4,096 samples
	Output Range (V)	-	-	0 ~ 5, 0 ~ 10 ±5, ±10	0 ~ 5, 0 ~ 10, ±5, ±10	0 ~ 5, 0 ~ 10, ±5, ±10	0 ~ 5, 0 ~ 10, ±5, ±10	0 ~ 5, 0 ~ 10, ±5, ±10
	Output Rate	-	-	Static update	250 kS/s	500 kS/s	3 MS/s	3 MS/s
	DMA Transfer	-	-	-	-	Bus-mastering	Bus-mastering	Bus-mastering
Digital I/O	Input Channels	16 (shared)	16 (shared)	16 (shared)	16 (shared)	24 (shared)	24 (shared)	24 (shared)
	Output Channels	-	-	-	-	-	-	-
Timer/Counter	Channels	1	1	1	3	2	2	2
	Resolution	16 bits	16 bits	16 bits	16 bits	32-bit	32-bit	32-bit
	Max. Input Frequency	10 MHz	10 MHz	10 MHz	10 MHz	10 MHz	10 MHz	10 MHz
Isolation Voltage		-	-	-	-	-	-	-
Auto Calibration		-	-	-	✓	✓	✓	✓
BoardID Switch		-	-	-	-	✓	✓	✓
Dimensions (mm)		96 x 90	96 x 90	96 x 90	96 x 90	168 x 100	168 x 100	168 x 100
Connector		2 x 20-pin	2 x 20-pin	2 x 20-pin	50-pin/26-pin box header	68-pin SCSI	68-pin SCSI	68-pin SCSI
Legacy Driver	Windows XP/2000	✓	✓	✓	✓	-	-	-
	WinCE	✓	✓	✓	-	-	-	-
	Linux	✓	✓	✓	-	-	-	-
DAQNavi Driver	Windows 8/7/Vista/XP/2000	✓	✓	✓	✓	✓	✓	✓
	WinCE	-	-	-	-	-	-	-
	Linux	-	-	-	✓	-	-	-
LabVIEW Driver		✓	✓	✓	✓	✓	✓	✓

\* 80 kHz on Pentium 4-based (or upper) system

\*\* SS: Single DMA channel, Single A/D channel scan

# Data Acquisition Boards

## Analog I/O & Multifunction Card

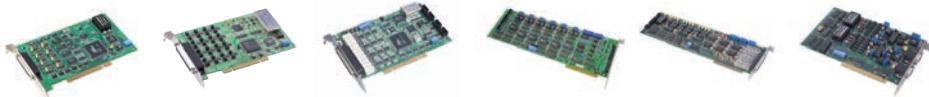


Category		Analog Input						Analog Output		
Bus		PCI					ISA	PCI-104	PCI	
Model		PCI-1713U	PCI-1714U	PCI-1714UL	PCI-1715U	PCI-1747U	PCL-813B	PCM-3813I	PCI-1720U	PCI-1721
Analog Input	General Spec.	Resolution	12 bits	12 bits	12 bits	12 bits	16 bits	12 bits	12 bits	-
		Channels	32 SE/16 Diff.	4 SE	4 SE	32 SE/16 Diff.	64 SE/32 Diff.	32 SE	32 SE/16 Diff.	-
		Onboard FIFO	4,096 samples	32,768 samples	8,192 samples	1,024 samples	1,024 samples	-	1,024 samples	-
		Sampling Rate	100 kS/s	30 MS/s	10 MS/s	500 kS/s	250 kS/s	25 kS/s	100 kS/s	-
	Input Ranges	Unipolar Inputs (V)	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25	-	-	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25	-	-
		Bipolar Inputs (V)	±10, 5, 2.5, 1.25, 0.625	±5, 2.5, 1, 0.5	±5, 2.5, 1, 0.5	±10, 5, 2.5, 1.25, 0.625	±10, 5, 2.5, 1.25, 0.625	±5, 2.5, 1.25, 0.625	±5, 2.5, 1.25, 0.625	-
	Trigger Modes	Configurable Per-Channel	✓	✓	✓	✓	✓	✓	✓	-
		Pacer/Software/External Pulse	✓	✓	✓	✓	Pacer/Software	Software	✓	-
		Analog Slope	-	✓	✓	-	-	-	-	-
		Advanced Trigger	-	✓	✓	-	-	-	-	-
	Data Transfer Modes	Software	✓	✓	✓	✓	✓	✓	-	-
		DMA	-	Bus-mastering	Bus-mastering	Bus-mastering	Bus-mastering	-	-	-
Analog Output	Resolution	-	-	-	-	-	-	-	12 bits	12 bits
	Channels	-	-	-	-	-	-	-	4	(Waveform Output)
	Onboard FIFO	-	-	-	-	-	-	-	-	1,024 samples
	Output Range (V)	-	-	-	-	-	-	-	0 ~ 5, 0 ~ 10, ±5, ±10, 0 ~ 20 mA, 4 ~ 20 mA	0 ~ 5, 0 ~ 10, ±5, ±10, 0 ~ 20 mA, 4 ~ 20 mA
	Output Rate	-	-	-	-	-	-	-	Static update	10 MS/s
	DMA Transfer	-	-	-	-	-	-	-	-	Bus-mastering
Digital I/O	Input Channels	-	-	-	-	-	-	-	-	16 (shared)
	Output Channels	-	-	-	-	-	-	-	-	
	Channels	-	-	-	-	-	-	-	-	1
	Resolution	-	-	-	-	-	-	-	-	16 bits
Timer/Counter	Max. Input Frequency	-	-	-	-	-	-	-	-	10 MHz
	Isolation Voltage	2,500 V <sub>dc</sub>	-	-	2,500 V <sub>dc</sub>	-	500 V <sub>dc</sub>	2,500 V <sub>dc</sub>	2,500 V <sub>dc</sub>	-
	Auto Calibration	-	✓	✓	-	✓	-	-	-	✓
BoardID Switch	BoardID Switch	-	✓	✓	✓	✓	✓	-	-	✓
	Dimensions (mm)	175 x 100	175 x 100	175 x 100	175 x 100	175 x 100	219 x 100	96 x 90	175 x 100	175 x 100
	Connector	DB37	4 x BNC	4 x BNC	DB37	68-pin SCSI	DB37	40-pin	DB37	68-pin SCSI
Legacy Driver	Windows XP/2000	✓	✓	✓	✓	✓	✓	✓	✓	✓
	WinCE	✓	-	-	-	✓	-	-	✓	-
	Linux	✓	✓	✓	-	✓	-	-	✓	✓
DADnAvi Driver	Windows 8/7/Vista/XP/2000	✓	✓	✓	✓	✓	✓	✓	✓	✓
	WinCE	-	-	-	-	-	-	-	✓	-
	Linux	-	✓	✓	✓	✓	-	-	-	✓
LabVIEW Driver	LabVIEW Driver	✓	✓	✓	✓	✓	✓	✓	✓	✓

\* 80 kHz on Pentium 4-based (or upper) system

\*\* SS: Single DMA channel, Single A/D channel scan

# Digital I/O & Counter Card



Category		Analog Output					
Bus	Model	PCI			ISA		
		PCI-1723	PCI-1724U	PCI-1727U	PCL-726	PCL-727	PCL-728
Analog Input	General Spec.	Resolution	-	-	-	-	-
		Channels	-	-	-	-	-
		Onboard FIFO	-	-	-	-	-
		Sampling Rate	-	-	-	-	-
	Input Ranges	Unipolar Inputs (V)	-	-	-	-	-
		Bipolar Inputs (V)	-	-	-	-	-
		Configurable Per-Channel	-	-	-	-	-
	Trigger Modes	Pacer/Software/External Pulse	-	-	-	-	-
		Analog Slope	-	-	-	-	-
		Advanced Trigger	-	-	-	-	-
	Data Transfer Modes	Software	-	-	-	-	-
		DMA	-	-	-	-	-
Analog Output	Resolution	16 bits	14 bits	14 bits	12 bits	12 bits	12 bits
	Channels	8	32	12	6	12	2
	Onboard FIFO	-	-	-	-	-	-
	Output Range (V)	±10, 0 ~ 20 mA, 4 ~ 20 mA	±10, 0 ~ 20 mA	±10, 0 ~ 20 mA	0 ~ 5, 0 ~ 10, ±5, ±10, 4 ~ 20 mA	0 ~ 5, 0 ~ 10, ±5, 4 ~ 20 mA	0 ~ 5, 0 ~ 10, ±5, ±10, 0 ~ 20 mA, 4 ~ 20 mA
	Output Rate	Static update	Static update	Static update	Static update	Static update	Static update
	DMA Transfer	-	-	-	-	-	-
Digital I/O	Input Channels	16 (shared)	-	16	16	16	-
	Output Channels		-	16	16	16	-
Timer/ Counter	Channels	-	-	-	-	-	-
	Resolution	-	-	-	-	-	-
	Max. Input Frequency	-	-	-	-	-	-
Isolation Voltage		-	1,500 V <sub>DC</sub>	-	-	-	2,500 V <sub>DC</sub>
Auto Calibration		✓	-	-	-	-	-
BoardID Switch		✓	✓	✓	-	-	-
Dimensions (mm)		175 x 100	175 x 100	175 x 100	337 x 112	337 x 112	185 x 120
Connector		68-pin SCSI	DB62	2 x 2-pin, DB37	4 x 20-pin	2 x 20-pin, DB37	2 x DB9
Legacy Driver	Windows XP/2000	✓	✓	✓	✓	✓	✓
	WinCE	-	✓	-	-	-	-
	Linux	✓	✓	✓	-	-	-
DAQNavi Driver	Windows 8/7/Vista/XP/2000	✓	✓	✓	-	-	-
	WinCE	-	-	-	-	-	-
	Linux	-	✓	✓	-	-	-
LabVIEW Driver		✓	✓	✓	✓	✓	✓

# Data Acquisition Boards

## Digital I/O & Counter Card



Category		Non-Isolated Digital I/O						
Bus		PCI						
Model		PCI-1735U	PCI-1737U	PCI-1739U	PCI-1751	PCI-1753	PCI-1755	PCI-1757UP
TTL DI/O	Input Channels	32						
	Output Channels	32	24 (shared)	48 (shared)	48 (shared)	96 (shared)	32 (shared)	24 (shared)
	Output Channel	Sink Current	24 mA @ 0.5V	24 mA @ 0.4 V	24 mA @ 0.4 V	24 mA @ 0.4 V	24 mA @ 0.44 V	24 mA @ 0.5V
		Source Current	15 mA @ 2.0V	15 mA @ 2.4 V	15 mA @ 2.4 V	15 mA @ 2.4 V	24 mA @ 3.76 V	15 mA @ 2.0V
Isolated DI/O	Input	Channels	-	-	-	-	-	-
		Isolation Voltage	-	-	-	-	-	-
		Input Range	-	-	-	-	-	-
	Output	Channels	-	-	-	-	-	-
		Isolation Voltage	-	-	-	-	-	-
		Output Range	-	-	-	-	-	-
		Max. Sink Current	-	-	-	-	-	-
Timer/Counter	Channels	3	-	-	3	-	3	-
	Resolution	16 bits	-	-	16 bits	-	16 bits	-
	Max. Input Frequency	10 MHz	-	-	10 MHz	-	10 MHz	-
Advanced Function	Pattern Match	-	-	-	-	✓	✓	-
	Change of State	-	-	-	-	✓	✓	-
	BoardID Switch	✓	✓	✓	✓	✓	✓	✓
	Channel-Freeze Function	-	-	-	-	-	✓	-
	Output Status Read Back	✓	✓	✓	✓	✓	-	✓
	Dry/Wet Contact*	-	✓	✓	✓	✓	-	✓
Dimensions (mm)		175 x 100	175 x 100	175 x 100	175 x 100	175 x 100	175 x 100	120 x 65
Connector		5 x 20-pin	1 x 50-pin	2 x 50-pin	68-pin SCSI	100-pin SCSI	100-pin SCSI-II	1 x DB25
Legacy Driver	Windows XP/2000	✓	✓	✓	✓	✓	✓	✓
	WinCE	-	-	-	-	-	-	-
	Linux	✓	✓	✓	✓	✓	-	✓
DAQNavi Driver	Windows 8/7/Vista/ XP/2000	✓	✓	✓	✓	✓	-	✓
	WinCE	-	-	-	-	-	-	-
	Linux	-	-	-	✓	-	-	-
LabVIEW Driver		✓	✓	✓	✓	✓	✓	✓

\* Dry/wet contact can be mixed at the same time within one group.



Category		Non-Isolated Digital I/O					
Bus		ISA			PC/104	PCI-104	
Model		PCL-720+	PCL-722	PCL-724	PCL-731	PCM-3724	PCM-3731I
TTL DI/O	Input Channels	32	144 (shared)	24 (shared)	48 (shared)	48 (shared)	96 (shared)
	Output Channels	32					
	Output Channel	Sink Current	24 mA @ 0.5 V	24 mA @ 0.4 V	24 mA @ 0.4 V	24 mA @ 0.4 V	24 mA @ 0.5 V
		Source Current	15 mA @ 2.0 V	-15 mA @ 2.4 V	15 mA @ 2.4 V	15 mA @ 2.4 V	15 mA @ 2.0 V
Isolated DI/O	Input	Channels	-	-	-	-	-
		Isolation Voltage	-	-	-	-	-
		Input Range	-	-	-	-	-
	Output	Channels	-	-	-	-	-
		Isolation Voltage	-	-	-	-	-
		Output Range	-	-	-	-	-
		Max. Sink Current	-	-	-	-	-
Timer/ Counter	Channels	3	-	-	-	-	-
	Resolution	16 bits	-	-	-	-	-
	Max. Input Frequency	1 MHz	-	-	-	-	-
Advanced Function	Pattern Match	-	-	-	-	-	✓
	Change of State	-	-	-	-	-	✓
	BoardID Switch	-	-	-	-	-	-
	Channel-Freeze Function	-	-	-	-	-	-
	Output Status Read Back	-	✓	✓	✓	✓	✓
	Dry/Wet Contact*	-	-	-	-	-	-
Dimensions (mm)		185 x 100	334 x 100	125 x 100	185 x 100	96 x 90	96 x 90
Connector		5 X 20-pin	6 x 50-pin	1 x 50-pin	2 x 50-pin	2 x 50-pin	4 x 50-pin
Legacy Driver	Windows XP/2000	✓	✓	✓	✓	✓	✓
	WinCE	-	-	-	-	✓	✓
	Linux	-	-	-	-	✓	✓
DAQNavi Driver	Windows 8/7/Vista/XP/2000	-	-	-	-	✓	✓
	WinCE	-	-	-	-	-	-
	Linux	-	-	-	-	-	-
LabVIEW Driver		✓	✓	✓	✓	✓	✓

\* Dry/wet contact can be mixed at the same time within one group.

# Data Acquisition Boards

## Digital I/O & Counter Card



Category		Isolated Digital I/O					Non-isolated Digital I/O	
Bus		PCI Express						
Model		PCIE-1730	PCIE-1752	PCIE-1754	PCIE-1756	PCIE-1760	PCIE-1751	PCIE-1753
TTL DI/O	Input Channels	16	-	-	-	-	48 (shared)	96 (shared)
	Output Channels	16	-	-	-	-		
	Output Channel	24 mA @ 0.5 V	-	-	-	-	15 mA @ 0.8 V	15 mA @ 0.8 V
	Source Current	15 mA @ 2.4 V	-	-	-	-	15 mA @ 2.0 V	15 mA @ 2.0 V
Isolated DI/O	Input	Channels	16	-	64	32	8	-
		Isolation Voltage	2,500 V <sub>DC</sub>	-	2,500 V <sub>DC</sub>	2,500 V <sub>DC</sub>	2,500 V <sub>DC</sub>	-
		Input Range	10 ~ 30 V <sub>DC</sub>	-	10 ~ 30 V <sub>DC</sub>	10 ~ 30 V <sub>DC</sub>	4.5 ~ 12 V <sub>DC</sub>	-
	Output	Channels	16 (Sink)	64 (Sink)	-	32 (Sink)	6 x Form A 2 x Form C	-
		Isolation Voltage	2,500 V <sub>DC</sub>	2,500 V <sub>DC</sub>	-	2,500 V <sub>DC</sub>	2,500 V <sub>DC</sub>	-
		Output Range	5 ~ 40 V <sub>DC</sub>	5 ~ 40 V <sub>DC</sub>	-	5 ~ 40 V <sub>DC</sub>	1 A @ 125 V <sub>AC</sub> 2 A @ 30 V <sub>AC</sub>	-
		Max. Sink Current	500 mA	500 mA	-	500 mA		-
Timer/Counter	Channels	-	-	-	-	8 x UP CTR 2 x PWM	3	-
	Resolution	-	-	-	-	16 bits	32 bits	-
	Max. Input Frequency	-	-	-	-	500 Hz	10 MHz	-
Advanced Function	Pattern Match	-	-	-	-	✓	✓	✓
	Change of State	-	-	-	-	✓	✓	✓
	BoardID Switch	✓	✓	✓	✓	✓	✓	✓
	Channel-Freeze Function	✓	✓	-	✓	-	-	-
	Output Status Read Back	✓	✓	-	✓	✓	✓	✓
	Dry/Wet Contact*	✓	-	-	-	-	✓	✓
Dimensions (mm)		168 x 100	168 x 100	168 x 100	168 x 100	168 x 100	168 x 100	168 x 100
Connector		1 x DB37 4 x 20-pin	100-pin SCSI	100-pin SCSI	100-pin SCSI	1 x DB37	68-pin SCSI	68-pin SCSI
Legacy Driver	Windows XP/2000	-	-	-	-	-	-	-
	WinCE	-	-	-	-	-	-	-
	Linux	-	-	-	-	-	-	-
DAQNavi Driver	Windows 8/7/Vista/ XP/2000	✓	✓	✓	✓	✓	✓	✓
	WinCE	-	-	-	-	-	-	-
	Linux	-	-	-	-	✓	-	-
LabVIEW Driver		✓	✓	✓	✓	✓	✓	✓

\* Dry/wet contact can be mixed at the same time within one group.



Category		Isolated Digital I/O					
Bus	Model	PCI					
<b>TTL DI/O</b>		PCI-1730U	PCI-1733	PCI-1734	PCI-1750	PCI-1752U	PCI-1754
Input Channels		16	-	-	-	-	-
Output Channels		16	-	-	-	-	-
<b>Isolated DI/O</b>	Sink Current Channel	24 mA @ 0.5 V	-	-	-	-	-
	Source Current	15 mA @ 2.4 V	-	-	-	-	-
<b>Isolated DI/O</b>	Input Channels	16	32	-	16	-	64
	Isolation Voltage	2,500 V <sub>dc</sub>	2,500 V <sub>dc</sub>	-	2,500 V <sub>dc</sub>	-	2,500 V <sub>dc</sub>
	Input Range	5 ~ 30 V <sub>dc</sub>	5 ~ 30 V <sub>dc</sub>	-	5 ~ 50 V <sub>dc</sub>	-	10 ~ 50 V <sub>dc</sub>
	Output Channels	16 (Sink)	-	32 (Sink)	16 (Sink)	64 (Sink)	-
<b>Timer/Counter</b>	Isolation Voltage	2,500 V <sub>dc</sub>	-	2,500 V <sub>dc</sub>	2,500 V <sub>dc</sub>	2,500 V <sub>dc</sub>	-
	Output Range	5 ~ 40 V <sub>dc</sub>	-	5 ~ 40 V <sub>dc</sub>	5 ~ 40 V <sub>dc</sub>	5 ~ 40 V <sub>dc</sub>	-
	Max. Sink Current	300 mA	-	200 mA	200 mA	200 mA	-
Channels		-	-	-	1	-	-
Resolution		-	-	-	16 bits	-	-
Max. Input Frequency		-	-	-	1 MHz	-	-
<b>Advanced Function</b>	Pattern Match	-	-	-	-	-	-
	Change of State	-	-	-	-	-	-
	BoardID Switch	✓	✓	✓	-	✓	✓
	Channel-Freeze Function	✓	-	-	-	✓	-
	Output Status Read Back	✓	-	✓	-	✓	-
Dimensions (mm)		175 x 100					
Connector		1 x DB37 4 x 20-pin	1 x DB37	1 x DB37	1 x DB37	100-pin SCSI	100-pin SCSI
<b>Legacy Driver</b>	Windows XP/2000	✓	✓	✓	✓	✓	✓
	WinCE	✓	-	✓	✓	✓	✓
	Linux	✓	✓	✓	✓	✓	✓
<b>DAQNavi Driver</b>	Windows 8/7/Vista/XP/2000	✓	✓	✓	✓	✓	✓
	WinCE	-	-	-	-	-	-
	Linux	✓	-	-	✓	✓	-
<b>LabVIEW Driver</b>		✓	✓	✓	✓	✓	✓

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# Data Acquisition Boards

## Digital I/O & Counter Card



Category		Isolated Digital I/O						
Bus		PCI						
Model		PCI-1756	PCI-1758UDI	PCI-1758UDO	PCI-1758UDIO	PCI-1760U	PCI-1761	PCI-1762
TTL DI/O	Input Channels	-	-	-	-	-	-	-
	Output Channels	-	-	-	-	-	-	-
	Output Channel	Sink Current	-	-	-	-	-	-
	Source Current	-	-	-	-	-	-	-
Isolated DI/O	Input Channels	32	128	-	64	8	8	16
	Isolation Voltage	2,500 V <sub>DC</sub>	2,500 V <sub>RMS</sub>	-	2,500 V <sub>DC</sub>	2,500 V <sub>DC</sub>	3,750 V <sub>DC</sub>	2,500 V <sub>DC</sub>
	Input Range	10 ~ 50 V <sub>DC</sub>	5 ~ 25 V <sub>DC</sub>	-	5 ~ 25 V <sub>DC</sub>	4.5 ~ 12 V <sub>DC</sub>	5 ~ 50 V <sub>DC</sub>	10 ~ 50 V <sub>DC</sub>
	Output Channels	32 (Sink)	-	128	64	6 x Form A 2 x Form C	4 x Form A 4 x Form C	16**
	Isolation Voltage	2,500 V <sub>DC</sub>	-	2,500 V <sub>RMS</sub>	2,500 V <sub>DC</sub>	2,500 V <sub>DC</sub>	2,500 V <sub>DC</sub>	2,500 V <sub>DC</sub>
	Output Range	5 ~ 40 V <sub>DC</sub>	-	5 ~ 40 V <sub>DC</sub>	5 ~ 40 V <sub>DC</sub>	1 A @ 125 V <sub>AC</sub> 2 A @ 30 V <sub>DC</sub>	8 A @ 250 V <sub>AC</sub> 2 A @ 30 V <sub>DC</sub>	0.25 A @ 250 V <sub>AC</sub> 2 A @ 30 V <sub>DC</sub>
	Max. Sink Current	200 mA	-	90 mA	90 mA			
Timer/ Counter	Channels	-	-	-	-	8 x Up CTR 2 x PWM	-	-
	Resolution	-	-	-	-	16 bits (2,500 Isolation)	-	-
	Max. Input Frequency	-	-	-	-	500 Hz for Up CTR	-	-
Advanced Function	Pattern Match	-	-	-	-	✓	-	-
	Change of State	-	-	-	-	✓	-	-
	BoardID Switch	✓	✓	✓	✓	✓	✓	✓
	Channel-Freeze Function	✓	-	-	-	-	-	✓
	Output Status Read Back	✓	-	✓	✓	✓	✓	✓
	Dry/Wet Contact*	-	-	-	-	-	-	-
Dimensions (mm)		175 x 100	175 x 100	175 x 100	175 x 100	175 x 100	175 x 100	175 x 100
Connector		100-pin SCSI	Dual 100-pin mini-SCSI	Dual 100-pin mini-SCSI	Dual 100-pin mini-SCSI	1 x DB37	1 x DB37	1 x DB62
Legacy Driver	Windows XP/2000	-	✓	✓	✓	-	✓	✓
	WinCE	✓	✓	✓	✓	✓	✓	✓
	Linux	-	✓	✓	✓	-	✓	✓
DAQNavi Driver	Windows 8/7/Vista/ XP/2000	✓	✓	✓	✓	✓	✓	✓
	WinCE	-	-	-	-	-	-	-
	Linux	-	✓	✓	✓	-	✓	✓
LabVIEW Driver		✓	✓	✓	✓	✓	✓	✓

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Category		Isolated Digital I/O						Counter		
Bus		ISA		PC/104		PCI-104		PCI	ISA	PC/104
Model		PCL-725	PCL-735	PCM-3725	PCM-3730	PCM-3730I	PCM-3761I	PCI-1780U	PCL-836	PCM-3780
TTL DI/O	Input Channels	-	-	8	16	-	-	8	16	24 (shared)
	Output Channels	-	-	8	16	-	-	8	16	
	Output Channel	Sink Current	-	-	0.5 V @ 8 mA	-	-	24 mA @ 0.5 V	8 mA @ 0.5 V	24 mA @ 0.5 V
	Source Current	-	-	-	0.4 mA @ 2.4 V	-	-	15 mA @ 2.4 V	0.4 mA @ 2.4 V	15 mA @ 2.0 V
Isolated DI/O	Input	Channels	8	-	8	8	16	8	-	-
	Isolation Voltage	1,500 V <sub>DC</sub>	-	2,500 V <sub>DC</sub>	2,500 V <sub>DC</sub>	2,500 V <sub>DC</sub>	2,500 V <sub>DC</sub>	-	-	-
	Input Range	5 ~ 24 V <sub>DC</sub>	-	10 ~ 50 V <sub>DC</sub>	5 ~ 24 V <sub>DC</sub>	5 ~ 30 V <sub>DC</sub>	5 ~ 30 V <sub>DC</sub>	-	-	-
	Output	Channels	4 x Form A 4 x Form C	12 x Form C	8 x Form C	8	16	8 x Form C	-	-
	Isolation Voltage	1,000 V <sub>DC</sub>	1,000 V <sub>DC</sub>	2,000 V <sub>DC</sub>	2,500 V <sub>DC</sub>	2,500 V <sub>DC</sub>	2,000 V <sub>DC</sub>	-	-	-
	Output Range	0.5A @ 120 V <sub>AC</sub> 1A @ 30 V <sub>DC</sub>	1A @ 125 V <sub>AC</sub> 2A @ 30 V <sub>DC</sub>	0.25A @ 240 V <sub>DC</sub> 1A @ 30 V <sub>DC</sub>	5 ~ 40 V <sub>DC</sub>	5 ~ 30 V <sub>DC</sub>	0.25 A @ 250 V <sub>AC</sub> 2 A @ 30 V <sub>DC</sub>	-	-	-
	Max. Sink Current				200 mA	300 mA		-	-	-
Timer/ Counter	Channels	-	-	-	-	-	-	8 x CTR	6 x CTR 3 x PWM	2
	Resolution	-	-	-	-	-	-	16 bits	16 bits	16 bits
	Max. Input Frequency	-	-	-	-	-	-	20 MHz	10 MHz	20 MHz
Advanced Function	Pattern Match	-	-	-	-	-	-	-	-	-
	Change of State	-	-	-	-	-	-	-	-	-
	BoardID Switch	-	-	-	-	-	-	✓	✓	-
	Channel-Freeze Function	-	-	-	-	-	-	-	-	-
	Output Status Read Back	-	-	-	-	-	-	✓	-	-
	Dry/Wet Contact*	-	-	-	-	-	-	-	-	-
Dimensions (mm)		147 x 95	155 x 100	96 x 90	96 x 90	96 x 90	96 x 90	175 x 100	185 x 100	96 x 90
Connector		1 x DB37	1 x DB37	1 x 20-pin 1 x 50-pin	3 x 20-pin	2 x 20-pin	1 x 20-pin 1 x 50-pin	68-pin SCSI	1 x DB37 2 x 20-pin	1 x 50-pin 1 x 20-pin
Legacy Driver	Windows XP/2000	✓	✓	✓	✓	✓	✓	✓	✓	✓
	WinCE	-	-	✓	✓	✓	✓	-	-	✓
	Linux	-	-	✓	✓	✓	✓	✓	-	-
DAQNavi Driver	Windows 8/7/Vista/ XP/2000	-	-	✓	✓	✓	✓	-	-	✓
	WinCE	-	-	-	-	-	-	-	-	-
	Linux	-	-	-	-	-	-	✓	-	-
LabVIEW I/O Driver		✓	✓	✓	✓	✓	✓	✓	✓	✓

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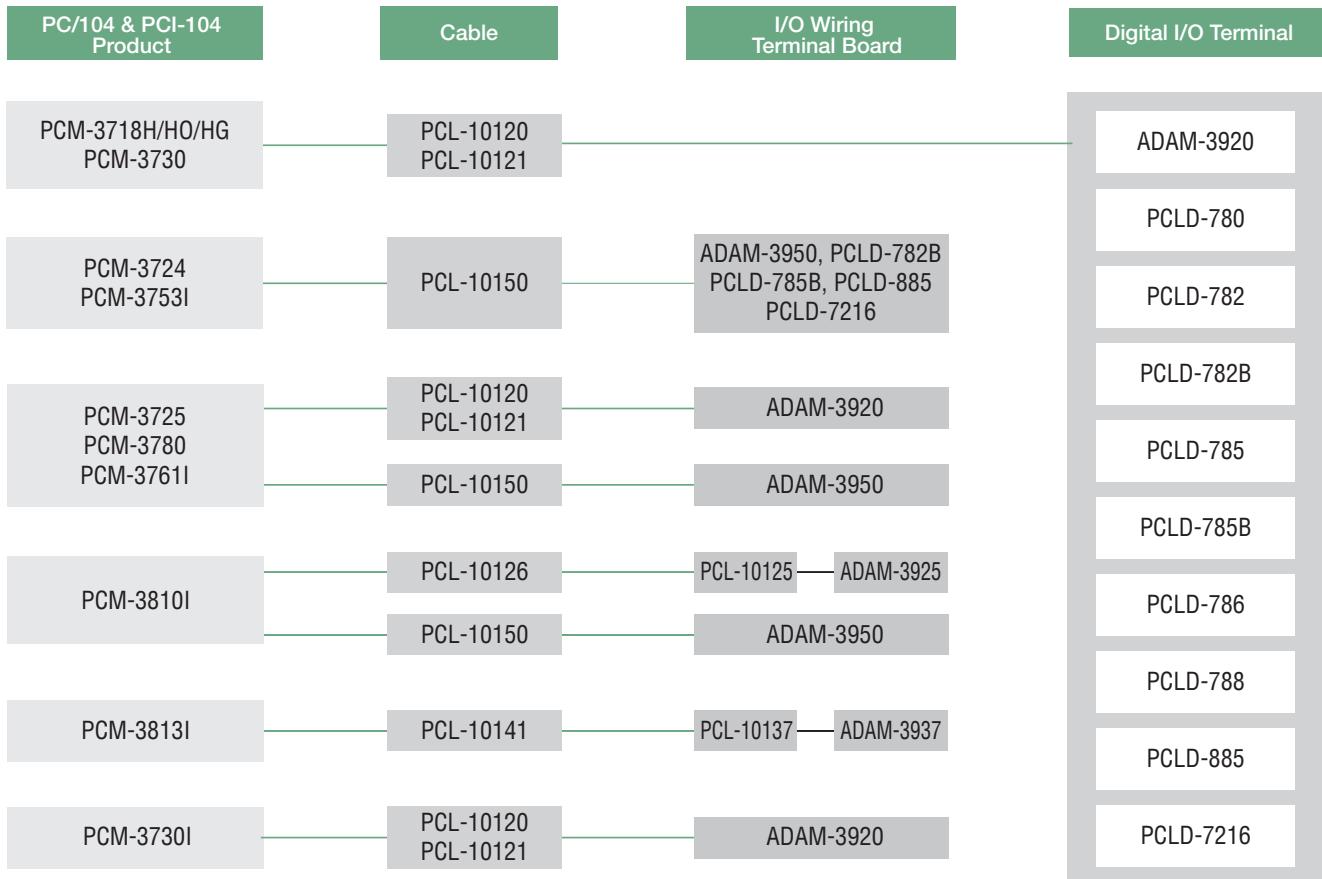
\*\* Jumper selectable Form A/Form B-type relay output

# Signal Conditioning Modules and Terminal Boards

**Recommended Cables, I/O Wiring Terminal Boards and Isolated Digital I/O Terminals for Connecting to PCI & USB Data Acquisition (DAQ) Products**

PCI & USB Product	Cable	I/O Wiring Terminal Board	Cable	Digital I/O Terminal
PCI-1710U/1710UL/1710HGU PCI-1711U/1711UL PCI-1716/1716L PCI-1706U/UL PCI-1741U/1742U PCIE-1810/ PCIE-1816/ PCIE-1816H	PCL-10168 PCL-10168H	PCLD-8710 ADAM-3968	PCL-10120 PCL-10121	ADAM-3920
PCI-1712/1712L	PCL-10168 PCL-10168H	PCLD-8712		
PCI-1718HDU/HGU	PCL-10137	ADAM-3937, PCLD-880 PCLD-8115, PCLD-789D		
PCI-1727U PCI-1730U PCIE-1730	PCL-10120 PCL-10121 PCL-10137 ADAM-3937 PCLD-880	PCL-10502+ PCL-10120, PCL-10121 PCL-10503+ PCL-10137, ADAM-3937		PCLD-782
PCI-1751	PCL-10168	ADAM-3968 PCLD-8751, PCLD-8761 PCLD-8762	PCL-10150+ ADAM-3950 PCLD-782B PCLD-785B PCLD-885 PCLD-7216	PCLD-782B
PCI-1753	PCL-10268	ADAM-3968/50 ADAM-3968/20	PCL-10120	PCLD-785
PCI-1713U, PCI-1715U	PCL-10137	ADAM-3937 PCLD-880 PCLD-881B		
PCI-1720U, PCI-1733, PCI-1734 PCI-1750, PCIE-1760, PCI-1760U, PCI-1761, USB-4702	PCL-10137	ADAM-3937		
PCI-1784U	PCI-10137H			PCLD-785B
PCI-1752U, PCI-1754, PCI-1756 PCIE-1752, PCIE-1754, PCIE-1756	PCL-10250 PCL-101100M	ADAM-3951 ADAM-39100		
PCI-1724U, PCI-1762	PCL-10162	ADAM-3962		PCLD-786
PCI-1737U PCI-1739U USB-4751/L	PCL-10150	ADAM-3950, PCLD-782B PCLD-785B, PCLD-885 PCLD-7216		
PCI-1714U/1714UL, PCIE-1744	PCL-10901 PCL-1010B	ADAM-3909		PCLD-788
PCI-1757UP	PCL-10125	ADAM-3925		
PCI-1747U, PCI-1721 PCI-1723, PCI-1780U	PCL-10168	ADAM-3968		
PCI-1735U	PCL-10120 PCL-10121	PCL-10502+ PCL-10120, PCL-10121 PCL-10503+ PCL-10137, ADAM-3937		PCLD-885
PCI-1755	PCL-101100	ADAM-39100		PCLD-7216
PCI-1758UDI/1758UDO/1758UDIO	PCL-101100S			
PCI-1671UP, USB-4671	PCL-10488			

## Recommended Cables, I/O Wiring Terminal Boards and Isolated Digital I/O Terminals for Connecting to PC/104 & PCI-104 Data Acquisition (DAQ) Products



## Cable Accessories

Model	Description
PCL-1010B-1E	BNC to BNC Wiring Cable, 1 m
PCL-101100-1E	100-pin SCSI High-Speed Cable, 1 m
PCL-101100S-1E	100-pin Mini-SCSI Cable, 1 m
PCL-101100S-2E	100-pin Mini-SCSI Cable, 2 m
PCL-101100S-3E	100-pin Mini-SCSI Cable, 3 m
PCL-101100M-3E	100-pin SCSI Shielded Cable, 3 m
PCL-10120-0.4E	20-pin Flat Cable, 0.4 m
PCL-10120-1E	20-pin Flat Cable, 1 m
PCL-10120-2E	20-pin Flat Cable, 2 m
PCL-10121-2E	20-pin Shielded Cable, 2 m
PCL-10125-1E	DB25 Cable, 1 m
PCL-10125-3E	DB25 Cable, 3 m
PCL-10126-0.2E	IDE#2 26-pin to DB25(F) Flat CABLE, 0.2m
PCL-10137-1E	DB37 Cable, 1 m
PCL-10137-2E	DB37 Cable, 2 m
PCL-10137-3E	DB37 Cable, 3 m
PCL-10137H-1E	DB37 High-Speed Cable, 1 m

Model	Description
PCL-10137H-3E	DB37 High-Speed Cable, 3 m
PCL-10141-0.2E	IDE#2 40-pin to DB37(F) Flat CABLE, 0.2m
PCL-10150-1.2E	50-pin Flat Cable, 1.2 m
PCL-10162-1E	DB62 Cable, 1 m
PCL-10162-3E	DB62 Cable, 3 m
PCL-10168-1E	68-pin SCSI Shielded Cable, 1 m
PCL-10168-2E	68-pin SCSI Shielded Cable, 2 m
PCL-10168H-1E	68-pin SCSI Shielded Cable with Noise Rejecting, 1m
PCL-10168H-2E	68-pin SCSI Shielded Cable with Noise Rejecting, 2m
PCL-10250-1E	100-pin SCSI to Two 50-pin SCSI Cable, 1 m
PCL-10250-2E	100-pin SCSI to Two 50-pin SCSI Cable, 2 m
PCL-10268-1E	100-pin SCSI to Two 68-pin SCSI Cables, 1 m
PCL-10268-2E	100-pin SCSI to Two 68-pin SCSI Cables, 2 m
PCL-10488-2	IEEE-488 Cable, 2 m
PCL-10502-AE	Extender, Extend Dual 20-pin to PC Slot-Plate
PCL-10503-AE	Adapter Dual 20-pin to DB37
PCL-10901-3E	DB9 to PS/2 Cable, 3 m

# Industrial USB I/O Modules



Category		Multifunction				Analog Input
Bus		USB				
Model		USB-4702	USB-4704	USB-4711A	USB-4716	USB-4718
Analog Input	General Spec.	Resolution	12 bits	14 bits	12 bits	16 bits
		Channels	8 S.E./4 Diff.	8 S.E./4 Diff.	16 S.E./8 Diff.	16 S.E./8 Diff.
		Onboard FIFO	512 samples	512 samples	1,024 samples	-
		Sampling Rate	10 kS/s	48 kS/s	150 kS/s	200 kS/s
	Input Ranges	Unipolar Inputs (V)	-	-	-	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25 J,K,T,E,R,S,B types
		Bipolar Inputs (V)	S.E.: ± 10 Diff.: ±1, ±1.25, ± 2, ± 2.5, ±4, ±5, ±10, ±20	S.E.: ± 10 Diff.: ±1, ±1.25, ± 2, ± 2.5, ±4, ±5, ±10, ±20	±10, ±5, ±2.5, ±1.25, ±0.625	±10, ±5, ±2.5, ±1.25, ±0.625
	Trigger Modes	Configurable Per-Channel	✓	✓	✓	✓
		Pacer/Software/External Pulse	✓	✓	✓	✓ Software
	Data Transfer Modes	Software	✓	✓	✓	✓
		DMA	-	-	-	-
Analog Output	Resolution	12 bits	12 bits	12 bits	16 bits	-
	Channels	2	2	2	2	-
	Output Range (V)	0~5	0~5	0~5, 0~10, ±5, ±10	0~5, 0~10, ±5, ±10	-
	Output Rate	Static update	Static update	Static update	Static update	-
Digital I/O	Input Channels	8	8	8	8	8 (Isolated)
	Output Channels	8	8	8	8	8 (Isolated)
Timer/Counter	Channels	1	1	1	1	-
	Resolution	32 bits	32 bits	32 bits	32 bits	-
	Max. Input Frequency	5 MHz	5 MHz	1 kHz	1 kHz	-
Isolation Voltage						2,500 V <sub>dc</sub>
BoardID Switch		Software	Software	Software	Software	Software
Dimensions (mm)		70 x 70	132 x 80 x 32	132 x 80 x 32	132 x 80 x 32	132 x 80 x 32
Connector		1 x DB37	Onboard screw terminal	Onboard screw terminal	Onboard screw terminal	Onboard screw terminal
Legacy Driver	Windows XP/2000	✓	✓	✓	✓	✓
	WinCE	-	-	✓	✓	✓
	Linux	-	-	✓	✓	✓
DAQNavi Driver	Windows 8/7/Vista/XP/2000	✓	✓	✓	✓	✓
	WinCE	-	-	-	-	-
	Linux	✓	✓	-	-	✓
LabVIEW Driver		✓	✓	✓	✓	✓



Category			Non-Isolated Digital I/O		Isolated Digital I/O			
Bus			USB					
Model			USB-4751	USB-4751L	USB-4750	USB-4761		
TTL DI/O	Input	Channels	48	24	-	-		
		Channels			-	-		
	Output	Sink Current	12 mA	12 mA	-	-		
		Source Current	12 mA	12 mA	-	-		
Isolated DI/O	Input	Channels	-	-	16	8		
		Isolation Voltage	-	-	2,500 V <sub>dc</sub>	2,500 V <sub>dc</sub>		
		Input Range	-	-	5 ~ 60 V <sub>dc</sub>	5 ~ 30 V <sub>dc</sub>		
	Output	Channels	-	-	16	8 x Form C		
		Isolation Voltage	-	-	2,500 V <sub>dc</sub>	2,500 V <sub>dc</sub>		
		Output Range	-	-	5 ~ 40 V <sub>dc</sub>	-		
		Max. Sink Current	-	-	100 mA max. per channel	0.25 A @ 250 V <sub>ac</sub> , 2 A @ 30 V <sub>dc</sub>		
Timer/Counter	Channels		2	2	2	-		
	Resolution		32 bits	32 bits	32 bits	-		
	Max. Input Frequency		8 MHz	8 MHz	8 MHz	-		
Advanced Function	Output Status Read Back		✓	✓	✓	✓		
Isolation Voltage			-	-	2,500 V <sub>dc</sub>	2,500 V <sub>dc</sub>		
BoardID Switch			Software					
Dimensions (mm)			132 x 80 x 32	132 x 80 x 32	132 x 80 x 32	132 x 80 x 32		
Connector			2 x opto-22 compatible box header	1 x opto-22 compatible box header	Onboard screw terminal	Onboard screw terminal		
Legacy Driver	Windows XP/2000		✓	✓	✓	✓		
	WinCE		✓	✓	✓	✓		
	Linux		✓	✓	✓	✓		
DAQNavi Driver	Windows 8/7/Vista/XP/2000		✓	✓	✓	✓		
	WinCE		-	-	-	-		
	Linux		✓	-	-	✓		
LabVIEW Driver			✓	✓	✓	✓		

# About Intelligent Systems

## Transforming the Industrial Cloud Era

With innovative technologies from cloud computing (industrial server, video server), edge computing (fanless, slim & portable devices), to high performance embedded systems. Advantech transforms embedded systems into intelligent systems with smart, secure, energy-saving features, built with Industrial Cloud Services and professional System Design-To-Order Services (System DTOS). Advantech's intelligent systems are designed to target vertical markets in intelligent transportation, factory automation/machine automation, cloud infrastructure, intelligent video application.

