



*Enabling an Intelligent Planet*

Product Catalog 2018-2019

# Embedded IoT Solutions

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- **Integrated IoT Solutions**

WISE-PaaS/EdgeSense

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Edge Intelligence Servers

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**ADVANTECH**

*Enabling an Intelligent Planet*

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

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# About Embedded IoT

## Worldwide Leader in Embedded Design and Services

Founded in 1983, Advantech is a leader in providing comprehensive system integration, hardware, software, customer-centric design services, and global logistics support. We cooperate closely with our partners to help provide complete solutions for a wide array of IoT applications across a diverse range of industries. For embedded markets, we not only provide the next generation of embedded computing products but also offer more value through various embedded design-in and software services.

About Embedded IoT



### Integrated IoT Solutions

By providing integrated IoT solutions ranging from sensor nodes and gateways to edge intelligence solutions and cloud services, Advantech has accelerated the IoT value chain and ecosystem. This has enabled customers to develop IoT applications with professional services including WISE-PaaS software services, embedded BIOS/OS services, and software API and utility services.

### Embedded Boards

We offer a full spectrum of embedded boards in multiple form factors, ranging from computer-on-module and multi-I/O extension boards and embedded single board computers to industrial motherboards, and we are continuously developing innovative form factors to meet customers' changing needs.

### Embedded Systems

Advantech offers all-in-one fanless embedded systems, easy-to-configure embedded PCs, and vertical -focused solutions with pre-integrated software services for digital signage, in-vehicle, railway, and gaming applications. This allows customers to not only rapidly implement various applications but also to maximize their benefits.

### Industrial Displays and Modules

Advantech's industrial peripheral products (e.g., storage, wireless devices, touch modules, and displays) and software turn-key solutions provide innovative options for industrial PC applications and are fully compatible with Advantech embedded boards and systems.

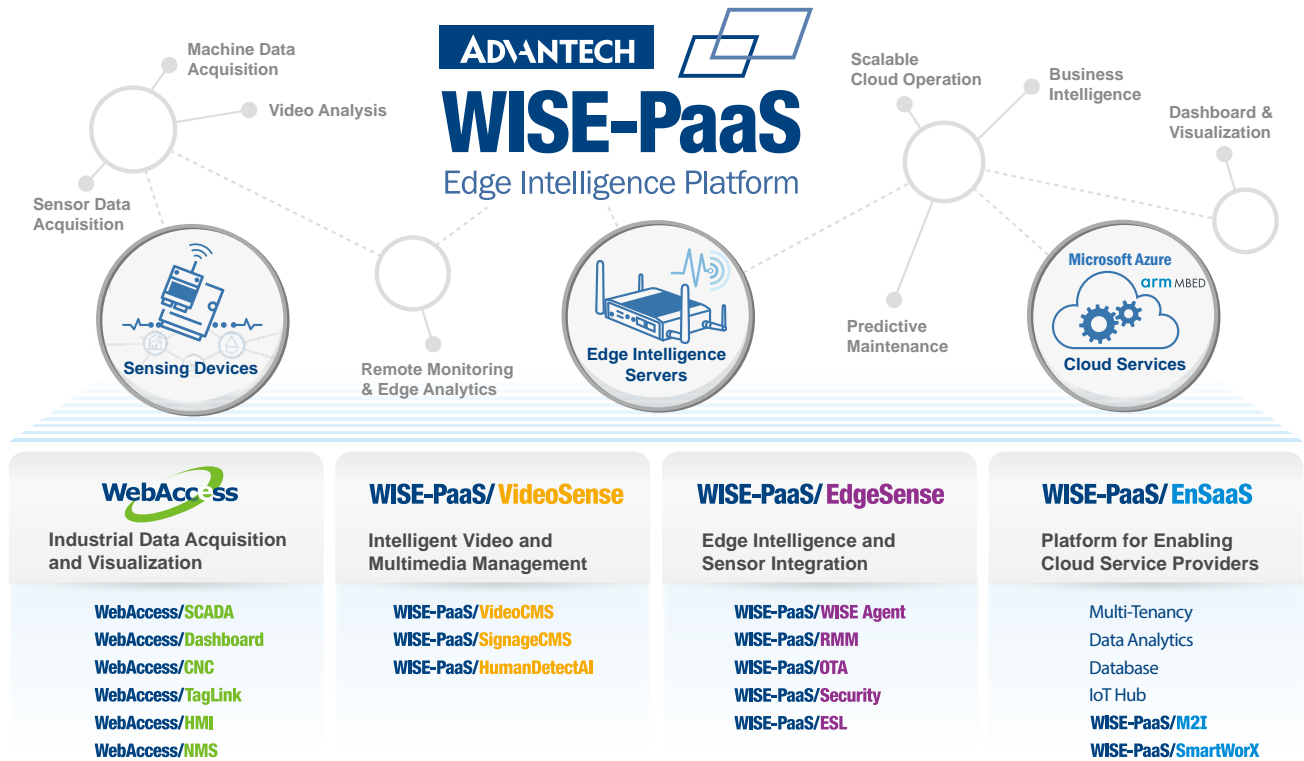
### Design-in Services

Streamlined design-in services ensure that engineering demands are fulfilled at the design-in phase, bringing notable benefits that can shorten design and integration cycles, thus minimizing uncertainty and risk. Services include wide-temperature and ruggedized solutions.

# WISE-PaaS

## Enabling IoT Edge Intelligence with WISE-PaaS

Advantech has launched WISE-PaaS, an IoT platform, to provide complete solutions to our partners and clients, enabling them to realize their IoT business. The WISE-PaaS platform integrates Advantech's software packages, various IoT cloud services, and security services. This offering is suitable for optimizing the utility of specific domains and includes four main software clusters: WebAccess, WISE-PaaS/VideoSense, WISE-PaaS/EdgeSense, and WISE-PaaS/EnSaaS.



### WISE-PaaS/EnSaaS

WISE-PaaS/EnSaaS is a software platform designed to power cloud services. It provides a highly secure, multi-tenancy architecture that can be automatically expanded to create a highly robust data platform for Advantech's domain-focused cloud services or customer cloud services.

### WISE-PaaS/EdgeSense

WISE-PaaS/EdgeSense is an edge intelligence and sensor integration software solution that incorporates sensor data aggregation, over-the-air software-in-time updates, edge analytics, cloud applications, and secure end-to-end data protection for easily deriving real-time device-to-cloud operational intelligence.

### WISE-PaaS/VideoSense

WISE-PaaS/VideoSense is a service platform for intelligent video analytics. It collects sensor data, performs video analytics, data visualization, and dispatches files through a central management system. It also offers several video technology modules for application in security, retail, logistics, transportation, and medicine.

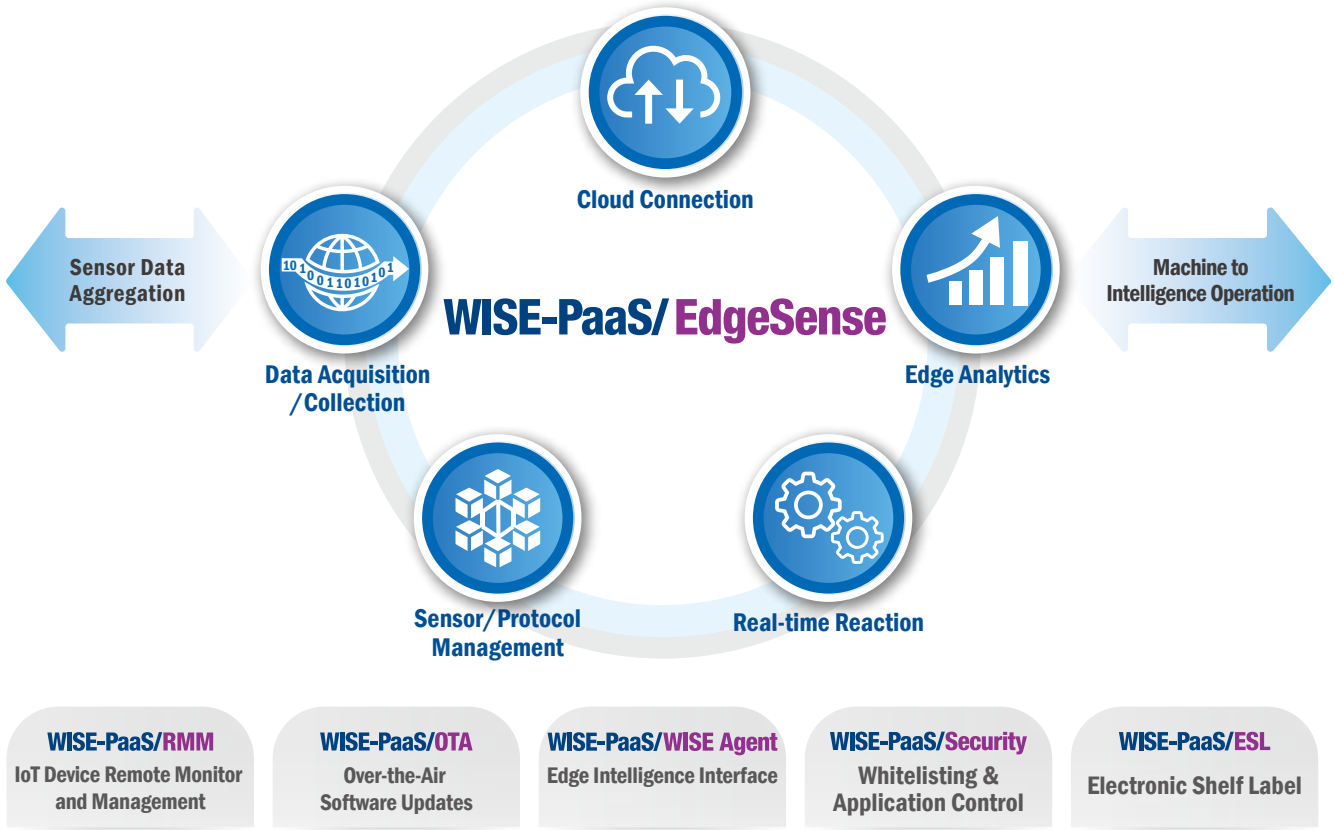
### WebAccess

WebAccess is the core of Advantech's industrial IoT solutions for data acquisition, analysis, and visualization. It supports open interface APIs for secondary development and enterprise-level system integration. Using a cross-browser dashboard interface, you can easily control all on-site activities and make decisions at any time from any location from your PC, smartphone, or tablet.

# WISE-PaaS/EdgeSense

## Edge Intelligence & Sensor Integration

WISE-PaaS/EdgeSense is an edge intelligence and sensing integration software solution that incorporates sensor data aggregation, over-the-air software-in-time updates, edge analytics, cloud applications, and secure end-to-end data protection for fast and easy real-time device-to-cloud operational intelligence.



### Service Highlights



#### Data Acquisition/ Collection

Everything starts with device data. The built-in WISE Agent integrates various sensor data formats for aggregating data from sensors via either wired or wireless approaches.



#### Sensor/Protocol Management

WISE Agent provides an open and standard interface, offering both remote monitoring and control functionality over multiple types of sensor data.



#### Cloud Connectivity

The bridge for transmitting field data from sensors to the cloud is the MQTT protocol, which is adopted for its bidirectional capabilities, meaning that you can both deploy commands and acquire data remotely.



#### Real-time Reaction

This allows you to set up simple logics for the local and non-cloud processing of acquired data. This is a more efficient approach to data processing, especially with regard to optimizing time management and the processing of throughput-sensitive cases.



#### Edge Analytics

It is feasible to execute proper algorithms to meet business artificial intelligence and predictive maintenance requirements at the network edge. Our goal is to help our partners increase their overall operation efficiency and value.



# IoT Cloud Services

## Platform for Enabling Cloud Service Providers

As a software platform designed to empower cloud services, WISE-PaaS/EnSaaS provides a highly secure, multi-tenancy architecture with automatic expansion to ensure that this data platform is highly robust for either domain-focused cloud services provided by Advantech or those developed by customers.