## Intelligent Systems

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



Intelligent Video



Industrial Cloud



Equipment Builder



Intelligent Transportation



# Star Products

## Intelligent Transportation Systems

**ITA-5730**

Intel® 3rd Generation Core™ i Processor Fanless System

EN 50155 Certified Product for Railway Applications

- Supports Intel® 3rd Generation processor with HM76
- Fanless computer for railway vehicle applications, fully compliant with EN 50155
- Satisfy temp. standard: EN 50155 TX (-40 ~ 70° C) and IEC 61373 body mount class B
- Compliant with EN 50121-3-2 EMC test standard
- Ruggedized connectors (M12) used for communication and power ports
- Optional PCI/miniPCIe slots for expansion
- Supports Easy-swap HDD/SSD/CF module

**ITA-1711**

Intel® Celeron™ J1900 Compact System Multiple COM Ports and Dual Display

- Fanless, Intel® Celeron™ J1900, 2.0 GHz Quad Core Compact System
- Onboard 4G DDR3 Memory and optional NVRAM
- Supports up to 2 x LAN, 6 x USB, 14 x COM ports
- Supports 1 x USB 3.0 port
- Replaceable secondary display output (VGA2/DVI-D/LVDS)
- Supports dual full HD resolution video output
- Serial ports support RS-232/422/485 with automatic flow control
- Supports up to 24 in, 24 out Digital IO

**ITA-2211**

Intel® Atom™ E3845 2U Fanless Rackmount System with 3 ITAM Module

- Built-in Intel® Atom™ E3845, 1.91 GHz CPU
- Onboard 4GB DDR3 Memory
- 2U Fanless Rackmount System
- Supports 3 ITAM Module for I/O Expansion
- Supports Easy-Swap Power Module
- Supports AC/DC dual power input
- Compliance with railway applications (EN50121-4)

**ITA-2230**

Intel® Core™ i7 Fanless 2U Rackmount System with 3 ITAM Module

- Built-in Intel® Core™ i7-3555LE, 2.5 GHz CPU
- Onboard 4GB DDR3 Memory
- 2U Fanless Rackmount System
- Support 3 ITAM Module for I/O expansion
- Supports Easy-Swap Power Module
- Supports AC/DC dual power input
- Compliance with railway applications (EN50121-4)

## Industrial Motherboards & SBCs

**AIMB-705**

LGA1151 6th Generation Intel® Core™ i7/i5/i3/Pentium ATX with DVI/VGA, DDR4, SATA III, USB 3.0 & 6 COMs

- Supports Intel® Core™ i7/i5/i3/Pentium processor with H110 chipset
- Dual channel (Non-ECC) DDR4 1866/2133 up to 32GB
- Supports VGA and DVI display
- Supports SATA3.0, USB3.0, dual GbEs
- Supports 5 RS-232 and 1 RS-232/422/485 serial ports
- 1 PCIe x16 (Gen3) and 1 PCIe x4 (Gen3), and 5 PCI expansion slots

**AIMB-785**

LGA1151 6th Generation Intel® Core™ i7/i5/3/Celeron/Pentium ATX with Triple Display, DDR4, SATA III

- Supports Intel® Core™ i7/i5/3/Celeron/Pentium processor with Q170 chipset
- Four DIMM sockets support up to 64 GB DDR4 1866/2133
- Supports triple display VGA/2 DVI-D and dual GbE LAN
- Supports SATA RAID 0, 1, 5, 10, USB 3.0
- Supports Intel vPro, AMT 11.0 & TPM technologies
- Note: PCA-TPM-00A1E module is required to enable Intel vPro and TPM technologies

**ASMB-585**

Intel® LGA 1151 Micro ATX Server Board with 4 PCIe slots, 4 DDR4 slots, 6 USB 3.0, 4 LAN ports

- Supports Intel® Xeon® E3-1200 v5 & Core i5-6500/7-6700 series processors
- One PCIe x16 slots (Gen3 x16 link), two PCIe x4 (Gen3 x4 link) and one PCIe x4 slot (Gen3 x1 link)
- DDR4 1600/1866/2133 MHz ECC/Non-ECC up to 64GB
- Rackmount optimized placement with positive air flow design
- 1 VGA + 2 DVI port for multi-display
- 6 COM ports + 7 SATA III ports.
- Supports Intel vPro, AMT 9.0, Software RAID 0,1,5,10 and Embedded software APIs/utilities

**ASMB-785**

Intel® LGA 1151 ATX Server Board with DDR4, PCIe/PCI, USB 3.0, Quad/Dual LANs

- Supports Intel® Xeon® E3-1200 v5 and 6th Gen. Core i7/i5 Series processors
- DDR4 1600/1866/2133 MHz ECC/Non-ECC up to 64GB
- One Gen 3.0 PCIe x16 link or two PCIe x16 slots with x8 link, two PCIe x4 and three PCI slots
- 6 COM, 6 SATA III, 6 USB 3.0, 1 VGA and 2 DVI ports for multi-display
- Supports Intel vPro, AMT 9.0, Software RAID 0,1,5,10 and Embedded software APIs/utilities

**ASMB-813**

LGA 2011-R3 Intel Xeon® E5-2600 v3 ATX Server Board with 8 DDR4 DIMM, 5 PCIe x16 Slot (Gen 3.0), 6 USB 3.0, IPMI

- ATX Server Board with Intel Xeon® E5-2600 v3 processor
- Eight DDR4 2133 MHz RDIMM up to 256 GB and support DDR4 NVDIMM
- Seven PCIe expansion slots: five PCIe x8 (or two x16 and one x8), one PCIe x4 and one PCIe x1
- 0 ~ 60° C ambient operation temperature range

**ASMB-913**

Dual LGA 2011-R3 Intel Xeon® E5-2600 v3 EATX Server Board with 16 x DDR4 DIMM, 3 PCIe x16, 6 USB 3.0, PME support

- EATX Server Board with dual Xeon® E5-2600 v3 processor
- 16 x DDR4 2133 MHz RDIMM up to 512 GB
- Three PCIe x16 slot(Gen3.0) and PME expansion slot
- 0 ~ 40° C ambient operation temperature range
- Note: ASMB-913 could enable PME slot when processor is installed in CPU0 socket

**PCE-3029**

LGA 1151 Intel® Core™ i7/i5/3 Half-size SHB with PCIe 3.0/ Dual independent display/Dual GbE LAN/ SATA III/m-SATA/ USB 3.0

- Complies with PICMG 1.3
- Supports LGA 1151 Intel® Core™ i7/i5/3 processor
- Intel® H110
- Dual channel 1866/2133 MHz SO-DIMM up to 32 GB
- Three SATA 2.0 ports
- Supports dual 10/100/1000 Mbps Ethernet
- Supports dual independent display with VGA and DVI/DP (optional)

**PCE-5129**

LGA1151 6th Generation Intel® Core™ i series SHB DDR4/SATA 3.0/USB3.0/M.2/Dual GbE/3 Displays

- Supports 6th Generation Intel® Core™ i7/i5/3 LGA1151 processors with Q170
- Dual Channel (Non-ECC) DDR4 1866/2133 up to 32 GB
- Supports PCIE 3.0, M.2, USB 3.0, SATA3.0, SW Raid 0, 1, 5, 10
- Supports CRT and 2 x DVI-D/DP (cable optional) display
- Supports out-of-band remote management with AMT11.0
- Supports Advantech LPC modules
- Supports SUSIAccess and Embedded Software APIs

# Industrial Computer Chassis



Model Name		ARK-6610 / ARK-6620	ARK-6622H/L	IPC-3012	IPC-3026	IPC-6006 / IPC-6006S	IPC-6806S	IPC-6806/6806W
Form Factor Support		Mini ITX	Mini ITX	PICMG 1.3 Half-size SBC	PICMG 1.0/1.3 Half-size SBC	PICMG 1.0 Full-size / Half-size SBC	PICMG 1.0/1.3 Half-size SBC	PICMG 1.0 / PICMG 1.0 and 1.3 Full-sized SBC
Drive Bay	Slim Optical Drive	1 / -	-	-	-	-	-	-
	2.5"	-	-	-	-	-	-	-
	3.5"	External	-	-	1	-	1	1 / 1
		Internal	1 / 1	2 (2.5")	0	-	1	1 / 1
	5.25"	-	-	-	-	-	-	0 / 1
Front I/O	USB	Front I/O chassis	Front I/O chassis	2	2	-	2	2 / 2
	PS/2			-	-	-	-	- / -
Cooling	No. of Fans	1 / 2	2 / 1	2	1	-	1	1 / 1
	CFM	52.5 / 27.7	27.7 / 15.4	27	44.6	-	53	53 / 58
Power Supply	AC	180W Flex ATX	180W Flex ATX	250W Flex ATX	150W Flex ATX	-	250W Flex ATX	250W Flex ATX 350W Flex ATX
	AC Redundant	-	-	-	-	-	-	-
	DC	-	-	-	-	-	-	-
No. of Slots for add-on cards		1 / 1	1 / 1	2	4	6 / 6	4	5 / 5
No. of Full-size Cards		-	-	-	-	6 / 6	-	6 / 6
Passive Backplane Options	PICMG 1.0	-	-	-	Yes	Yes	Yes	Yes
	PICMG 1.3	-	-	Yes	Yes	-	Yes	Yes
Intelligent System Module		-	-	-	Yes	-	-	-
Dimensions (W x H x D)	mm	250 x 156 x 253 / 272 x 88 x 232	272 x 88 x 232	232 x 90 x 232	150 x 222 x 270	158 x 186 x 368 / 158 x 186 x 215	191 x 178 x 290	166 x 178 x 398 / 198 x 221 x 398
	inch	9.8 x 6.1 x 10 / 10.7 x 3.5 x 9.1	10.7 x 3.5 x 9.1	9.13 x 3.54 x 9.13	5.9 x 8.74 x 10.63	6.2 x 7.3 x 14.5 / 6.2 x 7.3 x 8.4	7.5 x 7.01 x 11.42	6.54 x 7.01 x 15.67 / 7.8 x 8.7 x 15.67
Weight	kg	4.76 / 3.49	3.49	3.24	4.4	2.2 / 1.6	5.6	6.3 / 8
	lb	10.47 / 7.68	7.68	7.14	9.7	4.8 / 3.5	12.3	13.9 / 17.6



<b>IPC-6806S-D</b>	<b>IPC-6606/6608</b>	<b>IPC-6908</b>	<b>IPC-7132</b>	<b>IPC-5120/7120</b>	<b>IPC-6025</b>	<b>IPC-5122</b>	<b>IPC-7130</b>	<b>IPC-7130L</b>	<b>IPC-7220</b>
PICMG 1.0/1.3 Half-size SBC	PICMG 1.0/1.3 Full-size SBC	PICMG 1.0/1.3 Full-size SBC	PICMG 1.3 Full-size SBC/ ATX / Micro ATX	Micro ATX / ATX	PICMG 1.0/1.3 Full-size SBC	Micro ATX	ATX / Micro ATX	ATX / Micro ATX	ATX / Micro ATX
1	-	-	-	- / -	-	1	-	-	-
1 (hot-swap)	-	-	-	-	-	-	-	-	-
-	1 / 1	1	1	1 / 1	1	1	2	2	1
1	1 / -	1	2	1 / 1	1	1	1	1	1
-	1 / 2	2	1	1 / 1	-	-	1	1	2
2	2 / 2	-	2	Front I/O chassis	2	2	2	2	2
-	- / -	-	-	-	-	-	-	-	-
1	1 / 1	1	1	1 + 1	1	1	1 + 1	1 + 1	1
53	53 / 85	53	85	85 / 10	46.6	85	73.8 + 21.2	73.8 + 21.2	85
250W Flex ATX	250W PS/2 300W PS/2 400W PS/2	250W PS/2 300W PS/2 400W PS/2	300W PS/2 400W PS/2	250W Flex ATX 350W Flex ATX	270W Flex ATX	300W PS/2 400W PS/2	300W PS/2 400W PS/2	300W PS/2 400W PS/2	300W PS/2 400W PS/2
-	-	-	-	-	-	-	350W Mini RPS 500W Mini RPS	350W Mini RPS 500W Mini RPS	350W Mini RPS 500W Mini RPS
-	-	300W 48V	-	-	-	-	-	-	-
4	5 / 7	7	9	4 / 7	4	4	7	7	7
-	6 / 8	8	10	-	5 / 5	-	7	7	7
Yes	Yes	Yes	-	-	Yes	-	-	-	-
Yes	Yes	Yes	Yes	-	Yes	-	-	-	-
-	-	-	-	-	Yes	Yes	Yes	-	Yes
191 x 178 x 290	173 x 254 x 396/ 173 x 315 x 410	200 x 300 x 463	200 x 330 x 430	320 x 164 x 316.5/ 380 x 164 x 316.5	111 x 212 x 420	157 x 360 x 340	200 x 320 x 480	200 x 320 x 480	200 x 320 x 480
7.5 x 7.01 x 11.42	6.8 x 10 x 15.6 / 6.8 x 12.4 x 16.1	7.9 x 11.8 x 18.2	7.9 x 13 x 16.9	12.6 x 6.5 x 12.5 / 15 x 6.5 x 12.5	4.4 x 8.3 x 16.5	6.2 x 14.2 x 13.4	7.9 x 12.6 x 18.9	7.9 x 12.6 x 18.9	7.9 x 12.6 x 18.9
5.6	9 / 11	12	9.96	6.54 / 7.01	4.7	6.5	12.8	11.11	14
12.3	19.8 / 24.2	26.4	21.93	14.42 / 15.45	10.3	14.3	28.2	24.49	30.8

# Industrial Computer Chassis



Model Name		1U Rackmount			2U Rackmount			4U Rackmount		
		IPC-100	IPC-120	ACP-1010	IPC-603	ACP-2000/ IPC-602	ACP- 2010/2320	IPC-510	IPC-610-L	IPC-611
Form Factor Support		Mini ITX	PICMG 1.3 Half-size SBC	PICMG 1.0/1.3 Full-Size SBC ATX/MicroATX	ATX/MicroATX	PICMG 1.0/1.3 Full-Size SBC	ATX/MicroATX	PICMG1.0/1.3 Full size SBC ATX/Micro-ATX	PICMG1.0/1.3 Full size SBC ATX/Micro-ATX	PICMG1.0/1.3 Full size SBC ATX/Micro-ATX
Drive Bay	Slim Optical Drive	1	-	1	1	1 / -	-/1	-	-	-
	2.5"	-	2 (Internal)	1 (Internal)	-	-	-	-	-	-
	Hot-swap	-	-	-	-	-	- / 2 (SAS/SATA)	-	-	-
	3.5"	-	-	1	-	2 / 1	1 / -	1	1	1
	External	-	-	-	-	- / 1	2	-	-	-
	Internal	1	-	-	1	- / 1	1 / -	3	3	3
Front I/O	USB	8	2	2	0	2	2	2	2	2
	PS/2	-	-	-	-	1	1	1	-	-
Cooling	No. of Fans	-	1	2 (MB), 4 (BP)	2	2	2 / 3	1	1	1
	CFM	-	6.5	2 x 24 (MB) / 3 x 24 + 1 x 15 (BP)	47	2 x 47/ 2 x 40	2 x 47/ 2 x 47 + 1 x 28	77	85	85
Power Supply	AC	60W power board	250W Flex ATX 300W Flex ATX	250W Flex ATX 300W Flex ATX	350W Flex ATX	250W PS/2 300W PS/2 400W PS/2 500W PS/2	250W Flex ATX 300W Flex ATX	250W PS/2 300W PS/2 400W PS/2	250W PS/2 300W PS/2	250W PS/2 300W PS/2
	AC Redundant	-	-	-	-	300W 1+1 RPS / -	250W 1+1	-	350W Mini RPS 500W Mini RPS	350W Mini RPS 500W Mini RPS
	DC	-	-	-	-	300W 48V	-	-	-	-
No. of Slots		1	3	MB: 1 BP: 3	3	6 / 6	3 / 3	15	15	15
No. of Full-size Cards <sup>Note</sup>		0	0	MB: 1 BP: 0	0	4 / 4	3 / 3	8	15	15
Passive Backplane Options	PICMG 1.0	-	Yes	Yes	-	Yes	-	Yes	Yes	Yes
	PICMG 1.3	-	-	Yes	-	Yes	-	Yes	Yes	Yes
Intelligent System Module		-	-	-	-	Yes	Yes	-	-	-
Dimensions (W x H x D)	mm	480 x 44 x 288	480 x 44 x 300	480 x 44 x 497	482 x 88 x 308	482 x 88 x 451	482 x 88 x 480	482 x 177 x 446	482 x 177 x 480	482 x 177 x 480
	inch	19 x 1.7 x 11.4	19 x 1.7 x 11.8	19 x 1.7 x 19.6	19 x 3.46 x 12.1	19 x 3.5 x 17.8	19 x 3.5 x 18.9	19 x 7 x 17.6	19 x 7 x 18.9	19 x 7 x 18.9
Weight	kg	3.6	3.1	8	6.4	11.5/11.3	10.7/11.7	10.7	14.5	14.2
	lb	7.92	6.82	17.6	14.1	25.3/24.9	23.5/25.7	23.5	31.9	31.2

Note: Depending on system configuration. Board component or CPU cooler mechanical interference might reduce supported full-sized card number.



4U Rackmount											6U Rackmount
IPC-610-H	IPC-610-F	IPC-619	ACP-4020	ACP-4D00	ACP-4000	ACP-4010/ACP-4320	ACP-4340	ACP-4360	IPC-623	IPC-622	
PICMG1.0/1.3 Full size SBC ATX/Micro-ATX	PICMG1.0/1.3 Full size SBC ATX/Micro-ATX	PICMG 1.0/1.3 Full-size SBC ATX/Micro-ATX	PICMG1.0/1.3 Full-size SBC ATX/Micro-ATX	PICMG 1.3/PCI Half-sized SBC	PICMG1.0/1.3 Full-size SBC ATX/Micro-ATX	PICMG1.0/1.3 Full-size SBC ATX/Micro-ATX	PICMG1.0/1.3 Full size SBC ATX/Micro-ATX	PICMG1.0/1.3 Full size SBC ATX/Micro-ATX	PICMG 1.0/1.3 Full size SBC	PICMG 1.0/1.3 Full size SBC	
-	-	-	1	-	-	-	1	1	-	-	
-	-	-	1 (Internal)	-	-	-	1 (Internal)	-	-	-	
-	-	-	-	-	-	- / 2 (SAS/SATA)	4 (SAS/SATA)	6 (SAS/SATA)	-	-	
1	1	1	2	1 / each node	1	1 / -	-	1	1	-	
-	1	-	-	-	-	1 / -	-	-	1	2	
3	3	2	-	-	3	2	-	-	3	4	
2	2	2	2 (USB 3.0)	2 (USB 2.0) + 2 (USB 3.0) / each node	2	4	2 (USB 3.0)	2	-	4	
1	1	-	-	-	1	-	-	-	-	-	
2	1	1	2	1 / each node	2	2 / 2	2	3	3	4	
85	85	85	2x53	1x58 per node	2x85	2x 85 / 1x 114 + 1x 28	1x 74 + 1x 56	1x 114 + 2x 47	114	4x 58	
300W PS/2 400W PS/2	300W PS/2 400W PS/2	250W PS/2 300W PS/2 400W PS/2	300W PS/2 400W PS/2 500W PS/2 700W PS/2	250W Flex ATX 300W Flex ATX	300W PS/2 400W PS/2 500W PS/2 700W PS/2	400W 500W	400W PS/2 500W PS/2 700W PS/2				
350W Mini RPS 500W Mini RPS	350W Mini RPS 500W Mini RPS	-	350W Mini RPS 500W Mini RPS	-	350W Mini RPS 500W Mini RPS	350W Mini RPS 500W Mini RPS 750W Mini RPS	350W Mini RPS 500W Mini RPS	350W Mini RPS 500W Mini RPS	460W 1+1 570W 2+1 810W 3+1	500W Mini RPS 750W Mini RPS	
300W 48V	300W 48V	-	300W 48V	-	300W 48V	-	-	-	-	-	
15	15	14	15	6 / each node	15	15 / 15	15	15	20	20	
15	15	0	0	0	11	15 / 10	15	15	20	20	
Yes	Yes	Yes	Yes	Yes (PCI BP only)	Yes	Yes	Yes	Yes	Yes	Yes	
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
-	-	-	Yes	Yes	Yes	Yes	Yes	Yes	-	Yes	
482 x 177 x 479 482 x 177 x 499 (MB) 482 x 177 x 449 (BP)	482 x 177 x 430	482 x 177 x 348	430 x 177 x 350	482 x 177 x 479	482 x 177 x 479	482 x 177 x 478	482 x 177 x 501	482 x 222 x 662	482 x 266 x 464		
19 x 7 x 18.9	19 x 7 x 19.6 (MB) 19 x 7 x 17.8 (BP)	19 x 7 x 16.9	19 x 7.0 x 13.7	19 x 7.0 x 13.8	19 x 7 x 18.9	19 x 7 x 18.9	19 x 7.0 x 18.8	19 x 7.0 x 19.8	19 x 8.75 x 26	19 x 10.5 x 18.3	
15	16.2	15	8.5	15	15.2	16.6/17.6	12.5	19	26	30	
33	35.6	33	18.7	33	33.5	36.5/38.7	27.5	41.8	57	66	

# Server-grade Motherboards



Model Name		ASMB-584	ASMB-585	ASMB-781	ASMB-782	ASMB-784
Form Factor		Micro ATX	Micro ATX	ATX (12"x9.6")	ATX (12"x9.6")	ATX
Processor System	CPU	Intel® Xeon® E3 v3 and 4th Gen. Core i3/i5/i7 Series	Intel® Xeon® E3-1200 v5 and Core i5-6500/i7-6700 Series	Intel® Xeon® E3/2nd Gen. Core i3/Pentium Series	Intel® Xeon® E3/E3 v2/ 2nd and 3rd Gen. Core i7/i5/i3/ Pentium Series	Intel® Xeon® E3 v3 and 4th Gen. Core i3/i5/i7 Series
	Socket	1 x socket 1150	1 x socket 1151	1 x socket 1155	1 x socket 1155	1 x socket 1150
	Max. Speed	3.5 GHz	3.6 GHz	3.4 GHz	3.5 GHz	3.5 GHz
	Front Side Bus	-	-	-	-	-
	L3 Cache	8 MB	8 MB	8 MB	8 MB	8MB
	Chipset	Intel C226	Intel C236	Intel C206	Intel C216	Intel C226
	BIOS	AMI 128Mbit, SPI	AMI 128Mbit, SPI	AMI 64 Mbit, SPI	AMI 64 Mbit, SPI	AMI 128Mbit, SPI
Expansion Slot	PCI	1*	-	3	3	3
	PCIe x16	-	1 (Gen3 x16 link)	1 (auto switch to two x8)	-	1 (switchable to two x8)
	PCIe x8	2 (x16 slot with x8 link)	-	2 (auto switch to one x16)	2 (x16 slot with x8 link)	2 (switchable to one x16)
	PCIe x4	1	3 (2 Gen3 x4 link, 1 Gen3 x1 link)	1	2	-
	PCIe x1	-	-	1	-	2
Memory	Technology	DDR3 ECC/non-ECC Unbuffer 1066/1333/1600 MHz	DDR4 ECC/non-ECC Unbuffer 1600/1866/2133 MHz	DDR3 ECC/Non-ECC Unbuffer 1066/1333/1600 MHz	DDR3 ECC/Non-ECC Unbuffer 1066/1333/1600 MHz	DDR3 ECC/non-ECC Unbuffer 1066/1333/1600 MHz
	Max. Capacity	32 GB ECC/Non-ECC UDIMM	64 GB ECC/Non-ECC UDIMM	32 GB ECC/Non-ECC UDIMM	32 GB ECC/Non-ECC UDIMM	32 GB ECC/Non-ECC UDIMM
	Socket	4 x 240-pin DIMM	4 x 288-pin DIMM	4 x 240-pin DIMM	4 x 240-pin DIMM	4 x 240-pin DIMM
Graphics	Controller	Intel GT2-HD Graphics	Intel GT2-HD Graphics	AST2300/1300 (G4/G2)	Intel HD Graphics	Intel GT2-HD Graphics
	VRAM	1 GB maximum shared memory with 2 GB and above system memory installed	1 GB maximum shared memory with 2 GB and above system memory installed	DDR3 64 MB	1 GB maximum shared memory with 2 GB and above system memory installed	1 GB maximum shared memory with 2 GB and above system memory installed
	LCD	-	-	-	-	-
	TV-Out	-	-	-	-	-
	HDMI	-	-	-	-	-
Ethernet	DVI	1	2	-	Yes (pin header)	2
	Dual Display	Yes	Yes	-	Yes (pin header for DVI)	Yes
	Interface	10/100/1000 Mbps Gigabit Ethernet	10/100/1000 Mbps Gigabit Ethernet	10/100/1000 Mbps Gigabit Ethernet	10/100/1000 Mbps Gigabit Ethernet	10/100/1000 Mbps Gigabit Ethernet
	Controller	1 x Intel I217LM, 1 x Intel I210AT (G2 SKU only)	1 x Intel I219LM, 3 x Intel I210AT (G4 SKU only)	1 x Intel I2579LM, 1 x Intel I2574L, Intel I2580DB (G4 SKU only)	1 x Intel I2579LM + 3 x Intel I2574L (G4 SKU only)	1 x Intel I217LM + 3 x Intel I210AT (G4 SKU only)
	Connector	RJ-45 x 2 (G2 SKU) / RJ-45 x 1 (VG SKU)	RJ-45 x 2 (G2 SKU) / RJ-45 x 4 (G4 SKU)	RJ-45 x 4 (G4 SKU) / RJ-45 x 2 (G2 SKU)	RJ-45 x 4 (G4 SKU) / RJ-45 x 2 (G2 SKU)	RJ-45 x 4 (G4 SKU) / RJ-45 x 2 (G2 SKU)
TPM		Optional	Optional	Optional	Optional	Optional
SATA	Max. Data Transfer Rate	600 MB/s	600 MB/s	300MB/s for SATA2 600 MB/s for SATA3	300MB/s for SATA2 600 MB/s for SATA3	600 MB/s
	Channel	6	7	4 for SATA2, 2 for SATA3	4 for SATA2, 2 for SATA3	6
SAS	Max. Data Transfer Rate	-	-	-	-	-
	Channel	-	-	-	-	-
Rear I/O	VGA/DVI/HDMI/DP	1 / 1 / - / 2	1 / 2 / - / -	1 / - / - / -	1 / - / - / -	1 / 2 / - / -
	Ethernet	2 for G2 SKU and 1 for VG SKU	2 for G2 SKU and 4 for G4 SKU	4 for G4 SKU and 2 for G2 SKU	4 for G4 SKU and 2 for G2 SKU	4 for G4 SKU and 2 for G2 SKU
	USB	4 (2 USB 3.0; 2 USB 2.0)	4 (USB 3.0)	4	4 (2 USB 3.0 ; 2 USB 2.0)	4 (2 USB 3.0; 2 USB 2.0)
	Audio	Mic-in, Line-out	Mic-in, Line-out	-	-	-
	Parallel	-	-	-	-	-
	Serial	-	1 (RS-232)	1 (RS-232)	1 (RS-232)	1 (RS-232)
	PS/2	-	-	2	2	2
Internal Connector	DVI	-	-	-	Yes (pin header)	-
	USB	9 (2 USB 3.0; 6 USB 2.0; 1 USB 2.0 Type A)	9 (2 USB 3.0; 6 USB 2.0; 1 USB 2.0 Type A)	8 (6 USB 2.0; 2 USB 2.0 Type-A)	10 (2 USB 3.0; 6 USB 2.0; 2 USB 2.0 Type-A)	9 (2 USB 3.0; 6 USB 2.0; 1 USB 2.0 Type A)
	Audio	1	1	1	1	1
	Serial	2	3	1	1	1
	Parallel	1	-	1	1	1
	SATA	6	7	6	6	6
	SAS	-	-	-	-	-
	Compact Flash	-	-	-	-	-
	GPIO	8 bit GPIO	8 bit GPIO	1 (SATA GPIO)	1 (SATA GPIO)	8 bit GPIO
Watchdog Timer	Output	System reset	System reset	System reset	System reset	System reset
	Interval	Programmable 1~255 sec	Programmable 1~255 sec	Programmable 1~255 sec	Programmable 1~255 sec	Programmable 1~255 sec

\*ASMB-584 A2 version has removed PCI slot for 1U & 2U chassis with riser.



<b>ASMB-785</b>	<b>ASMB-813</b>	<b>ASMB-822</b>	<b>ASMB-823</b>	<b>ASMB-913</b>	<b>ASMB-922</b>	<b>ASMB-923</b>
ATX	ATX	ATX	ATX	EATX	EATX	EATX
Intel® Xeon® E3-1200 v5 and Core i5-6500/7-6700 Series	Intel® Xeon® E5-1600 v3 /2600 v3 Series	Intel® Xeon® E5-1600/ 1600 v2 / 2600 / 2600 v2	Intel® Xeon® E5-2600 v3 Series	Intel® Xeon® E5-2600 v3 Series	Intel® Xeon® E5-2600 / 2600 v2	Intel® Xeon® E5-2600 v3 Series
1 x socket 1151	1 x socket 2011-R3	1 x socket 2011	2 x socket 2011-R3	2 x socket 2011-R3	2 x socket 2011	2 x socket 2011-R3
3.6 GHz	2.5 GHz	3.7 GHz	2.5 GHz	2.5 GHz	2.1 GHz	2.5 GHz
-	QPI 9.6GT/s	-	QPI 9.6GT/s	QPI 9.6GT/s	QPI 8 GT/s	QPI 9.6GT/s
8 MB	30 MB	20 MB	30 MB	30 MB	20 MB	30 MB
Intel C236	Intel C612	Intel C602J	Intel C612	Intel C612	Intel C602J	Intel C612
AMI 128Mbit, SPI	AMI 128 Mbit, SPI	AMI 64 Mbit, SPI	AMI 128 Mbit, SPI	AMI 128 Mbit, SPI	AMI 64 Mbit, SPI	AMI 128 Mbit, SPI
3	-	1	-	-	-	-
1 (switchable to two x8)	2/0	-	4	4 (1 for PME)	4 (1 for PME)	4
2 (switchable to one x16)	1/5	5	2	-	1	2
2	1	1	1 (x8 slot with x4 link)	-	-	1
-	1	-	-	-	-	-
DDR4 ECC/Non-ECC Unbuffer 1600/1866/2133 MHz	DDR4 REG 2133/1866/1600/1333 MHz DIMM	DDR3 REG/ECC/ non-ECC Unbuffer 1066/1333/1600 MHz	DDR4 REG 2133/1866/1600/1333 MHz DIMM	DDR4 REG 2133/1866/1600/1333 MHz DIMM	DDR3 REG/ECC/ non-ECC Unbuffer 1066/1333/1600 MHz	DDR4 REG 2133/1866/1600/1333 MHz DIMM
64 GB ECC/Non-ECC UDIMM	256 GB REG DIMM	96 GB/Non-ECC/ECC/REG DIMM	192 GB REG DIMM	512 GB REG DIMM	128 GB/Non-ECC/ECC/REG DIMM	256 GB REG DIMM
4 x 288-pin DIMM	8 x 288-pin DIMM	6 x 240-pin DIMM	6 x 288-pin DIMM	16 x 288-pin DIMM	8 x 240-pin DIMM	8 x 288-pin DIMM
Intel GT2-HD Graphics	AST1400/AST2400	AST1300/AST2300	AST1400/AST2400	AST1400/AST2400	AST1300/AST2300	AST1400/AST2400
1 GB maximum shared memory with 2 GB and above system memory installed	DDR3 64MB	DDR3 64MB	DDR3 64MB	DDR3 64MB	DDR3 64MB	DDR3 64MB
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
2	-	-	-	-	-	-
Yes	-	-	-	-	-	-
10/100/1000 Mbps Gigabit Ethernet	10/100/1000 Mbps Gigabit Ethernet	10/100/1000 Mbps Gigabit Ethernet	10/100/1000 Mbps Gigabit Ethernet	10/100/1000 Mbps Gigabit Ethernet	10/100/1000 Mbps Gigabit Ethernet	10/100/1000 Mbps Gigabit Ethernet
1 x Intel I219LM + 3 x Intel I210AT (G4 SKU only)	2 x Intel I210AT	1 x Intel 82579LM + 1 x Intel I210AT 1 x Realtek 8201EL (ASMB-8221 SKU only)	2 x Intel I210AT	4 x Intel I210AT	1 x Intel 82579LM + 1 x Intel I210AT 1 x Realtek 8201EL (ASMB-9221 SKU only)	2 x Intel I210AT
RJ-45 x 2 (G2 SKU) / RJ-45 x 4 (G4 SKU)	RJ-45 x 3 (1 for IPMI function)	RJ-45 x 3 (1 for IPMI function)	RJ-45 x 4 (1 sharing IPMI function)	RJ-45 x 4 (1 sharing IPMI function)	RJ-45 x 3 (1 for IPMI function)	RJ-45 x 3 (1 for IPMI function)
Optional	Optional	Optional	Optional	Optional	Optional	Optional
600 MB/s	600MB/s for SATA3	300MB/s for SATA2 600 MB/s for SATA3	600MB/s for SATA3	600MB/s for SATA3	300MB/s for SATA2 600 MB/s for SATA3	600MB/s for SATA3
6	8 for SATA3	4 for SATA2, 2 for SATA3	9 for SATA3	8 for SATA3	4 for SATA2, 2 for SATA3	10 for SATA3
-	-	-	-	-	-	-
-	-	-	-	-	-	-
1 / 2 / - / -	1 / - / - / -	1 / - / - / -	1 / - / - / -	1 / - / - / -	1 / - / - / -	1 / - / - / -
2 for G2 SKU and 4 for G4 SKU	2	2	2	4	2	2
4 (USB 3.0)	4 (USB 3.0), 2 (USB 2.0)	6 (2 x USB 3.0)	4 (USB 3.0)	2 (USB 3.0)	4 (2 x USB 3.0)	2 (USB 3.0), 2 (USB 2.0)
Mic-in, Line-out	-	-	-	-	-	-
-	-	-	-	-	-	-
1 (RS-232)	1 (RS-232)	1 (RS-232)	-	1 (RS-232)	1 (RS-232)	1 (RS-232)
-	2	2	-	-	2	2
-	-	-	-	-	-	-
9 (2 USB 3.0; 6 USB 2.0; 1 USB 2.0 Type A)	5 (2 USB3.0,2 USB2.0, 1 USB 2.0 Type-A)	8 (6 USB 2.0, 2 USB 2.0 Type-A)	5 (2 USB3.0, 2 USB2.0, 1 USB 2.0 Type-A)	7 (4 USB3.0,2 USB2.0, 1 USB 2.0 Type-A)	9 (8 USB 2.0, 1 USB 2.0 Type-A)	7 (2 USB3.0,4 USB2.0, 1 USB 2.0 Type-A)
1	1	1	1	1	1	1
3	1	1	1	1	1	1
1	-	1	-	-	-	-
6	8	6	9	8	6	10
-	-	-	-	-	-	-
-	-	-	-	-	-	-
8 bit GPIO	8 bit GPIO	8 bit GPIO	8 bit GPIO	8 bit GPIO	8 bit GPIO	8 bit GPIO
System reset	System reset	System reset	System reset	System reset	System reset	System reset
Programmable 1~255 sec	Programmable, 1 ~ 255 sec	Programmable, 1 ~ 255 sec	Programmable, 1 ~ 255 sec	Programmable, 1 ~ 255 sec	Programmable, 1 ~ 255 sec	Programmable, 1 ~ 255 sec

# Server-grade Chassis



<b>Height (1U = 1.75")</b>		<b>1U</b>		<b>2U</b>	
<b>Model Name</b>		<b>HPC-7140</b>	<b>HPC-7180</b>	<b>HPC-7242</b>	<b>HPC-7280</b>
<b>Form Factor Support</b>		Micro ATX, ATX	ATX, EATX	Micro ATX, ATX	Micro ATX, ATX, EATX
<b>No. of slots / No. of full-size cards</b>		1/0	1/1	3/3	3/3
<b>Drive Bay</b>	Slim ODD Bay	1 (ODD should be purchased separately)	1 (ODD should be purchased separately)	1 (ODD should be purchased separately)	1 (ODD should be purchased separately)
	5.25" (front-accessible)	-	-	-	-
	3.5" (hot-swappable)	4	-	4 (3.5" / 2.5")	8
	3.5" (internal)	-	-	-	-
	2.5" (hot-swappable)	Optional	8	4 (3.5" / 2.5")	-
	2.5" (internal)	-	-	2	2
<b>Cooling</b>	Chassis Fan	4 (4cm / 24CFM)	5 (4 cm / 26.5 CFM)	1 (8 cm/47CFM) + 2 (6 cm/28CFM)	3 (8 cm / 90.04 CFM)
	Air Filter	-	-	Yes	-
<b>Front I/O Interface</b>	USB 3.0	-	-	2	-
	USB 2.0	2	1	-	1
<b>Miscellaneous</b>	LED Indicators	System: Power, HDD, LAN1, LAN2, Error LED HDD Tray: HDD Power and Activity LED	System: Power, LAN1, LAN2 HDD Tray: HDD Power and Activity LED	System: Power, HDD, LAN1, LAN2, temperature, fan HDD Tray: HDD Power and Activity LED	System: Power, HDD, LAN1, LAN2 HDD Tray: HDD Power and Activity LED
	Rear Panel	-	-	Two 9-pin D-Sub	-
<b>Environment</b>	Operating Temperature	0 ~ 35° C (32 ~ 95° F)	0 ~ 40° C (32 ~ 104° F)	0 ~ 40° C (32 ~ 104° F)	0 ~ 40° C (32 ~ 104° F)
	Non-Operating Temperature	-40 ~ 70° C (-40 ~ 158° F)	-40 ~ 70° C (-40 ~ 158° F)	-40 ~ 70° C (-40 ~ 158° F)	-40 ~ 70° C (-40 ~ 158° F)
	Operating Humidity	10 ~ 85% @ 35° C non-condensing	10 ~ 85% @ 40° C non-condensing	10 ~ 85% @ 40° C non-condensing	10 ~ 85% @ 40° C non-condensing
	Non-operating Humidity	10 ~ 95% @ 60° C non-condensing	10 ~ 95% @ 60° C non-condensing	10 ~ 95% @ 60° C non-condensing	10 ~ 95% @ 60° C non-condensing
<b>Physical Characteristics</b>	<b>Dimensions (W x H x D)</b>	437 x 43.5 x 503 mm (17.2" x 1.7" x 19.85")	430 x 43.5 x 597mm (16.9" x 1.7" x 23.5")	482 x 88 x 525 mm (19" x 3.46" x 20.67")	482.6 x 88 x 700 mm (19" x 3.46" x 27.56")



<b>2U</b>	<b>3U</b>	<b>4U</b>		
<b>HPC-7282</b>	<b>HPC-7320</b>	<b>HPC-7400</b>	<b>HPC-7442</b>	<b>HPC-7480</b>
Micro ATX, ATX	Micro ATX, ATX, EATX	Micro ATX, ATX, EATX	Micro ATX, ATX, EATX	Micro ATX, ATX, EATX
7/0	7/6	12/12	7/7	7/7
1 (ODD should be purchased separately)	1 (ODD should be purchased separately)	-	1 (ODD should be purchased separately)	-
-	-	2	-	3
8	2 (3.5" / 2.5")	-	4 can upgrade to 8 (3.5" / 2.5")	8
2	2	2 rear-accessible (3.5" / 2.5")	1	-
Optional	2 (3.5" / 2.5")	-	4 can upgrade to 8 (3.5" / 2.5")	-
-	-	2 rear-accessible (3.5" / 2.5")	-	-
3 (8cm / 52.6 CFM)	2 (8cm/141.9CFM) + 1 (6cm/27.72CFM)	3 (8cm/141.9CFM)	1 (12 cm /114 CFM) + 1 (8 cm/55 CFM)	4 (8 cm / 68.15 CFM)
-	Yes	Yes	Yes	Yes
-	2	2	2	-
2	-	-	-	2
System: Power, HDD, LAN1, LAN2 Error LED HDD Tray: HDD Power and Activity LED	System: Power, HDD, LAN1, LAN2 HDD Tray: HDD Power and Activity LED	System: Power, HDD, LAN1, LAN2	System: Power, HDD, LAN1, LAN2, temperature, fan HDD Tray: HDD Power and Activity LED	System: Power, HDD, LAN1, LAN2
-	Two 9-pin D-Sub	-	Five 9-pin D-Sub and one 68-pin SCSI openings	-
0 ~ 40° C (32 ~ 104° F)	0 ~ 40° C (32 ~ 104° F)	0 ~ 40° C (32 ~ 104° F)	0 ~ 40° C (32 ~ 104° F)	0 ~ 40° C (32 ~ 104° F)
-40 ~ 70° C (-40 ~ 158° F)	-40 ~ 70° C (-40 ~ 158° F)	-40 ~ 70° C (-40 ~ 158° F)	-40 ~ 70° C (-40 ~ 158° F)	-40 ~ 70° C (-40 ~ 158° F)
10 ~ 85% @ 40° C non-condensing	10 ~ 85% @ 40° C non-condensing	10 ~ 85% @ 40° C non-condensing	10 ~ 85% @ 40° C non-condensing	10 ~ 85% @ 40° C non-condensing
10 ~ 95% @ 60° C non-condensing	10 ~ 95% @ 60° C non-condensing	10 ~ 95% @ 60° C non-condensing	10 ~ 95% @ 60° C non-condensing	10 ~ 95% @ 60° C non-condensing
437 x 88.9 x 533.4 mm (17.2" x 3.5" x 21")	426.4 x 132.2 x 480 mm (16.79" x 5.2" x 18.9")	482 x 177 x 448 mm (19" x 7.0" x 17.6")	482 x 177 x 600 mm (19" x 7.0" x 23.6")	452 x 178 x 648 mm (17.8" x 7.0" x 25.5")

# Video Wall Controller



Model Name		AVS-240	AVS-290	AVS-540	AVS-541	AVS-542	AVS-543	AVS-840	AVS-860
Processor System	Chipset	Intel® C602J	Intel® C206	Intel® C602J	Intel® C216	Intel® C602J	Intel® C602J	Intel® C216	Intel® C216
	CPU	Intel® LGA1356 Xeon E5-2400 Single processor (up to 95W TDP)	Intel® LGA1155 Xeon E3-1200 / Core i3-2120 / Pentium G850 Single processor	Intel® LGA2011 Xeon E5-2600 Single processor (up to 95W TDP)	Intel LGA1155 Xeon E3-1200V2 Single processor (up to 95W TDP)	Intel® LGA2011 Xeon E5-2600 Single processor (up to 95W TDP)	Intel® LGA2011 Xeon E5-1200V2 Single processor (up to 95W TDP)	Intel® LGA1155 Xeon E3-1200V2 Single processor (up to 95W TDP)	Intel® LGA1155 Xeon E3-1200V2 Single processor (up to 95W TDP)
	L2 Cache	20/15/10 MB	8MB/6MB/3MB	5/10/15/20 MB	2/3/6/8 MB	5/10/15/20 MB	5/10/15/20 MB	2/3/6/8 MB	2/3/6/8 MB
	Memory	DDR3 ECC & Register or ECC or non ECC 1600/1333/1066 MHz up to 96 GB	DDR3 ECC/Non-ECC 1066/1333 MHz up to 32GB	DDR3 ECC & Register or ECC or non ECC 1600/1333/1066 MHz up to 96 GB	DDR3 ECC or non ECC 1600/1333/1066 MHz up to 16 GB	DDR3 ECC & Register or ECC or non ECC 1600/1333/1066 MHz up to 96 GB	DDR3 ECC or non ECC 1600/1333/1066 MHz up to 16 GB	DDR3 ECC or non ECC 1600/1333/1066 MHz up to 16 GB	DDR3 ECC or non ECC 1600/1333/1066 MHz up to 16 GB
Maximum Output/ Input support number	Output	8 Analog/Digital	8 Analog/Digital	20 Analog/Digital	20 Analog/Digital	20 Analog/Digital	20 Analog/Digital	40 Analog/Digital	40 Analog/Digital
	Input	8 Analog/Digital & 16 Analog	8 Analog/Digital	20 Digital	20 Analog/Digital & 160 Analog	15 Analog/Digital or 40 Analog	20 Digital	40 Analog/Digital	40 Analog/Digital
Drive Bay	5.25" (front-accessible)	3	1	3	3	-	-	3	4
	3.5" (hot-swappable)	-	2	-	-	-	4	-	-
	3.5" (internal)	1	1	1	2	2	-	2	2
	2.5" (internal)	-	-	-	-	1	1	-	-
	Slim ODD Bay	-	-	-	-	1 (ODD should be purchased separately)	1 (ODD should be purchased separately)	-	-
Ethernet	Interface	Dual 10/100/1000 Mbps Gigabit Ethernet	Quad 10/100/1000 Mbps Gigabit Ethernet	Dual 10/100/1000 Mbps Gigabit Ethernet	Dual 10/100/1000 Mbps Gigabit Ethernet	Dual 10/100/1000 Mbps Gigabit Ethernet	Dual 10/100/1000 Mbps Gigabit Ethernet	Dual 10/100/1000 Mbps Gigabit Ethernet	Dual 10/100/1000 Mbps Gigabit Ethernet
	Controller	Intel 82579LM + Intel 82574L	LAN1: Intel 82579LM; LAN2: Intel 82574L; LAN3/4: Intel 82580DB	Intel 82579LM + Intel I210	Intel 82579LM + Intel 82574L	Intel 82579LM + Intel I210	Intel 82579LM + Intel I210	Intel 82579LM + Intel 82574L	Intel 82579LM + Intel 82574L
Front I/O Interface	USB	2 x USB2.0	2 x USB2.0	2 x USB2.0	2 x USB2.0	2 x USB2.0	2 x USB2.0	2 x USB2.0	2 x USB2.0
	PS/2	1	-	1	-	-	-	-	-
Rear I/O Interface	USB	4 x USB2.0	4 x USB2.0	4 x USB2.0, 2 x USB 3.0	1 x USB 3.0	4 x USB2.0, 2 x USB 3.0	4 x USB2.0, 2 x USB 3.0	1 x USB 3.0	1 x USB 3.0
	PS/2	2	2	2	1 (KB & MS through the Y cable)	2	2	1 (KB & MS through the Y cable)	1 (KB & MS through the Y cable)
	COM	1	1	1	-	1	1	-	-
	RJ-45	2	4	3 (1 is dedicated for IPMI)	2	3 (1 is dedicated for IPMI)	3 (1 is dedicated for IPMI)	2	2
Watchdog Timer	Output	Interrup, system reset	Interrup, system reset	Interrup, system reset	Interrup, system reset	Interrup, system reset	Interrup, system reset	Interrup, system reset	Interrup, system reset
	Interval	Programmable, 1~255 sec/min	Programmable, 1~255 sec/min	Programmable, 1~255 sec/min	Programmable, 1~255 sec/min	Programmable, 1~255 sec/min	Programmable, 1~255 sec/min	Programmable, 1~255 sec/min	Programmable, 1~255 sec/min
Power Supply	Power Output Wattage	80+ Bronze 500W Single Power Supply	80+ Bronze 400W Single Power Supply	80+ Bronze 700W Single Power Supply	810W 3+1 redundant power supply (Front-accessible)	80+ Bronze 700W Single Power Supply	80+ Bronze 750W Redundant Power Supply	810W 3+1 redundant power supply (Front-accessible)	80+ Bronze 750W Redundant Power Supply
	Input Range	AC 100 ~ 240 V	AC 100 ~ 240 V	AC 100 ~ 240 V	AC 115 ~ 230 V (full range)	AC 100 ~ 240 V	AC 100 ~ 240 V	AC 115 ~ 230 V (full range)	AC 100 ~ 240 V
Cooling	Chassis Fan	2 (12 cm / 85 CFM each)	1 (12 cm/85 CFM) + 1 (6 cm/27.7CFM)	2 (12 cm / 114 CFM each)	3 (12 cm / 114 CFM each)	2 (9cm / 110.18 CFM)	2 (9cm / 110.18 CFM) + 1 (8 cm / 56CFM)	3 (12 cm / 114 CFM each)	4 (9cm/110CFM each)
	Air Filter	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Physical Characteristics	Dimension	482 x 177 x 479 mm (19" x 7" x 18.9")	200 x 320 x 480 mm (7.9" x 12.6" x 18.9")	482 x 177 x 479 mm (19" x 7" x 18.9")	482 x 177 x 657 mm (19" x 7" x 26")	482 x 177 x 348 mm (19" x 7.0" x 13.7")	482 x 177 x 478 mm (19" x 7.0" x 18.8")	482 x 177 x 657 mm (19" x 7" x 26")	482 x 266 x 464 mm (19" x 10.5" x 18.3")

# Selection Guide

## GPU Server



Model Name		AGS-910	AGS-913	AGS-920	AGS-923		
Processot Support		Dual Intel® Xeon® E5-2600 / 2600 v2	Dual Intel® Xeon® E5-2600 v3	Dual Intel® Xeon® E5-2600 / 2600 v2	Dual Intel® Xeon® E5-2600 v3		
Form Factor Support		Proprietary					
Expansion Slots		3 x PCIe x16 double-depth card + 1 x PCIe x8 FH/HL card		4 x PCIe x16 double-depth card + 1 x PCIe x8 FH/HL card			
Drive Bay	Slim ODD Bay	-		-			
	2.5" Hot Swap	4		8			
	3.5" Hot Swap	-		-			
Cooling	Chassis Fan	7 x 40x56 + 2 x 40x28 high speed fan		4 x 80x38 + 1 x 80x20 + 1 x 80x38 (optional) high speed fan			
	Air Filter	-		-			
Chassis Intrusion Alarm		Yes					
Front USB		2					
Miscellaneous	LED Indicators	Power status, HDD activity, Lan status, location, error message					
	Rear Panel	Location, error message					
Environment	Operating		Non-Operating				
	Temperature	0 ~ 40° C (32~104° F)		-20 ~ 60° C (-4 ~ 140° F)			
	Humidity	10 ~ 85% @ 40° C		10 ~ 95% @ 40° C			
	Vibration (5~500 Hz)	0.5 Grms		2G			
	Shock	10 G (with 11ms duration, half sine wave)					
Physical Characteristics	Dimensions (W x H x D)	430 x 44 x 770 mm	430 x 44 x 770 mm	430 x 88 x 770 mm	430 x 88 x 770 mm		

### Compatible GPU/Xeon Phi

Advantech Product model			1U		2U		3U HPC-7320 Chassis / 4U HPC-7400 Chassis				
			AGS-910	AGS-913	AGS-920	AGS-923	ASMB-813	ASMB-822	ASMB-823	ASMB-913	ASMB-922
GPU Card Vendor											
Advantech DSP card	TI	DSP-8681	V	V	V	V	V	V	V	V	V
		DSP-8682	V	V	V	V	V	V	V	V	V
NVIDIA	GRID	K1	V	V	V	V	V	V	V	V	V
		K2	V	V	V	V	V	V	V	V	V
	TESLA	K10	V	V	V	V	V	V	V	V	V
		K20	V	V	V	V	V	V	V	V	V
AMD	Workstation	W9000	V	V	V	V	V	V	V	V	V
		W9100	V	V	V	V	V	V	V	V	V
	Server	S9000	V	V	V	V	V	V	V	V	V
		S9150	V	V	V	V	V	V	V	V	V
Intel	Coprocessor	Xeon Phi 5110P	V	V	V	V	V	V	V	V	V

Note:

1. Tick means they have already passed compatibility tests (GPU card and driver install).
2. Detailed compatibility information of AGS series GPU server, please reference GPU Qualification list.
3. AGS-910/AGS-920 already have Tesla K20 qualification by NVIDIA.
4. Some GPU cards need to enable "Above 4G Decoding" in BIOS setup menu when installing multiple GPU cards.

# Industrial Storage



Product Categories		Disk Expansion Enclosure	Storage Server		
	Model Name	ASR-1400	ASR-3100	ASR-3272	ASR-3472
System	Form Factor	4U 24-Bay	1U 16-Bay	2U 12-Bay	4U 24-Bay
	Number of Drives	24-Bays (2.5"/3.5")	16-Bay (2.5")	12-Bay (3.5"/2.5")	24-Bay (3.5"/2.5")
	Drive Type	SATA/SAS 6Gb/s or 3Gb/s	NVMe/SAS/SATA	SATA/SAS 6Gb/s or 3Gb/s	SATA/SAS 6Gb/s or 3Gb/s
	CPU Type	-	Dual LGA 2011-R3 Intel Xeon E5-2600 v3 series	LGA 1155 Xeon 1200V2 or 3rd Generation Core i3 processor	LGA 1155 Xeon 1200V2 or 3rd Generation Core i3 processor
	Chipset	-	Intel C612 Chipset	Intel C216 Chipset	Intel C216 Chipset
	Memory Type	-	16 x DDR4-2133 ECC RDIMM, maximum to 512GB	4 x 240 pin DDR3 up to 32 GB	4 x 240 pin DDR3 up to 32 GB
	Storage Expansion	2 x 6Gb/s SAS 4x wide ports	Two PCIe x8 slots (Gen3), one is HHHL card and the other one is FHHL card	Yes (only for E SKU)	-
	RAID Level	-	-	0, 1, 5, 6, 10, 50, 60	0, 1, 5, 6, 10, 50, 60
	TPM	-	-	Yes (optional)	Yes (optional)
Expansion Slot	PCIe x16 slot with x8 link	-	-	1	1
	PCIe x 8 slot	-	2 (one is HHHL card and the other one is FHHL card)	-	-
	PCIe x4 slot	-	-	2	2
	PCI	-	-	3	3
Display	Chipset	-	-	Integrated Intel HD Graphics(GT2-P4000 or GT1-2500)	Integrated Intel HD Graphics(GT2-P4000 or GT1-2500)
	Display Memory	-	1GB memory	1 GB maximum shared memory with 2 GB and above system memory installed	1 GB maximum shared memory with 2 GB and above system memory installed
	VGA	-	Aspeed AST-2400	Onboard, supports up to 2048 x 1536 (@60Hz)	Onboard, supports up to 2048 x 1536 (@60Hz)
Ethernet	Gigabit Ethernet	-	2	4	4
I/O	Front Panel I/O Port	-	2 USB 2.0	2 USB 2.0	2 USB 2.0
	Back Panel I/O Port	-	1 VGA Port 1 COM RS-232 Port 2 USB 2.0 Ports 2 USB 3.0 Ports 2 LAN RJ45 Port	1 PS/2 Keyboard/Mouse 1 VGA Port 1 COM RS-232 Port 2 USB 2.0 Ports 2 USB 3.0 Ports 4 LAN RJ45 Port	1 PS/2 Keyboard/Mouse 1 VGA Port 1 COM RS-232 Port 2 USB 2.0 Ports 2 USB 3.0 Ports 4 LAN RJ45 Port
	Internal I/O Connector	-	1 USB 2.0 Pin Header 2 M.2 connectors (2242)	1 TPM Pin Header 2 USB Type A connectors	1 Parallel Port pin header 1 COM Port pin header 1 Audio Port pin header 1 TPM Pin Header 1 USB 3.0 Pin Header 2 USB Type A connectors 3 USB 2.0 Pin Headers
Power Supply	Power Output Wattage	875W Redundant Power	1100W Redundant Power	650W Redundant Power	875W Redundant Power
Mechanical	Input Range	AC 100-240V	AC 100-240V	AC 100-240V	AC 100-240V
	Dimension	699 x 432 x 176 (mm)	806 x 430 x 446 (mm)	699 x 432 x 88 (mm)	699 x 432 x 176 (mm)
	Weight	41 kg (without hard drives)	-	19 kg (without hard drives)	42 kg (without hard drives)
Environmental	Operating Temperature	0° C ~ 40° C (32° F ~ 104° F)	0° C ~ 40° C (32° F ~ 104° F)	0° C ~ 40° C (32° F ~ 104° F)	0° C ~ 40° C (32° F ~ 104° F)
	Non-Operating Temperature	-20° C ~ 60° C (-4° F ~ 140° F)	-20° C ~ 60° C (-4° F ~ 140° F)	-20° C ~ 60° C (-4° F ~ 140° F)	-20° C ~ 60° C (-4° F ~ 140° F)
	Operating Humidity	10% ~ 85% @ 40° C, non-condensing	10% ~ 85% @ 40° C, non-condensing	10% ~ 85% @ 40° C, non-condensing	10% ~ 85% @ 40° C, non-condensing
	Non-operating Humidity	10% ~ 95% @ 40° C, non-condensing	10% ~ 95% @ 40° C, non-condensing	10% ~ 95% @ 40° C, non-condensing	10% ~ 95% @ 40° C, non-condensing
	Operating Vibration (5~500 Hz)	-	0.25Grms	0.25Grms	0.25Grms
Misc	Notification LED	Power Status, System Fail	Power Status, System Error, HDD Status, LAN LED, Location	Power Status, System Fail, LAN LED	Power Status, System Fail, LAN LED



Product Categories		External Disk Array	
Model Name		ASR-5200E	ASR-5300I
System	Form Factor	2U 12-Bay (LFF) / 24-bay(SFF)	3U 16-Bay (LFF)
	Configuration	Dual Controller	Single Controller
	Number of Drives	12-Bay (3.5") / 24-Bay (2.5")	16-Bay (3.5")
	Drive Type	6Gb/s SAS	6 Gb/s SAS, 6 Gb/s SATA
	Cache Memory	Default 8GB	Default 2 GB, up to 16 GB
	JBOD Expansion	Yes, miniSAS HD	Yes, miniSAS
	Max Drives	120 x 3.5" drives / 240 x 2.5" drives	160 x 3.5" drives
	Default Host	4 x 1Gb/s iSCSI RJ45 port 6 x 6Gb/s SAS wide-port	4 x 1Gb/s iSCSI RJ45 Port
	Optional Host	8 x 8Gb/s FC SFP port 4 x 10Gb/s iSCSI SFP+ port 8 x 1Gb/s iSCSI RJ45 port	-
	RAID Level	0, 1 , 3, 5, 6, 10, 30, 50, 60	0, 1 , 3, 5, 6, 10, 30, 50, 60
	LUN Number	2048 LUNs	2048 LUNs
	Notification	Email, SNMP traps	Email, Fax, LAN broadcast, SNMP traps, SMS, Skype
Data Service	Advanced Functions	Thin Provisioning	Thin provisioning
		FlashCopy (Default 64 Targets)	Snapshot (64 images per source volume, max 128 per system )
		-	Volume copy/ mirror (16 source volume x 4 replication pairs, max 64 per system )
	Optional Features	Easy Tier FlashCopy upgrade (up to 2040 Targets) Remote Mirror	-
Power Supply	Output Wattage	800W Redundant Power	460W Redundant Power (80 Plus)
	Input Range	AC 100-240V	AC 100-240 V
Mechincal	Dimensions	556 x 483 x 87 (mm)	500 x 448 x 130 (mm)
	Weights	18 kg / 39.68lbs (without hard drives)	21.66kg / 47.75lbs (without hard drives)
Environment	Operating Temperature	10° C ~ 35° C (50° F ~ 95° F)	0 to 40° C (32 ~ 104° F) without BBU or Super-Cap
	Non-Operating Temperature	-10° C ~ 50° C (14° F ~ 125° F)	-40 to 60° C (-40° F ~ 140° F)
	Operating Humidity	20% ~ 80% @ 35° C, non-condensing	5 to 95% non-condensing
	Non-operating Humidity	10% ~ 90% @ 35° C, non-condensing	5 to 95% non-condensing

# ATX Motherboards



Model Name		AIMB-767	AIMB-769	AIMB-701
Processor System	CPU	Intel Core 2 Quad/Core 2 Duo/Pentium dual-core/Celeron	Intel Core 2 Quad/Core 2 Duo/Pentium dual-core/Celeron	2nd/3rd Gen Intel Core i7/i5/i3/Pentium
	Socket	LGA775	LGA775	LGA1155
	Max. Speed	3.0 GHz/3.16 GHz/ 2.93 GHz/2.2 GHz	3.0 GHz/3.16 GHz/ 2.93 GHz/2.2 GHz	3.4 GHz/3.0 GHz/3.3 GHz/3.1 GHz
	Front Side Bus	1333/1066/800 MHz	1333/1066/800 MHz	-
	Cache	L2: 12 MB/ 6 MB/ 8 MB/ 512 KB	L2: 12 MB/ 6 MB/ 8 MB/ 512 KB	L3: 8 MB/ 6 MB/ 3 MB/ 3 MB
	Chipset	Intel G41 + ICH7R	Intel G41 + ICH7	H61
	BIOS	AMI 16 Mbit, SPI	AMI 16 Mbit, SPI	AMI 64 Mbit SPI
Expansion Slot	PCIe x16	1 (Gen1)	1 (Gen1)	1 (Gen2)
	PCIe x4	1 (Gen1)	-	1 for VG SKU (Gen2)
	PCIe x1	-	1 (Gen1)	1 for G2 SKU (Gen2)
	PCI	5	5	5
Memory	Technology	Dual channel DDR3 800/1066 MHz	Dual channel DDR3 800/1066 MHz	Dual Channel DDR3 1066/1333/1600 (1600 is only supported by Core i7/i5/i3 3xxx series processors)
	Max. Capacity	8 GB	8 GB	16 GB
	Socket	2 x 240-pin DIMM	2 x 240-pin DIMM	2 x 240-pin DIMM
Graphics	Controller	Intel GMA X4500	Intel GMA X4500	Intel HD Graphics
	VRAM	Shared system memory up to 352 MB	Shared system memory up to 352 MB	1 GB maximum shared memory with 2 GB and above system memory installed
Ethernet	Interface	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps
	Controller	Dual Intel 82583V	GbE LAN: Realtek RTL8111DL	GbE LAN1: Intel 82579V, GbE LAN2: Intel 82583V
SATA	Max. Date Transfer Rate	300 MB/s	300 MB/s	300 MB/s
	Channel	4 (SW RAID)	4	4
EIDE	Mode	-	-	-
	Channel	-	-	-
I/O Interface	VGA	1	1	1
	DVI	1	-	1 for G2 version
	USB	8	8	10
	Serial	4	2	6 for G2 version (3 x RS-232, 1 x RS-232/422/485 with auto-flow control)
	Parallel	1	-	1
	FDD	1	1	-
	PS/2	2 (1 x keyboard and 1 x mouse)	2 (1 x keyboard and 1 x mouse)	2 (1 x keyboard and 1 x mouse)
	Ethernet (GbE)	2	1	2 for G2 version; 1 for VG version
	Audio	Mic-in, Line-out	Mic-in, Line-out	Mic-in, Line-out
Watchdog Timer	Output	System reset	System reset	System reset
	Interval	Programmable, 1 ~ 255 sec	Programmable, 1 ~ 255 sec	Programmable 1 ~ 255 sec



<b>AIMB-705</b>	<b>AIMB-782</b>	<b>AIMB-784</b>	<b>AIMB-785</b>
6th Gen Intel Core i7/i5/i3/Pentium	2nd/3rd Gen Intel Core i7/i5/i3/Pentium	4th Gen Intel Core i7/i5/i3	6th Gen Intel Core i7/i5/i3/Pentium
LGA1151	LGA1155	LGA1150	LGA1151
3.7GHz/ 3.4 GHz/3.2 GHz/2.4 GHz/2.3 GHz	3.4 GHz/3.0 GHz/3.3 GHz/3.1 GHz	3.1 GHz/ 2.9 GHz	3.4 GHz/3.2 GHz/2.4 GHz/2.3 GHz
-	-	-	-
L3: 8 MB/ 6 MB/ 3 MB	L3: 8 MB/ 6 MB/ 3 MB/3 MB	L3: 8 MB/ 6 MB	L3: 8 MB/ 6MB
Intel H110	Q77	Q87	Q170
AMI 128 Mbit SPI	AMI 64 Mbit SPI	AMI 128 Mbit SPI	AMI 128 Mbit SPI
1 (Gen3)	1 (Gen3)	1 (Gen3)	1 (Gen3)
1 (Gen3)	1 (Gen2)	1 (Gen2)	3 (Gen3)
-	1 (Gen2)	1 (Gen2)	-
5	4	4	3
Dual Channel DDR4 1866/2133	Dual Channel DDR3 1066/1333/1600	Dual Channel DDR3 1333/1600	Dual Channel DDR4 1866/2133
32 GB	32 GB	32 GB	64 GB
2 x 288-pin DIMM	4 x 240-pin DIMM	4 x 240-pin DIMM	4 x 288-pin DIMM
Intel HD Graphics	Intel HD Graphics	Intel HD Graphics	Intel HD Graphics
Shared system memory is subject to OS	Shared system memory up to 1 GB	Shared system memory up to 1 GB	Shared system memory up to 1GB
10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps
GbE LAN1: Intel i219V GbE LAN2: Intel i211AT (for G2 version)	GbE LAN1: Intel 82579LM, GbE LAN2: Intel 82583V	GbE LAN1: Intel i217LM, GbE LAN2: Intel i211AT	GbE LAN1: Intel i219LM, GbE LAN2: Intel i211AT
600 MB/s	600 MB/s; 300 MB/s	600 MB/s	600 MB/s
4	6 (SW RAID)	6 (SW RAID)	6 (SW RAID)
-	-	-	-
-	-	-	-
1	1	1	1
1(for G2 version)	1	2	2
9 (4 USB 3.0 and 5 USB 2.0)	14 (4 USB 3.0 and 10 USB 2.0)	13 (4 USB 3.0 and 9 USB 2.0)	13 (6 USB 3.0 and 7 USB 2.0)
6(for G2 version) 2(for VG version)	6	6	6
1	1	1	1
-	-	-	-
2	2 (1 x keyboard and 1 x mouse)	2 (1 x keyboard and 1 x mouse)	1 (internal wafer box)
2 for G2 version; 1 for VG version	2	2	2
Mic-in, Line-out	Mic-in, Line-out	Mic-in, Line-out	Mic-in, Line-out
System reset	System reset	System reset	System reset
Programmable, 1-255 Sec	Programmable, 1 ~ 255 sec	Programmable, 1 ~ 255 sec	Programmable, 1-255 Sec

# PICMG 1.3 System Host Boards



Model Name		LGA1155 PCIMG 1.3 SHB	LGA1151 PCIMG 1.3 SHB	LGA1155 PCIMG 1.3 SHB	LGA1150 PCIMG 1.3 SHB
		PCE-5026	PCE-5029	PCE-5127	PCE-5128
Processor System	CPU	Intel® Core™ i7/Core™ i5/Core™ i3 LGA1155 processors	Intel® Core™ i7/Core™ i5/Core™ i3 LGA1151 Processors	Intel® Core™ i7/Core™ i5/Core™ i3 LGA1155 Processors	Intel® Core™ i7/Core™ i5/Core™ i3 LGA1150 Processors
	Max. Speed	3.4 GHz/3.4 GHz/3.1 GHz/3.3 GHz	3.7 GHz	3.4 GHz/3.4 GHz/3.1 GHz/3.3 GHz	3.1/2.9 GHz
	Cache	L3: 8/8/6/3/3 MB	Up to 8 MB(Depend on CPU)	L3: 8/8/6/3/3 MB	L3: 8/6 MB
	Chipset	Intel® H61	Intel® H110	Intel® Q77	Intel® Q87
Backplane Bus	BIOS	AMI 64 Mbit SPI Flash	AMI 128 Mbit SPI Flash	AMI 64 Mbit SPI Flash	AMI 128 Mbit SPI Flash
	PCIe	One x16 & Four x1	PICMG1.3: One x16 & Four x1	One x16 & Four PClex1	One x16 & Four x1
Memory	PCI (32bit/33 MHz)	4	4	4	4
	Technology	Dual-channel (Non-ECC) DDR3 1066/1333	Dual-channels (Non-ECC) DDR4 1866/2133	Dual-channel (Non-ECC) DDR3 1333/1600	Dual-channel (Non-ECC) DDR3 1333/1600
	Max. Capacity	16 GB	32 GB	16 GB	16 GB
Graphics	Socket	240-pins DIMM x 2	2 x 288-pins DIMM	240-pins DIMM x 2	240-pins DIMM x 2
	Controller	Chipset integrated Intel® HD Graphics	Chipset integrated Intel® HD Graphics	Chipset integrated Intel® HD Graphics	Chipset integrated Intel® HD Graphics
	VRAM	Shared system memory is subject to OS	Shared system memory is subject to OS	Shared system memory is subject to OS	Shared system memory is subject to OS
Ethernet	Video Out	VGA	G2: VGA+DP/DVI (Optional DVI-D/DP cable) VG: VGA	VGA/DVI-D (Optional DVI-D cable)	VGA/DVI-D/VGA-D (Optional DVI-D cable)
	Interface	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps
	LAN1/LAN2 Controller	Intel® 82579V	LAN1: I219-V LAN2: I211-A1 (G2 only)	Intel® 82579LM/B2583V	Intel® I217LM/I211AT
	Connector	RJ45 x 1	G2: 2 VG: 1	RJ45 x 2	RJ45 X 2
SATA	Disable in BIOS	Yes	Yes	Yes	Yes
	Max. Date Transfer Rate	300 MB/s SATA2	600 MB/s SATA3.0	300 MB/s SATA2.0 & 600 MB/s SATA3.0	600 MB/s SATA3.0
	Channel	4 x SATA2.0	4 x SATA3.0	2 x SATA3.0; 4 x SATA2.0	6 x SATA3.0
Rear I/O	S/W Raid	-	-	0, 1, 5, 10	0, 1, 5, 10
	VGA	1	1	1	1
	Ethernet	1	G2: 2 VG: 1	2	2
	USB2.0	-	-	-	-
	USB3.0	-	G2: 1 VG: -	1	1
	PS/2	1	1	1	1
	Serial	1	G2: - VG: 1	-	-
Internal I/O	USB 2.0	10 USB 2.0 (Pin-header x 4+Vertical USB A type x 2+ 4 on backplane)	7 (Pin-header x 2+USB Type A x 1+ 4 on backplane)	9 USB 2.0 (Pin-Header x 4 + USB Type A x 1 + 4 on backplane)	9 USB 2.0 (Pin-Header x 4 + USB Type A x 1 + 4 on backplane)
	USB 3.0	-	2 USB3.0 (Pin header)	2 USB3.0 (Pin-Header x 2)	2 USB3.0 (Pin-Header)
	SATA	4	4	6	6
	M.2 (2280 Type M)	-	-	-	-
	Serial	2 RS-232(Pin-Header)	G2: 2 VG: 1	2 RS-232(Pin-Header)	2 RS-232(Pin-Header)
	Parallel	1(SPP/EPP/ECP)	Yes	1(SPP/EPP/ECP)	1(SPP/EPP/ECP)
	PS/2	1	1	1	1
	OBS(Onboard Security Hardware Monitor)	Yes	Yes	Yes	Yes
Watchdog Timer	Output	System reset	System reset	System reset	System reset
	Interval	Programable, 1~255 sec/min	Programable, 1~255 sec	Programable, 1~255 sec/min	Programmable, 1~255 sec/min
Miscellaneous	Advantech Audio Module	PCA-Audio-HDA1E	PCA-AUDIO-HDB1E	PCA-Audio-HDA1E	PCA-Audio-HDA1E
	Advantech SNMP-1000	Yes	No	Yes	Yes
	Advantech SAB-2000	Yes	G2: Yes VG: -	Yes	Yes
	Advantech IPMI Module	-	-	-	-
	AMT	-	-	Yes	Yes