### Service Highlights

#### Arm Mbed Cloud

- Device management and provisioning on a centralized web-based console
- End-to-end security offers protection on devices and the cloud
- Remote software update service



#### Amazon Web Services

- Connect devices to various services provided by AWS
- Build scalable, global, and secure IoT applications
- Bring computing capabilities to edge devices



#### Microsoft Azure

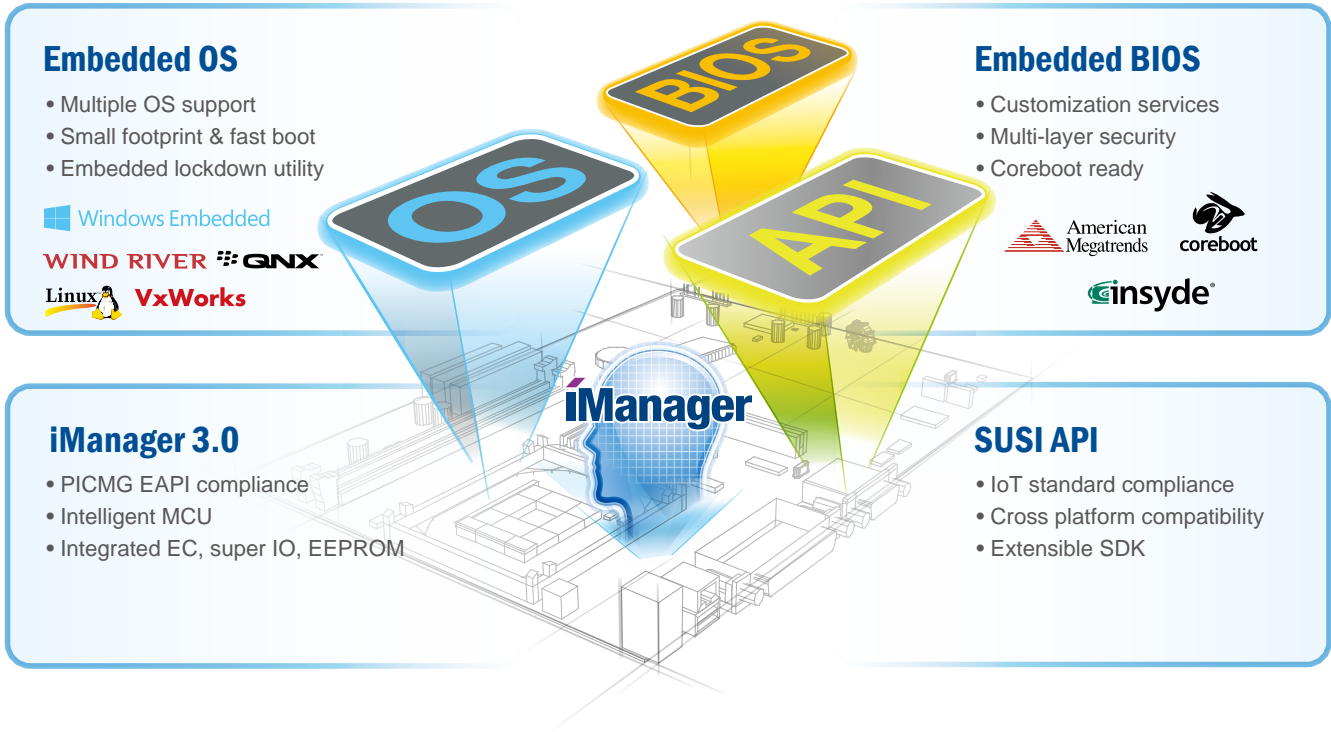
- Build trusted and intelligent cloud applications for use in most global regions
- Easy implementation of ready-to-use IoT
- Mine big data with a complete business analysis tool



# Embedded BIOS, OS, and APIs

## Connecting to Leading Edge Technologies

Our dedicated global embedded software team is committed to providing a range of services from embedded BIOS and OS to software APIs and utilities. By leveraging our seamless hardware/ software integration services, embedded developers can lower their design effort and project complexity while accelerating product development.



## Embedded BIOS

We provide full-feature embedded BIOS solutions that deliver superior performance in compatibility and functionality. A variety of options and extensions enable you to tailor your products to suit a wide range of target markets, and our BIOS solutions are coreboot-ready. Secure boot options are optimized to ensure a secure POST process prior to OS startup. Furthermore, our BIOS suite makes it possible to build custom firmware tools, such as DMI, BIOS configurations, and modules, for flexibility in OS support.

### Fast Boot:

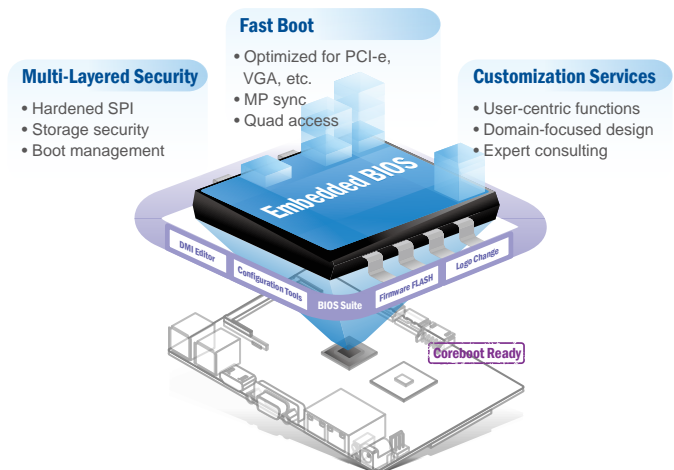
We continue to work with ISV, to provide Fast Boot solutions with optimized PCI-e, VGA, etc., meeting 1.5 seconds boot times, especially in important in military and medical products.

### Multi-Layered Security:

Our embedded BIOS provides three levels of security, namely hardened SPI, storage security, and boot management, to protect against viruses, malware, and uncertified devices in the pre-OS environment.

### Customization Services:

With our customization services, we provide full-feature modularized designs and customizable mechanisms that can accelerate system development and simplify customization. Proven quality, rapid execution, and industry-leading experience are the hallmarks of our consulting services.





## Embedded OS

To facilitate system integration, Advantech provides wide OS support, customized embedded OS images, and built-in configuration utilities for our embedded platforms. This ensures that you can choose the most suitable platform based on your specific needs.

### Windows:

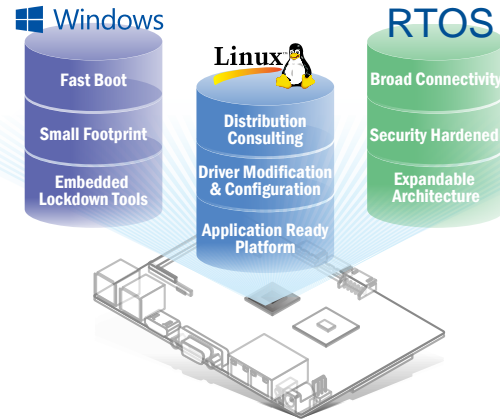
We offer a full range of Microsoft Windows Embedded platforms with ready-to-use embedded OS images and a complete set of components for rapid prototyping and application development.

### Linux:

Installation and verification are available for Yocto, Ubuntu, Red Hat, and more, with additional services for driver modification, configuration, and general distribution consulting. Notably, we have cooperated with Wind River for Pulsar Linux, a container-based OS that delivers vital components for the productization and commercialization of IoT devices.

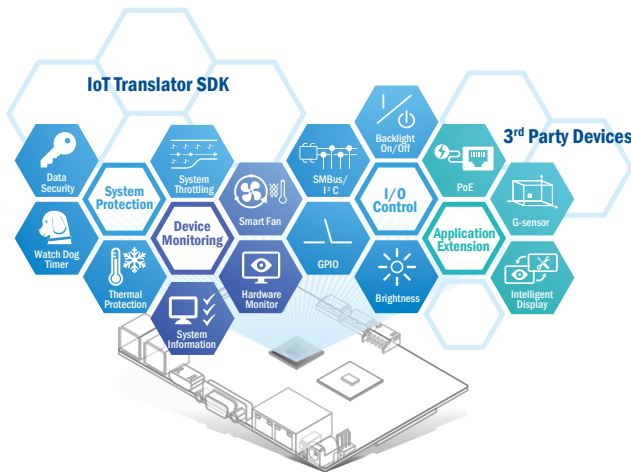
### RTOS:

We provide a series of RTOS services, including RTX, QNX, Windows CE, and VxWorks, in order to deliver robust, secure, and scalable virtualization capabilities.



## SUSI APIs

Advantech has created secure, unified, and smart interface (SUSI) APIs with user-friendly, intelligent, integrated interfaces that deliver add-on value for Advantech platforms. SUSI APIs make it easier for you to program and configure features while maintaining full control over their application.



### System Protection:

Your system data and performance are protected with data security, watch dog timer, thermal protection, and system throttling features.

### Device Monitoring:

Monitor and detect device data including smart fan, hardware monitoring, and system information for further management and optimization.

### I/O Control:

Access and manage I/O modules for device control over such features as general purpose I/O, SMBus/I2C, backlight on/off, and brightness.

### Application Extension:

Gain access to external modules or devices for the development of PoE, G-sensor, and intelligent display applications.

### IoT "Translator" SDK:

With a modularized SDK to help customers integrate their own devices into Advantech platforms, our IoT SDK plays the role of a translator, allowing plugin functions to connect with Advantech WISE-PaaS.

## iManager 3.0: Intelligent Self-Management

iManager is a built-in solution chip with a standardized API that integrates several unique platform consolidation functions needed by embedded system integrators to help improve consistency, lighten development efforts, and shorten product time-to-market.

### PICMG EAPI Compliance:

Compliance with the PICMG EAPI standard ensures maximum compatibility and rapid integration.

### Intelligent MCU:

Our solutions are integrated with EEPROM, SPI, EC, and super I/O for rapid deployment.

### I/O Capabilities:

We provide I/O support for diverse applications.

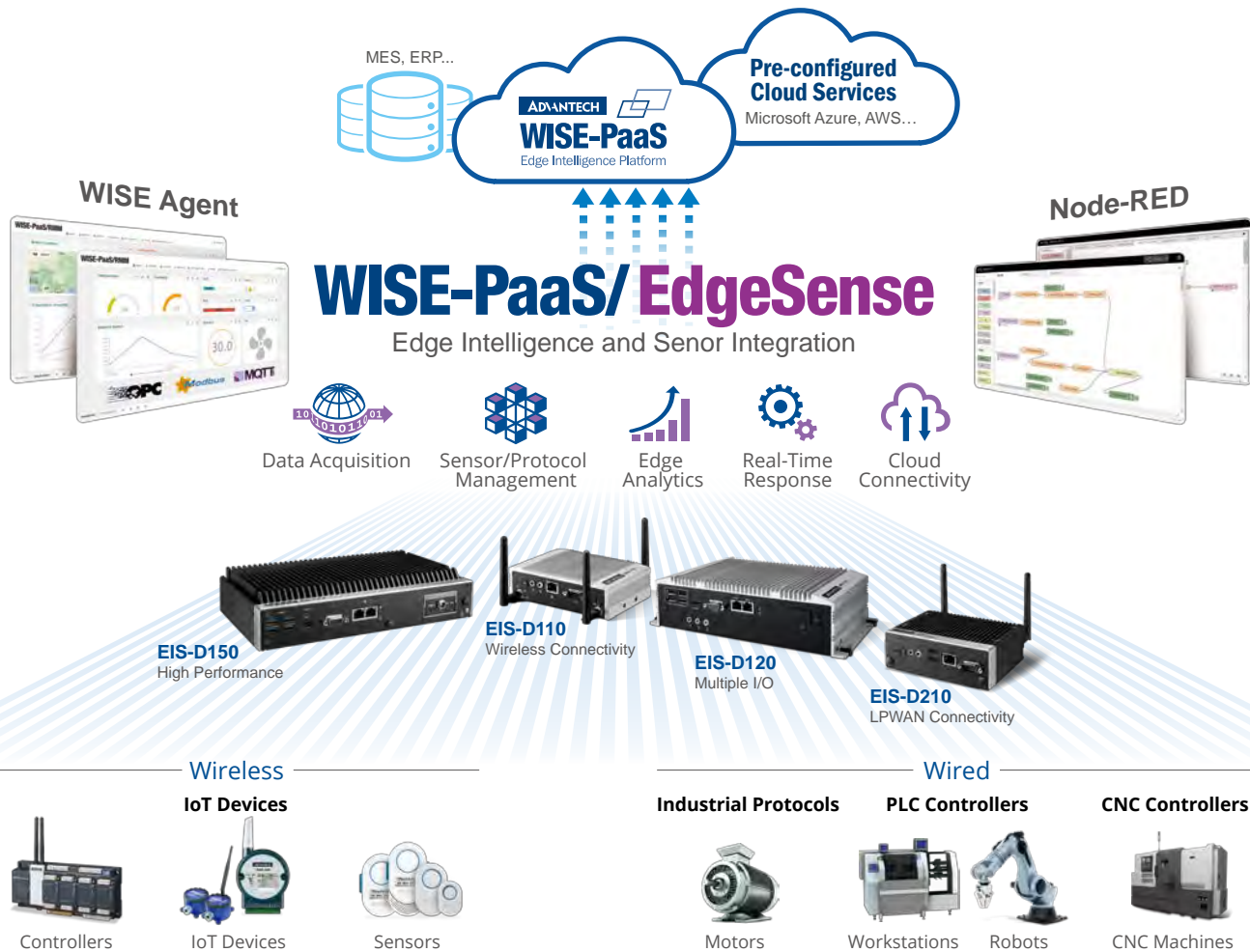


# Edge Intelligence Servers

## Building Up Edge-to-Cloud Applications

Advantech edge intelligence servers accelerate IoT implementation by providing integrated solutions with edge computer, WISE-PaaS/EdgeSense IoT edge intelligence and sensing integration software, IoT development tools, and preconfigured cloud services. Our servers facilitate centralized data management, edge analytics, and achieving cloud connectivity, thus simplifying IoT application development, especially in equipment connections, data visualization, and predictive maintenance for machine-to-intelligence (M2I) applications.

- Comes with standard protocols (Modbus/OPC UA) and an open plugin SDK for sensor data acquisition
- Preintegrated dataflow logic designer Node-RED for data processing and flow control for preventive maintenance
- Preconfigured Microsoft Azure and AWS Greengrass cloud services for data analytics
- Open and standard structure/components allow for easy upgrading and future expansion



### Features



#### Simplify Deployment

Built-in WISE-PaaS/EdgeSense gives you animated graphics displays and real-time data control.



#### High Repeatability

Modulized logic flow control can be exported to similar equipment to save workload and development time.



#### Preventive Maintenance

Our solutions allow you to analyze aggregated sensor data to discover patterns for device management/optimization and scheduled maintenance to prevent failure.

# IoT Gateways

## Simplify Your IoT Deployment with Multit-connectivity Design

Advantech's UTX series of embedded IoT gateways are designed for end device data analysis and transmission, increasing operational efficiency by giving you the information you need to make effective decisions. This aids in deriving intelligence to drive new design innovations and makes business transformation a viable option. In addition, the UTX series supports multiple connectivity options and IoT software integration, making it ideal for Industry 4.0 solutions in smart city, and smart energy applications.

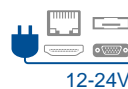


### Innovative Design Features



#### Optimized Thermal Solutions

- Wide operating temperature, -20~60°C
- Double-sided optimized thermal solution



#### Wide power input & Rich I/O

- 12-24V power input
- Supports RS-232/422/485



#### Multi-connectivity Design

- 5-antenna design: 3G/LTE, Wi-Fi, Zigbee, and LoRa
- 3 RF modules for add-on flexibility



#### IoT Software Integration

- OS support: Windows 10, WindRiver Pulsar
- IoT software integration: WISE-PaaS IoT software platform, AWS Greengrass, Microsoft IoT Edge

# Wireless IoT Sensor Nodes and Gateways

## Accelerate Integration from Sensors to the Cloud

Integrated IoT Solutions

Advantech offers a comprehensive range of wireless IoT solutions powered by Arm core technology. Featuring low-power consumption and a selection of wireless Arm® Mbed™ cloud service technologies, Advantech's sensor nodes, gateways, and cloud services can help you quickly and easily build wireless IoT device-to-cloud network solutions.



### Features



#### Modular Design

Advantech has developed the M2.COM open standard, a simple modular design for IoT sensor nodes and sensors.



#### Worldwide Certification-Ready

To simplify system development, Advantech offers wireless sensor node and gateway solutions with internationally recognized RF certification.



#### Value-Added Software

Advantech provides API and SDK support for accurate design and easy development.



#### IoT Software Built-in

Advantech WISE series incorporates WISE-PaaS/RMM IoT software platform to help build IoT applications quickly.





# Wireless ePaper Display Solutions

## Enable Battery-Powered IoT Display Applications


Advantech provides hardware and software integrated wireless ePaper display solutions: wireless ePaper modules, a router, a gateway, and WISE-PaaS/ESL software to accelerate implementation in a wide range of applications such as electronic shelf labelling, and digital signage in smart warehouses. The WISE-PaaS/ESL software package enables easy management over the whole system locally or remotely over the internet using the MQTT protocol. System integrators and developers can focus on their own application development and build customer satisfaction. Our solutions enable battery-powered IoT display applications in smart warehouses, industrial equipment, and intelligent healthcare fields.

### Smart Warehouse







2.9" ePaper Display  
**EPD-023B**




### Industrial Equipment




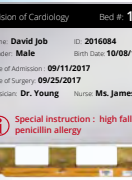


5.65" ePaper Display  
**EPD-053R**





### Intelligent Healthcare






13.3" ePaper Display  
**EPD-132R**






**WISE-PaaS/ESL**



**ePaper Manager**



**Advantech IoT Gateway & Edge Intelligence Server**



**Router EPD-800**

### Features



#### Ultra Low Power

Supports ultra low power design with battery life up to 5 years



#### Easy Deployment

10,000 modules can join networks and be updated automatically in 1 hour



#### Design-in Service

Build your own application with integrated ePaper driver, wireless and power technology



#### Centralized Content Management

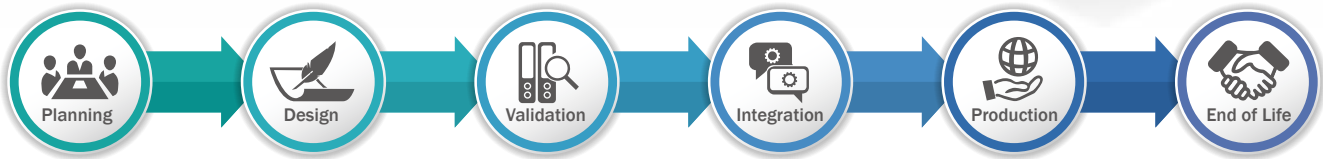
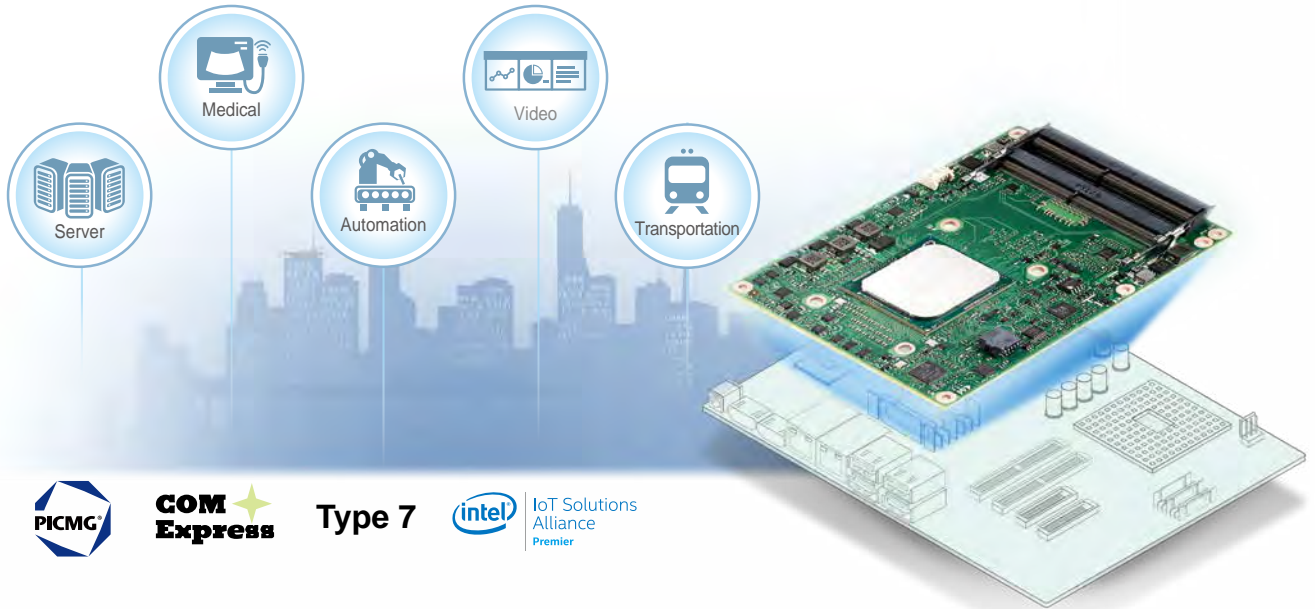
Built-in WISE-PaaS/ESL for content management and maintenance

# Computer On Modules

## Accelerate Application Development with Dedicated Design-In Services

Embedded Boards

To help customers accelerate the development of their core competencies, computer-on-module (COM) systems can be utilized to reduce the time and effort involved in designing new carrier boards. Advantech's COM series includes the COM-Express series, ETX, and Qseven, all of which offer additional design-in services that provide small form factor support while also supporting the latest Intel CPUs.

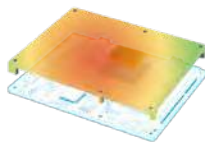


### Innovative Technologies and Services



#### Full Customization Services

- COM customization
- Semi-system integration
- Carrier board design and production
- Manufacturing services



#### DHCS Thermal Solution

- Mates 100% with CPU for improved heat transfer performance
- Automatic CPU pressure adjustment keeps the board flat
- Thin design for space-limited systems



#### COM for Server Applications

- Ultimate computing performance
- Fast data transmission
- Limited power consumption
- High expansion capability



#### COM Express 3.0

- Higher bandwidth networking support
- Low power consumption
- Ideal for healthcare, retail, testing and measurement, gaming, automation, and networking

### Full Range of COM Platforms



COM Express Basic



COM Express Compact



COM Express Mini



Qseven



Development Board



# Embedded Single Board Computers

## Enabling Next-Generation Industrial Applications

Advantech offers compact industrial-grade embedded single-board computers (SBCs) with rugged design, high flexibility, and easy expansion capabilities. Our range of product offerings vary from the 2.5" Pico-ITX and 3.5" SBC, to PC/104 and 5.25" EBX. Moreover, our innovative multi-I/O expansion design, which features multiple integrated I/Os and flexible design can facilitate system development, maximize resource efficiency, and assist integrators in providing optimized solutions that are more cost-effective.



### Multi-I/O Extension Design-In Process

#### Reference Design

- Off-the-shelf modules
- Available IP building blocks
- 2D/3D mechanical drawing

#### Design Checklist & Review

- Schematic design guide
- Layout checklist
- Local technical review service

#### Integration Services

- BIOS customization
- Thermal simulation & integration
- Enclosure & customization service

### Latest Product Series



**2.5" Pico-ITX**  
100 x 72 mm in Pico-ITX form factor



**PC/104**  
96 x 90 mm to 96 x 115 mm in PC/104-Plus, PC/104 or PCI-104 form factors



**3.5" SBC**  
146 x 102 mm in 3.5" form factor



**EBX & 5.25" SBC**  
203 x 146 mm in EBX/ 5.25" form factor

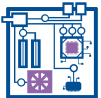
# Industrial Motherboards

## Form Entry to Server Grade Performance

Advantech offers you full range industrial motherboards with the latest platforms and industrial know-how, and services which aim to give you the cutting edge in technology to stay ahead of the competition.



### Advantech Core Design Value



#### The Latest Platform with Pioneering Design

- Early engagement with Intel & AMD
- -20~70°C optional temperature support
- 12-24V wide range DC input & dual power input source
- ESD level 4 protection & USB stability enhancement



#### Entry to Server-grade Performance

- THIN design for entry-level systems
- High reliability for mobile & ULT
- Desktop performance
- Server-grade & workstation CPU computing



#### Value-added IoT Software

- Embedded OS
- Embedded BIOS
- SUSI API / iManager 2.0
- Advantech WISE-PaaS/RMM
- Microsoft Azure



#### Global Service & Technical Support

- 14+ global service networks
- Local & online technical support
- Configure-to-order Service (CTOS)
- Customization service: thermal solution, I/O extension, and certification/validation

### To Meet Your Vertical Requirements

Medical	Kiosk/POS	Gaming/Signage	CNC/MA	Surveillance/ Server
<b>Hardware &amp; Software Features</b>				
<ul style="list-style-type: none"> <li>• High ESD protection</li> <li>• High speed multiple IO</li> <li>• Longevity support</li> </ul>	<ul style="list-style-type: none"> <li>• Massive I/O with reliable</li> <li>• USB design and control</li> <li>• Value-added software</li> </ul>	<ul style="list-style-type: none"> <li>• High graphic performance</li> <li>• Multiple independent display</li> </ul>	<ul style="list-style-type: none"> <li>• High reliability</li> <li>• Longevity support</li> <li>• WISE PaaS/RMM</li> </ul>	<ul style="list-style-type: none"> <li>• Multiple CPU Core (up to 16)</li> <li>• Massive SATA &amp; jumbo frame LAN (up to 10GbE)</li> </ul>