LGA1151 PCIMG 1.3 SHB	LGA1155 PCIMG 1.3 SHB	LGA1150 PCIMG 1.3 SHB	LGA1151 PCIMG 1.3 SHB	LGA2011 PCIMG 1.3 SHB
PCE-5129	PCE-7127	PCE-7128	PCE-7129	PCE-9228
Intel® Core™ i7/Core™ i5/Core™ i3 LGA1151 Processors	Intel® Xeon®/Core™ i3/Pentium LGA1155 processors	Intel® Xeon® and Core™ i7/Core™ i5/ Core™ i3 LGA1150 Processors	Intel® Xeon and Core™ i7/Core™ i5/ Core™ i3 LGA1151 Processors	Intel Xeon E5-2600 v3 series LGA2011 Processors
3.4 GHz	3.9/3.3/3.1 GHz	3.5/2.9 GHz	3.6 GHz	2.5 GHz
Up to 8 MB(Depend on CPU)	L3: 8/3/3 MB	L3: 8/6 MB	Up to 8 MB(Depend on CPU)	Up to 30 MB(Depend on CPU)
Intel Q170	Intel® C216	Intel® C226	Intel C236	Intel C612
AMI 128 Mbit SPI Flash	AMI 64 Mbit SPI Flash	AMI 128 Mbit SPI Flash	AMI 128 Mbit SPI Flash	AMI 128 Mbit SPI Flash
PICMG1.3: One x16 & Four x1	One x16/Two x8 & Four x1	One x16/ Two x8 & Four x1	PICMG1.3: One x16 / Two x8 & Four x1	PICMG1.3: One x16/ Two x8 & Four x1 Expansion (ODM optional): 64 lanes
4	4	4	4	4
Dual-channels (Non-ECC) DDR4 1600/1866/2133	Dual-channel (ECC) DDR3 1333/1600	Dual-channel (ECC) DDR3 1333/1600	Dual-channels (ECC) DDR4 1600/1866/2133	Quad-channels ECC-Register DDR4 1600/1866/2133
32 GB	16 GB	16 GB	32 GB	256 GB
2 x 288-pins DIMM	240-pins DIMM x 2	240-pins DIMM x 2	2 x 288-pins DIMM	288-pins DIMM x 8
Chipset integrated Intel® HD Graphics	Chipset integrated Intel® HD Graphics	Chipset integrated Intel® HD Graphics	Chipset integrated Intel® HD Graphics	AST1400/AST2400
Shared system memory is subject to OS	Shared system memory is subject to OS	Shared system memory is subject to OS	Shared system memory is subject to OS	DDR3 64MB
VGA+DP/DVI-D+DP/DVI-D	VGA/DVI-D (Optional DVI-D cable)	VGA/DVI-D/DVI-D (Optional DVI-D cable)	VGA+DP/DVI-D+DP/DVI-D	VGA
10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps
Intel I219LM/I211	Intel® 82579LM/ 82583V	Intel® I217LM/I210AT	Intel I219LM/I210AT	Intel I210AT/I210AT
RJ45 x 2	RJ45 x 2	RJ45 x 2	RJ45 x 2	RJ45 x 2
Yes	Yes	Yes	Yes	Lan1: No; Lan2: Yes
600 MB/s SATA3.0	300 MB/s SATA2.0 & 600 MB/s SATA3.0	600 MB/s SATA3.0	600 MB/s SATA3.0	600 MB/s SATA3.0
5 x SATA3.0	2 x SATA3.0; 4 x SATA2.0	6 x SATA3.0	5 x SATA3.0	8 x SATA3.0
0, 1, 5, 10	0, 1, 5, 10	0, 1, 5, 10	0, 1, 5, 10	0, 1, 5, 10
1	1	1	1	1
2	2	2	2	3(IPMI occupy 1 LAN)
0	-	-	0	2
1	1	1	1	2
1	1	1	1	1
7 USB2.0 (Pin-header x 2+USB Type A x 1+ 4 on backplane)	9 USB 2.0 (Pin-header x 2+USB Type A x 1+ 4 on backplane)	9 USB 2.0 (Pin-Header x 4 + USB Type A x 1+ 4 on backplane)	7 USB2.0 (Pin-header x 2+USB Type A x 1+ 4 on backplane)	4 USB 2.0 (On backplane)
4 USB3.0 (Pin header)	2 USB3.0 (Pin-Header)	2 USB3.0 (Pin-Header)	4 USB3.0 (Pin header)	2 USB3.0 (Pin-Header)
6	6	6	6	8
1 (Shared w/ SATA0 port)	-	-	1 (Shared w/ SATA0 port)	-
2 RS-232(Pin-Header)	2 RS-232(Pin-Header)	2 RS-232(Pin-Header)	2 RS-232(Pin-Header)	1 RS-232(Pin-Header)
1	1(SPP/EPP/ECP)	1(SPP/EPP/ECP)	1	-
1	1	1	1	-
Yes	Yes	Yes	Yes	Yes
System reset	System reset	System reset	System reset	System reset
Programable, 1~255 sec/min	Programable, 1~255 sec/min	Programable, 1~255 sec/min	Programable, 1~255 sec/min	Programable, 1~255 sec/min
PCA-AUDIO-HDB1E	PCA-Audio-HDA1E	PCA-Audio-HDA1E	PCA-AUDIO-HDB1E	PCA-Audio-HDA1E
Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes	Yes
-	Yes	Yes	-	Yes
Yes	Yes	Yes	Yes	-

# PICMG 1.0 Single Board Computers



Model Name		Core™ 2 Quad PICMG 1.0 SBC	Atom™ N455/D525 PICMG 1.0 SBC
		PCA-6011	PCA-6012
Processor System	CPU	Intel® Core™ 2 Quad/Core™ 2 Duo/ Pentium dual-Core™/Celeron LGA775 processors	Onboard Intel® Atom™ N455 (VG version only) Onboard Intel® Atom™ D525 (G2 version only)
	Max. Speed	3.0 GHz/3.16 GHz/2.93 GHz/2.2 GHz	1.66 GHz/1.8 GHz
	Max. L2 Cache	12 MB/6 MB/8 MB/512 KB	512 KB/1MB
	Chipset	Intel® G41 + ICH7 (VG version only) Intel® G41 + ICH7R (G2 version only)	Intel® ICH8M
	BIOS	AMI 16 Mb SPI Flash	AMI 16Mb SPI Flash
	FSB	1333/1066/800 MHz	-
Bus	PCI	32-bit/33 MHz PCI	32-bit/33 MHz PCI
	ISA	HISA (ISA High Drive)	HISA (ISA High Drive)
Graphics	Controller	Chipset integrated Intel® Graphics Media Accelerator X4500	Embedded Gen3.5+ GFX Core™ technology, Direct X 9/Pixel Shader 2.0 compliant
	VRAM	Shared with system memory up to 352 MB	Shared with system memory up to 224 MB
	LCD/DVI	DVI (Optional)	LVDS (G2 version only)
Ethernet	Interface	10/100/1000 Mbps	10/100/1000 Mbps
	Controller	LAN1: Intel® 82583V LAN2: Intel® 82583V	LAN1: Intel® 82567V LAN2: Intel® 82583V
	Connector	RJ-45 x 2	RJ-45 x 2
	Disabled in BIOS	Yes	Yes
Memory	Technology	Dual-channel DDR3 1066/800 MHz	Dual-channel DDR3 800 MHz
	Max. Capacity	8 GB	2 GB (VG version only) 4 GB (G2 version only)
	Socket	240-pin DIMM x 2	204-pin SODIMM x 2
SATA	Max. Data Transfer Rate	300 MB/s	300 MB/s
	Channel	4	3
	RAID	0, 1, 5, 10 (G2 version only)	-
EIDE	Mode	ATA 100/66/33	ATA 100/66/33
	Channel	1 (Max. two devices)	1 (Max. two devices)
I/O Interface	USB	8 (USB 2.0, for VG version) 7 (USB 2.0, for G2 version)	8 (USB 2.0, for VG version) 9 (USB 2.0, for G2 version)
	Serial	2 (RS-232)	2 (RS-232)
	Parallel	1 (SPP/EPP/ECP)	1 (EPP/ECP)
	FDD	1	1
	PS/2	1	1
	LAN	1 (for VG version) 2 (for G2 version)	1 (for VG version) 2 (for G2 version)
	OBS (Hardware Monitor)	Yes	Yes
Watchdog Timer	Output	System reset	System reset
	Interval	Programmable, 1~255 sec	Programmable, 1~255 sec
Miscellaneous	Audio	PCA-AUDIO-HDA1E	PCA-AUDIO-HDA1E
	Advantech SNMP-1000-B	Yes	Yes
	Advantech SAB-2000	Yes	Yes
	Solid State Disk	(Optional)	CompactFlash Type I/II (G2 version only)



<b>Atom™ N455/D525 PICMG 1.0 SBC PCA-6013</b>	<b>LGA1150 PICMG 1.0 SHB PCA-6028</b>
Onboard Intel® Atom™ N455 (VG version only) Onboard Intel® Atom™ D525 (G2 version only)	Intel Core i7/i5/i3/Pentium LGA 1150 Processors
1.66 GHz/1.8 GHz	up to 3.2GHz
512 KB/1MB	up to 8MB
Intel® ICH8M	Intel H81
AMI 16Mb SPI Flash	AMI 128Mbit SPI Flash
-	-
32-bit/33 MHz PCI	32 bit/33 MHz PCI
HISA (ISA High Drive)	HISA (ISA High Driver)
Embedded Gen3.5+ GFX Core™ technology, Direct X 9/Pixel Shader 2.0 compliant	Chipset integrated Intel HD Graphics
Shared with system memory up to 224 MB	Shared system memory is subject to OS
LVDS (G2 version only)	DVI (G2 version only)
10/100/1000 Mbps	10/100/1000 Mbps
LAN1: Intel® 82567V LAN2: Intel® 82583V	LAN 1: Intel I217V LAN 2: Intel I211 (Only in G2 SKU)
RJ-45 x 2	RJ45 x 1 (VG sku); RJ45 x 2 (G2 sku)
Yes	Yes
Dual-channel DDR3 800 MHz	Dual channel (Non-ECC) DDR3 1333/1600 MHz
2 GB (VG version only) 3 GB (G2 version only)	16 GB (8 GB per DIMM)
1 GB on Board + 204-pin SODIMM x 1	DDR3 240-pin DIMM x 2
300 MB/s	600 MB/s
3	4 (1x SATA2.0, 2x SATA3.0, 1x mSATA)
-	-
ATA 100/66/33	-
1 (Max. two devices)	-
8 (USB 2.0, for VG version) 9 (USB 2.0, for G2 version)	Up to 8 x USB2.0 (6x pin header, 1x type A, 1x rear in G2 sku only) 2x USB3.0 (Pin header)
2 (RS-232)	2 RS-232 (Pin-Header)
1 (EPP/ECP)	1
1	-
1	1
1 (for VG version) 2 (for G2 version)	1 (for VG version) 2 (for G2 version)
Yes	Yes
System reset	System reset
Programmable, 1~255 sec	Programmable, 1~255 sec
PCA-AUDIO-HDA1E	PCA-AUDIO-HDA1E
Yes	Yes
Yes	Yes
CompactFlash Type I/II (G2 version only)	mSATA

# Half-Size Single Board Computers



Specifications		PCIe Half-Size SBC				
		PCE-3026	PCE-3028	PCE-3029	PCI-7032	PCI-7031
Processor System	CPU	Intel® Core™ i7/i5/i3/Pentium/Celeron LGA1155 processor	Intel® Core i7/i5/i3/Pentium LGA 1150 Processor	Intel® Core i7/i5/i3/Pentium LGA 1151 Processor	Intel® Celeron J1900/N2930	Intel® Atom™ D510/N450
	Speed	up to 3.4 GHz	Up to 3.5 GHz	up to 3.4GHz	2.00/1.83 GHz	1.66 GHz
	L2 Cache	up to 8 MB	Up to 8MB	Up to 8 MB	2MB/2MB	512 KB (N450)/1 MB (D510)
	Chipset	Intel® H61	Intel H81	Intel H110	Intel Celeron J1900/N2930 SOC	Intel® Atom™ D510/N450+ICH8M
	BIOS	AMI 64 Mbit SPI Flash	AMI 128 Mbit SPI Flash	AMI 128 Mbit SPI Flash	AMI 64 Mbit SPI Flash	AMI 16 Mbit SPI Flash
	FSB	N/A	N/A	N/A	-	-
Bus	PCIe	One PCIe x16, Four PCIe x1	One PCIe x16, Four PCIe x1	One PCIe x16, Four PCIe x1	One PCIe x 1 (F SKU) Only	-
	PCI	-	-	-	32-bit/33 MHz PCI	32-bit/33 MHz PCI
	ISA	-	-	-	-	-
Graphics	Controller	Chipset integrated graphics with Intel® HD	Chipset integrated graphics with Intel HD	Chipset integrated graphics with Intel HD	Chipset integrated graphics with Intel® HD	Embedded Gen3.5+ GFX Core™ technology
	VRAM	Shared with system memory is subject to OS	Shared with system memory is subject to OS	Shared with system memory is subject to OS	Shared with system memory is subject to OS	Shared with system memory up to 224 MB
	Video output	D-sub VGA port, DVI	D-sub VGA port, DVI	VGA, DVI, DP	D-sub VGA port, 48-bit LVDS, DVI	D-sub VGA port, LVDS
Ethernet	Interface	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps
	Controller	LAN1: Intel® 82579V LAN2: Intel® 82583V	LAN1: Intel® I217V LAN2: Intel® I211AT	LAN1: Intel® I219V LAN2: Intel® I211AT	LAN1: Intel® I211 LAN2: Intel® I211	LAN1: Intel® 82567V LAN2: Intel® 82583V
	Connector	RJ-45 x 2	RJ-45 x2	RJ-45 x2	RJ-45 x 2	RJ-45 x 2
	Disabled in BIOS	Yes	Yes	Yes	Yes	Yes
Memory	Technology	Dual-channel DDR3 1066/1333 MHz	Dual-channel DDR3 1066/1333/1600 MHz	Dual-channel DDR4 1866/2133 MHz	Dual-channel DDR3L 1333	Onboard 1G DDR2 667 MHz (for PCI-7031N) Single Channel DDR2 667 MHz (for PCI-7031D)
	Max. Capacity	16 GB	16 GB	32 GB	8GB (for G2/F SKU) 4GB (for VG SKU)	1 GB (for PCI-7031N) 2 GB (for PCI-7031D)
	Socket	204-pin SODIMM x 2	204-pin SODIMM x2	260-pin SODIMM x2	204-pin SODIMM x 2 (for G2/F SKU) 204-pin SODIMM x 1 (for VG SKU)	200-pin SODIMM x 1
SATA	Max. Data Transfer Rate	300 MB/s	600 MB/s, 300 MB/s	600MB/s	300 MB/s	300 MB/s
	Channel	3	4	4	2 (SATA 2 can change mSATA)	3
	RAID	-	-	-	-	-
EIDE	Mode	-	-	-	-	ATA 100/66/33
	Channel	-	-	-	-	1 (Max. 2 devices)
I/O Interface	USB	8 USB 2.0	2 USB 3.0 + 8 USB 2.0	3 USB 3.0 + 7 USB 2.0	1 USB 3.0 + 6 USB 2.0 (for G2/F SKU) 1 USB 3.0 + 5 USB 2.0 (for VG SKU)	7 USB 2.0
	Serial	2 x RS-232 Optional: 4 x RS-422/485 w/ Auto-flow or 4 RS-232 by COM module	2 x RS-232 Optional: 4x RS-422/485 w/ Auto-flow or 4 x RS-232 by COM module	2 x RS-232 Optional: 4x RS-422/485 w/ Auto-flow or 4 x RS-232 by COM module	4 x RS-232/422/485 (for G2/F SKU) 2 x RS-232/422/485 (for VG SKU) Optional: 4 x RS-422/485 w/ Auto-flow or 4 RS-232 by COM module	2 x RS-232 Optional: 4 x RS-422/485 w/ Auto-flow by COM module
	Parallel	1	1	1	1	1
	FDD	-	-	-	-	1
	PS/2	1	1	1	1	1
	LAN	2	2	2	2 (for G2/F SKU) 1 (for VG SKU)	2
	OBS (Onboard Security Hardware Monitor)	-	-	Yes	Yes (G2 SKU only)	-
Watchdog Timer	Output	System reset	System reset	System reset	System reset	System reset
	Interval	Programmable 1-255 sec/min	Programmable 1-255 sec	Programmable 1-255 sec	Programmable 1-255 sec/min	Programmable 1~255 sec/min
Miscellaneous	Audio	PCA-AUDIO-HDA1E	PCA-AUDIO-HDA1E	PCA-AUDIO-HDB1E	PCA-AUDIO-HDB1E	PCA-AUDIO-HDA1E
	Advantech SNMP-1000	-	-	-	-	-
	IPMI	-	-	-	-	-
	Solid State Disk	-	-	mSATA x 1	mSATA x 1	CompactFlash Type I/II

ISA Half-Size SBC			
PCA-6782	PCA-6763	PCA-6742	PCA-6743
Intel® Atom™ D525/N455	AMD G-Series APU T16R	Advantech EVA-X4300	DM&P Vortex86DX
D525 1.8 GHz/N455 1.66 GHz	615 MHz	300 MHz	800 MHz
512 KB (N455)/1 MB (D525)	512 KB	L1 Cache 32 KB	256 KB
Intel® Atom™ D525/N455+ICH8M	AMD T16R+A55F	Advantech EVA-X4300	DM&P Vortex86DX
AMI 16 Mbit SPI Flash	AMI 64 Mbit SPI Flash	Award integrated 256 KB ROM in EVA-X4300	Award integrated 256 KB ROM in Vortex86DX
-	-	-	-
-	-	-	-
-	-	-	-
16-bit ISA Bus	16-bit ISA Bus	8/16-bit 8 MHz ISA	16-bit ISA Bus
Embedded Gen3.5+ GFX Core™ technology	Radeon HD 6250	SMI 712 graphic controller	SMI 712 graphic controller
Shared with system memory up to 224 MB	Shared with system memory up to 384MB	4 MB display memory	4 MB display memory
D-sub VGA port, 18 bit LVDS	D-sub VGA port, LVDS (48-bit for G2 SKU, 18-bit for VG SKU), DVI	D-sub VGA port, 18/24 bit TTL or 18/24 bit LVDS (optional)	D-sub VGA port, up to 24 bit TTL or 18 bit LVDS (optional)
10/100/1000 Mbps	10/100/1000 Mbps	10/100 Mbps	10/100 Mbps
Intel® 82567V	LAN1: Intel® I211 LAN2: Intel® I211	Realtek RTL8100C (VE)	LAN on Vortex86DX
RJ-45 x 1	RJ-45 x 2	RJ-45 x 1	RJ-45 x 1
Yes	Yes	Yes	Yes
Single-Channel DDR2 667 MHz (for PCA-6782N) Single-Channel DDR2 667/800 MHz (for PCA-6782D)	Onboard 1GB DDR3 1066 MHz SODIMM DDR3 1066 MHz up to 4GB	Default onboard DDR 2 166MHz	Default onboard DDR2 (for VE SKU) Default onboard DDR2 (for F SKU)
2 GB	5GB	64 MB	256 MB (for VE SKU) 512 MB (for F SKU)
200-pin SODIMM x 1	204-pin SODIMM x 1	-	-
300 MB/s	300 MB/s	-	150 MB/s
3	2 (SATA 2 can change mSATA)	-	1 (for F SKU)
-	-	-	-
ATA 100/66/33	-	UDMA 100	UDMA 100
1 (Max. 2 devices)	-	1 (Max. 2 devices)	1 (Max. 2 devices)
8 USB 2.0	7 USB 2.0 (for G2 SKU) 6 USB 2.0 (for VG SKU)	4 USB 2.0	4 USB 2.0
2 x RS-232 Optional: 4 x RS-422/485 w/Auto-flow by COM module	2 x RS-232 Optional: 4 x RS-422/485 w/Auto-flow by COM module	1 x RS-232/422/485 3 x RS-232	F SKU: 2 x RS-232/422/485 & 2 x RS-232 VE SKU: 2 x RS-232
1	1	1	1
1	1	-	1
1	1	1	1
1	2 (for G2/F SKU) 1 (for VG SKU)	1 (VE)	1
-	-	-	-
System reset	System reset	System reset/IRQ11	System reset/IRQ11
Programmable, 1~255 sec/min	Programmable, 1~255 sec/min	Programmable, 1~255 sec/min	Programmable, 1~255 sec/min
PC-AUDIO-HDA1E	PC-AUDIO-HDA1E	-	-
-	-	-	-
-	-	-	-
CompactFlash Type I/II	mSATA x 1	CompactFlash Type I/II	CompactFlash Type I/II

# PICMG1.3 Full-Size SHB Backplanes

## Server Grade: Compatible with PCE-7000 Series CPU Boards

Category	Model Name	PCIe				PCI-X				PCI
		x16	x8	x4	x1	64/66	64/100	64/133	32/33	
2U Butterfly BP	PCE-7B06V-04A1E	-	1	-	-	-	-	-	-	4
8 slots BP	PCE-7B08-04A1E	-	2	1	-	-	-	-	-	4
	PCE-7B09R-04A1E	-	1	3	-	-	-	-	-	4
	PCE-7B10-04A1E	-		5	-	-	-	-	-	4
14 slots BP	PCE-7B13-64C1E	-	2	-	-	4	2	-	-	4
	PCE-7B13-07A1E	-	2	3	-	-	-	-	-	7
	PCE-7B13D-04A1E	-	1,2	-	-	-	-	-	-	4
20 slots BP	PCE-7B17-00A1E	-	5	11	-	-	-	-	-	-

Category	Model Name	Wallmount/Desktop Chassis				
		IPC-6025	IPC-6606	IPC-6806(W)	IPC-6608	IPC-6908
2U Butterfly BP	PCE-7B06V-04A1E	-	-	-	-	-
8 slots BP	PCE-7B08-04A1E	-	-	-	V	V
	PCE-7B09R-04A1E	-	-	-	-	-
	PCE-7B10-04A1E	-	-	-	-	-
14 slots BP	PCE-7B13-64C1E	-	-	-	-	-
	PCE-7B13-07A1E	-	-	-	-	-
	PCE-7B13D-04A1E	-	-	-	-	-
20 slots BP	PCE-7B17-00A1E	-	-	-	-	-

Category	Model Name	Rackmount Chassis													
		ACP-1010	ACP-1320	ACP-2000EBP	IPC-602EBP	IPC-510	IPC-610	IPC-611	ACP-4000	ACP-4010	ACP-4320	ACP-4340	ACP-4360	IPC-623	IPC-622
		2-slot / 1U	6-slot / 2U						15-slot / 4U					20-slot / 4U	20-slot / 6U
2U Butterfly BP	PCE-7B06V-04A1E	-	-	V	V	-	-	-	-	-	-	-	-	-	-
8 slots BP	PCE-7B08-04A1E	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	PCE-7B09R-04A1E	-	-	-	-	V	V	V	V	V	V	V	-	-	-
	PCE-7B10-04A1E	-	-	-	-	V	V	V	V	V	V	V	-	-	-
14 slots BP	PCE-7B13-64C1E	-	-	-	-	V	V	V	V	V	V	V	-	-	-
	PCE-7B13-07A1E	-	-	-	-	V	V	V	V	V	V	V	-	-	-
	PCE-7B13D-04A1E	-	-	-	-	-	-	-	V	-	-	-	-	-	-
20 slots BP	PCE-7B17-00A1E	-	-	-	-	-	-	-	-	-	-	-	V	V	

## Desktop: Compatible with PCE-5000 Series CPU Boards

Category	Model Name	PCIe				PCI-X				PCI
		x16	x8	x4	x1	64/66	64/100	64/133	32/33	
1U Butterfly BP	PCE-5B03V-01A1E	1	-	-	-	-	-	-	-	1
	PCE-5B03V-00A1E	1		1	-	-	-	-	-	-
2U Butterfly BP	PCE-5B05V-30B1E	1	-	-	-	-	2	1	-	-
	PCE-5B06V-00A1E	1	-	-	4	-	-	-	-	-
	PCE-5B06V-04A1E	1	-	-	-	-	-	-	-	4
	PCE-5B04-20B1E	1	-	-	-	-	-	2	-	-
5 slot BP	PCE-5B05-02A1E	1	-	1	-	-	-	-	-	2
	PCE-5B05-03A1E	1	-	-	-	-	-	-	-	3
	PCE-5B05-04A1E	-	-	-	-	-	-	-	-	4
6 slot BP	PCE-5B06-00A1E	1	-	-	4	-	-	-	-	-
	PCE-5B06-03A1E	1	-	1	-	-	-	-	-	3
	PCE-5B06-04A1E	1	-	-	-	-	-	-	-	4
8 slot BP	PCE-5B07-04A1E	1	-	1	-	-	-	-	-	4
	PCE-5B08-02A1E	1	-	-	4	-	-	-	-	2
10 slot BP	PCE-5B09-04A1E	1	-	3	-	-	-	-	-	4
	PCE-5B09-06A1E	1	-	1	-	-	-	-	-	6
	PCE-5B10-04A1E	1	-	-	4	-	-	-	-	4
	PCE-5B12-07A1E	1	-	3	-	-	-	-	-	7
14 slot BP	PCE-5B12-64C1E	1	-	-	-	4	2	-	-	4
	PCE-5B13-08A1E	1	-	-	3	-	-	-	-	8
	PCE-5B12D-04A1E	1	-	-	-	-	-	-	-	4
20 slot BP	PCE-5B12-00A1E	10	-	1	-	-	-	-	-	-
	PCE-5B16Q-02A1E	1	-	-	-	-	-	-	-	2
	PCE-5B18-88B1E	1	-	-	-	8	-	-	-	8
	PCE-5B19-00A1E	17	-	1	-	-	-	-	-	-

Category	Model Name	Wallmount/Desktop Chassis						
		IPC-6025	IPC-6606	IPC-6806	IPC-6806W	IPC-6608	IPC-6908	IPC-7132
1U Butterfly BP	PCE-5B03V-01A1E	-	-	-	-	-	-	-
	PCE-5B03V-00A1E	-	-	-	-	-	-	-
2U Butterfly BP	PCE-5B05V-30B1E	-	-	-	-	-	-	-
	PCE-5B06V-00A1E	-	-	-	-	-	-	-
	PCE-5B06V-04A1E	-	-	-	-	-	-	-
	PCE-5B04-20B1E	V	-	-	-	-	-	-
5 slot BP	PCE-5B05-02A1E	V	-	-	-	-	-	-
	PCE-5B05-03A1E	V	-	-	-	-	-	-
	PCE-5B05-04A1E	V	-	-	-	-	-	-
6 slot BP	PCE-5B06-00A1E	-	V	-	V	-	-	-
	PCE-5B06-03A1E	-	V	-	V	-	-	-
	PCE-5B06-04A1E	-	V	-	V	-	-	-
8 slot BP	PCE-5B07-04A1E	-	-	-	-	V	V	-
	PCE-5B08-02A1E	-	-	-	-	V	V	-
10 slot BP	PCE-5B09-04A1E	-	-	-	-	-	-	V
	PCE-5B09-06A1E	-	-	-	-	-	-	V
	PCE-5B10-04A1E	-	-	-	-	-	-	-
	PCE-5B12-07A1E	-	-	-	-	-	-	-
14 slot BP	PCE-5B12-64C1E	-	-	-	-	-	-	-
	PCE-5B13-08A1E	-	-	-	-	-	-	-
	PCE-5B12D-04A1E	-	-	-	-	-	-	-
20 slot BP	PCE-5B12-00A1E	-	-	-	-	-	-	-
	PCE-5B16Q-02A1E	-	-	-	-	-	-	-
	PCE-5B18-88B1E	-	-	-	-	-	-	-
	PCE-5B19-00A1E	-	-	-	-	-	-	-

# PCI/ISA Backplanes

## Selection Guide

Yes: supported/- : not supported/Δ : optional

Category	Model Name	Slot per segment					Segment	AT	ATX	1U Chassis		2U Chassis		4U Chassis		
		ISA	PCI	PICMG	PICMG/PCI	ISA/PCI				ACP-1010	ACP-1320	ACP-2000	IPC-602	IPC-510	IPC-610	IPC-611
1U Butterfly BP	PCA-6103P2V-0A2E*	-	2	1	-	-	1	-	Yes	Yes	Yes	-	-	-	-	-
2U Butterfly BP	PCA-6105P4V-0B3E*	-	4	1	-	-	1	-	Yes	-	-	Yes	Yes	-	-	-
	PCA-6106P3V-0B2E*	1	3	2	-	-	1	Yes	Yes	-	-	Yes	Yes	-	-	-
5 Slot BP	PCA-6105P3-5A1E	1	2	1	-	1	1	-	Yes	-	-	-	-	-	-	-
6/8 Slot BP	PCA-6106P4-0A2E	-	4	2	-	-	1	Yes	Yes	-	-	-	-	-	-	-
	PCA-6106P3-0D2E	2	2	1	1	-	1	Yes	Yes	-	-	-	-	-	-	-
	PCA-6108P6-0C1E	1	5	1	1	-	1	Yes	Yes	-	-	-	-	-	-	-
	PCA-6108P4-0C2E	3	3	1	1	-	1	Yes	Yes	-	-	-	-	-	-	-
	PCA-6108-0B2E	8	-	-	-	-	1	Yes	Yes	-	-	-	-	Yes	Yes	Yes
14/15 Slot BP	PCA-6114P12-0B3E	1	11	1	1	-	1	Yes	Yes	-	-	-	-	Yes	Yes	Yes
	PCA-6114P10-0B2E	2	10	2	-	-	1	Yes	Yes	-	-	-	-	Yes	Yes	Yes
	PCA-6114P7-0E1E	4	6	3	-	1	1	Yes	Yes	-	-	-	-	Yes	Yes	Yes
	PCA-6114P4-0C2E	8	4	2	-	-	1	Yes	Yes	-	-	-	-	Yes	Yes	Yes
	PCA-6113P4R-0C2E	7	4	2	-	-	1	Yes	Yes	-	-	-	-	Yes	Yes	Yes
	PCA-6114-0B2E	14	-	-	-	-	1	Yes	Yes	-	-	-	-	-	-	-
	PCA-6113DP4-0A2E	1	3,4	1,2	1,0	-	2	Yes	Yes	-	-	-	-	-	-	-
20 Slot BP	PCA-6120P18-0A2E	1	17	1	1	-	1	Yes	Δ	-	-	-	-	-	-	-
	PCA-6120P4-0B2E	14	4	2	-	-	1	Yes	Δ	-	-	-	-	-	-	-
	PCA-6120P12-0A2E	7	11	1	1	-	1	Yes	Δ	-	-	-	-	-	-	-
	PCA-6119P7-0C1E	10	7	2	-	-	1	Yes	Δ	-	-	-	-	-	-	-
	PCA-6120Q-0B2E	5	-	-	-	-	4	Yes	Δ	-	-	-	-	-	-	-

Category	Model Name	4U Chassis						6U Chassis	Wallmount/Desktop Chassis					Cage	
		ACP-4000	ACP-4010	ACP-4320	ACP-4340	ACP-4360	IPC-623		IPC-622	IPC-6908	IPC-6608	IPC-6606	IPC-6806/IPC-6806W	IPC-6025	IPC-6006
		15-slot	15-slot	15-slot	15-slot	15-slot	20-slot		20-slot	8-slot	8-slot	6-slot	6-slot	5-slot	6-slot
1U Butterfly BP	PCA-6103P2V-0A2E*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2U Butterfly BP	PCA-6105P4V-0B3E*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5 Slot BP	PCA-6105P3-5A1E	-	-	-	-	-	-	-	-	-	-	-	-	Yes	-
6/8 Slot BP	PCA-6106P4-0A2E	-	-	-	-	-	-	-	-	-	-	-	Yes	Yes	-
	PCA-6106P3-0D2E	-	-	-	-	-	-	-	-	-	-	-	Yes	Yes	-
	PCA-6108P6-0C1E	-	-	-	-	-	-	-	-	Yes	Yes	-	-	-	-
	PCA-6108P4-0C2E	-	-	-	-	-	-	-	-	Yes	Yes	-	-	-	-
	PCA-6114P12-0B3E	Yes	Yes	Yes	Yes	Yes	-	-	-	-	-	-	-	-	-
14/15 Slot BP	PCA-6114P10-0B2E	Yes	Yes	Yes	Yes	Yes	-	-	-	-	-	-	-	-	-
	PCA-6114P7-0E1E	Yes	Yes	Yes	Yes	Yes	-	-	-	-	-	-	-	-	-
	PCA-6114P4-0C2E	Yes	Yes	Yes	Yes	Yes	-	-	-	-	-	-	-	-	-
	PCA-6113P4R-0C2E	Yes	Yes	Yes	Yes	Yes	-	-	-	-	-	-	-	-	-
	PCA-6114-0B2E	Yes	Yes	Yes	Yes	Yes	-	-	-	-	-	-	-	-	-
	PCA-6113DP4-0A2E	-	Yes	-	-	-	-	-	-	-	-	-	-	-	-
	PCA-6120P18-0A2E	-	-	-	-	-	Yes	Yes	-	-	-	-	-	-	-
20 Slot BP	PCA-6120P4-0B2E	-	-	-	-	-	Yes	Yes	-	-	-	-	-	-	-
	PCA-6119P7-0C1E	-	-	-	-	-	Yes	Yes	-	-	-	-	-	-	-
	PCA-6119P7-0B3E	-	-	-	-	-	Yes	Yes	-	-	-	-	-	-	-
	PCA-6120Q-0B2E	-	-	-	-	-	Yes	Yes	-	-	-	-	-	-	-

Remarks:

\*: only Compatible with Advantech's 1U/2U chassis

# Backplanes Compatible with Half-Size SBCs

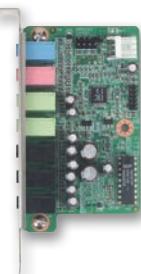
## Selection Guide

Yes : supported/- : not supported

Interface	Category	Model Name	Slots per segment							Segment
			ISA	PCI	PCIe x16	PCIe x 8	PCIe x4	PCIe x1	PICMG	
Pure ISA Backplane	-	PCA-6104-0C2E	3	-	-	-	-	-	1	1
	6-slot	PCA-6106-0B2E	5	-	-	-	-	-	1	1
	-	PCA-6108-0B2E *	7	-	-	-	-	-	1	1
	8-slot	PCA-6108E-0C2E	7	-	-	-	-	-	1	1
Pure PCI Backplane	-	PCA-6104P4-0B2E	-	3	-	-	-	-	1	1
	6-slot	PCA-6105P5-0B2E	-	4	-	-	-	-	1	1
	8-slot	PCA-6108P8-0A2E	-	7	-	-	-	-	1	1
PCI/PCIe Backplane	1U	PCI-7103P1V-01A1E	-	1	-	-	1	-	1	1
PICMG1.3 Half-Size Backplanes	6-slot	PCE-3B03-00A1E	-	-	1	-	1	-	1	1
	6-slot	PCE-3B06-00A1E	-	-	1	-	-	4	1	1
	6-slot	PCE-3B06-03A1E	-	3	1	-	-	1	1	1
	6-slot	PCE-3B06-02A1E	-	2	1	-	-	2	1	1
	3-slot	PCE-3B03A-00A1E	-	-	1	-	1	-	1	1
	3-slot	PCE-3B03-01A1E	-	1	1	-	-	-	1	1
	14-slot	PCE-3B12-08A1E	-	8	1	-	-	2	1	1
	14-slot	PCE-4B13-08A1E	-	8	-	2	-	2	1	1
	14-slot	PCE-4B12-03A1E	-	3	-	1	4	3	1	1
	14-slot	PCE-4B13-00A1E	-	-	-	1	11	-	-	-

Interface	Model Name	AT	ATX	IPC-120	ACP-4020	ACP-4D00	IPC-6908	IPC-6806S*	IPC-6006S	IPC-3026	IPC-3012
				Rackmount	Rackmount	Rackmount	Wallmount	Wallmount	Wallmount	Wallmount	Wallmount
				3-slot	14-slot	6-slot	8-slot	6-slot	6-slot	6-slot	3-slot
Pure ISA Backplane	PCA-6104-0C2E	Yes	Yes	-	-	-	-	-	-	-	-
	PCA-6106-0B2E	Yes	Yes	-	-	-	-	Yes	Yes	Yes	-
	PCA-6108-0B2E	Yes	Yes	-	-	-	-	-	-	-	-
	PCA-6108E-0C2E	Yes	Yes	-	-	-	-	Yes	-	-	-
Pure PCI Backplane	PCA-6104P4-0B2E	Yes	Yes	-	-	-	-	-	-	-	-
	PCA-6105P5-0B2E	Yes	Yes	-	-	Yes	-	Yes	Yes	Yes	-
	PCA-6108P8-0A2E	Yes	Yes	-	-	-	Yes	-	-	-	-
PCI/PCIe Backplane	PCI-7103P1V-01A1E	-	Yes	Yes	-	-	-	-	-	-	-
Half-Size Backplanes	PCE-3B03-00A1E	-	Yes	-	-	Yes	-	Yes	-	Yes	-
	PCE-3B06-00A1E	-	Yes	-	-	Yes	-	Yes	-	Yes	-
	PCE-3B06-03A1E	-	Yes	-	-	Yes	-	Yes	-	Yes	-
	PCE-3B06-02A1E	-	Yes	-	-	Yes	-	Yes	-	Yes	-
	PCE-3B03A-00A1E	-	Yes	-	-	-	-	-	-	-	Yes
	PCE-3B03-01A1E	-	Yes	-	-	-	-	-	-	-	Yes
	PCE-3B12-08A1E	-	Yes	-	Yes	-	-	-	-	-	-
	PCE-4B13-08A1E	-	Yes	-	Yes	-	-	-	-	-	-
	PCE-4B12-03A1E	-	Yes	-	Yes	-	-	-	-	-	-
	PCE-4B13-00A1E	-	Yes	-	Yes	-	-	-	-	-	-

# Extension Modules for Slot SBCs



## PCA-AUDIO-HDA1E

- 7.1 Channel HD Audio Extension Module
- Line-in, Mic-in, Lin-out, Front-out, Speaker-out, Rear-out, Subcen-out, Side-out
- Dimensions: 47.5 x 80.74 mm



## PCA-COM232-00A1E

- 4 RS-232 series ports extension module by LPC connector on CPU card.
- Dimensions: 31.5 x 48 mm



## PCA-COM485-00A1E

- 4 RS-422/485 series ports extension module by LPC connector on CPU card.
- With Auto-flow control function
- Dimensions: 31.5 x 48 mm



## PCE-SA01-00A1E

- I/O extension stack board
- 1 DP, 2 USB 3.0, MIC-in, LINE-out
- Dimensions: 68 x 125 mm



## PCA-5650-00A1E

- 2 VGA output Mini PCI Express Graphic card
- GPU: Silicon Motion SM750
- VGA output: 1920 x 1080, up to 75Hz vertical rate
- 16 Mb of embedded DDR memory



## PCA-TPM-00A1E

- Trusted platform module compliant with TCG 1.2 specification and TCG software stack 1.2 via LPC connector on CPU card
- Hardware based data protection solution for storage device encryption and decryption
- Dimensions: 31.5 x 30.5 mm



## IPMI-1000-00A1E

- IPMI2.0 Server-grade remote control solution
- OS independent hardware-based solution
- Real-time and centralized management
- KVM over IP remote control function
- User friendly UI and utility
- Supports Model: PCE-5126WG2, PCE-7127, PCE-5128