### Full Range of Product Offerings



**UTX**  
116.8x 111.8mm



**Mini-ITX**  
170x 170mm



**THIN Mini-ITX**  
170x 170 mm with 22mm in height



**Micro-ATX**  
244x 244mm

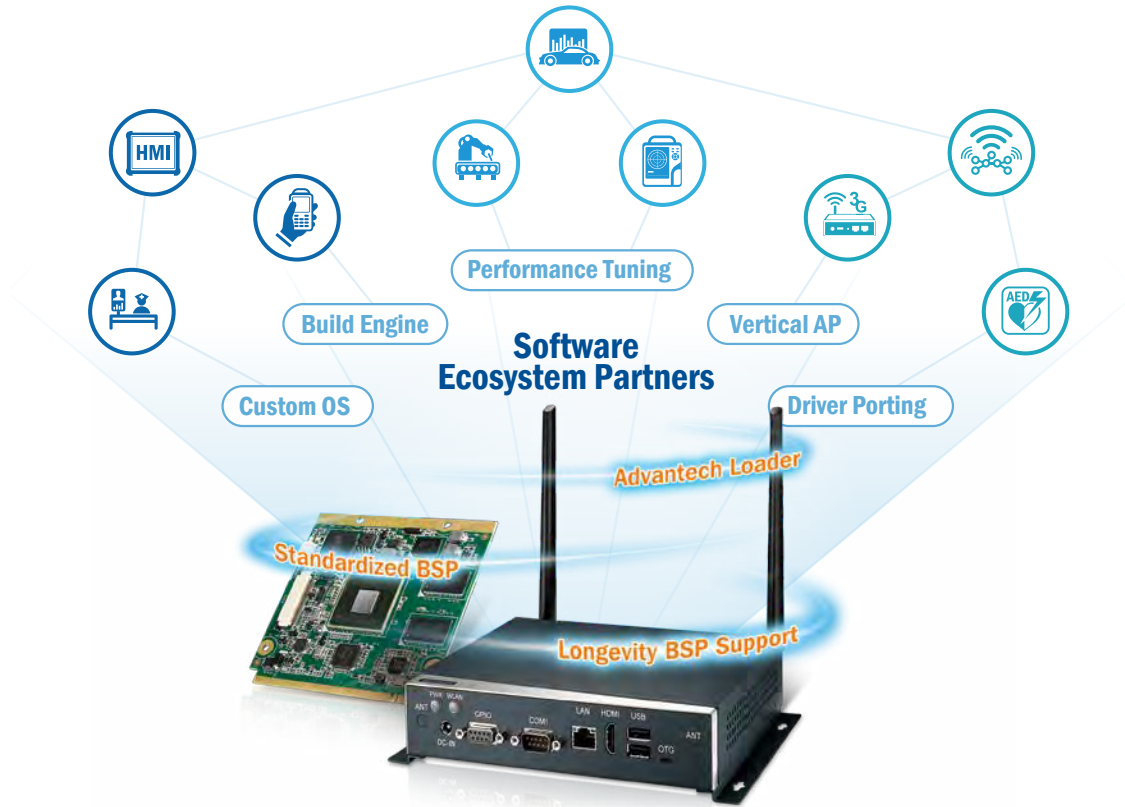


**ATX**  
304.8x 244 mm

# RISC Computing Solutions

## Embedded Linux & Android Ready ARM Solutions

ARM technology is leading the revolution in the IoT era due to its cost effectiveness and compact size. Advantech offers a standardized hardware platform with open design guidelines and relevant schematics that helps customers integrate general hardware platforms into unique applications. To achieve that, we dedicate ourselves to providing unified, organized and advanced software packages with longevity support.



### Features



#### Unified S/W and BSP with Longevit

- Longevity upgrade
- Unified architecture
- Complete documentation



#### Time-To-Market Design-in Services

- Hardware design review
- Software reference code
- Online SW support



#### Leading Technology in ARM Development

- The latest platform
- IoT connectivity
- Device management



#### Peripheral Integration Services

- Verified device driver code samples
- Longevity support
- Various peripheral support

### Comprehensive RISC Platforms



#### Computer On Module

SMARC, RTX (Advantech), Qseven



#### SBC & Motherboards

2.5", 3.5", Mini-ITX



#### Box Computers IoT

Optimized Box Solutions



#### Embedded PCs

EPC-R Series



Unified Platform for Embedded Linux & Android Industrial Applications  
[www.elaa-platform.org/en-us](http://www.elaa-platform.org/en-us)



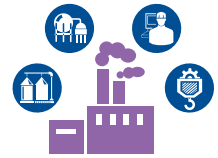
# Fanless Embedded Computers

## Modular System for Quick Equipment Integration

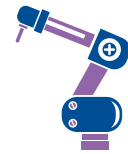
Advantech provides full customization services including a selection of offerings for I/O modules, OS software, and peripherals. You can choose from a flexible range of modular I/O options without concern for additional customization time, NRE, or costs. With our modular I/O design, you can rapidly implement your applications with maximal benefits.



### Diverse Solution Packages



Factory Automation



Machine Automation



Video Processing

### Integrated Software Services

#### Remote Monitoring and Management

- Centralized IoT device HW & SW status management
- Built-in 15+ real-time monitoring widgets

**WISE-PaaS/RMM**

#### Video Content Management Software

- Intelligent video platform and analytics
- Modularized SDK

**WISE-PaaS/VideoCMS**

#### Smart SCADA Management

- Dashboard editor & viewer
- Widget library & widget builder
- Cross browser & device viewing

**WebAccess/SCADA**

### Full Configuration

#### Selected I/O and Power



#### Operating System

Windows 10 IoT Enterprise  
 Windows 10 IoT Core Pro  
 Windows Embedded 8.1  
 Windows Embedded 8  
 Windows Embedded 7

Microsoft

#### Peripherals



# Embedded PCs

## Your Vertical Applications Enabler

To meet different vertical needs, Advantech offers 6 series of Embedded PCs (EPC), providing high-performance graphics, various I/O expansion options, multiple displays connections, and a rugged enclosure. With these product features, Advantech's EPC is ideal for applications in self-service kiosk, passenger information systems, gaming and industrial automation.



### Features



#### Full Range Offerings

- Low-power to server-grade performance
- 1U & 2U compact design
- Reliable fanless design



#### Optimized Mechanical Design

- I/O design flexibility
- Rich expansion capability
- Multiple mounting: Wall/VESA/DIN rail



#### Quick Integration Services

- Fast local CTOS assembly
- One-stop peripheral integration
- Customized safety certification



#### Software Integration

- Advantech WISE-PaaS/EdgeSense
- Windows OS image ready
- SUSI API unified interface

### Full Range of EPC

#### EPC-S Series



- Compact 1U fanless system
- Designed for 3.5" SBC

#### EPC-C Series



- Fan & Fanless configurable system
- Designed for 3.5" SBC

#### EPC-X Series



- Fanless system
- Available with extension boards or MIOe modules

#### EPC-R Series



- ARM base with Linux/Android SW
- Designed for Mini-ITX motherboards

#### EPC-T Series



- THIN design under 1U height
- Designed for THIN Mini-ITX motherboards

#### EPC-B Series



- Scalable design
- Designed for all Mini-ITX motherboards

# In-Vehicle and Railway Systems

## Certified Designs for In-Vehicle, Rolling Stock Applications

We provide in-vehicle and rolling stock embedded systems with designs unique for transportation industry applications. These products feature in-vehicle/rolling stock certifications (eMark/EN50155), high extension capability for communication interfaces, wireless 3G/LTE and GPS communication support, and wide operating temperature designs.



### Embedded Modular Design



### Embedded Peripherals



### Vertical Accessories



### Eco-Partner Collaboration—The Key to Success

- Generate additional revenues by being a "solutions seller"
- Grow your market share by leveraging Advantech brand
- Explore new opportunities with Advantech global sales team
- Professional training and support worldwide



### Product Series



In-Vehicle Systems



Surveillance Systems



Railway Systems



# Cloud-based Digital Signage Solutions

## Immersive Experience and Easy Management

Digital signage has evolved into an interactive and personalized communication tool. It is now a vital link to connect advertisers with viewers for a more direct engagement and experience. Advantech cloud-based digital signage solution covers most business and environmental needs, from single stores to central management, commercial to industrial applications. All systems come bundled with content management, device monitoring, and content security software, and can connect with WiFi, 3G or LTE modules for a flexible range of communication possibilities.



**WISE-PaaS/RMM**  
**WISE-PaaS/SignageCMS**

### Built-in Software



#### Cloud-based Management

- Remotely edit and dispatch programs to up to 500 display clients
- Remote monitoring & reporting
- Supports public, private, LAN



#### Remote Control and Monitoring

- Remote KVM/on/off
- Hardware monitoring: CPU temperature, fan speed, and voltage



#### User-friendly Interface

- Drag and drop operation
- Supports 30+ media formats
- Preloads diverse layout templates



#### Content Security/System Recovery

- Centralized security management
- Whitelist system protection
- Timely backup and recovery

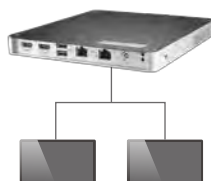
### Ready-to-use Platforms

#### Entry Level Series



2 Displays

#### Ultra Slim Series



2 UHD/FHD Displays

#### Multi-display Series



3-6 Displays

#### OPS Series



2-3 Displays

# Gaming Computing Platforms

## The Widest Range of Solutions for the Gaming Industry

Vertical Focused Solutions

Advantech-Innocore is dedicated to providing advanced gaming solutions for customers. We offer the widest range of industrial grade computer products designed specifically for the gaming industry. We provide our customers with excellent standard products, customized products and services, and we employ the latest up-to-date technologies for gaming solutions to meet the requirements for casino machines, AWP's, VLT's, multiplayer games, arcade games, and pachislots.



### DPX® Gaming Platforms & Systems

#### Standalone (S Series)



DPX-S445



DPX-S2445



DPX-E135



DPX-E250

#### ODM/Customized



### Gaming Displays and Touch Solutions



IDS-3121GD



CRV31-430WP

### Gaming Peripherals

#### Long Lifecycle Graphic Cards



#### Industrial Storage Modules



# Industrial Display Systems

## A Leading Specialist for Display Technologies, Products and Solutions

Advantech designs, develops and manufactures display systems that meet the demands of industrial display markets in gaming, transportation, medical, and many system integration markets globally. All our products range from 5.7" to 55", from indoor to outdoor, from LCD kit to stand-alone monitors with demonstrable advantages in quality, project control and cost. Combining proven technologies and flexible manufacturing, Advantech creates class leading solutions for your customers that deliver significant product differentiation and competitive advantage. Our customer-centric approach reinforces all of our activities and in an essential part of the thousands of products we ship daily.



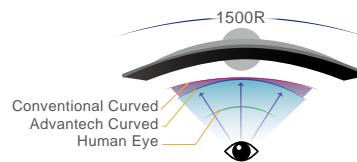
### Leading Display Technologies



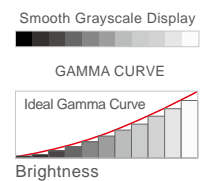
Optical Bonding



High Brightness



Curved Display



Medical Imaging

### Product Portfolio

Industrial/Outdoor  
Touch LCD Kits



IDK-1000/IDK-2000  
5.7"~21.5"

Slim Open Frame/  
Panel Mount Monitors



IDS-3100/IDS-3200  
6.5"~21.5"

Proflat Touch  
Monitors



IDP31 Series  
10.4", 15", 21.5"

Digital Signage  
Displays



DSD-3000/DSD-5000  
28"-55"

Curved  
Displays



CRV31-430WP  
43" UHD/FHD



# Industry-leading Flash and Memory Solutions

## Extreme Performance, 360-degree Security, Industrial Reliability

As the leading industrial flash and memory solution provider, Advantech offers a comprehensive industrial grade SSD and DRAM modules with better longevity for industrial and semi-industrial application developers. All our modules are designed with tier 1 IC, high endurance capability, the most comprehensive security functions, and pass 100% screening test.



### Features

#### Security Inside

- Self-encryption
- Data protection
- McAfee integration



#### Self-Management

- Lifetime prediction
- Remote device monitoring
- Online PMQ

#### Industrial Reliability

- Comprehensive protection against power failure
- 100% screening test
- Industrial grade design

### SQFlash

#### Industrial Flash Solutions



Supports various interfaces such as SATA, PCIe/NVMe, and PATA/IDE with multiple form factors including 2.5" SSD, mSATA, M.2, DOM, CFAST, and Half-Slim.

### SQRAM

#### Industrial Memory Solutions



Offers comprehensive product line including Unbuffered DIMM, SODIMM for Industrial applications and supports DDR4, DDR3, and DDR2.

### EXM

#### Embedded Extension Modules



Provides standard Half/Full-size Mini PCIe modules that support a variety of I/O to embedded boards and systems.

# Embedded IoT Wireless Modules & Design-in Services

## Simplifying Wireless Connectivity for IoT Platforms

To fully realize the benefits of connected platforms in the IoT era, Advantech Embedded IoT Wireless Module Solutions offer Bluetooth, Wi-Fi, GPS, 3G, and 4G modules with ready-to-use software and wireless design-in services as a total package for embedded vertical applications. With Advantech wireless modules, system integrators, and industrial PC vendors can easily implement extra wireless functions into their own systems or board level applications.



### Short Range Series



EWM-W157H  
EWM-W135H/F

802.11a/b/g/n, Bluetooth, ZigBee

### High Throughput Series



EWM-C117FL01E  
EWM-C163M201E

802.11AC,AX,4G LTE (+CAT-6)

### Smart Mobility Series



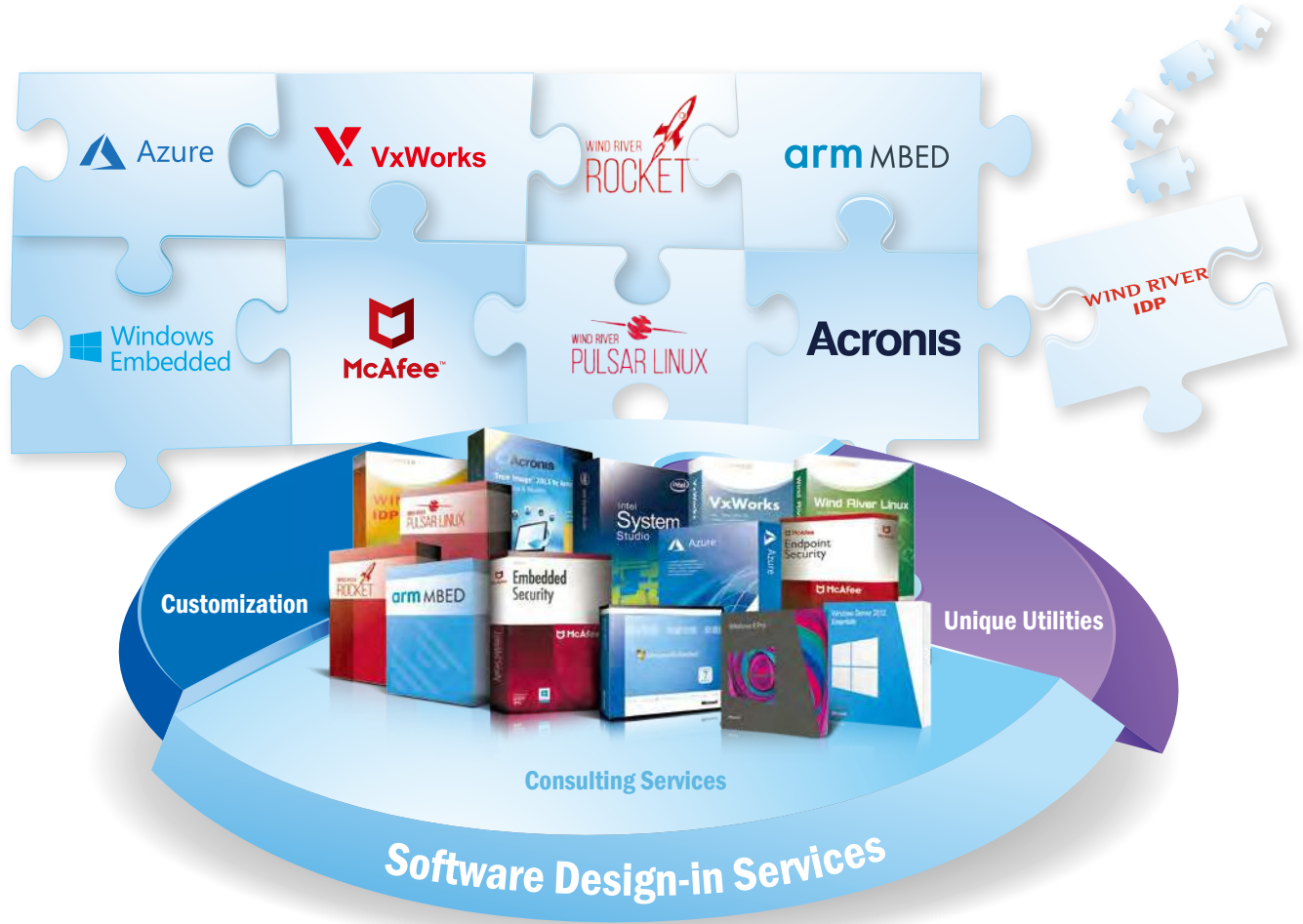
EWM-C109F601E  
EWM-G109H

GPS,3G WCDMA,LTE-CAT-M

# IoT Software Distribution

## Ensuring Device Manageability, Security and Connectivity

Advantech offers more than just a distribution license; it offers a series of value-added services, including hosting embedded solution seminars, hands-on training, and software APIs and utilities. You can leverage our professional embedded solution development capability to streamline your business.



### Product Series

Embeddeed OS	McAfee Embedded Security	Backup and Recovery
<p>We provide Microsoft Windows Embedded OS for use on embedded systems and devices. We also offer a series of real-time OS services for Advantech platforms, including Linux and Android solutions, to help developers implement IoT solutions in the field.</p>	<p>McAfee Embedded Security Solution is ideal for protecting systems with fixed CPU/memory resource functionality. Its low overhead has virtually no impact on system performance and is equally effective in standalone mode without network access.</p>	<p>Acronis provides a variety of backup and store options aimed at satisfying user needs in various application scenarios. The makes the overall backup and recovery process even more convenient and adds greater protection for user data.</p>
<ul style="list-style-type: none"> <li>• Windows Embedded OS</li> <li>• Wind River VxWorks</li> <li>• Wind River Pulsar Linux</li> </ul>	<ul style="list-style-type: none"> <li>• McAfee Embedded Security</li> <li>• McAfee Endpoint Protection</li> </ul>	<ul style="list-style-type: none"> <li>• Acronis Backup and Recovery Solution</li> </ul>



# Embedded Design To Order Services

## Enabling Your Vertical Solutions Through One-Stop Customization Services

Advantech's design-to-order service (DTOS) is a design service aimed at providing tailor-made systems and boards that meet specific application requirements. With our advanced, innovative, and world-leading technologies, we provide diverse levels of customization, flexibility for manufacturing, and worldwide technical/logistics support.



### Leading Technology

- Latest chipset solutions
- Vertical domain know-how
- IoT software platform services with WISE-PaaS built-in



### Trusted Quality

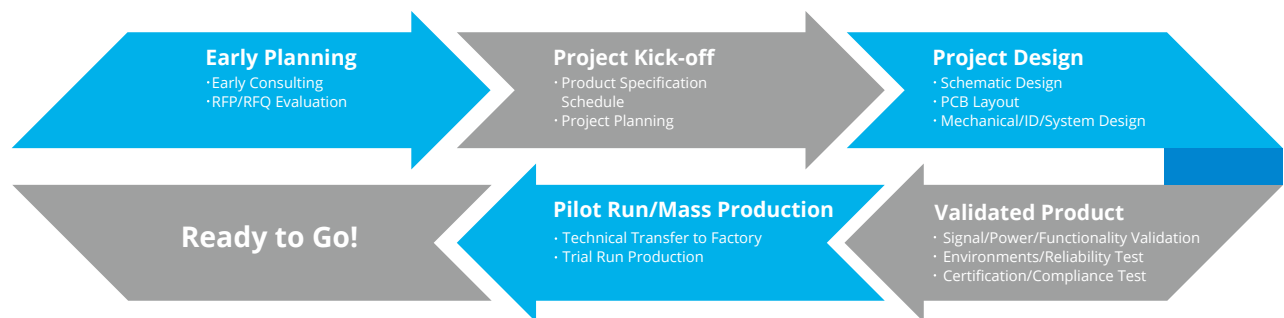
- Proven modular designs
- Top product reliability
- Solid quality assurance



### Dedicated Services

- Design-in eco partners
- HW & SW integration design
- Expert manufacturing service

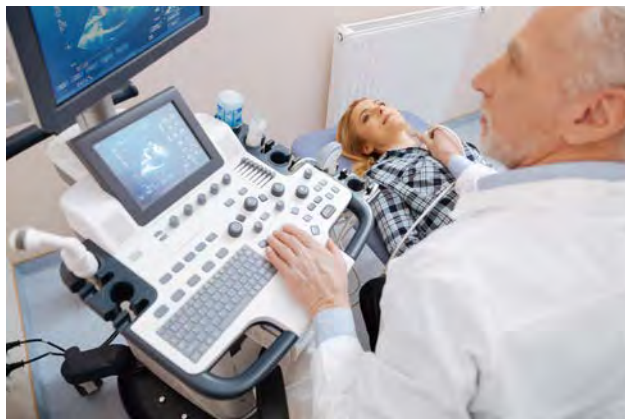
## DTOS Development Process



# Medical/Healthcare

Healthcare for senior citizens and persons with disabilities will be one of the main issues for smart cities. According to a recent IDC report, healthcare revenue driven by IoT technology will reach \$ 313 million in 2018 and the ubiquitous adoption of wireless technology in our personal lives will accelerate the adoption of remote devices in healthcare. For intelligent, connected medical devices, which provide superior care quality and remote management of clinical information, stable and ruggedized embedded solutions are widely used. Advantech embedded design-in capability, BIOS/FW/SW integration services, medical design validation, and product lifecycle control are crucial ingredients to advancing eHealthcare computing in the IoT era.

Source: Worldwide Internet of Things Spending by Vertical Market 2014–2018 Forecast, IDC, June 2014.



## Intelligent Systems for Outpatient Services

### Video Wall Solutions



**Embedded Boards**  
7th Gen Intel Core I  
**SOM-5898**

**Embedded Systems**  
Six display support  
**DS-980**

**Industrial Display**  
32"-55"  
**DSD-3000 Series**

**Storage**  
2.5" SATA-SSD  
**SQF-S25 830**

**IoT Device & Content Management**  
**WISE-PaaS/RMM**  
**WISE-PaaS/SignageCMS**  
**McAfee**

### Clinic Check-in Systems



**Embedded Boards**  
7th Gen Intel Core I  
**AIMB-285**

**Embedded Systems**  
Fanless & multiple I/O  
**ARK-2230**

**Industrial Display**  
Proflat monitors  
**IDP31-215 (21.5")**

**Storage**  
2.5" SATA-SSD  
**SQF-S25 640**

**IoT Device Management**  
**WISE-PaaS/RMM**  
**WISE-PaaS/OTA**

### Public Queuing Systems



**Embedded Boards**  
Intel Atom  
**MIO-3260**

**Embedded Systems**  
Fanless & Rich I/O  
**EPC-T1215**

**Industrial Display**  
Open frame monitor  
**IDS-3221W (21.5")**

**Storage**  
2.5" SATA-SSD  
**SQF-S25 640**

**IoT Device & Content Management**  
**WISE-PaaS/RMM**  
**WISE-PaaS/SignageCMS**  
**Azure**

## Medical Diagnosis & Equipment

### Ultra Sound



**Embedded Boards**  
7th Gen Intel Core I  
**AIMB-585 SOM-6898**  
NXP i.MX6 D/Q Plus  
**ROM-7421**

**DICOM Complied LCD**  
19" SXGA display  
**IDK-1119MD**

**Storage**  
2.5" SATA-SSD  
**SQF-S25 640**

**Embedded OS**  
Windows Embedded Compact/  
Windows Embedded Server

### MRI/CT Controller



**Embedded Boards**  
Intel Atom  
**SOM-6869 SOM-3569**  
**PCM-9366**

**Industrial Grade Touch Panel**  
5.7" - 21.5"  
**IDK-1000 Series**

**Storage**  
2.5" SATA-SSD  
**SQF-S25 830**

**Embedded OS**  
Windows Embedded Standard/  
Compact

## OCT System



**Embedded Boards**  
7th Gen Intel Core I  
**AIMB-275**  
Intel Atom  
**SOM-6869**

**Industrial Grade Touch Panel**  
5.7" - 21.5"  
**IDK-1000 Series**  
**Storage**  
2.5" SATA-SSD  
**SQF-S25 640**

**Embedded OS**  
Windows Embedded Standard  
/ Compact

## Healthcare Information Terminals

### Dialysis Machine

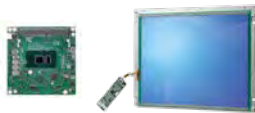


**Embedded Boards**  
Intel Atom  
**PCM-9310**  
TI AM3352 Cortex A8  
**ROM-3310**

**Industrial Grade Touch Panel**  
5.7" - 21.5"  
**IDK-1000 Series**  
**Storage**  
2.5" SATA-SSD  
**SQF-S25 640**

**Embedded OS**  
Windows Embedded Standard  
/ Compact

### Bedhead Monitor & Nursing Cart



**Embedded Boards**  
7th Gen Intel Core I  
**SOM-6898**  
Intel Atom  
**SOM-7569**

**Industrial Grade Touch Panel**  
5.7" - 21.5"  
**IDK-1000 Series**  
**Storage**  
2.5" SATA-SSD  
**SQF-S25 640**

**Embedded OS**  
Windows 10

### Automated Dispensing Machine



**Embedded Boards**  
Intel Atom  
**AIMB-217**  
**Embedded Systems**  
Compact & I/O expandable  
**ARK-1124**

**Industrial Display**  
15"  
**IDK-1115P IDS-3115**  
**Storage**  
2.5" SATA-SSD  
**SQF-S25 640**

**Embedded OS**  
Windows Embedded Standard

## Software Administration & Management

### Nurse Station Whiteboard



**Embedded System**  
OPS Design  
**DS-280**  
Low Power  
**EPC-R4760**

**Industrial Display**  
32"-55"  
**DSD-3000 Series**  
**Storage**  
2.5" SATA-SSD  
**SQF-S25 640**

**Embedded OS**  
Windows Embedded Standard/  
Compact/ Windows 10  
**IoT Device Management**  
**WISE-PaaS/RMM**  
**WebAccess/SCADA**  
**WISE-PaaS/SignageCMS**