# PICMG1.3 Full-Size SHB Backplanes

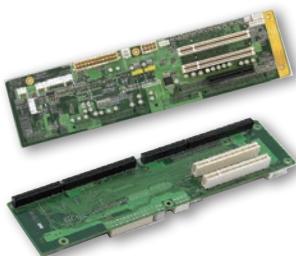
## Server Grade Backplanes

Compatible with PCE-7000 Series System Host Board

### 2U Butterfly Backplanes

#### PCE-7B06V-04A1E

- 6-slot Butterfly BP for 2U chassis
- Segment: 1
- One CPU card slot
- PCIe slot: One x8
- PCI-X slot: N/A
- PCI slot: Four 32/33
- Compatible with IPC chassis:  
ACP-2000EBP and IPC-602EBP



### 6-slot Wallmount Chassis Backplanes

#### PCE-7B06-04A1E

- 6-slot BP for 6-slot chassis
- Segment: 1
- One CPU card slot
- PCIe slot: One x8
- PCI-X slot: N/A
- PCI slot: Four 32/33
- Compatible with IPC chassis: IPC-6606, and  
IPC-6806W



### 8-slot Wallmount Chassis Backplanes

#### PCE-7B08-04A1E

- 8-slot BP for 8-slot chassis
- Segment: 1
- One CPU card slot
- PCIe slot: Two x8; One x4
- PCI-X slot: N/A
- PCI slot: Four 32/33
- Compatible with IPC chassis: IPC-6608 and IPC-6908



## 14-slot Rackmount Chassis Backplanes

### PCE-7B10-04A1E

- 10-slot BP for 14-slot chassis
- Segment: 1
- One CPU card slot
- PCIe slot: Five x4
- PCI-X slot: N/A
- PCI slot: Four 32/33
- Compatible with IPC chassis: IPC-510, IPC-610, IPC-611, ACP-4000, ACP-4010, ACP-4320, and ACP-4360



### PCE-7B13-64B1E

- 13-slot BP for 14-slot chassis
- Segment: 1
- One CPU card slot
- PCIe slot: Two x8
- PCI-X slot: Two 64/100; Four 64/66
- PCI slot: Four 32/33
- Compatible with IPC chassis: IPC-510, IPC-610, IPC-611, ACP-4000, ACP-4010, ACP-4320, and ACP-4360



### PCE-7B13D-04A1E

- 13-slot BP for 14-slot chassis
- Segments: 2
- Each segment: One CPU card slot
- PCIe slot: One or Two x8
- PCI-X slot: N/A
- PCI slot: Four 32/33
- Compatible with IPC chassis: ACP-4010



### PCE-7B13-07A1E

- 13-slot BP for 14-slot chassis
- Segment: 1
- One CPU card slot
- PCIe slot: Two x8, Three x4
- PCI-X slot: N/A
- PCI slot: Seven 32/33
- Compatible with IPC chassis: IPC-510, IPC-610, IPC-611, ACP-4000, ACP-4010, ACP-4320, and ACP-4360



### PCE-7B09R-04A1E

- 9-slot BP for 14-slot chassis
- Segment: 1
- One CPU card slot
- PCIe slot: One x8, Three x4
- PCI-X slot: N/A
- PCI slot: Four 32/33
- Compatible with IPC chassis: IPC-510, IPC-610, IPC-611, ACP-4000, ACP-4010, ACP-4320, ACP-4340, and ACP-4360



## 20-slot Rackmount Chassis Backplanes

### PCE-7B17-00A1E

- 17 slot BP for 20-slot chassis
- Segments:1
- One CPU card slot
- PCIe slot: five x8, eleven x4
- PCI-X slot: N/A
- PCI slot: N/A
- Compatible with IPC chassis: IPC-623, IPC-622



# PICMG1.3 Full-Size SHB Backplanes

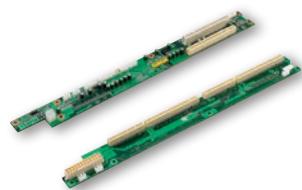
## Mainstream Backplanes

Compatible with PCE-5000 Series System Host Board

### 1U Butterfly Backplanes

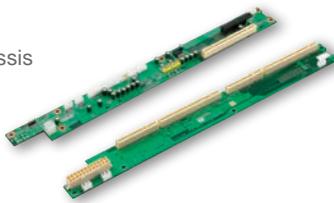
#### PCE-5B03V-01A1E

- 3-slot Butterfly BP for 1U chassis
- Segments: 1
- One CPU card slot
- PCIe slot: One x16
- PCI-X slot: N/A
- PCI slot: One 32/33
- Compatible with IPC chassis: ACP-1320, ACP-1010



#### PCE-5B03V-00A1E

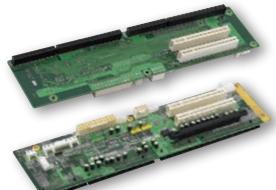
- 3-slot Butterfly BP for 1U chassis
- Segments: 1
- One CPU card slot
- PCIe slot: One x16; One x4
- PCI-X slot: N/A
- PCI slot: N/A
- Compatible with IPC chassis: ACP-1320, ACP-1010



### 2U Butterfly Backplanes

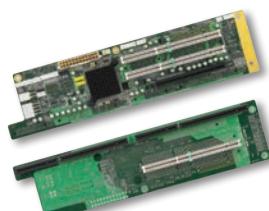
#### PCE-5B06V-04A1E

- 6-slot Butterfly BP for 2U chassis
- Segments: 1
- One CPU card slot
- PCIe slot: One x16
- PCI-X slot: N/A
- PCI slot: Four 32/33
- Compatible with IPC chassis: ACP-2000EBP and IPC-602EBP



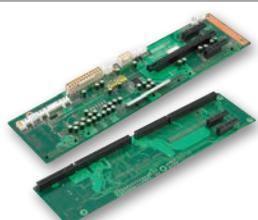
#### PCE-5B05V-30B1E

- 5-slot Butterfly BP for 2U chassis
- Segments: 1
- One CPU card slot
- PCIe slot: One x16
- PCI-X slot: Two 64/100; one 64/133
- PCI slot: N/A
- Compatible with IPC chassis: ACP-2000EBP and IPC-602EBP



#### PCE-5B06V-00A1E

- 6-slot Butterfly BP for 2U chassis
- Segments: 1
- One CPU card slot
- PCIe slot: One x16; Four x1
- PCI-X slot: N/A
- PCI slot: N/A
- Compatible with IPC chassis: ACP-2000EBP and IPC-602EBP



### 5-slot Wallmount Chassis Backplanes

#### PCE-5B05-02A1E

- 5-slot BP for 5-slot chassis
- Segments: 1
- One CPU card slot
- PCIe slot: One x16; One x4
- PCI-X slot: N/A
- PCI slot: Two
- Compatible with IPC chassis: IPC-6025



#### PCE-5B04-20B1E

- 4-slot BP for 5-slot chassis
- Segments: 1
- One CPU card slot
- PCIe slot: One x16
- PCI-X slot: Two 64/133
- PCI slot: N/A
- Compatible with IPC chassis: IPC-6025



#### PCE-5B05-04A1E

- 5-slot BP for 5-slot chassis
- Segments: 1
- One CPU card slot
- PCIe slot: N/A
- PCI-X slot: N/A
- PCI slot: Four 32/33
- Compatible with IPC-6025



#### PCE-5B05-03A1E

- 5 slot BP for 5 slot chassis
- Segments: 1
- One CPU card slot
- PCIe slot: One x16
- PCI-X slot: N/A
- PCI slot: Three PCI 32/33
- Compatible with IPC chassis: IPC-6025



## 6-slot Wallmount Chassis Backplanes

### PCE-5B06-00A1E

- 6-slot BP for 6-slot chassis
- Segments: 1
- One CPU card slot
- PCIe slot: One x16; Four x1
- PCI-X slot: N/A
- PCI slot: N/A
- Compatible with IPC chassis: IPC-6606, and IPC-6806W



### PCE-5B06-04A1E

- 6-slot BP for 6-slot chassis
- Segments: 1
- One CPU card slot
- PCIe slot: One x16
- PCI-X slot: N/A
- PCI slot: Four 32/33
- Compatible with IPC chassis: IPC-6606, and IPC-6806W



### PCE-5B06-03A1E

- 6 slot BP for 6 slot chassis
- Segments: 1
- One CPU card slot
- PCIe slot: One x16; One x4
- PCI-X slot: N/A
- PCI slot: Three PCI 32/33
- Compatible with IPC chassis: IPC-6606, and IPC-6806W



## 8-slot Wallmount Chassis Backplanes

### PCE-5B07-04A1E

- 7-slot BP for 8-slot chassis
- Segments: 1
- One CPU card slot
- PCIe slot: One x16; One x4
- PCI-X slot: N/A
- PCI slot: Four 32/33
- Compatible with IPC chassis: IPC-6608 and IPC-6908



### PCE-5B08-02A1E

- 8-slot BP for 8-slot chassis
- Segments: 1
- One CPU card slot
- PCIe slot: One x16; Four x1
- PCI-X slot: N/A
- PCI slot: Two 32/33
- Compatible with IPC chassis: IPC-6608 and IPC-6908



## 10-slot Wallmount Chassis Backplanes

### PCE-5B09-06A1E

- 9-slot BP for 10-slot chassis
- Segments: 1
- One CPU card slot
- PCIe slot: One x16; One x4
- PCI-X slot: N/A
- PCI slot: Six 32/33
- Compatible with IPC chassis: IPC-7132, IPC-510, IPC-610, ACP-4000, ACP-4010, ACP-4320, and ACP-4360



### PCE-5B09-04A1E

- 9-slot for 10-slot chassis
- Segments: 1
- One CPU card slot
- PCIe slot: One x16, three x4
- PCI-X slot: N/A
- PCI slot: Four 32/33
- Compatible with IPC chassis: IPC-7132, IPC-510, IPC-610, ACP-4000, ACP-4010, ACP-4320, and ACP-4360



# PICMG1.3 Full-Size SHB Backplanes

## 14-slot Rackmount Chassis Backplanes

### PCE-5B10-04A1E

- 10-slot BP for 14-slot chassis
- Segments: 1
- One CPU card slot
- PCIe slot: One x16; Four x1
- PCI-X slot: N/A
- PCI slot: Four 32/33
- Compatible with IPC chassis: IPC-510, IPC-610, IPC-611, ACP-4000, ACP-4010, ACP-4320 and ACP-4360



### PCE-5B12-64C1E

- 12-slot BP for 14-slot Chassis
- Segments: 1
- One CPU card slot
- PCIe slot: One x16
- PCI-X slot: Two 64/100; Four 64/66
- PCI slot: Four 32/33
- Compatible with IPC chassis: IPC-510, IPC-610, IPC-611, ACP-4000, ACP-4010, ACP-4320, and ACP-4360



### PCE-5B13-08A1E

- 13-slot BP for 14-slot chassis
- Segments: 1
- One CPU card slot
- PCIe slot: One x16; Three x1
- PCI-X slot: N/A
- PCI slot: Eight 32/33
- Compatible with IPC chassis: IPC-510, IPC-610, IPC-611, ACP-4000, ACP-4010, ACP-4320, and ACP-4360



### PCE-5B12D-04A1E

- 12-slot BP for 14-slot chassis
- Segments: 2
- Each segment:
  - One CPU card slot
  - PCIe slot: One x16
  - PCI-X slot: N/A
  - PCI slot: Four 32/33
- Compatible with IPC chassis: ACP-4010



### PCE-5B12-07A1E

- 13-slot BP for 14-slot chassis
- Segment: 1
- One CPU card slot
- PCIe slot: One x16, Three x4
- PCI-X slot: 0
- PCI slot: Seven 32/33
- Compatible with IPC chassis: IPC-510, IPC-610, IPC-611, ACP-4000, ACP-4320, ACP-4360, ACP-4010



## 20-slot Rackmount Chassis Backplanes

### PCE-5B18-88A1E

- 18-slot BP for 20-slot chassis
- Segments: 1
- One CPU card slot
- PCIe slot: One x16
- PCI-X slot: Eight 64/66
- PCI slot: Eight 32/33
- Compatible with IPC chassis: IPC-623, ACP-5360 and ACP-7360



### PCE-5B16Q-02A1E

- 16-slot BP for 20-slot chassis
- Segments: 4
- Each segment:
  - One CPU card slot
  - PCIe slot: One x16
  - PCI-X slot: N/A
  - PCI slot: Two 32/33
- Compatible with IPC chassis: IPC-623, ACP-5360, ACP-7360



### PCE-5B12-00A1E

- 12-slot BP for 20-slot chassis
- Segments: 1
- One CPU card slot
- PCIe slot: Ten x16 and one x4
- PCI-X slot: N/A
- PCI slot: N/A
- Compatible with IPC chassis: IPC-623, IPC-622



### PCE-5B19-00A1E

- 19 slot BP for 20-slot chassis
- Segments: 1
- One CPU card slot
- PCIe slot: Seventeen X16 and One X4
- PCI-X slot: N/A
- PCI slot: N/A
- Compatible with IPC chassis: IPC-622/623

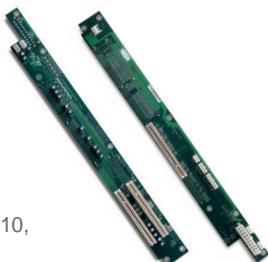


# PICMG1.0 Full-Size SBC Backplanes

## 1U Butterfly Backplanes

### PCA-6103P2V-0A2E

- Segments: 1
- Slots: 2 PCI, 1 CPU
- PCI bus: 32-bit/33 MHz
- Size: 40 x 400 mm (1.57" x 15.75")
- Ordering Information: 989K610302E
- Compatible with IPC chassis: ACP-1010, ACP-1320



## 2U Butterfly Backplanes

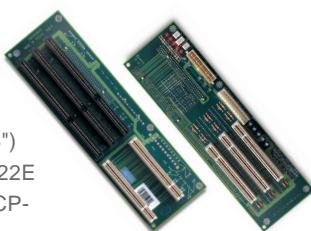
### PCA-6105P4V-0B3E

- Segments: 1
- Slots: 4 PCI, 1 PICMG
- PCI bus: 32-bit/33 MHz
- Size: 80 x 260 mm (3.15" x 10.23")
- Ordering Information: 989K610512E
- Compatible with IPC Chassis: ACP-2000, IPC-602



### PCA-6106P3V-0B2E

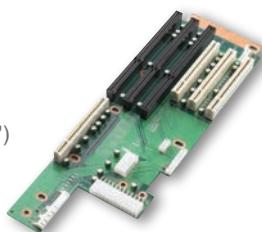
- Segments: 1
- Slots: 1 ISA, 3 PCI, 2 PICMG
- PCI bus: 32-bit/33 MHz
- Size: 80 x 260 mm (3.15" x 10.23")
- Ordering Information: 989K610622E
- Compatible with IPC Chassis: ACP-2000, IPC-602



## 5-slot PCI/ISA Backplanes

### PCA-6105P3-5A1E

- Segments: 1
- Slots: 1 ISA, 2 PCI, 1 PICMG, 1 PCI/ISA
- Size: 106.5 mm x 327.66 mm (4.19" x 12.9")
- Ordering Information: PCA-6105P3-5A1E
- Compatible with IPC Chassis: IPC-6025



## 6-slot PCI/ISA Backplanes

### PCA-6106P4-0A2E

- Segments: 1
- Slots: 4 PCI, 2 PICMG
- Size: 142 x 270 mm (5.59" x 10.63")
- Ordering Information: PCA-6106P4-0A2E
- Compatible with IPC Chassis: IPC-6806W, IPC-6806, IPC-6606, IPC-6006



### PCA-6106P3-0D2E

- Segments: 1
- Slots: 2 ISA, 2 PCI, 1 PICMG/PCI, 1 PICMG
- Size: 142 x 270 mm (5.59" x 10.63")
- Ordering Information: PCA-6106P3-0D2E
- Compatible with IPC Chassis: IPC-6806W, IPC-6806, IPC-6606, IPC-6006



## 8-slot PCI/ISA Backplanes

### PCA-6108P6-0C1E

- Segments: 1
- Slots: 1 ISA, 5 PCI, 1 PICMG/PCI, 1 PICMG
- Size: 180 x 260 mm (7.09" x 10.24")
- PCI bridge: PI7C8152BMAE
- Primary PCI: 3 slots; Secondary PCI: 3 slots
- Ordering Information: PCA-6108P6-0C1E
- Compatible with IPC Chassis: IPC-6908, IPC-6608



### PCA-6108P4-0C2E

- Segments: 1
- Slots: 3 ISA, 3 PCI, 1 PICMG/PCI, 1 PICMG
- Size: 180 x 260 mm (7.09" x 10.24")
- Ordering Information: PCA-6108P4-0C2E
- Compatible with IPC Chassis: IPC-6908, IPC-6608



# PICMG1.0 Full-Size SBC Backplanes

## 14-slot PCI/ISA Backplanes

### PCA-6114P12-0B3E

- Segments: 1
- Slots: 1 ISA, 11 PCI, 1 PICMG/PCI, 1 PICMG
- Size: 315 x 300 mm (12.4" x 11.8")
- PCI bridge: Pericom PI7C8150BMAE
- Primary PCI: 3 slots;  
Secondary PCI: 9 slots
- Ordering Information: PCA-6114P12-0B3E
- Compatible with IPC Chassis: ACP-4000, ACP-4010, ACP-4320, ACP-4340, ACP-4360, IPC-510, IPC-610, IPC-611



### PCA-6114P4-0C2E

- Segments: 1
- Slots: 8 ISA, 4 PCI, 2 PICMG
- Size: 315 x 260 mm (12.4" x 10.24")
- Ordering Information: PCA-6114P4-0C2E
- Compatible with IPC Chassis: ACP-4000, ACP-4010, ACP-4320, ACP-4340, ACP-4360, IPC-510, IPC-610, IPC-611
- When installing ACP-4320, ACP-4340, ACP-4360 and IPC-510 chassis, a 1U cooler is required.



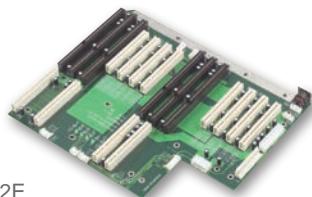
### PCA-6114-0B2E

- Segments: 1
- Slots: 14 ISA
- Size: 315 x 175 mm (12.4" x 6.89")
- Ordering Information: PCA-6114-0B2E
- Compatible with IPC Chassis: ACP-4000, ACP-4010, ACP-4320, ACP-4340, ACP-4360, IPC-510, IPC-610, IPC-611



### PCA-6113DP4-0A2E

- Segments: 2
- Slots: 2 ISA, 7 PCI, 1 PICMG/PCI, 3 PICMG
- Size: 315 x 260 mm (12.4" x 10.24")
- Ordering Information: PCA-6113DP4-0A2E
- Compatible with IPC Chassis: Only for ACP-4010
- Compatible with IPC Chassis: ACP-4010



### PCA-6114P7-0E1E

- Segments: 1
- Slots: 4 ISA, 6 PCI, 3 PICMG, 1 PCI/ISA
- Size: 315 x 260 mm (12.4" x 10.24")
- PCI bridge: PI7C8152BMAE
- Primary PCI: 3 slots;  
Secondary PCI: 4 slots
- Ordering Information: PCA-6114P7-0E1E
- Compatible with IPC Chassis: ACP-4000, ACP-4010, ACP-4320, ACP-4340, ACP-4360, IPC-510, IPC-610, IPC-611



### PCA-6113P4R-0C2E

- Segments: 1
- Slots: 7 ISA, 4 PCI, 2 PICMG
- Size: 315 x 260 mm (12.4" x 10.24")
- Ordering Information: PCA-6113P4R-0C2E
- Compatible with IPC Chassis: ACP-4000, ACP-4010, ACP-4320, ACP-4340, ACP-4360, IPC-510, IPC-610, IPC-611



### PCA-6114P10-0B2E

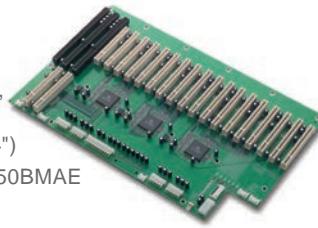
- Segments: 1
- Slots: 2 ISA, 10 PCI, 2 PICMG
- Size: 315 x 260 mm (12.4" x 10.24")
- PCI bridge: Pericom PI7C8150BMAE
- Primary PCI: 3 slots;  
Secondary PCI: 7 slots
- Ordering Information: PCA-6114P10-0B2E
- Compatible with IPC Chassis: ACP-4000, ACP-4010, ACP-4320, ACP-4340, ACP-4360, IPC-510, IPC-610, IPC-611



# 20-slot PCI/ISA Backplanes

## PCA-6120P18-0A2E

- Segments: 1
- Slots: 1 ISA, 17 PCI, 1 PICMG/PCI, 1 PICMG
- Size: 417 x 260 mm (16.42" x 10.24")
- PCI bridge: Three Pericom PI7C8150BMAE
- Secondary: 6 slot/6 slot/6 slot
- Ordering Information: PCA-6120P18-0A2E
- Compatible with IPC Chassis : IPC-623, IPC-622



## PCA-6119P7-0C1E

- Segments: 1
- Slots: 10 ISA, 7 PCI, 2 PICMG
- Size: 417 x 260 mm (16.42" x 10.24")
- PCI bridge: PI7C8152BMAE
- Primary PCI: 3 slots; Secondary PCI: 4 slots
- Ordering Information: PCA-6119P7-0C1E
- Compatible with IPC Chassis : IPC-623, IPC-622



## PCA-6120P12-0A2E

- Segments: 1
- Slots: 7 ISA, 11 PCI, 1 PICMG/PCI, 1 PICMG
- Size: 417 x 260 mm (16.42" x 10.24")
- PCI bridge: Pericom PI7C8150BMAE
- Primary PCI: 3 slots; Secondary PCI: 9 slots
- Ordering Information: PCA-6120P12-0A2E
- Compatible with IPC Chassis : IPC-623, IPC-622



## PCA-6120P4-0B2E

- Segment: 1
- Slots: 14 ISA, 4 PCI, 2 PICMG
- Size: 417 x 260 mm (16.42" x 10.24")
- Ordering Information: PCA-6120P4-0B2E
- Compatible with IPC Chassis : IPC-623, IPC-622



## PCA-6120Q-0B2E

- Segment: 4
- Slots: 5-5-5-5 ISA
- Size: 417 x 200 mm (16.42" x 7.87")
- Ordering Information: PCA-6120Q-0B2E
- Compatible with IPC Chassis : IPC-623, IPC-622

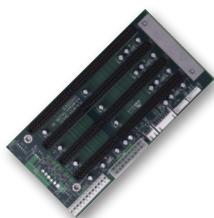


# Half-Size SBC Backplanes

## ISA Half-size SBC Backplanes

### PCA-6104-0C2E

- Segments: 1
- Slots: 4 ISA
- Size: 94.7 x 186 mm (3.7" x 7.3")
- Ordering Information: PCA-6104-0C2E



### PCA-6106-0B2E

- Segments: 1
- Slots: 6 ISA
- Size: 142 x 175 mm (5.59" x 6.89")
- Compatible with IPC-6806S, IPC-6006S, 3026
- Ordering Information: PCA-6106-0B2E



### PCA-6108E-0C2E

- Segments: 1
- Slots: 8 ISA
- Size: 180 x 190 mm (7.09" x 7.48")
- Compatible with IPC-6908
- Ordering Information: PCA-6108E-0C2E



### PCA-6108-0B2E

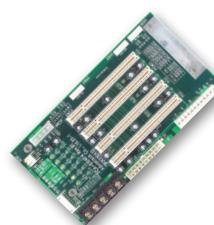
- Segments: 1
- Slots: 8 ISA
- Size: 222 x 171 mm (8.74" x 6.73")
- Only for commercial PC chassis (baby AT size)
- Ordering Information: PCA-6108-0B2E



## PCI Half-size SBC Backplanes

### PCA-6104P4-0B2E

- Segments: 1
- Slots: 4 PCI
- Size: 110 x 180 mm (4.3" x 7")
- Ordering Information: PCA-6104P4-0B2E



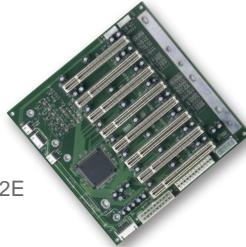
### PCA-6105P5-0B2E

- Segments: 1
- Slots: 5 PCI
- Size: 143 x 155 mm (5.6" x 6")
- Compatible with ACP-4D00, IPC-6806S, IPC-6006S, IPC-3026
- Ordering Information: PCA-6105P5-0B2E



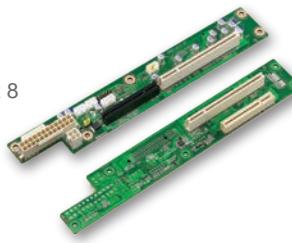
### PCA-6108P8-0A2E

- Segments: 1
- Slots: 8 PCI
- Size: 182 x 185 mm (7.2" x 7.3")
- Compatible with IPC-6908
- Ordering Information: PCA-6108P8-0A2E



### PCI-7103P1V-01A1E

- Segments: 1
- Slots: 1 PCI, 1 PCIe x 4 (in PCIe x 8 slot)
- Size: 252 x 41 mm (9.9" x 1.6")
- Compatible with IPC-120 chassis
- Compatible with PCI-7031DF and PCI-7032F CPU cards
- Ordering Information: PCI-7103P1V-01A1E



# PICMG 1.3 Half-size SHB Backplanes

## PCE-3B03-00A1E

- 3 slot backplane for 6-slot chassis
- Segments:1
- One CPU card slot
- PCIe slot: One x16, One x4
- Size: 142 x 176 mm
- Compatible with ACP-4D00, IPC-6806S, IPC-3026
- Ordering information: PCE-3B03-00A1E



## PCE-3B06-00A1E

- 6 slot backplane for 6-slot chassis
- Segments:1
- One CPU card slot
- PCIe slot: One x16, four x1
- Size: 142 x 176 mm
- Compatible with ACP-4D00, IPC-6806S, IPC-3026
- Ordering information: PCE-3B06-00A1E



## PCE-3B06-03A1E

- 6 slot backplane for 6-slot chassis
- Segments:1
- One CPU card slot
- PCIe slot: One x16, One x1
- PCI slot: Three 32/33
- Size: 142 x 176 mm
- Compatible with ACP-4D00, IPC-6806S, IPC-3026
- Ordering information: PCE-3B06-03A1E



## PCE-3B06-02A1E

- 6-slot backplane for 6-slot chassis
- Segments:1
- One CPU card slot
- PCIe slot: One x16, Two x1
- PCI slot: Two 32 bit/33MHz
- Size: 142 x 176 mm
- Compatible with ACP-4D00, IPC-6806S, IPC-3026
- Ordering information: PCE-3B06-02A1E



## PCE-3B03A-00A1E

- 3 slot backplane for compact-sized wall-mount chassis
- Segments:1
- One CPU card slot
- PCIe slot: One x16, One x4
- Size: 173 x 86.3 mm
- Compatible with IPC-3012
- Ordering information: PCE-3B03A-00A1E



## PCE-3B03-01A1E

- 3 slot backplane for compact-sized wall-mount chassis
- Segments:1
- One CPU card slot
- PCIe slot: One x16
- PCI slot: One 32 bit/33MHz
- Size: 173 x 86.3 mm
- Compatible with IPC-3012
- Ordering information: PCE-3B03-01A1E



## PCE-3B12-08A1E

- 12-slot backplane for 14-slot half-sized chassis
- Segments:1
- One CPU card slot
- PCIe slot: One x16, Two x1
- PCI slot: Eight 32 bit/33MHz
- Size: 315 x 185 mm
- Compatible with IPC chassis: ACP-4020
- Ordering information: PCE-3B12-08A1E



## PCE-4B13-08A1E

- 13-slot backplane for 14-slot half-sized chassis
- Segments: 1
- One CPU card slot
- PCIe slot: Two x8, Two x1
- PCI slot: Eight 32 bit/33MHz
- Size: 315 x 185 mm
- Compatible with IPC chassis: ACP-4020
- Ordering information: PCE-4B13-08A1E



## PCE-4B12-03A1E

- 12-slot backplane for 14-slot half-sized chassis
- Segments:1
- One CPU card slot
- PCIe slot: One x8, Four x4, Three x1
- PCI slot: Three 32 bit/33MHz
- Size: 315 x 185 mm
- Compatible with IPC chassis: ACP-4020
- Ordering information: PCE-4B12-03A1E



## PCE-4B13-00A1E

- 13-slot backplane for 14-slot half-sized chassis
- Segments: 1
- One CPU card slot
- PCIe slot: One x8, Eleven x4
- PCI slot: N/A
- Size: 315 x 243.84 mm
- Compatible with IPC chassis: ACP-4020
- Ordering information: PCE-4B13-00A1E



# IVS Platform Structure



## Intelligent Video Analytics (IVA)

<b>Forbidden Zone</b> Alarms when intrusions occur in one or more predefined forbidden zones.	<b>Demographics</b> Apply to retail, finance, and hospitality. Identify individuals by age and gender.	<b>People Counting</b> Calculates when people are passing through a certain area by counting faces.	<b>Dwell Time &amp; Loitering</b> Ensure safe environments for tracking suspicious persons.
<b>Camera Tamper</b> Trigger alarms when the camera lens are covered, sprayed, defocused, or the camera is repositioned.	<b>Motion Detection</b> Monitors the amount of motion and alerts when something changes.	<b>Optical Self Diagnostic</b> Trigger alarms when high noise video, excess/insufficient lighting or video signal losses occur.	<b>License Plate Recognition</b> Detects and recognizes vehicle license plates upon motion or I/O trigger.
<b>Facial Surveillance &amp; Black List</b> Scan crowds and automatically identify people by their faces that help match faces in a crowd with names on a watch list.	<b>Object Counting</b> Counting of individuals and / or vehicles for separate moving objects.	<b>Crowd Detection</b> Crowd density status of people in a specific region can be detected as over capacity indicator.	<b>Parking Vacancy</b> Detects if defined parking spaces are occupied or not by scene analysis.

**ADVANTECH**

## WebAccess/IVS

<b>Flexible Event Action Plan</b> • Flexible event action plans including alarm signal, snapshot, email/SMS notification, PTZ control, video record, file, execution and more. • Event sources include motion/sensor detection, camera signal loss, log status, backup/recording status, system status, etc.	<b>Quick Search for Event Logs</b> • Quick search for event logs including login status, remote connection status, system events, camera status, motion/sensor detection, and more. • Users can print out or save the event logs into excel or HTML files.	<b>Multiple Backup Mode</b> • Backup recorded data to hard disk, CD, DVD, Disk Array and USB without stopping video recording. • Flexible selection of backup time, camera and storage location. • Automatically calculate storage space required for backing up recorded data.	<b>Flexible and Diverse Recording Modes</b> • Supports diverse recording modes and schedules for each individual camera	<b>Powerful IE Browser Monitoring</b> • Monitor historical recorded video data and remote control for live view video, set up, and client system status monitoring through IE browser.
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## X86 Platforms



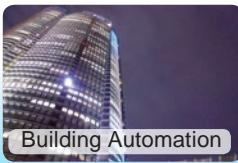
Description	Industrial 4U Hybrid Intelligent Video Surveillance System	Compact Size Hybrid Intelligent Video Surveillance System	Compact Size Fanless Intelligent Video System with RFID	Compact Size Intelligent Video Analysis System with PoE Switch	High Performance Video Recorder with PoE Switch
Features	<ul style="list-style-type: none"> <li>Supports up to 32 analog/32 D1 IP/8 megapixel IP cameras with hybrid structure</li> <li>Modularized SDK ready for CM and AP software integration</li> <li>Default 3TB HDD for 24-ch of recording for 30 Days (4CIF resolution @ 15FPS)</li> <li>Free bundled and optional intelligent video analytic software</li> </ul>	<ul style="list-style-type: none"> <li>Supports up to 8 analog, 8 D1 IP or 4 megapixel IP cameras with hybrid structure</li> <li>Free bundled and optional intelligent video analytic software</li> <li>Free bundled CMS or SDK for 3rd party CMS or AP software integration</li> <li>Supports up to 2.5" HDD</li> </ul>	<ul style="list-style-type: none"> <li>All-in-One x86-based intelligent RFID &amp; Video controller with Intel Core™ i7 Dual Core 1.7 GHz processors, flexible I/O, and dual display</li> <li>Free-bundled configurable demo software and SDK with feature-rich protocol for RFID applications</li> <li>Supports Advantech intelligent video surveillance software, PowerView, and multiple intelligent video analytic software</li> <li>Industrial grade device for harsh environment applications</li> </ul>	<ul style="list-style-type: none"> <li>Intel® Celeron® J1900 Quad Core 2.0 GHz SoC</li> <li>DDR3L 1333MHz 4GB</li> <li>Supports 1x Realtek GbE</li> <li>4 x PoE ports to support IP camera</li> <li>1 x removable 2.5" SATA HDD bay and 1 x 32G mSATA</li> <li>Supports dual independent displays: VGA and HDMI</li> <li>4 x dry contact inputs and 2 x relay outputs</li> <li>1 x serial port (RS-232/422/485)</li> <li>1 x USB 3.0 and 2 x USB 2.0</li> </ul>	<ul style="list-style-type: none"> <li>Built in high power 802.3at PoE Switch (16/24 ports)</li> <li>10/100/1000Base-T and SFP combo uplink port</li> <li>Supports Intel 4th Gen Core™ I processor (LGA1150) with - Intel Q87 chipset</li> <li>Supports two 204-pin SO-DIMM up to 16GB DDR3 1333/1600 SDRAM</li> <li>Supports four 3.5" SATA HDD up to 16TB storage</li> <li>One 2.5" SATA HDD for OS storage</li> <li>Features USB 3.0 &amp; USB 2.0</li> <li>Supports triple display of HDMI*2/VGA</li> </ul>
Model Name	ACP-4000VS	AIMC-3200VS	ARK-R12150L	NVS-300VS	NVS-500VS
Max IP Camera Support	32	8	4	4	16/24
Max. Analog Camera Support	32	8	-	0	0
Max. Resolution Support	D1@480fps / 1080p@160 fps	D1@240fps/1080p@60fps	1080p@60fps	4ch (60FPS@D1)	16ch (240FPS@D1) / 24ch (360FPS@ D1)
Compression Type	H.264				
Max. Number of HDD	3 * 3.5" HDD	2 * 2.5" HDD	64G mSATA	1* 2.5" SATA HDD 1* mSATA (32G included)	4* 3.5" SATA HDD (Up to 16TB) 1* 2.5" SATA HDD (500G included)
CPU	Intel Core i7-3770 (3.4GHz)	Intel Core i5-3550S	Intel ULV Core i7 3517UE	Intel® Celeron® J1900 Quad Core 2.0 GHz SoC	Intel Core i7
Operating System	Windows 7 Embedded				
Display	VGA + DVI Dual Display	VGA + DVI Dual Display	VGA + HDMI/DP Dual Display	VGA + DVI Dual Display	HDMI X 2 +VGA X 1 (Multi-Display)
Dimension (W x H x D)	482 x 177 x 479 mm	232 x 90 x 232 mm	264.5 x 75.1 x 133.0 mm	252 x 184 x 50 mm	430x540x44.5mm
Embedded IVA	Supported				

## Video Capture Card Series



Part Number		DVP-7635E	DVP-7637E	DVP-7640E	DVP-7650E	DVP-7630HE	DVP-7031E
Video	Compression	H/W H.264 Main Profile	SW H.264				
	Channels	4	4	8	16	4	4
	Host Interface	PCI	PCIe x1	PCIe x4	PCIe x4	PCIe x4	Mini PCIe
	Input Interface	BNC	BNC	BNC	BNC	SDI	Composite for NTSC/PAL
	Max. Display Resolution	4CIF	4CIF	4CIF	4CIF	1080p	D1
	Max. Recording Resolution	4CIF + CIF	4CIF + CIF	4CIF + CIF	4CIF + CIF	1920 x 1080p + 960 x 540p	D1
	Max. Display Rate	120/100 fps (NTSC/PAL)	120/100 fps (NTSC/PAL)	240/200 fps (NTSC/PAL)	480/400 fps (NTSC/PAL)	120/100 fps (NTSC/PAL)	30/25 fps (NTSC/PAL)
	Max. Recording Rate	120/100 fps (NTSC/PAL)	120/100 fps (NTSC/PAL)	240/200 fps (NTSC/PAL)	480/400 fps (NTSC/PAL)	120/100 fps (NTSC/PAL)	30/25 fps (NTSC/PAL)
	Dual Stream	Yes	Yes	Yes	Yes	Yes	No
Physical Characteristic	Operating Temperature	-20 ~ 70° C (-4 ~ 158° F)	-20 ~ 70° C (-4 ~ 158° F)	-20 ~ 70° C (-4 ~ 158° F)	-20 ~ 70° C (-4 ~ 158° F)	-20 ~ 70° C (-4 ~ 158° F)	-20 ~ 70° C (-4 ~ 158° F)
	Dimensions	121 x 97 mm	111 x 104 mm	166 x 111 mm	166 x 111 mm	166 x 109 mm	30 x 51 mm

# About iConnectivity



Advantech's iConnectivity group offers a full range of Industrial Communication products including wired and wireless communication solutions for mission critical applications. These products include: Industrial Ethernet Switches, Industrial Wireless AP/Client, Media Converters, Serial Device Servers, Cellular IP Gateways, and Modbus Gateways. They are also capable of securely transmitting, remotely monitoring and controlling networked devices for industrial applications. These reliable and robust industrial grade communication products from Advantech's iConnectivity group fit different applications including process manufacturing, discrete manufacturing, security, and intelligent transportation system.