### IT Control Room



**Embedded Systems**  
Six display support  
**DS-980**  
**Storage**  
2.5" SATA-SSD  
**SQF-S25 830**

**Embedded OS**  
Windows Embedded  
Standard/  
Compact/ Server

**IoT Device & Content Management**  
**WISE-PaaS/RMM**  
**WISE-PaaS/OTA**  
**WISE-PaaS/SignageCMS**  
**McAfee Acronis**

### Environment Monitoring System



**IoT Gateway Solutions**  
WiFi network gateway  
**WISE-3620**  
WiFi network gateway  
**WISE-3310**

**IoT Sensor Nodes**  
WiFi node  
**WISE-1530**  
Mesh node with intelligent MCU  
**WISE-1021**

**Storage**  
2.5" SATA-SSD  
**SQF-S25 640**  
**IoT Device Management**  
**WISE-PaaS/RMM** **ARM** MBED

# Intelligent Automation

In the IoT era, where wireless networks are everywhere, traditional industrial systems and processes need evolution, which means intelligent systems require more storage, memory, and embedded boards with wireless functions to make connection with the Internet and things easier. In response to their requirements, customers need to use many kinds of I/O sensors, software and wireless technologies for smart factory applications to create more efficient and safer environments. Advantech provides a series of embedded systems, boards, and storage modules with multiple I/O with pre-integrated IoT software packages to connect the edge to the cloud.



## Machine Automation

### Robotics Arm



#### Embedded System

Cortex-A8 Arm-based box  
**UBC-330**

#### Embedded Boards

Intel® Pentium  
**SOM-3569 MIO-5350**

Arm Cortex-A15 Intel® Xeon  
**ROM-7510 AIMB-585**

#### Storage

2.5" SSD  
**SQF-SMS 640**

#### Memory

EEPROM with thermal sensor  
**SQR-SD3I**

#### IoT Device Management

**WISE-PaaS/RMM WISE-PaaS/OTA**  
**WebAccess/CNC McAfee**  
**Acronis**

### AGV Robot



#### Embedded System

Four serial port fanless box PC  
**ARK-1124**

#### Embedded Boards

Arm Cortex-A9 Intel® Pentium  
**ROM-3420 SOM-3569**

Intel® Core™ i  
**MIO-5272**

#### Storage

2.5" SSD  
**SQF-SMS 640**

#### Memory

EEPROM with thermal sensor  
**SQR-SD4M**

#### IoT Device Management & Video Analytics

**WISE-PaaS/RMM WISE-PaaS/OTA**  
**WISE-PaaS/VideoCMS**

### HMI Control PC



#### Embedded System

Fanless & various mounting kits Fanless & 1U Design  
**EPC-S101 EPC-T1217**

#### Embedded Boards

Intel® Pentium® Arm Cortex-A9  
**SOM-3569 RSB-4411**

#### Storage

2.5" SSD  
**SQF-S25 640**

#### Memory

EEPROM with thermal sensor  
**SQR-SD3M**

#### Digital Signage Display

15" XGA LCD  
**IDS-3215**

#### IoT Device Management

**WebAccess/HMI Windows Embedded**  
**McAfee**

### CNC-HMI



#### Embedded System

Flexible expansion & wide range power input  
**ARK-3520**

#### Embedded Boards

Arm Cortex-A9 Intel® Pentium  
**ROM-7421 MIO-2360 AIMB-217**

#### Wireless Module

WiFi Mini-PCIe card  
**EWM-W135**

#### Storage

2.5" SATA SSD  
**SQF-S25 830**

#### Memory

EEPROM with thermal sensor  
**SQR-SD41**

#### Digital Signage Display

15" XGA LCD  
**IDS-3215**

#### IoT Device Management

**WebAccess/CNC McAfee**  
**PULSAR LINUX VxWorks**

## Display Controller

### Control Center



#### Digital Signage Players

**DS-980**

#### Digital Signage Display

55" FHD 42" FHD  
**DSD-3055 DSD-3042**

#### Wireless Module

WiFi Mini-PCIe card  
**EWM-C109**  
WiFi Mini-PCIe card  
**EWM-C117**  
WiFi M.2 card  
**EWM-W163**

#### IoT Device & Content Management

**WISE-PaaS/RMM**  
**WISE-PaaS/SignageCMS**  
**Windows Embedded Acronis**  
**McAfee**



## Product Line Signage



### Digital Signage Players

Full HD output for simultaneous dual displays  
**DS-370**

### Digital Signage Display

55" FHD **DSD-3055**      42" FHD **DSD-3042**

### Storage

2.5" SSD  
**SQF-S25 640**

### Memory

SODIMM DDR4  
**SQR-SD4N(ECC)**

### Wireless Module

WiFi Mini-PCIe card  
**EWM-W142 EWM-W135**

### IoT Device & Content Management

**WISE-PaaS/RMM** **McAfee**  
**WISE-PaaS/SignageCMS** **Acronis**

## Edge Computer

### Equipment Integrated System



### Embedded System

Four serial port fanless box PC  
**ARK-1124**  
Multi-connectivity IoT gateway  
**UTX-3117**

Wireless IoT Mesh  
**WISE-3310**

### Digital Signage Players

GeForce GT730M graphic  
**DS-570**

### Storage

2.5" SSD  
**SQF-S25 830**

### Memory

SODIMM DDR3L  
**SQR-SD3N**

### Wireless Module

M2.COM  
**WISE-1540**

### IoT Device Management

**WISE-PaaS/RMM** **WISE-PaaS/OTA**  
**Microsoft** **McAfee**

### Equipment Predictive Maintenance



### Embedded System

Edge intelligence server **EIS-D110**      Freescale i.MX6 **UBC-220**

Multi-connectivity IoT gateway  
**UTX-3117**

### IoT Device Management

**WebAccess/SCADA**  
**WISE-PaaS/RMM**

### Equipment Connectivity



### Embedded System

Multi-connectivity IoT gateway  
**UTX-3117**  
Intel Celeron fanless box PC  
**ARK-2230**

### Wireless Module

WiFi Mini-PCIe card  
**EWM-W135**  
M2.COM LoRa  
**WISE-1510**  
M2.COM low power Wi-Fi  
**WISE-1520**

### IoT Device Management

**WISE-PaaS/RMM** **WISE-PaaS/OTA**  
**Microsoft** **Acronis**

## Process Control and Conditional Monitoring

### Conditional Monitoring



### Embedded System

Arm-based box computer  
**EPC-R4760**  
Wireless IoT LoRa  
**WISE-3610**  
TI Sitara AM3352 Cortex-A8 RISC box  
**UBC-330**

### Embedded Boards

3.5" SBC  
**RSB-4221**

### Wireless Module

M2.COM LoRa **WISE-1510**      M2.COM low power Wi-Fi  
**WISE-1520**

### IoT Device Management

**WISE-PaaS/RMM** **WISE-PaaS/OTA**  
**WebAccess/SCADA** **Microsoft**

### Video Surveillance



### Embedded System

Intel Core i5 fanless box PC  
**ARK-2151S**

### Embedded Boards

Intel® Celeron  
**PCM-9310**

### Storage

2.5" SSD  
**SQF-S25 830**

### Memory

SODIMM DDR3L  
**SQR-SD3I**

### IoT Device Management & Video Analytics

**WISE-PaaS/RMM** **WISE-PaaS/OTA**  
**WISE-PaaS/VideoCMS** **Acronis**  
**Windows Embedded**

### Environment Monitoring



### Embedded System

Wireless IoT mesh network gateway  
**WISE-3310**  
Multi-connectivity IoT gateway  
**UTX-3117**

### Wireless Module

Wireless IoT mesh node  
**WISE-1020**  
Wireless IoT mesh node with intelligent MCU  
**WISE-1021**  
M2.COM mesh network IoT node  
**WISE-1540**

### IoT Device Management

**WISE-PaaS/RMM** **WISE-PaaS/OTA**  
**WebAccess/SCADA**  
**Microsoft** **ARM** **MBED**

### Automated Optical Inspection



### Embedded System

1U THIN design & expansion slot  
**EPC-T3285**  
Expansion slots & wide range power  
**ARK-3520**  
Wireless IoT WiFi network gateway  
**WISE-3620**

### Embedded Boards

Intel® Xeon® **SOM-5992**      Intel® Core™ i  
**AIMB-275**

### Storage

2.5" SSD  
**SQF-S25 830**

### Memory

SODIMM DDR4  
**SQR-SD4I**

### IoT Device Management

**WISE-PaaS/RMM** **WISE-PaaS/OTA**  
**Windows Embedded** **McAfee**  
**Acronis**

# Intelligent Transportation

Advantech, a global leader in the embedded system market, has always been an innovator in the development of Edge computing platforms. We offer diverse intelligent transportation solutions including in-vehicle computers, public transit surveillance, station management, and railway systems that assist customers with application adoption while minimizing uncertainty and risk. Through new ideas and technologies, Advantech intelligent transportation platforms are all integrated with a series of software solutions and diverse wireless communications to make our systems more manageable and secure.



## In-vehicle Computer

### Mobile Surveillance



#### Embedded Systems

4-8 PoE support  
**ARK-2250V**  
 In-vehicle certification  
**ARK-2151V**



#### Storage

2.5" SATA-SSD  
**SQF-S25 830**

#### IoT Device Management & Video Analytics

**WISE-PaaS/RMM**  
**WISE-PaaS/VideoCMS**

### Infotainment System



#### Embedded Systems

Video processing  
**ARK-2250V**  
  
**Industrial Display**  
 Industrial touch LCD kit  
**IDK-1000 series**

Thin design  
**EPC-T1217**

#### Embedded Boards

7th Gen Intel® Core i  
**SOM-5898**  
 Multiple display  
**MIO-5251**


#### IoT Device & Content Management

**WISE-PaaS/SignageCMS**  
**WISE-PaaS/RMM**  
**WISE-PaaS/OTA**

### Fleet Management



#### Embedded Systems

GPS support  
**ARK-2121V**  
  
 Wireless communication  
**UTX-3117**

#### Embedded Boards

Intel® Pentium®/Celeron®  
**SOM-3569**  
**Industrial Display**  
 Touch monitors  
**IDK-1110W**

#### Storage

mSATA-SSD  
**SQF-SMS 640**

#### IoT Device Management

**WISE-PaaS/RMM** **WISE-PaaS/OTA**

### Payment Card Reader



#### Embedded Systems

ESD/EMI protection  
**ARK-2121V**  
  
 Thin design  
**EPC-T2285**

#### Embedded Boards

Power saving  
**RSB-4411**

#### Storage

mSATA-SSD  
**SQF-SMS 640**

#### IoT Device Management


**WISE-PaaS/Security**

## Public Transit Surveillance

### Traffic Management



#### Embedded Systems

Multiple I/O  
**ARK-2151S**  
 Four PoE supported  
**ARK-2121S**  


#### Storage

2.5" SATA-SSD  
**SQF-S25 830**


#### IoT Device Management

**WISE-PaaS/RMM**  
**WISE-PaaS/Security**

### Highway ETC



#### Embedded Systems

Multiple I/O  
**ARK-2151S**  
 Four PoE supported  
**ARK-2121S**  


#### Embedded Boards

7th Gen Intel® Core i  
**AIMB-505**

#### Storage

2.5" SATA-SSD  
**SQF-S25 830**


#### IoT Device Management & Video Analytics

**WISE-PaaS/RMM**  
**WISE-PaaS/VideoCMS**

### Street Surveillance



#### Embedded Systems

IP camera support  
**ARK-2151S**  
  
 Wireless communication  
**UTX-3117**

#### Embedded Boards

3rd Gen Intel® Xeon®  
**AIMB-502**

#### Storage

2.5" SATA-SSD  
**SQF-S25 830**

#### IoT Device Management & Video Analytics


**WISE-PaaS/VideoCMS**



## Parking



### Embedded Systems

Rugged design  
**ARK-2121S**  
  
 LoRa gateway + nodes  
**WISE-3610 + WISE-1510**

### Embedded Boards

4th Gen Intel® Core i  
**AIMB-203**  
 Intel® Pentium & Atom  
**MIO-2360**  
**Industrial Display**  
 Flat-fronted touch design  
**IDP31-215**