## Industrial Ethernet Switches

- Unmanaged Switches
  - 10/100Mbps switches
  - 10/100/1000Mbps switches
- Layer-2 Managed Switches
  - Rack mount type
  - Din Rail type
- PoE and PoE+ Switches
  - Layer-2 managed
  - Unmanaged
- EN50155 Switches
- Layer-2 managed
  - Unmanaged
  - PoE switches
- Media Converter
  - Multi-mode
  - Single-mode
- SFP Accessorie

## Industrial Wireless Solutions

- Wireless High Power AP / Client
  - Single frequency band
  - Dual frequency band
- Serial to WI-FI Device Servers
  - 1 / 2 serial ports
  - 802.11b/g/n 2x2
- Serial to Cellular GPRS/3G IP Gateway
  - Dual-SIM
  - VPN & DDNS
- Antenna Accessories

## Serial Device Servers

- ADAM Serial Device Servers
  - Easy mounting
- Redundant Ethernet Serial Device Server
  - 1/2/4 serial port din-rail mounting
  - 8/16 serial port rack mount
- Modbus Data Gateway
  - Redundant Ethernet/Power input
  - Daisy-chain support
- USB to Serial Converter
  - RS-232/422/485 Software Selectable
- Accessories
  - RJ-45 to DB9 Cable
  - DB9 to Phoenix Connector

# Star Products

## Software



### WebAccess/NMS

**NEW**

### WebAccess/NMS

Network Management Software

## Industrial Router and Wireless AP/ Client



### EKI-1334

Industrial UMTS/HSPA+ Cellular Router

## Industrial Router and Wireless AP/ Client



### EKI-6340

IEEE 802.11 a/b/g/n Outdoor Wi-Fi AP

## Industrial Wireless AP/ Client



### EKI-6311GN

IEEE 802.11 b/g/n Wi-Fi AP/ Client



### EKI-6331AN

IEEE 802.11 a/n Wireless Access Point/ Client

## Wireless Serial Device Servers



### EKI-1361/1362

1/ 2-port RS232/ 422/ 485 to 802.11b/ g/ n WLAN Serial Device Servers



### EKI-1526/T/ 1528/T

16/8-port RS-232/422/485 Serial Device Server

## Serial Device Servers



### EKI-1524/CI/I 1522/CI/I/ 1521/CI/I

4/2/1-port RS-232/ 422/ 485 Serial Device Server

## Modbus Gateways



### EKI-1224CI//I 1222CI//I 1221CI//I

4/2/1-port Modbus Gateway

## Industrial Ethernet Managed Switches



### EKI-7710E-2C / 7710G-2C Series

8FE+2G / 8G+2G Port Gigabit Managed Redundant Industrial Switch



### EKI-9316/ 9312

16/12 Port Full Gigabit Managed DIN Rail Switch

## Proview Series Ethernet Switches



**NEW**

### EKI-5728/ 5725/ 5528/ 5525

8-port/ 5-port Fast and Gigabit ProView Series Ethernet Switch



**NEW**

### EKI-5629CI/ 5626CI

8FE/16FE + 2GE Combo Ethernet ProView Switch w/Wide Temperature

## Industrial Ethernet Unmanaged Switches



### EKI-2728/2725/2528/2525

8-port/ 5-port Fast and Gigabit Unmanaged Ethernet Switch



### EKI-3541M/ 3541S/ST

10/100T (X) to Multi/ Single-Mode SC/ST Type Fiber Optic Media Converter

## Power Over Ethernet (PoE) Switches



**NEW**

### EKI-7710E-2CP / 7710G-2CP Series

8FE+2G / 8G+2G Port Gigabit Managed Redundant Industrial PoE+ Switch



**NEW**

### EKI-7659CPI

8+2G Port Gigabit Managed Industrial PoE Switch w/Wide Temperature



**NEW**

### EKI-9316P/ 9312P

16/12 Port Managed DIN Rail Switch with PoE/PoE+



**NEW**

## EN50155 Compliant Switches



### EKI-7624E-PI

EN-50155 M12 Managed Ethernet Switch

# About Intelligent Service

The Internet of Things (IoT) and cloud computing technology are driving the next paradigm shift and helping build the foundations of the Intelligent Planet. Following global trends in urbanization, smart cities will flourish with innovative services and with interconnected and integrated devices, marking a significant change in the mode of operation in the industry. Advantech's Intelligent Service Group aims to enable smarter cities by providing products and solutions for different vertical markets such as Digital Logistics & Fleet Management, Healthcare, and Retail. The key to the future of intelligent services is the ability to shape the industry ecosystem through fruitful collaboration with key partners. Advantech Intelligent Service Group is now offering a Solution Ready Package (SRP) business model to targeted markets that will create higher value and help drive the industry onwards.



# Digital Logistics and Fleet Management

## One Stop Shopping for Mobile Computing Solutions

Advantech in-vehicle computing solutions provide a wide range of products for a variety of vertical markets such as fleet management, public transportation, warehousing, intra-logistic, ports, construction, mining, agriculture applications. Advantech offers integrated solutions for all aspects of in-vehicle computing: systems that work under a wide range of temperatures; certified power systems (ISO 7637-2, E-mark); x86 and RISC-based architectures; a full suite of RF protocols; standardized vehicle diagnostic tools; rich I/O connectors; vibration and shock resistance (SAE J1455, MIL-STD-810G, 5M3); and a comprehensive software developer kit to facilitate application development, speeding up time-to-market for system integrators, and helping reduce costs.

### Fleet Management

Advantech fleet management solutions help promote safety, efficiency, and profitability by capturing real-time data about cargo, trucks, deliveries and workers. They ultimately increase productivity and lower operating costs by delivering information about who is driving what, where, and when.

### Public Transportation

Advantech fulfills requirements for bus fleets with rugged designed in-vehicle computers. Vehicles equipped with these computers can proactively monitor vehicle diagnostics and deliver real-time communications and information to the driver and central office. These systems dramatically enhance safety for passengers and drivers.

### Off-road and Heavy Duty

Advantech's vehicle mounted computer systems placed in off-road & heavy duty vehicles must be rugged in design, and able to operate in extreme conditions. These systems assist personnel with asset management and real-time monitoring and communications.

### Intra-logistics and Warehousing

With the integration of mobile data capture technology and WMS (Warehouse Management System) software, Advantech logistics & warehousing solutions help customers better control their supply chains and inventories, allowing them to move products faster while saving time and increasing productivity.

## Product Solutions



**TREK-773**  
7" x86 All-in-one  
Aluminum Mobile  
Data Terminal

### In-vehicle Computers



**TREK-674**  
In-vehicle  
Surveillance with  
Fleet Management  
Computing Box



**DLT-V8310**  
Fully-rugged  
Vehicle Mounted  
Terminal



**XMT-5**  
Heavy-duty  
Vehicle Mounted  
Terminal

### Industrial Portable Computers



**PWS-870**  
10.1" Rugged  
Tablet PC



**PWS-470**  
5" Android-Based  
Handheld

# All-in-one Mobile Data Terminals



Model Name		TREK-722/723	TREK-773
System	Processor	TI AM3703 Cortex-A8 800MHz (AM3715 1GHz is optional)	Intel® Atom E3826 (Dual Core, 1.46 GHz)
	Memory	On board 256MB mDDR (512MB is optional)	1 x SO-DIMM socket Up to 4GB DDR3L-1066,(Default configuration: 2GB)
	Storage	On board 2GB eMMC 1x SD slot (externally accessible)	1 x CFast slot for OS 1 x push-push type SD slot
	Watchdog	Yes	Yes
	RTC	Yes	Yes
OS	Windows	WinCE 6.0	WE8S (32-bit)
	Linux	N/A	Linux Ubuntu 14.04(32-bit)
	Android	Android 4.0	N/A
RF	GNSS	GPS uBlox LEA-6S	GPS uBlox M8Q/M8W
	WLAN	TREK-722: N/A TREK-723: 802.11 b/g/n (shared interface with BT) with internal antenna	802.11 a/b/g/h
	BT	Module, Class 2.0 (shared interface with WLAN) with internal antenna	Bluetooth V4.0 LE,
	WWAN	GPRS/CDMA/HSPA+	LTE, HSPA+, GSM/GPRS/ EDGE, EV-DO Rev A1, 1xRTT
	Voice call	N/A	N/A
	Wakeup by WWAN	Yes	Yes
	SIM	Single SIM	Single SIM
	Antenna	SMA (x2): 1x Cellular, 1x GPS	SMA (x5): 2x Cellular, 1x GPS, 2x WLAN
Display	Size/Type	TREK-722: 5" (16:9) TFT LCD TREK-723: 7" (16:9) TFT LCD	7" (16:9) TFT LCD
	Max. Resolution	800 x 480	800 x 480
	Brightness (cd/m²)	400 nits With TS 325 nits	500 nits
	"Viewing Angle (R/L/B/T)"	70° / 70° / 70° / 50°	85° / 85° / 85° / 85°
	Backlight Life	20,000 hrs	30,000 hrs
Touchscreen		4-wire resistive type	4-wire resistive type
Brightness Control		Light sensor for auto dimming	Light sensor for auto dimming 2x hotkeys for brightness control
Function Key		5x programmable with green light	5x programmable with green light
I/O	Vehicle I/O Port	1x J1708	1x J1708 (with J1587 support)
		1x CAN 2.0 (with J1939 support)	1x CAN 2.0 (Supports Raw CAN, J1939, OBD-II/ISO 15765 FW configurable )
	Generic I/O Port	Isolated 2x DI / 2x DO	Isolated 4x DI / 4x DO
		2x 4-wire RS-232	1x Full RS232 1x RS485 with auto flow control
		1x CVBS in	1x CVBS in
		1x Mic-in	1x Mic-in
		1x Line-Out	1x Line-In/1x Line Out
	Standard I/O Port	2x USB2.0 Host 1x USB2.0 Client	1x USB 2.0 Host 1x USB 3.0 Host
		N/A	1x Giga LAN
Car Power Design	Indicators	N/A	1x LED (PWR)
	Power Button	N/A	Yes
	Reset Button	Yes	Yes
	Voltage input	6-36 VDC	9~32 VDC (18-58 VDC is optional)
Environment	Power Regulation	E-mark, ISO 7637-2, SAE J1455, SAE J1113	E-mark, ISO 7637-2, SAE J1455, SAE J1113
	IP Rating	IP54 (without I/O)	IP54 with I/O cover
	Operating Temperature	TREK-722: -20° C ~ 60° C TREK-723: -30° C ~ 70° C	-30° C ~ 60° C
Certifications	Shock / Vibration	MIL-STD-810G, EN60721-3-5 (5M3)	MIL-STD-810G, EN60721-3-5 (5M3)
	EMC/Safety	CE, FCC, UL/cUL, CCC	CE, FCC, UL/cUL, CCC, CB
Physical	RF/Carrier	PTCRB	N/A
	Dimensions (W x H x D)	TREK-722: 165 x 115 x 43 mm TREK-723: 213 x 145 x 45 mm	255.7 x 161 x 56 mm
	Weight	TREK-722: 650g TREK-723: 850g	2.2KG

# Smart Display



Model Name		TREK-303RH	TREK-303DH	TREK-306DH
Design Compatible Models		Paired with TREK-5xx/TREK-6xx	Paired with TREK-5xx/TREK-6xx	Paired with TREK-5xx/TREK-6xx
Display	Size/Type	7" (16:9) TFT LCD	7" (16:9) TFT LCD	10.4" (4:3) TFT LCD
	Max. Resolution	800 x 480	800 x 480	1024 x 768
	Brightness (cd/m <sup>2</sup> )	500 nits With TS 400 nits	500 nits With TS 400 nits	400 nits With TS 325 nits
	Viewing Angle (R/L/B/T)	70° / 70° / 60° / 60°	70° / 70° / 60° / 60°	89° / 89° / 89° / 89°
	Backlight Life	50,000 hrs	50,000 hrs	50,000 hrs
Touchscreen		4-wire resistive type	4-wire resistive type	5-wire resistive type
Brightness Control		Light sensor for auto dimming 2x hotkeys for brightness control	Light sensor for auto dimming	Light sensor for auto dimming
Function Key		5x programmable with green light	5x programmable with green light	5x programmable with green light
I/O Ports	Power Button	Yes	Yes	Yes
	Reset Button	Yes	Yes	Yes
	USB Port	1x USB 2.0 Type A (Front side)	1x USB 2.0 Type A (Rear side)	1x USB 2.0 Type A (Rear side)
	Smart Display Port	36-pin locking type connector paired with TREK box	36-pin locking type connector paired with TREK box	36-pin locking type connector paired with TREK box
Audio		1x 2-watt speaker	2x 2-watt speaker	2x 2-watt speaker
Power		Powered by TREK-5xx/6xx	Powered by TREK-5xx/6xx	Powered by TREK-5xx/6xx
Environment	IP Rating	IP54 (with IO cover)	IP54 (with IO cover)	IP55 (with IO cover)
	Operating Temperature	-30° C ~ 70° C	-30° C ~ 70° C	-30° C ~ 70° C
	Shock / Vibration	MIL-STD-810G	MIL-STD-810G	MIL-STD-810G, EN60721-3-5 (5M3)
Certifications		CE, FCC, UL/cUL, CCC	CE, FCC, UL/cUL, CCC	CE, FCC, UL/cUL, CCC
Physical	Dimensions (W x H x D)	244 x 160 x 41 mm	212.75 x 141.85 x 35 mm	303 x 226 x 35 mm
	Weight	0.8 KG	0.76 KG	1.7 KG
	Mounting	RAM mount	RAM mount	VESA mount, RAM mount

# In-vehicle Box Computers



Model Name		TREK-520	TREK-570	TREK-674	TREK-688
System	Processor	TI AM3703 Cortex-A8 800MHz (AM3715 1GHz is optional)	Intel-I E3826 (2C, 1.46GHz)	Intel-I E3827 (2C, 1.75GHz)	Intel® Core™ i7-4650U Dual Core, 3.4GHz (i3-4010U & i5-4300U by project support)
	Memory	On board 512MB mDDR (1GB is optional)	DDR3L 2GB (8GB Max), SO-DIMM	DDR3L 2GB (8GB Max), SO-DIMM	DDR3L 4GB (8GB Max), SO-DIMM
	Storage	1x SD slot (internal) 1x SD slot (externally accessible)	1x mSATA (internal); 1x SD card (internal)	1x CFast (externally accessible) 1x SSD (externally accessible)	1x CFast (externally accessible); 2x HDD/SSD (externally accessible); 1x mSata (internal, Optional)
	Watchdog	Yes	Yes	Yes	Yes
OS	RTC	Yes	Yes	Yes	Yes
	Windows	WinCE 6.0	WES 7 /WE8 S	WES 7 /WE8 S	Windows 7 Pro (WES 7, WE8 S is by Project-based)
RF	Linux	Embedded Linux	Fedora 18 (Kernel 3.8.0)	Fedora 18 (Kernel 3.8.0)	Fedora 18 (Kernel 3.8.0)
	GNSS	GPS GlobalSat EB-5662RE	GPS uBlox MAX-M8Q (Max-M8W is by Project-based)	GPS uBlox LEA-6S (Max-M8W or LEA-6R (Dead-Reckoning) is by Project-based)	GPS uBlox MAX-M8W
	WLAN				
	BT	WiFi+BT Class 1.5 combo module (802.11 b/g/n)	WiFi 802.11 a/b/g/n + BT Class 2 combo module	WiFi 802.11 a/b/g/n + BT Class 2 combo module	WiFi 802.11 a/b/g/n + BT Class 2 combo module
	WWAN	CDMA/HSPA+	CDMA/HSPA+/LTE	CDMA/HSPA+ (LTE by Project-based)	CDMA/HSPA+/LTE
	Voice call	Yes (optional)	Yes (optional)	Yes (optional)	Yes (optional)
	Wakeup by WWAN	Yes	Yes (optional)	Yes (optional)	Yes (optional)
Video Output	SIM	Single SIM	Dual SIM	Dual SIM	Dual SIM
	Antenna	SMA (x4): 1x Cellular, 1x GPS, 2x WLAN+BT	SMA (x5): 2x Cellular, 1x GPS, 2x WLAN+BT	SMA (x5): 2x Cellular, 1x GPS, 2x WLAN+BT	SMA (x4): 1x WLAN, 1x GPS, 2x WWAN
Video Surveillance	Digital	Smart Display Port (18 bits LVDS)	Smart Display Port (18 bits LVDS)	Smart Display Port (18 bits LVDS)	Smart Display Port (18 bits LVDS)
	Analog	N/A	1x VGA	1x VGA	1x VGA
	HDMI	N/A	1x HDMI	N/A	1x HDMI
Vehicle I/O	Video Input	N/A	N/A	8-ch Video inputs	16ch Video inputs (D1,30fps per channel, total 480fps)
	Audio Input	N/A	N/A	4-ch mono Audio inputs	8-ch mono Audio inputs
I/O	Vehicle I/O Port	1x J1708 (with J1587 support) 1x CAN 2.0 (with J1939 support) 1x ODB-II (with ISO 15765 support)	1x J1708 (with J1587 support) 2 x CAN Bus (Supports Raw CAN, J1939, OBD-II/ISO 15765; FW configurable) 1 x RS-485	1x J1708 (with J1587 support) 2 x CAN Bus (Supports Raw CAN, J1939, OBD-II/ISO 15765; FW configurable) 1 x 4-wire Dead-Reckoning Interface (Optional)	1x J1708 (with J1587 support) 2 x CAN Bus (Supports Raw CAN, J1939, OBD-II/ISO 15765; FW configurable) 1 x 4-wire RS-232/422/485 (Default RS-485, by software setting)
	Generic I/O Port	Isolated 2x DI / 2x DO	4 x Isolated DI (Dry Contact) 4 x Isolated DO (Open collector output, relay driver, up to 48V/ 150mA)	4 x Isolated DI (Dry Contact) 2 x Isolated DO (Open collector output, relay driver, up to 48V/ 150mA)	4 x Isolated DI (Dry Contact) 4 x Isolated DO (Open collector output, relay driver, up to 48V/ 150mA)
		1x Full RS232	2x 4-wire RS-232	1x RS485 with auto flow control	2 x 4-wire RS-232
		N/A	1x CVBS in	N/A	N/A
		1x Mic-in	1x Mic-in	1x Mic-in	1x Mic-in
		1x Line-Out	1x Line-Out	1x Line-Out	1x Line-Out
	Standard I/O Port	1x Full RS232	1 x High Speed Full RS-232, DB-9 (Pin 9 = Ring; 12V/5@ 0.5A, is BOM optional by jumper setting)	1 x High Speed Full RS-232, DB-9 (Pin 9 = Ring; 12V/5@ 0.5A, is BOM optional by jumper setting)	1 x High Speed Full RS-232, DB-9 (Pin 9 = 12V@ 0.5A, 5V is BOM optional by jumper setting)
		N/A	N/A	1x USB 3.0 (Front side)	1 x USB 2.0 Type A (Front side)
		1x USB2.0 Host 1x USB2.0 Client	1x USB 3.0 Host 1x USB 2.0 Host (Rear side, with cable clip)	2x USB 2.0 Host (Rear side, with cable clip)	2 x USB 3.0 Type A (Rear side, with cable clip)
	Indicators	4x LED (PWR, GPS, WWAN, WLAN)	5x LED (PWR, Storage, WLAN, WWAN, GPS)	5x LED (PWR, Storage, WLAN, WWAN, GPS)	6x LED (PWR, Storage, WLAN, WWAN, GPS, Network connection)
	Sensors	3-axis G-Sensor	3-axis G-Sensor	3-axis G-Sensor	3-axis G-Sensor
Car Power Design	Power Button	N/A	N/A	N/A	N/A
	Reset Button	Yes	Yes	Yes	Yes
	Voltage input	6-32 VDC (ISO 7637-2, SAE J1455, SAE J1113 compliant)	6-32 VDC (ISO 7637-2, SAE J1455, SAE J1113 compliant)	9-32 VDC (ISO 7637-2, SAE J1455, SAE J1113 compliant)	9-32 VDC (ISO 7637-2, SAE J1455, SAE J1113 compliant)
	Power Regulation	E-mark (E13)	E-mark (E13)	E-mark (E13)	E-mark (E13)
Environment	IP Rating	IP30 IP54 with IP protection box	IP30; (Optional: IP54 with I/O cover)	IP30; (IP31 by Project-based)	IP30
	Operating Temperature	-30° C ~ 70° C	-30° C ~ 70° C	-30° C ~ 70° C	-30° C~55° C
	Shock / Vibration	MIL-STD-810G, EN60721-3-5 (5M3)	MIL-STD-810G, EN60721-3-5 (5M3)	MIL-STD-810G, EN60721-3-5 (5M3)	MIL-STD-810G, EN60721-3-5 (5M3)
Certifications	EMC/Safety	CE, FCC, UL/cUL, CCC	CE, FCC, UL/cUL, CCC	CE, FCC, UL/cUL, CCC	CE, FCC, UL/cUL
	RF/Carrier	PTCRB, AT&T, Verizon	PTCRB	N/A	N/A
Physical	Dimensions (W x H x D)	205 x 47 x 135 mm 240 x 54 x 200 mm with IP protection box	230 x 72 x 118 mm	294 x 73 x 184 mm	346 x 92.5 x 196.2 mm
	Weight	900 g 1.2 KG with IP protection box	1.45 KG	3.5 KG	5.9 KG

# Vehicle Mount Computers



Model Name		XMT5	MTC6	DLT-V83
System	CPU	Marvell PXA320 up to 806 MHz	AMD Dual Core G-T40E, 1.0GHz	Intel Atom D525 Dual Core 1.8 GHz Intel® Core™ i5-4300U
	Memory	256 MB SDRAM / 256 MB Flash	2 GB with AMD CPU	2 GB or 4 GB
	Storage	Extended memory (SDHC) for backup and restore	Starting at 4 GB CFast media	Starting at 4 GB Cfast media 2.5" SSD with 128 GB
Housing		Coated aluminium, fanless design	Coated aluminium, fanless design	Coated aluminium, fanless design
Dimensions/Weight		XMT 5/7: 158 x 289 x 71 mm; 6.2 x 11.4 x 2.8 in, 2.2 kg / 4.8 lbs XMT 5/10: 285 x 230 x 82 mm, 11.2 x 9.1 x 3.2 in, 3.0 kg / 6.6 lbs	MTC 6/10: 285 x 229 x 78 mm, 3 kg / 11.2 x 9.0 x 3.1 in, 6.6 lbs MTC 6/12: 325 x 258 x 79 mm, 3.5 kg / 12.8 x 10.1 x 3.1 in, 7.7 lbs MTC 6/15: 388 x 305 x 82, 4.9 kg / 15.3 x 12.0 x 3.2 in, 10.78 lbs	DLT-V8310: 289 x 233 x 88 mm / 11.4 x 9.2 x 3.5 in, 4.3 kg / 9.5 lbs DLT-V8312: 328 x 263 x 93 mm / 12.9 x 10.4 x 3.7 in, 5.5 kg / 12.1 lbs DLT-V8315: 390 mm x 313 mm x 98 mm / 15.4 x 12.3 x 3.9 in, 6.2kg / 13.7 lbs
Display		7" LED, WVGA 800 x 480, convertible design: portrait and landscape use 10.4" LED, SVGA 800 x 600	10.4" LED, SVGA 800 x 600 12.1" LED, XGA 1024 x 768 15" LED, XGA 1024 x 768	10.4", XGA 1024 x 768 12.1", XGA 1024 x 768 15.0", XGA 1024 x 768
Touchscreen		DLoG-specific resistive touchscreen	DLoG-specific resistive touchscreen	DLoG-specific resistive touchscreen, 10", and 12" w. defroster options Capacitive multi-touch (CPT) for 10", 12" and 15" terminals
Software	Operating System	MS Windows CE 6.0	MS Windows XP Professional, XP Embedded, WES 7, Win 7 Pro, WES 2009 Additional OS: MS WE8S, WE 8.1 Ind Pro, Linux	MS Windows XP Professional, WES 7, WES 2009, Win 7 Pro, or Linux Additional OS: MS WE8S, WE 8.1 Ind Pro
	Emulation	VT100, VT220, IBM 5250, TN 3270, Citrix ICA Client, RDP Client	VT100, VT220, IBM 5250, TN 3270, Citrix ICA Client, RDP Client	VT100, VT220, IBM 5250, TN 3270, Citrix Client, Freefloat Access One
Communication	WLAN	IEEE 802.11 a/b/g/n with diversity antenna, optional, Bluetooth 2.1	IEEE 802.11 a/b/g/n with diversity antenna, optional	IEEE 802.11 a/b/g/n with diversity antenna optional, Bluetooth 2.1
	WWAN	GGSM, GPRS, EDGE, UMTS, HSPA	-	WWAN (GSM, GPRS, EDGE, UMTS, HSPA), optional for 10" and 12" terminals
	GPS	A-GPS, accuracy 2.5 m (CEP), optional	-	GPS, optional for 10" and 12" Terminals
	CAN Bus	optionally; ID: CAN 2.0A, CAN 2.0B, J1939 protocol ready	-	optional
LAN		RJ-45 10/100 Mbps	RJ-45 10/100/1000 Mbps	Ethernet 10/100/1000 Mbps, optional 2nd Ethernet
Interfaces	Serial	1 x RS-232 interface, optionally 2 x RS-232 or 1 x RS-232 and 1 x RS-422/485 COM 1 optionally 5 V or 12 V	1 x RS-232, COM 1 optionally 5 V	2 x RS-232, alternatively 1 x RS-232 and RS-422/485
	USB	2 x USB 2.0 Host ; 1 x USB 2.0 Client; 1 x Service USB 2.0	1 x Service USB 2.0 2 x USB 2.0	3 x USB 2.0 1 x Service USB 2.0
	PS2	-	-	-
Ports		-	-	-
Audio/voice	DLoG Voice Kit	Integrated speaker Voice over IP (VoIP), optional	Integrated speaker Voice over IP (VoIP), optional	Integrated speaker Advantech-DLoG specific Voice Kit, optional
Power Supply	AC	-	-	110V/230VAC, 50/60Hz for DLT-V8315 optionally
	DC	12/24 or 24/48 V <sub>dc</sub> , galvanically isolated voltage drops down to 50% can be handled	12/24 V <sub>dc</sub> or 24/48 V <sub>dc</sub> , galvanically isolated voltage drops down to 50% can be handled	12/24/48 VDC, galvanically isolated voltage drops down to 50 % can be handled Uninterruptible power supply (typically 10min), optional AC power supply (110V, 230V) integrated, available for DLT-V8315 only
Environmental	IP protection class	360° IP67 and IP66 (contains IP65 and IP54)	360° IP67 and IP66 (contains IP65 and IP54)	360° IP66
	Certifications	CE/FCC Class A	CE/FCC Class B	CE Immunity Class A, Emission Class B / FCC Class B
	Operating temperature	-30 to +50 °C / -22 to 122 °F	-30 to +50 °C / -22 to 122 °F	-30 to +50 °C / -22 to +122 °F
	Relative humidity	10 to 90% @ 40 °C, non-condensing	10 to 90% at 40 °C, non-condensing	10 to 90% at 40 °C, non-condensing
	Shock/Vibration	Class 5M3 according DIN EN 60721-3-5 and MIL-STD 810F (US Highway Truck)	Class 5M3 according DIN EN 60721-3-5 and MIL-STD 810F (US Highway Truck)	Class 5M3 according to EN 60721-3-5 and US Highway Truck as MIL-STD 810F

# Industrial Tablet PCs



Model Name		PWS-770	PWS-870
Processor	CPU	Intel® Atom N2600/1.6 GHz	Intel® Core™ i3 (4010U/1.7GHz), i5 (4300U/1.9GHz), i7 (4650U/1.7GHz)
	Companion Chipset	Intel NM10	N/A
Memory		SODIMM DDRIII 2 to GB	SODIMM DDR3L 4GB/8GB
Storage		Supports mSATA SSD 32 GB ~ 128 GB	Supports mSATA SSD 32 GB ~ 256 GB
Display	Size/ Type	10.4" XGA (1024 x 768) (Transflective) LCD	10.1" HD (1366 x 768) Low reflection LCD
	Brightness (cd/m²)	300 nits LED back light	750 nits by project
Touch Panel		4-wire resistive touch panel	10-point capacitive touch
Application Buttons		1 x Power button, 3 x Function keys (F1~F3), 1 x Tablet PC keyboard, 1 x Mode key, 1 x Enter key, 2 x Activate key (S1 & S2); Activate barcode reader, camera & dimming adjustment required to control the brightness	1 x Power button, 2 x Programmable function keys (default: 1 x Home, 1 x Barcode)
I/O Ports		SIM slot (with WWAN option)	1 x SD card slot, 1 x Audio combo jack, 1 x SIM card slot, 1 x DC-in
Wireless Communication		802.11b/g/n WLAN (default); 802.11 a/b/g/n WLAN (optional); Bluetooth 4.0 class2; GPS (Optional); WWAN (Optional)	802.11 a/g/b/n/ac WLAN; Bluetooth 4.0 class 2; GPS; LTE WWAN
Data Collection Modules		CMOS 2.0M pixel Camera module (default); 5.0M pixel Camera (optional) 1D/2D Barcode; MSR; HF RFID	2.0M pixel CMOS front camera; 5.0M pixel CMOS rear camera; 1D/2D barcode; NFC RFID
Security		Fingerprint scanner (optional) TPM1.2 (optional)	Fingerprint scanner; TPM1.2; Kensington cable lock slot
Dimensions & Weight		264 x 213 x 18 mm, 1.2 kg without rubber bumper & optional devices	305 x 207 x 25~27 mm, 1.4 kg
Power	Battery	Main battery: 3S1P 11.1V 1880 mAh Hot-Swap External battery: 3S2P 11.1V 3760mAh/5000mAh	Main Battery: 4S1P 14.4V 2730mAH Hot-Swap external battery: 4S2P 14.8V 4080mAh
	DC-input	19V ± 5%	19V ± 5%
Environment	Operating Temperature	-20° C ~ 50° C	-20° C ~ 50° C
	Storage Temperature	-30° C ~ 60° C	-20° C ~ 60° C
	Operating Humidity	5% ~ 95%	5%~95%
	IP Rating	IP54	IP65
	Drop	4 foot drop onto plywood	
	Vibration	MIL-STD-810G 516.5 Precedure VI	
OS		Windows 7 Professional /Embedded	Windows Embedded 8.1 Industry Pro/8.0 Standard
Certifications		CE, FCC, CCC, BSMI, C-Tick, UL, CB, PTCRB	CE, FCC, CCC, UL, CB, PTCRB
Accessories		AC adaptor (19V, 65W) Stylus (default), Vehicle docking station, Desk docking station VESA mounting bracket Carrying bag, Hand strap 2nd battery	AC adaptor (19V, 65W), Capacitive pen, Vehicle docking station, Desk docking station, Universal cover, External battery, Multiple battery charger, Extension module, Wall Mount

Model Name		PWS-770 Vehicle Docking Station	PWS-870 Vehicle Docking Station
IO connectors	RF	U-blox 6 GPS module	-
	HDC	1 x HDC connector	1 x HDC connector
	HDC Cable IO ports enhancement (Optional)	1 RS-232, 1x RS-485, 1 x Line-in &	1 RS-232, 1x CAN 2.0 AB (support J1939); OBDII (support ISO 15765) protocol,
		1 x Line-out, 2 x DI & 2 x DO	1 x Line-in & 1 x Line-out, 2 x DI & 2 x DO
	USB	2 x USB 2.0 (locking type)	2 x USB 3.0 (locking type)
	Ethernet	1 x 100/1000 LAN port (M12)	1 x 100/1000 LAN port (M12)
	SMA for GPS	1 for external GPS Antenna	1 for external GPS Antenna
	DC in	1 x Power Jack (M12) 18.5V ± 5%	1 x Power Jack (M12) 19V ± 5%
Environment	IP Rating	IP43 (with tablet docked)	IP54 (with tablet docked and all cables connected)
	Operating Temperature	-10° C ~ 50° C (Charge: 0° C ~ 40° C) with tablet	-20° C ~ 50° C (Charge: 0° C ~ 40° C) with tablet
	Storage Temperature	-40° C ~ 85° C	-40° C ~ 85° C
	Vibration/ Shock	MIL-STD-810G, Method 514.5; SAE J1455	MIL-STD-810G, Method 514.5; SAE J1455
	EMC	CE, FCC	CE, FCC
	Safety	UL, CB	UL, CB
	Vehicle-related	E-Mark	E-Mark (E13)
	Mounting	Mounting Way	VESA (75 x 75 mm)
Weight		804g	950g
Dimensions		204.98 x 276.99 x 85.8 mm	240.5 x 280.9 x 95.4 mm

Model Name		PWS-770 Desk Docking Station	PWS-870 Desk Docking Station
External I/O Interfaces	One LAN port	One LAN port (10/100/1000)	
	-	One VGA port	
	One RS-232	One RS-232	
	Two USB 2.0 host connectors	Two USB 3.0 host connectors	
	Battery Charger for 2nd battery 11.1V 5000mAh & 3760mAh		-
	One DC-in (19 V + - 5%)	One DC-in (19 V + - 5%)	
Environment	Operating Temperature	-20° C ~ 60° C	-10° C ~ 50° C
	Storage Temperature	-40° C ~ 70° C	-20° C ~ 60° C
	Operating Humidity	10% ~ 95%	5% ~ 95%
	Certifications	CE, FCC	CE, FCC, UL, CB
Physical Size		205 x 150 x 98 mm	223.8 x 146.7 x 128.5 mm
Weight		812g	820g



# Industrial Tablet PC Peripherals

## PWS-770 Accessories



Model Name	PWS-770 Carry Bag	Hand Strap	PWS-770 VESA Mount	PWS-770 Stand
P/N	S10A-93-S10A1-001	S10A-93-S10AA-002	S10A-93-S10A6-011 (M6) S10A-93-S10A6-021 (M4)	S10A-93-S10A6-001
Material	PVC	PVC	SPCC	SECC + Rubber
Color	Black	Black	Black	Black
Dimensions	265 x 230 x 30 mm	245 x 175 x 10 mm	176 x 237 x 19 mm	207 x 117 x 12 mm
Weight	440g	85g	306g	100g
Angle	-	-	-	0~75 degree angle



Model Name	PWS-770 External Battery	PWS-770 External Battery	PWS-770 Multiple Battery Charger
P/N	PWS-770-BAT100E (11.1V 3760mAh)	PWS-770-BAT200E (11.1V 5000mAh)	PWS-770-MBC00E
IP rating	IP54 With Device	IP54 With Device	-
Dimensions	181.8 x 87.6x 18.8 mm	181.8 x 87.6x 26.8 mm	214.4 x 229.4 x 60 mm
Weight	325g	382g	1.4kg
Power input	-	-	19.5V/7.7A
Operating temperature	-	-	0° C ~ 40° C
Remark	Small	Big	1. Store & charge up to 4 external batteries 2. LEDs indicate charge status 3. Easy to fix on the table by screws

## PWS-870 Extension Modules



Model name	PWS-870 MSR & Smart Card Reader Extension
P/N	PWS-870-EXT300E
Smart Card Reader	ISO 7816 PC/SC EMV 4.0 Level 1 Supports I2C memory card, SLE4418, SLE4428, SLE4432, SLE4442, SLE4436, SLE5536, SLE6636, AT88SC1608, AT45D041 card
MSR (Magnetic Card Reader)	MagneSafe Intellishift Supports US 7810 & ISO 7811/AAMVA Card speed: 6 to 60 ips (15.4 to 12.4 cm/s) Triple DES encryption DUKPT key management
Operating temperature	-10° C ~ 50° C
Storage temperature	-20° C ~ 60° C
Dimensions	192.2 x 40.2 x 25 mm
Weight	120g

Model Name	PWS-870 UHF RFID Extension
P/N	PWS-870-EXT200E (EU) /PWS-870-EXT210E (US)
RFID output power	0.063 watt EIRP
RFID antenna type	Linear Polarization
Frequency	EU: 865 ~ 868MHz /US: 902 ~ 928MHz
Tag standard supported	EPC Class 1 Gen 2 / ISO 18000-6C
Maximum output power	+18dBm (Conductive)
Dimensions	192.2 x 40.2 x 25 mm
Weight	110g

## PWS-870 Universal Cover



model name	PWS-870 I/O Extension
P/N	PWS-870-EXT100E
Interfaces	USB 3.0 (type A, 5V/0.9A) x 1, RS-232 (D-Sub 9) x 2, 10/100/1000 Ethernet(RJ45) x 1
Dimensions	192.2 x 45.2 x 25 mm
Weight	140g

Model Name	PWS-870 Universal Cover Package
P/N	PWS-870-UCOVER00E
Material	Plastic, PVC
Color	Black
Dimensions	305 x 254.2 x 88.4 mm
Weight	500g (universal cover, hand strap and shoulder belt)
Package content	universal cover, hand strap, shoulder belt

## PWS-870 External Battery & Charger



Model Name	PWS-870 External Battery
P/N	PWS-870-BAT100E
Capacity	14.8V 4080mAh
IP rating	IP65 with PWS-870
Operating temperature	-10° C ~ 50° C (charge: 0° C ~ 40° C)
Storage temperature	-20° C ~ 60° C
Dimensions	141.2 x 106.2 x 17 mm
Weight	385g

Model Name	PWS-870 Multiple Battery Charger
P/N	PWS-870-MBC00E
Power input	19.5V/7.7A
Store and charge	Up to 4 PWS-870 external batteries/ LEDs indicate charge status
Operating temperature	0° C ~ 40° C
Dimensions	214.4 x 229.4 x 60 mm
Weight	1.4kg
Remark	Easy to fix on the table by screws

# Digital Healthcare

## Engaged with Smarter Hospitals

Medical, clinical and healthcare settings have unique requirements for electronic products in terms of sealed units, thermal and acoustic properties, electromagnetic interference control, longevity, certification, and adherence to strict rules and regulations. Certifications such as UL60601-1, EN60601-1, and ISO 13485 ensure the quality of design and manufacturing of medical devices. Advantech has been a leader in providing a wide range of certified computing systems and services for the world's largest medical technology providers for many years. We have a full roster of medical products to fit all requirements, R&D teams dedicated to medical technology research and implementation, extensive customization capabilities, and a global sales and service organization that guarantees rapid time-to-market and dedicated local support.



### Intelligent Outpatient Services

Helping to create a more patient-friendly hospital environment, Advantech offers intelligent Clinic Check-in System, Clinic Queuing System, and Interactive Information kiosk to reduce patient waiting time and expedite the patient check-in process. Furthermore, the implementation of these systems will help hospitals save cost and speed up their return on investments.