### Storage

Industrial SD card  
**SQF-ISD**  
**IoT Device Management & Video Analytics**  
**WISE-PaaS/RMM**  
**WISE-PaaS/VideoCMS**

## Station Management

### Control Room



### Embedded Systems

Triple independent displays  
**DS-780**

### Industrial Display

Wide-view angle  
**DSD-3000 series**

### Embedded Boards

Server-grade workstation level  
**AIMB-585**  
 Server-grade mobile level  
**SOM-5992**  
 Server-grade entry level  
**AIMB-290**

### Storage

2.5" embedded SSD  
**SQF-S25 640**

### Content Management

**WISE-PaaS/SignageCMS**

### Automatic Gate Machine



### Embedded Systems

I/O expansion  
**ARK-2230 ARK-2250**

### Industrial Display

Compact design  
**IDK-1000 series**

### Embedded Boards

Power saving  
**RSB-4220**  
 Intel® Atom & Celeron®  
**PCM-3365**

### Storage

mSATA-SSD  
**SQF-SMS 640**


### IoT Device Management

**WISE-PaaS/OTA**

### Ticket Vending Machine



### Embedded Systems

IP cameras support  
**ARK-2151S**  
  
 Wireless communication  
**UTX-3117**

### Embedded Boards

3rd Gen Intel® Xeon®  
**AIMB-502**

### Storage

2.5" SATA-SSD  
**SQF-S25 830**

### IoT Device

### & Content Management

**WISE-PaaS/RMM**  
**WISE-PaaS/SignageCMS**  
**WISE-PaaS/VideoCMS**

### Passenger Information System



### Embedded Systems

Slim type OPS for airport PIS  
**DS-081 DS-280**  
 High graphic performance  
**EPC-T1227**  
**Industrial Display**  
 Wide-view angle  
**IDS-3000/ 5000 series**

### Embedded Boards

Intel® Pentium®/Celeron®  
**AIMB-216**  
 Intel® Atom with triple display  
**MIO-5350**

### Content Management

**WISE-PaaS/SignageCMS**

## Railway Systems

### Rolling Stock PIS & BYOD



### Embedded Systems

Video processing  
**ARK-2231R**  
  
**Industrial Display**  
 Anti-vibration certification  
**DSD-5028 DSD-5038**

### Embedded Boards

Intel® Pentium®/Celeron®  
**SOM-3567 SOM-3568**

### Storage

2.5" SATA-SSD  
**SQF-S25 830**

### IoT Device


### & Content Management

**WISE-PaaS/RMM**  
**WISE-PaaS/OTA**  
**WISE-PaaS/SignageCMS**

### In-train Surveillance



### Embedded Systems

4-8 PoE & M12 connector for railway app  
**ARK-2231R**  


### Embedded Boards

6th Gen Intel® Core i  
**MIO-5272**

### Storage

2.5" SATA-SSD  
**SQF-S25 830**

### IoT Device Management

### & Video Analytics

**WISE-PaaS/VideoCMS**  
**WISE-PaaS/RMM**  
**WISE-PaaS/OTA**

### Locomotive Control



### Embedded Systems

Multifunction vehicle bus  
**ARK-2250R**  
   
**Industrial Display**  
 Open-frame type  
**IDS-3000 series**

### Embedded Boards

Intel® Atom CPU  
**SOM-7569 PCM-3365**

### Storage

mSATA-SSD  
**SQF-SMS 640**

### IoT Device Management

**WISE-PaaS/RMM**

### Wayside Interlocking



### Embedded Systems

Signaling & controlling  
**ARK-2250R**  
 

### Embedded Boards

Intel® Atom CPU  
**SOM-7567 SOM-7569**  
**PCM-3365**

### Storage

mSATA-SSD  
**SQF-SMS 640**

### IoT Device Management

### & Video Analytics

**WISE-PaaS/Security**  
**WISE-PaaS/VideoCMS**  
**WISE-PaaS/OTA**

# POS and Self-service Kiosks

POS and self-service kiosks are almost everywhere from retail stores, airports, restaurants, banks and more. With many years' experience behind us and proven success in various POS and Kiosk applications, Advantech provides comprehensive core parts including both x86 and RISC platforms in different form factors, such as 3.5", Mini-ITX, COM Express and more. With optimized SBCs, I/O modules, industrial displays, flash, and memory solutions, and dedicated embedded software services and design-to-order services, Advantech has powered thousands of POS and Kiosks applications in various fields with one-stop-shop offerings.