### Quality Nursing Care

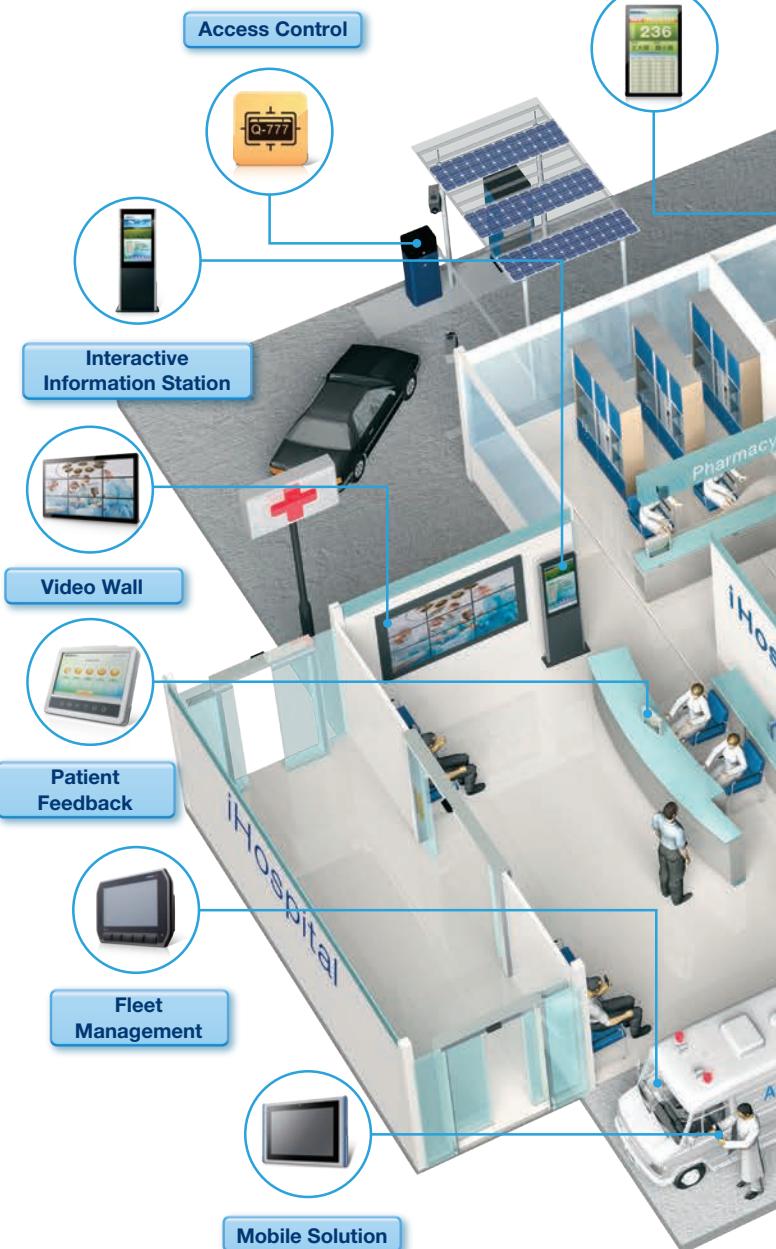
In order to enhance caregiver efficiency and the quality of care, Advantech also offers a variety of systems, including Intelligent Medication, Patient Infotainment, Telemetry Monitoring at the Point-of-Care and many more. Through these assisted technologies, we provide caregivers with solutions that ensure real-time care, as well as increasing patient safety and comfort, making the patient hospital stay as pleasant as possible.

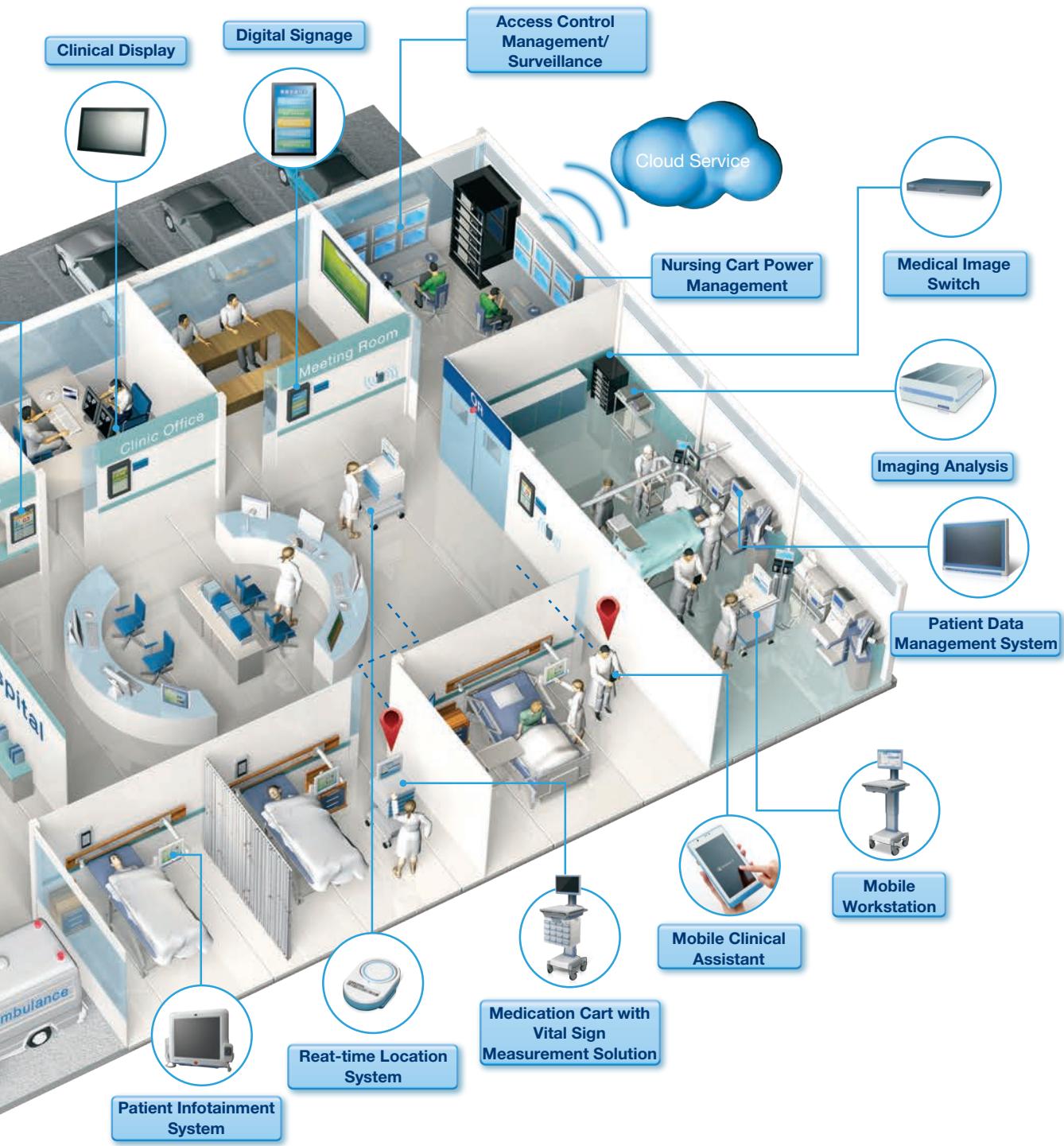


### Integrated Operating Room

Providing built-to-last medical-grade touch computers, Advantech Point-of-Care terminals are made to meet the toughest standards in the most critical medical environments such as the OR/ICU. We offer vital sign monitoring integration, medical image integration, OR Environment Monitoring, and medical asset management solutions. Our POC terminals assist doctors in making accurate clinical decisions, help nurses keep track of medical instruments, and allow technicians to maintain a suitable hospital environment.

### Clinic Queuing and Calling System





# Medical Computers



Model Name	POC-W242	POC-W212	POC-W181	
Computing Systems	Chipset	Intel QM87	Intel QM87	
	CPU	Intel® Core™ i7 4650U Intel® Core™ i5 4300U	Intel® Core™ i7 4650U Intel® Core™ i5 4300U	
	Memory	Up to 16 GB DDR3L 1600/1333 MHz SDRAM	Up to 16 GB DDR3L 1600/1333 MHz SDRAM	
	Graphics	Intel HD Graphics 5000/4400	Intel HD Graphics 5000/4400	
	Operating System	Windows 7, WIN8 Embedded Standard, Windows 8 industry Pro	Windows 7, WIN8 Embedded Standard, Windows 8 industry Pro	
Display	Size/Display Type	23.8" wide TFT color LCD (16:9)	21.5" wide TFT color LCD (16:9)	
	Max. Resolution	1920 x 1080 (H x V)	1920 x 1080 (H x V)	
	Max. Colors	16.7 M colors (6-bit+A-FRC)	16.7 M colors (RGB 6-bit + Hi-FRC)	
	Pixel Pitch (mm)	0.2745 x 0.2745	0.2475 x 0.2475	
	Viewing Angle	178°/178°	178°/178°	
	Luminance	250 cd/m²	250 cd/m²	
	LCD MTBF	30,000 hours	30,000 hours	
Expansion Slot	Contrast Ratio	1000 : 1	1000 : 1	
	PCIe	1x PCIe (x4)	1 x PCIe (x4)	
	Mini PCIe	2 (1 x full-size, 1 x half-size)	2 (1 x full-size, 1 x half-size)	
Storage	HDD/SSD	1 x 2.5" SATA or 1 x 2.5" SSD	1 x 2.5" SATA	
I/O Port	Serial Port	1 x RS-232/422/485 (isolated); 2 x RS-232 serial isolated port; 1 x RS-232 serial port (reserved)	1 x RS-232 (isolated) and 1 x RS-232/422/485 (isolated) serial port	
	USB Port	2 x USB 3.0 ports (rear) 2 x USB 2.0 ports (front) 2 x isolated USB ports (reserved)	2 x USB 3.0 ports (rear x 2); 4 x USB 2.0 ports (with side door, rear x 2, side x 2)	
	VGA/DVI Port	1 x VGA port	1 x VGA port	
	Audio	1 x 2.5" SATA or 1 x 2.5" SSD	-	
	Speakers	2 x 1W speakers	2 x 1W speakers	
	LAN	2 x Gigabit Ethernet (isolated) interfaces (RJ-45)		
	HDMI	1 x HDMI out	1 x HDMI out	
Cooling Fan	Fanless	Yes		
Power Supply	AC / DC Model	AC/DC adapter (Sinpro Model no.HPU101-107)		
	Input Voltage	90 ~ 260 V <sub>AC</sub> , 1.35 ~ 0.5 A, 47 ~ 63 Hz		
	Output Voltage	18 V <sub>DC</sub> , 5.55 A max. (100 watts)		
Optional Functions	WLAN	Integrated wireless 802.11 a/b/g/n connection & internal antenna		
	*Battery	3S2P 4200mAH, supports min. 0.5 hr backup operation	3S2P 4200mAH, supports 0.5 hr backup operation Adding the battery will prevent the PCIe card from being inserted	3S2P 4200mAH, Support up to 3 hours 36min*
	Smart Card Reader (Front)	Complies with ISO7816-1,2,3,T=1 and T=0 protocol		
	RFID	13.56 MHz with ISO-15693 & ISO-14443A/B certifications and active tag function	-	
	Bluetooth	Bluetooth v4.0	Integrated Bluetooth v4.0	Integrated Bluetooth v2.0 + EDR
Optional Touchscreen Features	Type	Analog Resistive (AG)	Projected Capacitive 10-points (AR)	Analog Resistive (Clear & AG)
	Light Transmission	80±3%	90±3%	80±3%
	Controller	USB interface	USB interface	USB interface
	Durability	>100 million touches	3.5 million touches	>50 million touches
IP Rating	Front Panel	IP65		
	Whole System	IP-54, Alcohol resistance for cleaning purposes		
Certifications	CE	Yes		
	FCC	Yes		
	*EN60601-1	Yes		
	*UL 60601-1	Yes		
	*CCC	Yes		
Environment	Temperature	0 ~ 40° C (32 ~ 104° F) (Operating)		
	Humidity	10 - 95% @ 40° C (non-condensing)		
	Shock Resistance	20G peak acceleration (11ms duration)		
Physical Characteristics	Dimensions (W x H x D)	583 x 386 x 69 mm (22.95" x 15.19" x 2.71")	550 x 360 x 65 mm (21.65" x 14.17" x 2.56")	454 x 304 x 56 mm (17.87" x 11.97" x 2.20")
	Weight	7.95 kg (17.52 lb)	6.9 kg (15.2 lb)	5.8 kg (12.76 lb)
	VESA Mounting	VESA 75/100 mm		

\* Test results by Passmark BatteryMon V2.1 with a minimum of peripherals connected



Model Name		POC-W152	POC-S198	POC-128
Computing Systems	Chipset	Intel QM87	Intel QM67	-
	CPU	Intel® Core™ i7-4650U Processor Intel® Core™ i5-4300U Processor Intel® Core™ i3-4010U Processor Intel® J1900 Processor	Intel® Core™ i7-3555LE Processor	Intel® Celeron® J1900 Processor
	Memory	Up to 16 GB DDR3L 1600 MHz	Up to 16 GB DDR3 1600 MHz SDRAM	Up to 8 GB DDR3L 1600MHz
	Graphics	LVDS	Integrated Intel HD Graphics	LVDS
	Operating System	Win8 Embedded Standard, Windows 8 Industry Pro	XPP, Win 7	Win 7, Win 8.1
Display	Size/Display Type	15.6" TFT-color LCD (16:9)	19" TFT-color LCD (4:3)	12.1" TFT LCD (4:3)
	Max. Resolution	1366 x 768 (H x V)	1280 x 1024 (H x V)	1024 x 768 (H x V)
	Max. Colors	16.7 M colors (6-bits+A-FRC)	16.7 M colors	16.2 M colors (8-bit+A-FRC)
	Pixel Pitch (mm)	0.252 x 0.252	0.294 x 0.294	0.240 x 0.240
	Viewing Angle	160°/160°	178°/178°	160°/140°
	Luminance	300 cd/m²	300 cd/m²	600 cd/m²
	LCD MTBF	-	50,000 hours	-
Expansion Slot	PCIe	Haswell: 1 x PCIe (x4) Baytrail: 1 x PCIe (x1)	-	1 x PCIe (x4)
	Mini PCIe	2	1	-
	Storage	1 x 2.5" SATA	1 x 2.5" SATA	1 x 2.5" SATA
I/O Port	Serial Port	1 x RS-232/422/485 serial port	1 x RS-232 (isolated) 1 x RS-232/422/485 (isolated) serial port	1 x RS-232 2 x RS-232 (isolated) 1 x RS-232/422/485 (isolated) serial port 2 x RS-232/422/485 serial port
	USB Port	2 x USB 3.0 ports; 3 x USB 2.0 ports	4 x USB 2.0 Ports	2 x USB 3.0 ports 3 x USB 2.0 ports
	VGA/DVI Port	1 x VGA port	1 x DVI-I port	1 x VGA port
	Audio	-	-	-
	Speakers	2 x 2W speakers	2 x 2W speakers	2 x 1W speakers
	LAN	1 x Gigabit Ethernet (isolated) interfaces (RJ-45)	2 x Gigabit Ethernet (isolated) interfaces (RJ-45)	1 x Gigabit Ethernet (isolated) interfaces (RJ-45)
	HDMI	1 x HDMI	-	1 x HDMI
Cooling Fan	Fanless	Yes		
Power Supply	AC / DC Model	AC/DC adapter (Sinpro Model no.HPU101-107)	AC/DC adapter (Sinpro Model no.HPU101-107)	External Power Adapter
	Input Voltage	90 ~ 260 V <sub>AC</sub> , 1.35 ~ 0.5 A, 47 ~ 63 Hz	90 ~ 260 V <sub>AC</sub> , 1.35 ~ 0.5 A, 47 ~ 63 Hz	90 ~ 260 V <sub>AC</sub> , 1.35 ~ 0.5 A, 47 ~ 63 Hz
	Output Voltage	18 V <sub>DC</sub> , 5.55 A max. (100 watts)		
Optional Functions	WLAN	Integrated wireless 802.11 a/b/g/n connection & internal antenna		
	*Battery	3S2P 4200mAH, supports min. 0.5 hr backup operation	3S2P 4200mAH, supports min. 0.5hr backup operation	3S2P 4200mAH, supports min. 0.5 hr backup operation
	Smart Card Reader (Front)	1 x Smart Card Reader	Complies with ISO7816-1,2,3,T=1 and T=0 protocol; Factory build for TPN process only. Non-compliant with IP54 rating.	1 x Smart Card Reader
	RFID	Passive RFID/Active RFID	13.56 MHz with ISO-15693 & ISO-14443A/B and active tag function	Passive RFID
	Bluetooth	Bluetooth v4.0		
Optional Touchscreen Features	Type	P-cap Multi-touch or Res TS . True Flat Design	Analog Resistive	Projected Capacitive 4-points
	Light Transmission	P-cap: 90% Res. TS: 75%	81%	90%
	Controller	USB interface	RS-232 interface (use COM 6)	USB Interface
	Durability	36 million touches	36 million touches	>100 million touches
IP Rating	Front Panel	IP65	IP65	-
	Whole System	IP43	IP54	IPX1
Certifications	CE	Yes	Yes	YES
	FCC	Yes	Yes	YES
	*EN60601-1	Yes	Yes	YES
	*UL 60601-1	Yes	Yes	YES
	*CCC	No	No	No
Environment	Temperature	0 ~ 40° C (32 ~ 104° F) (Operating)		
	Humidity	10 - 95% @ 40° C (non-condensing)		
	Shock Resistance	20 G peak acceleration (11 ms duration)		
Physical Characteristics	Dimensions (W x H x D)	405 x 271 x 59.8 mm (15.94" x 10.67" x 2.35")	470.5 x 415.2 x 102.2 mm (18.52" x 16.35" x 4.02")	348 x 287 x 92 mm (13.7" x 11.3" x 3.62")
	Weight	4.65 Kg (10.25 lb)	7.5 kg (16.5 lb)	4.5 Kg (9.92lb)
	VESA Mounting	VESA 75/100 mm		

# Computerized Medical Carts



  
TAIWAN  
EXCELLENCE  
2014

Model Name		AMiS-50	AMiS-30i
Base Cart	Footprint	19.7" x 18.5" (500 mm x 470 mm)	19.7" x 18.5" (500 x 470 mm)
	Casters	125 mm x 125 mm (Medical casters, two locking, two non-locking)	125 x 125 mm (medical casters, two locking, two non-locking)
	Work Surface	18.5" x 19.3" (469.9 x 489.9 mm) Extra Loading Capacity: Up to 88 lb/40 kg	18.5" x 16.3" (471 x 413 mm) Extra loading capacity: Up to 66 lb/20 kg
	Keyboard & Mouse Area	Keyboard Size: Up to 380 x 140 x 25 mm Keyboard LED Light; Mouse Tray	Keyboard size: 431 x 143 x 24 mm
	Height Adjustment Range	32.0" ~ 45.8" (813 ~ 1163 mm)	32.0" ~ 45.8" (813 ~ 1163 mm)
	Display Holder	Standard VESA Mount (VESA 75/75; VESA 100/100); Weight capacity: max. 18 kg	Standard VESA Mount (VESA 75/75; VESA 100/100); Weight capacity: max. 12kg
	Dashboard	Battery Power Button Computer Power Button LED for Battery Capacity Indication	Battery Power Button Computer Power Button LED for Battery Capacity Indication
	Accessory Integration Interface	Neck: Dove Tail Work Surface: DIN Rail (Right, Left and Rear)	Work Surface: Din Rail (Right and Left)
	I/O Ports	USB 2.0 ports x 4 Gigabit Ethernet Interface (RJ-45) x 1	USB 2.0 ports x 3
PC System			
Embedded Computing System	CPU	Intel® Core™ i5 1.9 GHz	Intel® Celeron® 1.6 GHz
	Memory	4GB DDR3L SO-DIMM max.16G x 2	4GB DDR3L SO-DIMM max.8G x 2
	Storage	2.5" SATA HDD 500 GB	2.5" SATA HDD 500 GB
	Box PC I/O Ports	DP/HDMI x 1 DP++ x 1 Ethernet x 2 COM x 1 USB 3.0 x 4 2 single audio jack for Line-Out (green), Mic-in (Red) DC Jack x 1	DP/HDMI x 1 DP++ x 1 Ethernet x 2 COM x 1 USB 3.0 x 4 2 single audio jack for Line-Out (green), Mic-in (Red) DC Jack x 1
	WLAN	802.11 a/b/g/n	802.11 a/b/g/n
	Operating System (Optional)	Supports Microsoft Windows 7; Windows 8	Supports Microsoft Windows 7; Windows 8
	Battery		
Power Module	Capacity	420 Wh	210 Wh
	Power Input	100 ~ 240 V <sub>AC</sub> , 50 ~ 60 Hz, Max 4.5A	
	Battery Type	Lithium-Iron Phosphate	
	Battery Runtime (Depends on system configuration)	8 ~ 10 Hours	4~5 Hours
	Battery Charge Time	< 3hr. DOD 100%	< 1.5hr. DOD 100%
	Certifications	EN60601-1, UL60601-1, CE, FCC Class B, Medical CB	
Battery Management Software	AMiS_Link	Battery capacity indicator Alerts (battery capacity, temperature, warning) Battery Lifecycle Statistics Report & Log File Client Installation Server Installation (Optional) Multi-language support, including Chinese Traditional, Chinese Simplified, English, German and Dutch	

# Medical Tablets and Clinical Display



Model Name		MICA-071	MICA-051
Physical Characteristics	Dimensions (W x H x D)	121 x 200 x 14.5 / 24 (mm) bottom / top	82 x 160 x 18 (mm)
	Weight	460g	295g (battery included)
Size		7" Display	5" Display
Display	Touch Panel	10-point P-cap touch	P-cap Multi-Touch
	Display Type	7" TFT LCD Panel	5" TFT LCD Panel
	Max. Resolution	800 x 1280	1280 x 720
Computing System	CPU	Intel® Atom™ Bay Trail-T Z3770 processor	Cortex-A7, quad core processor, 1.2 GHz
	Memory	LPDDR III 4GB	1GB
	Operating System	Windows 8.1 Industry Pro	Android 4.2.2
Storage	HDD	EMMC 32GB	8GB
	WiFi	Wireless 802.11a/b/g/n	Wireless 802.11a/b/g/n
Communications	Wireless	Bluetooth v4.0	-
	GNSS	GPS	GPS/COMPASS SoC (optional)
	NFC	Yes	13.56MHz RFID (optional)
Audio		Speaker x 1, microphone x 1, receiver x 1	Speaker x 1, microphone x 1, receiver x 1
Connectivity	I/O Ports	Docking connector x 1	
		USB 3.0 x 1	Micro SD slot x 1
		HDMI out x 1	MicroUSB 2.0 x 1
		Micro SD slot x 1	
		Line out x 1	
	Embedded I/O Devices	Front Camera: 2 MP Rear Camera: 8MP (Auto focus) 1D/2D Barcode scanner	Front Camera: 8 MP - 1D/2D Barcode scanner
Control Buttons		7 buttons (power, volume up & down, programmable key, barcode keys x 2, Home key)	6 buttons (power x 1, barcode key x 1, function key x 4)
Power Supply	AC In	100 ~ 240 V ~ 1.5A 50/60 Hz	-
	Battery Type	Lithium-ion standard battery	Lithium-ion battery
	Battery Capacity	4100 mAh	3200 mAh
Ingress Protection	Water / Dust Resistance	IP54-rated, Alcohol resistant for cleaning purposes	IP65-rated, Alcohol resistant for cleaning purposes
Environment	Temperature	Operating: 0° C ~ +40° C, Storage: -20° C ~ +60° C	Operating: -20° C ~ +60° C, Storage: -30° C ~ +70° C
	Humidity	Operating: 10% ~ 95% @ 40° C non-condensing, Storage: 10% ~ 95% @ 40° C non-condensing	5% ~ 95%, non-condensing
	Shock Resistance	Operating: 10 G, 11 ms, Non-operating: 30 G, 11ms	-
	Drop Test	Height : 90cm, for 6 faces	Height: 120 cm, for 6 faces
Certifications		FCC Part 15 Class B, UL, CE, CB60950, RoHS	CCC



Model Name		PDC-W240	PDC-W215	PDC-W210
Display	Display Type	23.8" wide TFT color LCD (16:9)	21.5" TFT LCD LED backlight	21.5" wide TFT color LCD (16:9)
	Native Resolution	1920 x 1080	1920 x 1080	1920 x 1080
	Support Color	16.7 M colors (6-bits+A-FRC)	16.7 M colors	16.7 M colors (6-bit+A-FRC)
	Pixel Pitch	0.2475 x 0.2475 mm	0.24825 x 0.24825 mm	0.2475 x 0.2475 mm
	Active Screen Area	527.04 x 296.46 mm	476.6 x 268.1 mm	476.06 x 267.78 mm
	Contrast Ratio	1000:1 (Typ.)	3000:1 (Typ.)	1000:1 (Typ.)
	Luminance	250 cd/m² (Typ.)	250 cd/m² (Typ.)	250 cd/m² (Typ.)
Color Temperature	Viewing Angle (H/V)	178/178°	178/178°	178/178°
	Response Time	25ms (Typ., on/off)	25 ms (Typ., on/off)	25ms (Typ., on/off)
	Cool	9300° K color temperature	9300° K color temperature	9300° K color temperature
	Neutral	6500° K color temperature	6500° K color temperature	6500° K color temperature
I/O Ports	Warm	5500° K color temperature	5400° K color temperature	5500° K color temperature
	User	-	User adjustable RGB	
	DVI	1	1	1
Functions	HDMI	1	-	1
	DP	1	1	1
	VGA	1	1	1
Physical Characteristics	Others	P-cap USB (Type B) x 1 (Upstream port) Audio out x 1/ Line in x 1 USB 2.0: 2 (Downstream Port) Speaker (Left/ Right)	Audio x 1 P-cap touch model: USB x 1, RS-232 x 1	P-cap USB (Type B) x 1 Speaker (Left/ Right)
	DICOM	Compatible to DICOM Part 14 (Optional)	Compatible to DICOM Part 14	
Power Supply	Power Adapter	Input: 100 ~ 250 V <sub>AC</sub> , 0.6 A, 60/50 Hz universal Output: 12V, 5 A	Input: 100 ~ 250 V <sub>AC</sub> , 0.6 A, 60/50 Hz universal Output: 12V, 4.5 A	Input: 100 ~ 250 V <sub>AC</sub> , 0.6 A, 60/50 Hz universal Output: 12V, 5 A
Power Consumption		<30 W	On: <35 W; active off: <2 W	<35 W
Certifications	Dimensions (W x H x D)	583 x 386 x 69 mm (22.95" x 15.19" x 2.71")	537.4 x 328.9 x 59 mm	550 x 360 x 65 mm (21.65" x 14.17" x 2.56")
	Weight	7.5 kg	5.6 kg	5 kg
	Mounting	VESA 100 x 100 mm/ 75 x 75 mm	VESA 100 x 100 mm	
Certifications	IP Rating	IP54	IP65-rated on cleanable front bezel IPX1-rated on rear cover	-
		FCC, CE, CB, UL60601-1, EN60601-1	FCC, CE	

# Healthcare Infotainment Terminals



Model Name	HIT-W121		HIT-W151		HIT-W181 / 182		HIT-W221 / 222	
	HIT-W121	HIT-W121B	HIT-W151 / W151B	HIT-W151H	HIT-W181B	HIT-W182H	HIT-W221B	HIT-W222H
Description	11.6" Healthcare Infotainment Terminal		15.6" Healthcare Infotainment Terminal		18.5" Healthcare Infotainment Terminal		21.5" Healthcare Infotainment Terminal	
Hardware	CPU	Atom D510 Dual Core 1.67 GHz	Intel J1900	Intel Atom D510 / D525	Intel Core i7-4650U 1.7GHz	Intel J1900	Intel Core i7-4650U 1.7GHz	Intel J1900
	Memory	DDR2 (up to 4G)	DDR3L (up to 8GB)	DDR2 (up to 4G)	DDR3L (up to 8GB)	DDR3L (up to 8GB)	DDR3L (up to 8GB)	DDR3L (up to 8GB)
	Storage	CF / 2.5" SATA HDD	1 x 2.5" SATA SSD	CF / 2.5" SATA HDD	1 x 2.5" SATA HDD/ SSD	1 x 2.5" SATA HDD/ SSD	1 x 2.5" SATA HDD/ SSD	1 x 2.5" SATA HDD/ SSD
	Camera	5 Megapixel	5 Megapixel	5 Megapixel	5 Megapixel	5 Megapixel	5 Megapixel	5 Megapixel
	Bus Expansion	Mini PCIe x 2	Mini PCIe x 2	Mini PCIe x 2	Mini PCIe x 2	Mini PCIe x 2	Mini PCIe x 2	Mini PCIe x 2
Display	Size	11.6" (16:9)	11.6" (16:9)	15.6" (16:9)	15.6" (16:9)	18.5" (16:9)	18.5" (16:9)	21.5" (16:9)
	Max Resolution	1366 x 768	1366 x 768	1366 x 768	1366 x 768	1366 x 768	1920 x 1080	1920 x 1080
	Brightness	200 cd/m2	200 cd/m2	300 cd/m2	300 cd/m2	350 cd/m2	250 cd/m2	250 cd/m2
	Contrast Ratio	400:1	400:1	500:1	500:1	1000:1	1000:1	5000:1
Touchscreen	Type	Full-Flat Analog Resistive (PCT as option)		Full-Flat Analog Resistive (PCT as option)		Full-Flat Analog Resistive (PCT as option)		Full-Flat Analog Resistive (PCT as option)
	Light Transmission	80%	80%	80%	80%	80%	80%	80%
	Durability	30 million touches	30 million touches	30 million touches	30 million touches	30 million touches	30 million touches	30 million touches
I/O Ports	USB	3 x USB 2.0	2 x USB 2.0 / 1 x USB 3.0	5 x USB 2.0	1 x USB 2.0 / 4 x USB 3.0	2 x USB 2.0 / 1 x USB 3.0	2 x USB 2.0 / 1 x USB 3.0	2 x USB 2.0 / 1 x USB 3.0
	COM Port	1	1	2	2	1	1	1
	Smart Card Reader	1	1	1	1	1	1	1
	RFID	Optional	Optional	Optional	Optional	Optional	Optional	Optional
	SD Card Reader	1	1	1	1	1	1	1
Audio	Speaker	2 watt x 2	2 watt x 2	2 watt x 2	2 watt x 2	2 W x 2	2 W x 2	2 W x 2
	Internal Microphone	1	1	1	1	1	1	1
Network	LAN	10/100/1000 Mbps x1	10/100/1000 Mbps x1 PoE (Option)	10/100/1000 Mbps x2		10/100/1000 Mbps x1		10/100/1000 Mbps x1 + 1 (Optional)
	WLAN	802.11 b/g/n	802.11 a/b/g/n + BT4.0	802.11 a/b/g/n	802.11 a/b/g/n + BT4.0	802.11 a/b/g/n + BT4.0		802.11 a/b/g/n + BT4.0
Software	OS	WES7, Win7 / Linux		WES, WES7, Win7, Fedora 13, Ubuntu 10.04, Android(W151H)		Win 7, XP/ Linux Fedora, Ubuntu, Andriod(Optional)		Win 7, XP/ Linux Fedora, Ubuntu, Andriod(Optional)
Function key	Hotkey	Yes (w/MQ)	Yes	5 or 8 ( 2 types )	5 or 8 ( 2 types )	5 (Resistive) 4 (PCT)	5 (Resistive) 4 (PCT)	5 (Resistive) 9 (PCT)
Emergency Alarm	LED Light Indicator	1	1	-	-	1 (3 colors)	1 (3 colors)	1 (3 colors)
Mechanical	Mounting	VESA 75 x 75 mm		VESA 75 x 75 & 100 x 100 mm		VESA 75 x 75 & 100 x 100 mm		VESA 75 x 75 & 100 x 100 mm
	Dimensions (WxHxD)	302.5 x 220.25 x 43 mm		400 x 285 x 50.3 mm		460 x 328 x 48 mm		512 x 368 x 51.2 mm
	Weight	2.3 kg		5 kg		6.5 kg		6.8 kg
IP Rating	Front Panel	IP65	IP65	IP65	IP65	IP65	IP65	IP65
Accessories (Optional)	MSR	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Barcode Scanner	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	TV Tuner	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Handset	Yes	Yes	Yes	Yes	Yes	Yes	Yes

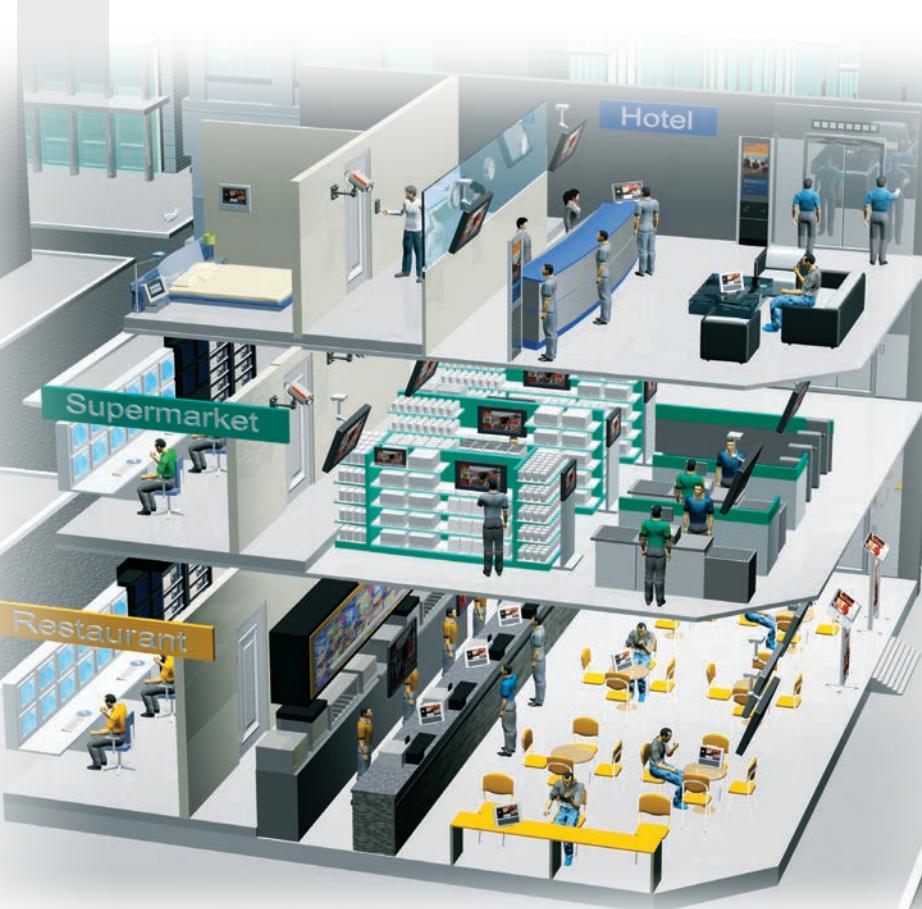


HIT-R151		HIT-R181		PIT-1503W	PIT-1703
HIT-R151B	HIT-R151F	HIT-R181B	HIT-R181F		
15.6" Healthcare Infotainment Terminal		18.5" Healthcare Infotainment Terminal		15.6" Full-flat Patient Infotainment Terminal	17" Full-flat Patient Infotainment Terminal
Intel Celeron QC J1900 2.0 GHz Processor	Freescale iMX6 QC 1.0 GHz Processor	Intel Celeron QC J1900 2.0 GHz Processor	Freescale iMX6 QC 1.0 GHz Processor	Atom D510 Dual Core 1.67 GHz	"Atom D525 Dual Core 1.8 GHz / Intel® Core™ i7 1.5 GHz"
DDR3L 2GB/4GB (MAX)	DDR3 1GB/2GB (MAX)	DDR3L 2GB/4GB (MAX)	DDR3 1GB/2GB (MAX)	1 GB (up to 4G)	"DDR3 1 GB (up to 4G) - D525 DDR3 1 GB (up 16G) - 17"
500GB 2.5" SATA HDD	eMMC 8GB	500GB 2.5" SATA HDD	eMMC 8GB	CF or 2.5" HDD SATA	CF or SATA HDD interface (Optional)
5M CMOS with LED Indicator & Button	5M CMOS with LED Indicator & Button	5M CMOS with LED Indicator & Button	5M CMOS with LED Indicator & Button	5MP CCD Module (Optional)	5MP CCD Module (Optional)
Half Mini-Pcie x 1, Full Mini-Pcie x 1	n/a	Half Mini-Pcie x 1, Full Mini-Pcie x 1	n/a	Mini PCIe x 1	Mini PCIe x 2
15.6" W TFT LED		18.5" W TFT LED		15.6" W TFT LED	17" W TFT LED
1366 x 768		1366 x 768		1366 x 768	1280 x 1024
400 cd/m2		300 cd/m2		300 cd/m2	300 cd/m2
500:1		1000:1		500:1	1000:1
Resistive 5 wires (Flat Glass) / Projected Capacitive (Flat Glass)		Resistive 5 wires (Flat Glass) / Projected Capacitive (Flat Glass)		Full-Flat Analog Resistive	Full-Flat Analog Resistive
80%	80%	80%	80%	80%	80%
30 million touches	30 million touches	30 million touches	30 million touches	30 million touches	30 million touches
2 x USB 2.0 / 1 x USB 3.0	2 x USB 2.0	2 x USB 2.0 / 1 x USB 3.0	2 x USB 2.0	3 x USB 2.0	3 x USB 2.0
-	-	-	-	1	-
1	1	1	1	1	1
1	1	1	1	1	1
n/a	1 (Bottom)	n/a	1 (Bottom)	-	-
2 watt x 2 , Audio output control via GPIO		2 watt x 2 , Audio output control via GPIO		2 W x 2	2 W x 2
1		1		1	1
10/100/1000 RJ-45 x 1		10/100/1000 RJ-45 x 1		10/100/1000 RJ45 x 1	10/100/1000 RJ45 x 1
802.11 b/g/n (Optional)		802.11 b/g/n (Optional)		802.11 b/g/n (Optional)	802.11 b/g/n (Optional)
Linux 3.0, Android 4.x Windows Embedded 7 Standard, 7 Pro, 8 Standard, 8 Pro	Linux 3.0, Android 4.x	Linux 3.0, Android 4.x Windows Embedded 7 Standard, 7 Pro, 8 Standard, 8.1 Industry Pro	Linux 3.0, Android 4.x	Win 7, XP/ Linux Fedora, Ubuntu (Optional )	Win 7, XP/ Linux Fedora, Ubuntu (Optional )
PCap Touch (1 key): Display On/Off Resistive Touch (6 keys) : Display On/Off, Vol-, Vol+, Home, Ch-, Ch+		Optional (1 key): Display On/Off with light indicator Default (9 keys): Display on/off, Play/Pause, Forward, Reverse, CH+, CH-, Vol+, Vol		5	5
-		-		2	2
VESA 75 x 75 / 100 x 100 mm		VESA 75 x 75 / 100 x 100 mm		VESA 75 x 75 mm	VESA 75 x 75 / 100 x 100 mm
392 x 313.5 x 32.8 mm		477.4 x 377.0 x 44.3 mm		416 x 308 x 65 mm	448 x 393 x 73.5 mm
3.2kg		4.6kg		4.8 kg	6.5 kg
IP65	IP65	IP65	IP65	IP65	IP65
Yes	n/a	Yes	n/a	Yes	Yes
Yes	n/a	n/a	n/a	Yes	Yes
Yes	n/a	Yes	n/a	Yes	Yes
Yes	Yes	Yes	Yes	Yes	Yes

# Intelligent Retail & Hospitality

## Solutions and Innovations to Shape the Future of Digital Retail

Driven by the new technologies, the retail business is embracing its biggest change in all aspects, including customer services, check-out process, membership programs, store management, and many others. Building a seamless shopping experience requires highly customized applications and fully integrated platforms to provide a steady and premium service to customers. As one of the leading digital retail solution providers, Advantech offers a portfolio of solution ready and service-ready platforms to offer customer-centric solutions that are flexible and scalable. Advantech's Ushop intelligence total solution provides Intelligent Video Analysis, Retail Cloud Solutions, Interactive Multi-Media Solutions, Energy Control Systems, Digital Signage Systems, Video Wall, Self-Service Kiosk, and POS, influencing customer behavior and driving next generation shopping experiences.



The all-in-one, self-service touch computer satisfies requirements in services such as self check-in, smart concierge, room service and car rental. With slim, elegant designs and dynamic functions, they offer high performance and flexible choices, and provide customers with a comfortable and convenient experience at your hotel.



With hospitality, retail, and public service applications becoming more popular and prevalent in our lives, all-in-one interactive POS systems are designed to be the ideal multi-purpose solution to meet the needs of various applications use such as digital signage, self-ordering/ticketing, and information search.



The UTC-series have intuitive peripheral support that helps retailers bring digital channels to the retail floor. The result is a combination of search with a visual browsing experience, exposing shoppers to more products and helping them find what they're looking for faster. Visual browsing brings a virtually limitless catalog and endless aisle of products to the shopper.



Many restaurants struggle with the question of how to reduce the workforce while providing a seamless customer experience and satisfaction. UTC series is exactly the right tool. It helps to transform businesses through interactive applications such as eMenu, self-reservation and auto call-out system, reducing customers' queuing time and ordering efficiency.



The multifunctional UTC terminal serves a wide variety of applications including self check-in, loyalty membership program, entertainment and smart training system. It allows exercisers access to dynamic media and engages them with customized content 24 hours a day, 7 days a week.

### Product Solutions

#### Ubiquitous Touch POS System NEW



**UTC-315P/318P**  
Intel Core J1900/i5  
15.6"/18.5" All-in-one 16:9  
POS System

#### Ubiquitous Touch Computers NEW



**UTC-315D/E**  
15.6" All-in-one Self-service Terminal

#### Ubiquitous Touch Computers



**UTC-620**  
21.5" All-in-one Self-Service Kiosk

#### Hospitality Infotainment Terminals



**HIT-R181**  
18.5" Full-flat Touch Computer for Healthcare and Hospitality

# Interactive Digital Signage



Model Name		UTC-312		UTC-315		UTC-318		UTC-322	
<b>Description</b>		11.6" Ubiquitous Touch Computer		15.6" Ubiquitous Touch Computer		18.5" Ubiquitous Touch Computer		21.5" Ubiquitous Touch Computer	
<b>Model</b>		UTC-312B	UTC-312D	UTC-315D	UTC-315E	UTC-318D	UTC-318E	UTC-322D	UTC-322E
<b>Hardware</b>	CPU	Atom D510 Dual Core 1.67 GHz	Intel J1900	Intel J1900	Intel Core i5-4300U	Intel J1900	Intel Core i5-4300U	Intel J1900	Intel Core i7-4650U 1.7GHz
	Memory	DDR2 (up to 2G)	DDR3L (up to 8GB)	1x SO-DIMM DDR3L 1333 MHz up to 8 GB	1x SO-DIMM DDR3L-1333/1600 up to 8GB	1x SO-DIMM DDR3L-1333/1600 up to 8 GB	1x SO-DIMM DDR3L-1333/1600 up to 8GB	DDR3L (up to 8GB)	DDR3L (up to 8GB)
	Storage	CF / 2.5" SATA HDD	1 x 2.5" SATA HDD or SSD	1 x 2.5 internal SATA HDD bay		1 x 2.5 internal SATA HDD bay		1 x 2.5" SATA HDD or SSD	1 x 2.5" SATA HDD or SSD
	Camera	5 Megapixel		-		-		5 Megapixel	
	BUS expansion	Mini PCIe x 2		Full-size MiniPCIe/mSATA		Full-size MiniPCIe/mSATA		Mini PCIe x 2	
<b>Display</b>	Size	11.6" W TFT LED		15.6" TFT LCD		18.5" TFT LCD		21.5" W TFT LED	
	Max Resolution	1366 x 768		1366 x 768		1366 x 768		1920 x 1080	
	Brightness	200 cd/m2		200 cd/m2		250 cd/m2		250 cd/m2	
<b>Touchscreen</b>	Type	Full-Flat Analog Resistive (PCT as option)		Resistive 5 wires (Flat Glass) / Projected Capacitive (Flat Glass)		Resistive 5 wires (Flat Glass) / Projected Capacitive (Flat Glass)		Full-Flat Analog Resistive (PCT as option)	
	Light Transmission	80%		Res. Touch : 80% ± 5% / P-Cap Touch : 90% ± 2%		Res. Touch : 80% ± 5% / P-Cap Touch : 90% ± 2%		80%	
<b>I/O Ports</b>	USB	3 x USB 2.0	2 x USB 2.0 / 1 x USB 3.0	5 x USB 2.0 / 1 x USB 3.0		5 x USB 2.0 / 1 x USB 3.0		2 x USB 2.0 / 1 x USB 3.0	2 x USB 2.0 / 1 x USB 3.0
	COM Port	1		1 x RS-232 COM , 1 x RS-232 / 422 / 485		1 x RS-232 COM , 1 x RS-232 / 422 / 485		1	
	HDMI	-		1		1		-	
<b>Audio</b>	Speaker	2 watt x 2		1 watt x 2		1 watt x 2		2 W x 2	
<b>Network</b>	LAN	10/100/1000 RJ-45 x 1		2 x Gigabit Ethernet ports (RJ-45)		2 x Gigabit Ethernet ports (RJ-45)		10/100/1000 RJ45 X2	
	WLAN	802.11 b/g/n		-		-		802.11 b/g/n	
<b>Software</b>	OS	WES, WES7, Win7 / Linux: Fedora 13, Ubuntu, Android		Windows Embedded Standard 7 Windows Embedded Standard 8 Embedded Linux 3.0		Windows Embedded Standard 7 Windows Embedded Standard 8 Embedded Linux 3.0		Win 7, XP/ Linux Fedora, Ubuntu, Andriod (Optional)	
<b>Mechanical</b>	Mounting	VESA 75 x 75 mm		VESA 75 x 75 mm		VESA 100 x 100 mm		VESA 75 x 75 & 100 x 100 mm	
	Dimensions(WxHxD)	302.5 x 220.25 x 43 mm		402 x 260 x 39.7 mm		475 x 295 x 43.5 mm		512 x 368 x 51.2 mm	
	Weight	2.3 kg		< 4 kg (8.8 lb)		5 kg (13.4 lb)		6.8 kg	
<b>IP Rating</b>	Front Panel	IP65		IP65		IP65		IP65	
<b>Accessories (Optional)</b>	Camera	-		Yes (5M Camera Module)		Yes (5M Camera Module)		-	
	MSR	Yes		Yes		Yes		Yes	
	Barcode Scanner	Yes		Yes		Yes		Yes	
	Smart Card Reader	Yes		Yes		Yes		Yes	
	RFID	Yes		Yes		Yes		Yes	

# Interactive Digital Signage



Model Name		UTC-515					UTC-520								
Description		15.6" Ubiquitous Touch Computer					21.5" Ubiquitous Touch Computer								
Model		UTC-515A	UTC-515B	UTC-515C	UTC-515D	UTC-515E	UTC-520A	UTC-520B	UTC-520C	UTC-520D	UTC-520E				
System	CPU	AMD G-Series T40E Dual-core 1.0 GHz <sup>**</sup>	Intel Atom Dual Core D2550 1.8 GHz	Intel Core i3 3217UE 1.6 GHz	Intel® Celeron® J1900	Intel® Core™ i5-4300U 1.9 GHz	AMD G-Series T40E Dual-core 1.0 GHz	Intel Atom Dual Core D2550 1.8 GHz	Intel Core i7 3517UE 1.7 GHz	Intel® Celeron® J1900	Intel® Core™ i5-4300U 1.9 GHz				
	Cache	512KB	1MB	3MB	2MB	3MB	512KB	1MB	4 MB	2MB	3MB				
	Memory	1 x SO-DIMM DDR3 1066 MHz up to 4 GB	1 x SO-DIMM DDR3 1066 MHz up to 4 GB	1 x SO-DIMM DDR3/DDR3L 1333/1600 MHz up to 8 GB	1 x SO-DIMM DDR3L 1333 / 1600 MHz up to 8 GB	1 x SO-DIMM DDR3 1066 MHz up to 4 GB	1 x SO-DIMM DDR3 1066 MHz up to 4 GB	1 x SO-DIMM DDR3/DDR3L 1333/1600 MHz up to 8 GB	1 x SO-DIMM DDR3L 1333 MHz up to 8 GB	1 x SO-DIMM DDR3L 1333 / 1600 MHz up to 8 GB					
	Storage	1 x 2.5 internal SATA HDD bay					1 x 2.5 internal SATA HDD bay								
Display	Size	15.6" TFT LCD					21.5" TFT LCD								
	Max Resolution	1366 x 768					1920 x 1080								
Touchscreen	Type	Projected Capacitive (Flat Glass)					Projected Capacitive (Flat Glass)								
		Resistive 5 wires (Flat Glass)					Resistive 5 wires (Flat Glass)								
		Glass Panel (No touch function)					Glass Panel (No touch function)								
I/O Ports	USB	4 x USB 2.0	4 x USB 2.0	2 x USB 2.0 2 x USB 3.0	3 x USB 2.0 1 x USB 3.0	2 x USB 2.0 2 x USB 3.0	4 x USB 2.0	4 x USB 2.0	2 x USB 2.0 2 x USB 3.0	3 x USB 2.0 1 x USB 3.0	2 x USB 2.0 2 x USB 3.0				
	COM Ports	3 x RS-232		2 x RS-232	2 x RS-232	2 x RS-232	3 x RS-232		2 x RS-232	2 x RS-232	2 x RS-232				
	VGA & HDMI	1					1								
	BUS expansion	Full-size MiniPCIe/mSATA					Full-size MiniPCIe/mSATA								
Network	LAN	2 x Gigabit Ethernet ports					2 x Gigabit Ethernet ports								
Software	OS	Windows XP/ XPE/ Embedded 7 Embedded Windows 8	Embedded Windows 7 32bit	Windows XP/ XPE/ Embedded 7 Embedded Windows 8	Windows Embedded 7, Windows Embedded 8, Linux Ubuntu 14.04		Windows XP/ XPE/ Embedded 7 Embedded Windows 8	Embedded Windows 7 32bit	Windows XP/ XPE/ Embedded 7 Embedded Windows 8	Windows Embedded 7, Windows Embedded 8, Linux Ubuntu 14.04					
Mechanical	Mounting	VESA 100 x 100 mm					VESA 100 x 100 mm								
	Dimensions (WxHxD)	389.81 x 240.12 x 45.20 mm					517.64 x 313.51 x 43.50 mm								
	Weight	4.85 kg (10.67 lb)					8 kg (17.6 lb)								
IP Rating	Front Panel	IP65					IP65								
Accessories (Optional)	Camera	Yes (5M Camera Module)					Yes (5M Camera Module)								
	MSR	Yes					Yes								
	Barcode Scanner	Yes					Yes								
	RFID	Yes					Yes								
	Smart Card Reader	Yes					Yes								



UTC-532				UTC-620				
32" Ubiquitous Touch Computer				21.5" Ubiquitous Touch Computer				
UTC-532A	UTC-532C	UTC-532D	UTC-532E	UTC-620E				
AMD G-Series T40E Dual-core 1.0 GHz	Intel Core i7 3517UE 1.7 GHz	Intel® Celeron® J1900	Intel® Core™ i5-4300U 1.9 GHz	Intel® Core™ i5-4300U 1.9 GHz				
512KB	4 MB	2MB	3MB	3MB				
1 x SO-DIMM DDR3 1066 MHz up to 4 GB	1 x SO-DIMM DDR3/DDR3L 1333/1600 MHz up to 8 GB	1 x SO-DIMM DDR3L 1333 MHz up to 8 GB	1 x SO-DIMM DDR3L 1333/1600 MHz up to 8 GB	1 x SO-DIMM DDR3L 1333/1600 MHz up to 8GB				
1 x 2.5 internal SATA HDD bay				Built-in 500GB HDD				
32" TFT LCD				21.5" TFT LCD				
1920 x 1080				1920 x 1080				
Projected Capacitive (Flat Glass)				Projected Capacitive (Flat Glass)				
-				-				
Glass Panel (No touch function)				-				
4 x USB 2.0	2 x USB 2.0 2 x USB 3.0	3 x USB 2.0 1 x USB 3.0	2 x USB 2.0 2 x USB 3.0	2 x USB 2.0, 2 x USB 3.0				
3 x RS-232	2 x RS-232	2 x RS-232	2 x RS-232	1 x RS-232 COM (RS-422/485)*				
1				1				
Full-size MiniPCIe/mSATA				Full-size MiniPCIe/mSATA				
2 x Gigabit Ethernet ports				2 x Gigabit Ethernet ports Wireless 802.11 abgn module				
Windows XP/ XPE/ Embedded 7 Embedded Windows 8 Embedded Linux 3.0	Windows Embedded 7, Windows Embedded 8, Embedded Linux 3.0			Windows Embedded 7 Windows Embedded 8 Linux Ubuntu 14.04				
VESA 200 x 200 mm				VESA 100 x 100 mm				
785.64 x 480.24 x 62.50 mm				344.71 x 565.24 x 43.5 mm				
18 kg (39.6 lb)				8 kg (17.6 lb)				
IP65				IP65				
Yes (5M Camera Module)				build-in camera, MSR, NFC(RFID), barcode scanner				
Yes								
Yes								
Yes								
Yes				-				

Model Name	UTC-W101	
	UTC-W101B	UTC-W101BF
<b>Description</b>		10.1" Ubiquitous Touch Computer
<b>Hardware</b>	<b>CPU</b>	Intel® Atom™ N2800 1.86GHz
	<b>Memory</b>	DDR3 (up to 4G)
	<b>Storage</b>	1 x Mini SATA
	<b>Bus Expansion</b>	Mini PCIe x 1
<b>Display</b>	<b>Size</b>	10.1" (16:9)
	<b>Max Resolution</b>	1024 x 600
<b>Touchscreen</b>	<b>Type</b>	Analog Resistive 5 wires
	<b>Light Transmission</b>	80%
	<b>Durability</b>	36 million touches
<b>I/O Ports</b>	<b>USB</b>	4 x USB 2.0
	<b>COM Port</b>	2
	<b>Smart Card Reader</b>	-
	<b>RFID</b>	Optional
	<b>SD Card Reader</b>	-
<b>Audio</b>	<b>Speaker</b>	1 watt x 2
	<b>Internal Microphone</b>	1
<b>Network</b>	<b>LAN</b>	10/100/1000 Mbps x1
	<b>WLAN</b>	802.11 b/g/n
<b>Software</b>	<b>OS</b>	WES7, Win7 / Linux
<b>Function key</b>	<b>Hotkey</b>	6
<b>Emergency Alarm</b>	<b>LED Light Indicator</b>	1
<b>Mechanical</b>	<b>Mounting</b>	VESA 75 x 75 mm
	<b>Dimensions (WxHxD)</b>	258 x 199 x 38.3mm
	<b>Weight</b>	2.47 kg
<b>IP Rating</b>	<b>Front Panel</b>	-
		IP65

# UTC Peripherals & Installation Accessories

	<b>5M Camera Module</b>	<b>Magnetic Stripe Card Reader</b>	<b>NFC/RFID Module</b>
	<ul style="list-style-type: none"> <li>• Auto focusing on 40-80 cm</li> <li>• Video format: YUY2, MJPEG</li> <li>• USB connection to UTC</li> </ul>	<ul style="list-style-type: none"> <li>• Card standard: ANSI, ISO, ABA</li> <li>• Read speed: 1-60 IPS</li> <li>• Head life: 1,000,000 times</li> <li>• USB connection to UTC</li> <li>• RS-232 optional</li> </ul>	<ul style="list-style-type: none"> <li>• 13.56 MHz frequency</li> <li>• Read mode: ISO 15693 / 14443A / B / 18000-3 / Felica</li> <li>• Reading range: 3 +/- 1 cm</li> </ul>
UTC-500 series	UTC-P01	UTC-P02	UTC-P03
			
UTC-300 series	UTC-300P-C	UTC-300-M	UTC-300P-R
			



<b>UTC-WALL-MOUNT1E</b>	<b>UTC-WALL-MOUNT2E</b>	<b>UTC-WALL-MOUNT3E</b>	<b>UTC-520-STAND1E</b>
VESA 75/100 mm	VESA 100/200 mm	VESA 75/100 mm	VESA 100 mm
<ul style="list-style-type: none"> <li>• Firmly fix to a solid wall</li> <li>• Weight capacity up to 14kg</li> <li>• Material: Steel</li> <li>• Tilt: 180° up and down</li> <li>• Rotation: 270° for portrait or landscape viewing</li> <li>• Lift: 130.5mm</li> <li>• For UTC-515/520</li> </ul>	<ul style="list-style-type: none"> <li>• Flush fit without movement</li> <li>• Weight capacity up to 35 kg</li> <li>• Material: Steel</li> <li>• Sits: 42.5 mm from the wall</li> <li>• For UTC-532 only</li> </ul>	<ul style="list-style-type: none"> <li>• Firmly fix to a solid wall</li> <li>• Weight capacity up to 20 kg</li> <li>• Material: Steel</li> <li>• Sits: 27mm from the wall</li> <li>• For UTC-515/520</li> </ul>	<ul style="list-style-type: none"> <li>• Desktop Stand</li> <li>• 40 x 47 x 169 (x2) mm</li> <li>• Weight: 0.145 (x2)</li> <li>• 45° viewing angle</li> <li>• For UTC-520</li> </ul>

Smart Card Reader Module	Barcode Module	iBeacon Module	4-in-1 Module
<ul style="list-style-type: none"> <li>User card friction type (ID-1), 200,000 cycles</li> <li>SAM card: 5000 insertions</li> <li>Compliant CPU card and memory card"</li> </ul>	<ul style="list-style-type: none"> <li>2D mode scan rate : 53 frames / sec</li> <li>Reads 1D, 2D and postal codes plus stacked and composite codes</li> <li>Resolution : 752 x 480 pixels, Greyscale: 256</li> </ul>	<ul style="list-style-type: none"> <li>Bluetooth Type : Bluetooth 4.0 Low Energy</li> <li>Bluetooth Sensitivity : -93 dBm</li> <li>Effective Range : Over 60 meters</li> </ul>	<ul style="list-style-type: none"> <li>Barcode Reader + RFID + Smart Card Reader + MSR</li> <li>USB connection to UTC</li> </ul>
UTC-P06	UTC-P07	UTC-P08	UTC-P21
			
UTC-300P-S	UTC-300P-B	-	-



UTC-H01-STANDE	UTC-T01-STANDE	UTK-500
H-shape floor stand	Triangle shape floor stand	Multi-functional self-service Floor Stand
<ul style="list-style-type: none"> <li>VESA 75/100 mm</li> <li>Organized cable management</li> <li>Height: 120cm</li> <li>Easily tilt for best viewing comfort</li> <li>Dimension: Ø660 mm</li> <li>Weight: 10 kg</li> <li>Acrylics signboard is excluded</li> </ul>	<ul style="list-style-type: none"> <li>VESA 75/100 mm</li> <li>Organized cable management</li> <li>Height: 120 cm</li> <li>Easily tilt for best viewing comfort</li> <li>Dimension: Ø660 mm</li> <li>Weight: 10 kg</li> </ul>	<ul style="list-style-type: none"> <li>Solid and exquisite chassis</li> <li>Modular Design, easy Installation</li> <li>Ergonomic design, easy to operate</li> <li>Organized cable management makes the floor stand blends simplicity with style</li> <li>Rich Peripheral options ,Easy Customization</li> </ul>

# Selection Guide

## POS



		<b>UPOS</b>	<b>E-POS</b>	<b>Chameleon</b>	<b>Chameleon</b>
<b>Model Number</b>		UPOS-315	EP-5530-AR50/EP-5530-PD50	CM-5500-AR70	CM-5500-AR80
<b>System</b>	<b>CPU</b>	Intel® Quad Core J1900, 2GHz up to 2.42GHz	Intel® Celeron 2.0 GHz	Intel® Core i7 / i5 / i3 / Pentium processor with LGA1150 CPU socket	Intel® Celeron J1900 2.0 GHz processor
	<b>Cache Memory</b>	2MB L3 cache memory	2MB 2nd level cache memory	Depends on CPU	2MB L3 cache memory
	<b>System Chipset</b>	SoC	Intel® Bay Trail quad-core SoC	Intel® H81 (Haswell)	Intel® Bay Trail quad-core SoC
	<b>System Memory</b>	Maximum up to 8GB DDR3	Maximum up to 8GB DDR3	Maximum up to 16GB DDR3	Maximum up to 8GB DDR3
<b>Display</b>	<b>Size / Max Resolution</b>	15" TFT LCD / 1024 x 768	15" TFT LCD / 1024 x 768	15" TFT LCD / 1024 x 768	15" TFT LCD / 1024 x 768
	<b>Brightness (cd/m²)</b>	250 cd/ m²	250 cd/ m²	250 cd/ m²	250 cd/ m²
	<b>Touch Screen</b>	5-wire resistive	Bezel free 5-wire resistive touch Bezel free P-CAP touch	5-wire resistive touch	5-wire resistive touch
<b>Storage</b>	<b>HDD Driver</b>	1 x 2.5" SATA HDD/SSD bay	1 x 2.5" SATA HDD bay	1 x 2.5" SATA HDD/SSD bay	1 x 2.5" SATA HDD/SSD bay
	<b>SSD</b>	-	-	1 x mSATA slot	1 x mSATA slot
<b>I/O</b>	<b>Serial Port</b>	3 x External: COM1 / COM2 support 5V (12V by order)	4 x External: COM1, COM2, COM5, COM6(Pole-mount VFD) (all Pin 9with +5V/12V)	2 x External:COM1,COM2 (5V/12V is optional)	2x External: COM1, COM2 (all Pin 9with +5V/12V)
	<b>USB Port</b>	4 x External (1 Power USB)	4 x External	6 x External	6 x External
	<b>Output</b>	1 x VGA port	1 x VGA port	1 x VGA port 1 x HDMI 1 x DVI-I port	1 x VGA port 1 x HDMI
	<b>Audio</b>	1 x Line out; 1 x Mic in, Speaker box header x 2	Line-out (Integrated stereo 2W + 2W speakers)	1 x Line-out, 1 x Mic-in	1 x Line-out & Mic-in
	<b>Ethernet</b>	1 x Gigabit Ethernet port	1 x RJ-45 Gigabit Ethernet (10/100/1000)	1 x RJ-45 Gigabit Ethernet (10/100/1000)	1 x RJ-45 Gigabit Ethernet (10/100/1000)
	<b>Parallel Port</b>	1 x Bi-directional Parallel (D-Sub25) (by order)	-	-	1 x bi-directional parallel (D-Sub25)
	<b>Extendable Slot</b>	Mini PCIe, mSATA	1 x mini PCIe slot	half size Mini PCIe x 1, mSATA x 1	-
<b>Modular Option</b>	<b>Cash Drawer</b>	1 x RJ11, cash drawer, 12V default, 24V by order	RJ-11 (Adjustable 12V/24V, 1 connector control 2 cash drawer)	RJ-11 (Adjustable 12V/24V, 1 connector control 2 cash drawer)	RJ-11 (Adjustable 12V/24V, 1 connector control 2 cash drawer)
	<b>Second Display</b>	• 15" TFT LCD (Non-Touch) • VFD Display	• 10.1" TFT LCD (Touch/Non-Touch) stand alone • VFD Display	• 15" / 10.1" TFT LCD (Touch/Non-Touch) • VFD Display(2 x 20, 5 or 9 mm Dot Character)	• Pole-mount 15"/ 10.1" TFT LCD (Touch/Non-Touch) • Pole-mount VFD Display (2 x 20, 5mm Dot Character)
	<b>Add-on module</b>	• Keyboard + MSR • MSR only • RFID • Smart card reader	• MSR only • MSR + iButton • MSR + Fingerprint • MSR + IC card reader • MSR + RFID • MSR + Wifi	• MSR • MSR + iButton • MSR + Fingerprint • MSR + IC card reader • RFID (13.56MHz) • WiFi (802.11b/g/n) or Bluetooth	• MSR • MSR + iButton • MSR + Fingerprint • MSR + IC card reader • RFID (13.56MHz) • WiFi (802.11b/g/n)
<b>Mounting Option</b>	<b>Stand Base</b>	Yes	Yes	Yes	Yes
	<b>Wall/Pole Mount</b>	-	Yes	-	Yes
<b>Mechanical &amp; Environmental</b>	<b>Power Supply</b>	60 W, 100 ~ 240 VAC, 50 ~ 60 Hz. 84 W by order	60W 12Vdc power adapter	150W 12V power adaptor	60W 12V power adapter
	<b>Case Material</b>	Plastic housing	Plastic housing	Plastic housing	Plastic housing
	<b>Case Color</b>	Black, white	Black, White	Yellow/Red/Black/White	Yellow/Red/Black/White
	<b>Operation Temperature</b>	0°C ~ 40°C operating	0°C ~ 40°C operating	0°C ~ 40°C operating	0°C ~ 40°C operating
	<b>Dimensions &amp; Weight</b>	356 (D) x 394 (W) x 361 (H)mm / 7.8 Kg	272 (D) x 380 (W) x 329 (H)mm / 6.8 Kg	352 (D) x 375 (W) x 350 (H)mm / 9 Kg	352 (D) x 375 (W) x 350 (H)mm / 9 Kg
	<b>IP Rating</b>	IP65 sealed front panel with touch screen	IP65 sealed front panel with touch screen	IP65 sealed front panel with touch screen	IP66 protection for front panel ; IP54 protection for whole unit (excluding VFD and counterfeit detection module)
	<b>EMI / Safety</b>	CE, CCC, UL, FCC, BSMI	CE, FCC, RoHS	CE, FCC, RoHS, CCC (optional)	CE, FCC, RoHS, CCC (optional )
<b>OS Support</b>		Windows Embedded POSReady 7, Windows 7 Pro Embedded, Windows 8.1 Pro Embedded (64-bit), Linux Kernel 3.13 or above, Android 4.4 or above	Win XP Pro Embedded, WEPOS, POSReady 2009, Win7 Pro Embedded, POSReady 7 and Linux	Windows 7 Pro Embedded, POSReady 7, Windows 8 Pro Embedded, Linux Kernel 3.13 or above	Windows 7 Pro Embedded, POSReady 7, Windows 8 Pro Embedded, Linux Kernel 3.13 or above



W-POS			
WP-5530-PD10	WP-5530-PD20	WP-7530-PD50 / WP-7530-ER50	WP-7530-PD60 / WP-7530-ER60
Intel® Quad Core J1900 2.0 GHz processor	Intel® Core i7 / i5 / i3 / Pentium processor with LGA1150 CPU socket	Intel® AtomTM Processor D525 1.8 GHz	Intel® Core i3 / i5 / i7 / Celeron
2MB L3 cache memory	Depends on CPU	1MB L2 Cache Memory	Smart cache memory (base on CPU)
SoC	Intel® H81 (Haswell)	Intel® D525 with ICH8M	Intel® QM77 (IVY Bridge)
Maximum up to 8GB DDR3L	Maximum up to 16GB DDR3	Maximum up to 4GB DDR3	Maximum up to 8GB DDR3
15" TFT LCD / 1024 x 768	15" TFT LCD / 1024 x 768	15" TFT LCD / 1024 x 768	15" TFT LCD / 1024 x 768
250 cd/ m <sup>2</sup>	250 cd/ m <sup>2</sup>	250 cd/ m <sup>2</sup>	250 cd/ m <sup>2</sup>
Bezel free P-CAP touch (Resistive Touch is optional)	Bezel free P-CAP touch (Resistive Touch is optional)	Bezel free ELO 5-wire resistive touch(default) Bezel free P-CAP touch(option)	Bezel free ELO 5-wire resistive touch(default) Bezel free P-CAP touch(option)
1 x 2.5" SATA HDD/SSD bay	1 x 2.5" SATA HDD/SSD bay	1 x 2.5" SATA HDD/SSD bay	1 x 2.5" SATA HDD bay
		1 x mSATA slot	1 x mSATA slot
3 x External: COM1,COM2,COM3, (D-Sub 9-pin ; 5V is default)	3 x External: COM1,COM2,COM5 (D-Sub 9-pin ; optional power with 5V/12V)	3 x External: COM1, COM2 (RS232 with RJ-45 CON.), COM5 (RS232/RS422/RS485 with RJ-45 CON.)	3 x External: COM1, COM2 (RS232 with RJ-45 CON.), COM5 (RS232 / RS422 / RS485 with RJ-45 CON.)
6 x External, 1 x Power USB	6 x External, 1 x Power USB	6 x External	6 x External
1 x VGA port 1 x HDMI	1 x VGA port 1 x HDMI 1 x DVI-I port	1 x VGA port	1 x VGA port 1 x HDMI
1 x Line-out, 1 x Mic-in	1 x Line-out, 1 x Mic-in	1 x Line out, integrated stereo 2W + 2W speakers	1 x Line out, integrated stereo 2W + 2W speakers
1 x RJ-45 Gigabit Ethernet (10/100/1000)	1 x RJ-45 Gigabit Ethernet (10/100/1000)	1 x RJ-45 Gigabit Ethernet (10/100/1000) 1 x Bi-directional Parallel (D-Sub25)	1 x RJ-45 Gigabit Ethernet (10/100/1000) 1 x Bi-directional Parallel (D-Sub25)
Mini PCIe, mSATA	Mini PCIe, mSATA		
RJ-11 (Adjustable 12V/24V, 1 connector control 2 cash drawer)	RJ-11 (Adjustable 12V/24V, 1 connector control 2 cash drawer)	RJ-11 (Adjustable 12V/24V, 1 connector control 2 cash drawer)	RJ-11 (Adjustable 12V/24V, 1 connector control 2 cash drawer)
• Pole-mount 15" / 10.1" TFT LCD (Touch/Non-Touch) • Rear-mount 10.1" TFT LCD (Touch/Non-Touch) • Embedded VFD Display (2 x 20, 5mm Dot Character)	• Pole-mount 15" / 10.1" TFT LCD (Touch/Non-Touch) • Rear-mount 10.1" TFT LCD (Touch/Non-Touch) • Embedded VFD Display (2 x 20, 5mm Dot Character)	• 15" / 10.1" TFT LCD (Touch/Non-Touch) • VFD Display( 2 x 20, 5 or 9 mm Dot Character)	• 15" / 10.1" TFT LCD (Touch/Non-Touch) • VFD Display( 2 x 20, 5 or 9 mm Dot Character)
• MSR only • MSR + iButton • MSR + WiFi • MSR + IC card reader • MSR + RFID • MSR + Fingerprint	• MSR only • MSR + iButton • MSR + WiFi • MSR + IC card reader • MSR + RFID • MSR + Fingerprint	• MSR • iButton • Fingerprint • IC card reader • RFID (13.56MHz) • WiFi (802.11b/g/n) • MSR + iButton • MSR + Fingerprint	• MSR + IC card reader • MSR + RFID (13.56MHz) • MSR + WiFi (802.11b/g/n) • MSR + iButton
Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes
60W 12V power adapter	150W 12V power adapter	WP-7530-XX50: 12V / 60Watt Power Adaptor	WP-7530-XX60: 19V / 90Watt Power Adaptor
Aluminum die-casting and plastic housing	Aluminum die-casting and plastic housing	Die-casting and plastic housing	Die-casting and plastic housing
Black, white	Black, white	Black	Black
0°C ~ 40°C operating	0°C ~ 40°C operating	0°C ~ 40°C operating	0°C ~ 40°C operating
246 (D) x 400 (W) x 341 (H)mm / 6.68 kg	46 (D) x 400 (W) x 341 (H)mm / 6.68 kg	211 (D) x 365 (W) x 326 (H)mm / 6 Kg	211 (D) x 365 (W) x 326 (H)mm / 6 Kg
IP66 protection for front panel ; IP54 protection for whole unit (excluding VFD and counterfeit detection module)	IP66 protection for front panel ; IP54 protection for whole unit (excluding VFD and counterfeit detection module)	IP65 sealed front panel with touch screen (Optional full IP65)	IP65 sealed front panel with touch screen (Optional full IP65)
CE, FCC, RoHS, CCC (optional )	CE, FCC, RoHS, CCC (optional )	CE, FCC, RoHS	CE, FCC, RoHS
Windows 7 Pro Embedded, POSReady 7, Windows Embedded 8.1 Industry, Linux Kernel 3.13 or above	Windows 7 Pro Embedded, POSReady 7, Windows Embedded 8.1 Industry, Linux Kernel 3.13 or above	WEPOS, POSReady 2009, Win XP Pro Embedded, Windows 7 Pro Embedded and POSReady 7	WEPOS, POSReady 2009, Win XP Pro Embedded and Windows 7 Pro Embedded



Model Number		UTC-315PD	UTC-315PE	UTC-318PD	UTC-318PE
System	CPU	Intel® Quad-Core J1900 2.0 GHz	Intel® Duo Core i5-4300U 1.9GHz	Intel® Quad-Core J1900 2.0 GHz	Intel® Duo Core i5-4300U 1.9GHz
	Cache Memory	2MB	3MB	2MB	3MB
	System Memory	1 x SO-DIMM DDR3L 1333 MHz up to 8 GB	1 x SO-DIMM DDR3L 1333 MHz up to 8 GB	1 x SO-DIMM DDR3L 1333 MHz up to 8 GB	1 x SO-DIMM DDR3L 1333 MHz up to 8 GB
Display	Size/Max Resolution	15.6" TFT LCD / 1366 x 768	15.6" TFT LCD / 1366 x 768	18.5" TFT LCD (1366 x 768)	18.5" TFT LCD (1366 x 768)
	Brightness	200cd/m2	200cd/m2	250 cd/m2	250 cd/m2
	Touch Screen	5-wires resistive / P-Cap Touch			
Storage	HDD Driver	1 x 2.5" SATA HDD/SSD bay	1 x 2.5 internal SATA HDD bay	1 x 2.5 internal SATA HDD bay	1 x 2.5 internal SATA HDD bay
	SSD	1 x Full-size MiniPcie/mSATA			
I/O	Serial Port	1 x RS-232 , 1 x RS-232 / 422 / 485	1 x RS-232 (optional CSAFE), 1 x RS-232/422/485	1 x RS-232 , 1 x RS-232 / 422 / 485	1 x RS-232 (optional CSAFE), 1 x RS-232/422/485
	USB Port	5 x USB 2.0 / 1 x USB 3.0	2 x USB 2.0 / 4 x USB 3.0	5 x USB 2.0 / 1 x USB 3.0	2 x USB 2.0 / 4 x USB 3.0
	Output	1 x HDMI	1 x HDMI	1 x HDMI	1 x HDMI
	Audio	Audio Line-out x 1, Mic-in x 1			
	Ethernet	2 x Gigabit Ethernet ports (RJ-45)			
	Parallel Port	-	-	-	-
	Extendable Slot	-	-	-	-
	Cashe Drawer	RJ-11 (optional) 12V/24V	RJ-11 (optional) 12V/24V	RJ-11 (optional) 12V/24V	RJ-11 (optional) 12V/24V
Modular Option	Second Dispaly	• 10.1" Pole Mount Display • VFD Display			
	Add-on module	• MSR only • RFID • Smart card reader • 5M Camera Module • 1D Barcode Scanner • 2D Barcode Scanner	• MSR only • RFID • Smart card reader • 5M Camera Module • 1D Barcode Scanner • 2D Barcode Scanner	• MSR only • RFID • Smart card reader • 5M Camera Module • 1D Barcode Scanner • 2D Barcode Scanner	• MSR only • RFID • Smart card reader • 5M Camera Module • 1D Barcode Scanner • 2D Barcode Scanner
Mounting Option	Stand Base	Yes	Yes	Yes	Yes
	Wall/Pole Mount	Yes	Yes	Yes	Yes
Mechanical & Environment	Power Supply	12 V/7 A (84W ITE Adapter)	12~30V/7A (84W ITE Adapter)	12 V/7 A (84W ITE Adapter)	12~30V/7A (84W ITE Adapter)
	Case Material	Plastic housing	Plastic housing	Plastic housing	Plastic housing
	Case Color	Black, White	Black, White	Black, White	Black, White
	Operation Temperature	0°C ~ 40°C operating			
	Dimensions & Weight	402 x 260 x 39.7 mm / Wall mount type: <4 kg Stand base type: 5.5 kg	402 x 260 x 39.7 mm / Wall mount type: <4 kg Stand base type: 5.5 kg	475 x 295 x 43.5 mm / Wall mount type: <4 kg Stand base type: 5.5 kg	475 x 295 x 43.5 mm / Wall mount type: <4 kg Stand base type: 5.5 kg
	IP Rating	IP 65	IP 65	IP 65	IP 65
	EMI / Safety	CE, FCC, UL, CCC CB,BSMI			
OS Support		Windows Embedded 8.1 Industry Pro 64bit Windows Embedded Standard 8 64bit Windows Pro Embedded 7 SP1 64bit Windows Embedded Standard 7P 32bit Windows Embedded Standard 7E 32bit Android 4.4 POSReady 2009 POSReady 7 Linux	Windows Embedded 8.1 Industry Pro 64bit Windows Embedded Standard 8 64bit Windows Pro Embedded 7 SP1 64bit Windows Embedded Standard 7P 32bit Windows Embedded Standard 7E 32bit Android 4.4 POSReady 2009 POSReady 7 Linux	Windows Embedded 8.1 Industry Pro 64bit Windows Embedded Standard 8 64bit Windows Pro Embedded 7 SP1 64bit Windows Embedded Standard 7P 32bit Windows Embedded Standard 7E 32bit Android 4.4 POSReady 2009 POSReady 7 Linux	Windows Embedded 8.1 Industry Pro 64bit Windows Embedded Standard 8 64bit Windows Pro Embedded 7 SP1 64bit Windows Embedded Standard 7P 32bit Windows Embedded Standard 7E 32bit Android 4.4 POSReady 2009 POSReady 7 Linux

# Memo

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Fax: 1-513-742-8892

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

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00800-2426-8080

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More Information



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