## Point of Sales

### All-in-One POS Terminal

#### Embedded Boards



**PCM-9310**  
3.5" SBC  
Intel Celeron® N3060/N3160,  
Intel Atom E8000



**SIMB-354**  
Mini-ITX  
Intel® Celeron® N3160

#### Industrial Storage & Memory



**SQF-S25 640**  
2.5" SATAIII SSD  
16GB ~ 512GB



**SQR-SD3N**  
SODIMM DDR3L  
2GB~8GB

#### Industrial Display



**IDK-1115P**  
Industrial touch LCD Kit  
15" XGA with PCAP touch



**IDK-1121WR**  
Industrial touch LCD Kit  
21.5" 1920x1080 with resistive touch

#### Wireless Module



**EWM-W135H**  
2.4GHz/5GHz Mini PCIe  
802.11 a 2x2



**EWM-W157H**  
2.4GHz/5GHz half-size Mini PCIe  
802.11 ac 1x1

#### OS & Application Software

Windows 10 McAfee Acronis

Windows Embedded Industry and POSReady

#### IoT Device & Content Management

WISE-PaaS/RMM WISE-PaaS/OTA WISE-PaaS/SignageCMS

### Mobile POS

#### Embedded Boards



**SOM-3569**  
Qseven  
Intel® Pentium®/ Celeron® N4200



**MIO-3260**  
2.5" Pico-ITX SBC  
Intel® Atom™ E3825 & Celeron® N2930



**RSB-6410**  
Mini-ITX  
ARM Cortex-A9 i.MX6

#### Industrial Storage & Memory



**SQF-S25 640**  
2.5" SATAIII SSD  
16GB ~ 512GB



**SQR-SD3N**  
SODIMM DDR3L  
2GB~8GB

#### Industrial Display



**IDK-1107WP**  
Industrial Touch LCD Kit  
7" 800x480/1024x600  
with PCAP touch



**IDK-1110P**  
Industrial Touch LCD Kit  
10.4" 1024 x 768 with PCAP touch

#### Wireless Module



**EWM-W157H**  
2.4GHz/5GHz  
Half-size Mini PCIe  
802.11 ac 1x1



**EWM-W168H**  
2.4GHz/5GHz  
Half-size Mini PCIe  
802.11 ac 2x2

#### OS & Application Software

Windows 10 McAfee Acronis

Windows Embedded Industry and POSReady

#### IoT Device Management

WISE-PaaS/RMM

# Self-service Kiosks

## Indoor Application

### Embedded Boards



**SOM-3569**  
Qseven  
Intel® Pentium®/  
Celeron® N4200



**MIO-5350**  
3.5" SBC  
Intel® Pentium  
N4200



**AIMB-205**  
Mini-ITX  
Intel® 7th Gen  
Core™ i



**AIMB-503**  
Micro-ATX  
Intel® Core™  
i7/i5/i3

### Industrial Display



**IDS-3115**  
Open frame monitor  
15" 1024 x 768, PCAP/  
resistive touch



**IDS-3118W**  
Open frame monitor  
18" 1366x768, PCAP/  
resistive touch

### Embedded Systems



**EPC-R6410**  
Mini-ITX embedded PC  
Cortex-A9 i.MX6



**DS-081**  
Digital signage player  
4K, dual displays



**EPC-B2203**  
Mini-ITX embedded PC  
Intel® 4th Gen Core™



**EPC-S101**  
3.5" SBC embedded PC  
Intel® Celeron N3160/ N3060



**IDS-3121W**  
Open frame monitor

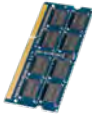
### Industrial Storage & Memory



**SQF-S25 640**  
2.5" SATAIII SSD  
16GB ~ 512GB



**SQF-SMS 640**  
mSATA  
16GB~1TB



**SQR-SD3M**  
SODIMM DDR3L  
2GB~8GB

### Wireless Module



**EWM-W157H**  
2.4GHz/5GHz  
half-size Mini PCIe  
802.11 ac 1x1

### OS & Application Software

Windows 10 McAfee Acronis

### IoT Device & Content Management

**WISE-PaaS/RMM** **WISE-PaaS/SignageCMS**  
**WISE-PaaS/OTA**

## Outdoor Application (Wide Temperature Support)

### Embedded Boards



**ROM-3420**  
RTX2.0 module  
Cortex-A9 i.MX6



**MIO-2263**  
2.5" Pico-ITX SBC  
Intel® Atom™ E3825/  
Celeron J1900



**RSB-4411**  
3.5" SBC  
NXP ARM®  
Cortex-A9i.MX6



**AIMB-217**  
Mini-ITX  
Intel Pentium/Celeron/Atom  
N4200/N3350/x7-E3950

### Industrial Display



**IDK-2115**  
1200-nit LCD Kit  
15" 1024x768,  
resistive touch



**IDK-2121**  
1200-nit LCD Kit  
21.5" 1920x1080,  
resistive touch

### Embedded Systems



**ARK-2250L**  
Fanless embedded  
computer  
Intel 6th Core U series



**ARK-1124U**  
Fanless Embedded  
Computer Intel  
Celeron N3350  
Dual Core



**DS-100**  
Android signage player  
4K, dual displays

### Industrial Storage & Memory



**SQF-S25 640**  
2.5" SATAIII SSD  
16GB ~ 512GB



**SQF-SMS 640**  
mSATA  
16GB~1TB



**SQR-SD3M**  
SODIMM DDR3L  
2GB~8GB

### Wireless Module



**EWM-W158F**  
2.4GHz/5GHz Mini PCIe  
802.11 a 2x2, -40~85°C

### OS & Application Software

Windows 10 McAfee Acronis

### IoT Device & Content Management

**WISE-PaaS/RMM** **WISE-PaaS/SignageCMS** **WISE-PaaS/OTA**

# WISE-PaaS/EdgeSense

## WISE-PaaS/RMM

## WISE-PaaS/OTA

## WISE-PaaS/Security

## WISE-PaaS/ESL

	WISE-PaaS/RMM		WISE-PaaS/OTA		WISE-PaaS/Security	WISE-PaaS/ESL	
<b>Introduction</b>	IoT Device Remote Monitoring and Management Platform		Over-the-Air Software Upgrade Management Services		IoT Security Management	Wireless and Battery-less Display Solutions for IoT Applications	
<b>Feature Highlights</b>	<ul style="list-style-type: none"> <li>Hardware Monitoring: Remotely monitor hardware status, including CPU temperature, fan speed, voltage, HDD smart information, etc.</li> <li>Software Monitoring: Remotely monitor software status, including CPU and memory usage.</li> <li>Device Management: Devices / Group/ Map view</li> </ul>		<ul style="list-style-type: none"> <li>Lightweight and reliable MQTT device connection</li> <li>Automatic mode means all parts of the upgrade are under control</li> <li>Scheduling mode lets you plan your updates</li> <li>Supports open framework, which can integrate 3rd party storage easily, such as, local storage FTP, or public storage</li> </ul>		<ul style="list-style-type: none"> <li>Central security management monitors and reports data from all managed clients</li> <li>Remote deployment of security policies</li> <li>Flexibility to add McAfee modules to fulfill different vertical applications</li> <li>Dashboard with analytical reports</li> </ul>	<ul style="list-style-type: none"> <li>Integrated ePaper module/router/gateway solutions for different scenarios</li> <li>Full centralized management with up to 10,000 tags</li> <li>Easy installation and maintenance</li> <li>Paper-free content management</li> </ul>	
<b>Hardware Requirements</b>	WISE-PaaS/RMM Cloud	WISE-PaaS/RMM Agent	WISE-PaaS/OTA Cloud	WISE-PaaS/OTA Agent	<ul style="list-style-type: none"> <li>Microsoft Windows Server 2012/2012R2/2008/2008 R2</li> <li>64-bit Intel Pentium D or higher, RAM 8GB or higher, HDD 200GB or higher</li> </ul>	WISE-PaaS/ESL Cloud	WISE-PaaS/ESL Agent
	<ul style="list-style-type: none"> <li>Intel® Core™ i3 2.3 GHz CPU or above 4GB RAM</li> <li>25 GB root partition for the system</li> <li>100 GB data storage partition (for documents and indexing)</li> <li>OS: Windows Server 2008 R2 64-bit, Windows Server 2012/2012 R2 64-bit, Windows 10 64-bit, Windows 8/8.1 64-bit, Windows 7 SP1 64-bit</li> </ul>	<ul style="list-style-type: none"> <li>Advantech HW with SUSI driver 3.02/4.0 support (or above), which is required for HWM (Hardware Monitoring Management) function to work normally</li> <li>OS: Windows 10 32-bit/64-bit, Windows 7 SP1 32-bit/64-bit, Ubuntu 16.04, CentOS 7, Yocto</li> </ul>	<ul style="list-style-type: none"> <li>Intel® Core™ i3 2.3 GHz CPU or above 4GB RAM</li> <li>25 GB root partition for the system</li> <li>100 GB data storage partition (for documents and indexing)</li> <li>OS: Windows Server 2008 R2 64-bit, Windows Server 2012/2012 R2 64-bit, Windows 10 64-bit, Windows 8/8.1 64-bit, Windows 7 SP1 64-bit</li> </ul>	<ul style="list-style-type: none"> <li>OS: Windows 10 32-bit/64-bit, Windows 7 SP1 32-bit/64-bit, Ubuntu 16.04, CentOS 7, Yocto, and Android 6 (request by project)</li> </ul>		<ul style="list-style-type: none"> <li>Intel® Core™ i3 2.3 GHz CPU or above 4GB RAM</li> <li>25 GB root partition for the system</li> <li>100 GB data storage partition (for documents and indexing)</li> <li>OS: Windows Server 2008 R2 64-bit, Windows Server 2012/2012 R2 64-bit, Windows 10 64-bit, Windows 8/8.1 64-bit, Windows 7 SP1 64-bit</li> </ul>	Pre built in ESL gateway
<b>Product Ordering Number</b>	WISE-PaaS/RMM Pro (max 10 devices): 32EMRMP31B WISE-PaaS/RMM Pro (max 50 devices): 32EMRMP31C WISE-PaaS/RMM Pro (max 200 devices): 32EMRMP31D WISE-PaaS/RMM Pro (Site License): 32EMRMP31E		WISE-PaaS/OTA Pro (max 100 devices): 32EMOTAP2B WISE-PaaS/OTA Pro (max 500 devices): 32EMOTAP2C		Acronis True Image 2016 Personal: 31WPSAL016 WISE-PaaS/Security ePolicy Orchestrator: 31WPSEP001 McAfee Endpoint Security 10: 31WPSMES0A McAfee Integrity Control: 31WPSMIC01 McAfee Embedded Control: 31WPSMEC01 McAfee Application Control: 31WPSMAC01 McAfee Application Control with ePO: 31WPSMAP01	Coming soon	
<b>Marketplace Ordering Number</b>	VIP Membership: 98DPWSPA0A (highly recommended) Regular membership: 98DPWSPAP1 *Join WISE-PaaS membership to redeem above applications with better service and discount					Coming soon	



# IoT Cloud Services

**WISE-PaaS/EnSaaS**

**arm** MBED



	WISE-PaaS/EnSaaS	Arm Mbed Cloud	Amazon Web Services	Microsoft Azure
<b>Product Positioning</b>	Cloud platform is well integrated with Advantech Hardware products. Particularly suitable for industrial IoT applications by leveraging Advantech's domain know-how.	Arm's cloud service is designed for Arm-based chips and platforms. High data protection is based on its Cortex architecture which makes it more suitable for security sensitive domains.	Well-known IaaS and PaaS provider, with proven ability to handle huge amounts of data. Most widely adopted cloud service around the world.	Well-known cloud service provider with IaaS, PaaS and SaaS solution which supports many different programming languages, tools and frameworks, including both Microsoft-specific and third-party software and systems.
<b>Focused Verticals</b>	<ul style="list-style-type: none"> <li>Industry 4.0 &amp; smart factory</li> <li>Equipment builder</li> <li>Smart city</li> <li>Smart agriculture</li> </ul>	<ul style="list-style-type: none"> <li>Telecom</li> <li>Smart metering</li> </ul>	<ul style="list-style-type: none"> <li>Smart Factory and manufacturing</li> <li>Retail</li> <li>Smart city</li> <li>Healthcare</li> </ul>	<ul style="list-style-type: none"> <li>Transportation and logistics</li> <li>Smart Factory and manufacturing</li> <li>Retail</li> <li>Smart city</li> <li>Healthcare</li> </ul>
<b>Application Scenarios</b>	<ul style="list-style-type: none"> <li>Application for verticals</li> <li>SW update</li> <li>Data acquisition</li> <li>Gateway edge computing package</li> <li>PaaS service</li> </ul>	<ul style="list-style-type: none"> <li>Data acquisition</li> <li>Gateway edge computing package</li> <li>Device provisioning</li> <li>Firmware update</li> </ul>	<ul style="list-style-type: none"> <li>Data acquisition</li> <li>Data analytic</li> <li>Gateway edge computing package</li> <li>IaaS virtual machine service</li> <li>PaaS service</li> </ul>	<ul style="list-style-type: none"> <li>Infra cloud host service</li> <li>Serverless/Hybrid PaaS service</li> <li>IoT data acquisition and analysis</li> <li>Edge Intelligent device solution package</li> <li>AI platform development</li> </ul>
<b>Edge Computing Package on Gateways</b>	WISE-PaaS/EdgeSense	Mbed Edge	AWS Greengrass (AWS Device SDK)	Azure IoT Edge
<b>Communication Protocol</b>	MQTT, AMQP	LWM2M	MQTT	MQTT, AMQP, HTTP
<b>Compatible Advantech Hardware Platform</b>	X86-based, Arm-based Platform	Arm-based Platform	X86-based, Arm-based Platform	X86-based, Arm-based Platform
<b>Data Resumption (zero downtime time)</b>	Y	Y	Y	Y
<b>Container Service</b>	Y	N	Y	Y
<b>Online Marketplace</b>	Y	N	Y	Y
<b>Multi-tenant Service</b>	Y	Y	Y	Y
<b>Data Visualization</b>	Y	N	Y	Y
<b>Data Pre-processing on Edge</b>	Y	Y	Y	Y
<b>API Service &amp; Management</b>	Y	Y	Y	Y
<b>Data Ingestion</b>	Y	Y	Y	Y
<b>Analytics</b>	N	N	Y	Y

# Edge Intelligence Servers

Microsoft Azure



Model Name	EIS-D210	EIS-D150	EIS-D120	EIS-D110	EIS-DK10		
CPU	Intel Celeron N3350	Intel® 6th Gen Core™ i5 6300U	Intel® Celeron® J1900	Intel® Celeron® J1900	Intel® Celeron® J1900		
RAM/Storage	4GB/ 64GB SSD	4GB /64GB SSD	4GB /64GB SSD	4GB /64GB SSD	4GB /64GB SSD		
OS	Win 10 IoT Enterprise	WES7E Win 10 IoT Enterprise	WES7E Win 10 IoT Enterprise	WES7E Win 10 IoT Enterprise	WES7E		
I/O Interface	VGA x1, GbE x2, RS232/422/485 x2, USB 3.0 x4 ,iDoor	HDMI x1, VGA x1, GbE x2, RS232/422/485x4, iDoor	HDMIx1, VGAX1, GbE x2, RS-232 x2, RS-232/422/485 x2, iDoor.	HDMI x2, GbE x2, RS232/422/485x1	Includes Modbus TCP module, temperature/humidity sensor, LED indicator, fan, and accessories		
Wireless Networking	Optional	Optional	Optional	IEEE 802.11 a/b/g/n Bluetooth 4.0 HS	IEEE 802.11 a/b/g/n Bluetooth 4.0 HS		
Dimensions (W x H x D)	133 x 46.4 x 94.2 mm	260 x 54 x 140.2 mm	264.5 x 68.4 x 133.0 mm	133.8 x 43.1 x 94.2 mm	350 x 250 x 175 mm		
Software Package	<table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <b>WISE-PaaS/ EdgeSense Software Solution</b>  <b>WISE-PaaS/RMM</b> Remote Monitoring and Management  <b>WISE-PaaS/OTA</b> Remote Software Update  <b>WISE-PaaS/Security</b> Centralize Security Management                 </td> <td style="width: 50%; vertical-align: top;"> <b>Applications Software Solution</b>  <b>WebAccess/SCADA</b> Smart SCADA  <b>WebAccess/HMI</b> Human Machine Interface  <b>WISE-PaaS/SignageCMS</b> Interactive Multimedia                 </td> </tr> </table>					<b>WISE-PaaS/ EdgeSense Software Solution</b> <b>WISE-PaaS/RMM</b> Remote Monitoring and Management <b>WISE-PaaS/OTA</b> Remote Software Update <b>WISE-PaaS/Security</b> Centralize Security Management	<b>Applications Software Solution</b> <b>WebAccess/SCADA</b> Smart SCADA <b>WebAccess/HMI</b> Human Machine Interface <b>WISE-PaaS/SignageCMS</b> Interactive Multimedia
<b>WISE-PaaS/ EdgeSense Software Solution</b> <b>WISE-PaaS/RMM</b> Remote Monitoring and Management <b>WISE-PaaS/OTA</b> Remote Software Update <b>WISE-PaaS/Security</b> Centralize Security Management	<b>Applications Software Solution</b> <b>WebAccess/SCADA</b> Smart SCADA <b>WebAccess/HMI</b> Human Machine Interface <b>WISE-PaaS/SignageCMS</b> Interactive Multimedia						
Cloud Package	Optional	Optional	Optional	Optional	Edge: IoT Hub SDK Cloud: 1 Month Azure VM Solution Package		
Development Tools	Node-RED Data Flow Logic Designer & Dashboard Builder Protocol Plug-in SDK & Configuration Tools						
Ordering Information	EIS-D210U-W1DS641 (Win 10; 2018/ 03)	EIS-D150-W1DS641 (WES7E)  EIS-D150-E1DS641 (Win 10)	EISD120W1DS641-BTO (WES7E)  EISD120E1DS641-BTO (Win 10)	EISD110W1SS641-BTO (WES7E)  EISD110W1SS141-BTO (WES7E/128G SSD)  EISD110E1SS641-BTO (Win 10)	EISDK-ARK1123-BTO (WES7E)		

# Wireless IoT Sensor Nodes and Gateways

## M2.COM IoT Sensor Node Modules



Model Name	WISE-1510	WISE-1511	WISE-1520	WISE-1530	WISE-1540	WISE-1570
Form Factor	M.2 TYPE 2230-D3-E	M.2 TYPE 2230-D3-E	M.2 TYPE 2230-D3-E	M.2 TYPE 2230-D3-E	M.2 TYPE 2230-D3-E	M.2 TYPE 2230-D3-E
Standard	LoRaWAN LoRa Private Network (WISE-Link)	SigFox	IEEE 802.11 b/g/n	IEEE 802.11 b/g/n Bluetooth 4.1	IEEE 802.15.4e	3GPP R14 NB-IOT
MCU	ARM Cortex-M4 Processor	ARM Cortex-M4 Processor	ARM Cortex-M4 Processor	ARM Cortex-M4 Processor	ARM Cortex-M4 Processor	ARM Cortex-M4 Processor
Memory	RAM 64KB Flash 256KB	RAM 64KB Flash 256KB	RAM 256KB Flash 1024KB	RAM 256KB Flash 1024KB	RAM 64KB Flash 256KB	RAM 128KB Flash 1024KB
Wireless Frequency	863-870MHz for Europe 902-928MHz for North America 920-928MHz for Japan 920-925MHz for Taiwan 470-510 MHz for China 915-928MHz for Australia	RCZ1 868MHz for Europe RCZ2 902MHz for North America RCZ3 923MHz for Japan RCZ4 920MHz for Australia	2.412~2.472 GHz	2.400~2.484 GHz for Wi-Fi 2.400~2.4835 GHz for BLE	2.4000~2.4835 GHz	3GPP bands over 698-2180MHz B1~B5 B8, B12, B13, B14 B17~B20, B26~B28, B66, B70
Topology	Star network	Star network	Star network	Star network	Self-Healing Mesh Network	Star network
Transmit Power	Up to +18dBm	RCZ1: 14dBm RCZ2: 22dBm RCZ3: 13 dBm RCZ4: 22dBm	17 dBm at 1 DSSS 17.25 dBm at 11 CCK 13.5 dBm at 54 OFDM	Typ. 14 dBm ± 2 at 802.11b CCK Mode 1M Typ. 12 dBm ± 2 at 802.11g OFDM Mode 54M Typ. 12 dBm ± 2at 802.11n OFDM Mode MCS0 Max 10 dBm ± 2 for BLE	Up to +8 dBm	Up to +23 dBm
Receiver Sensitivity	Up to -136dBm at SF = 12 / 125KHz	-125dBm @600bps 2GFSK	-94.7 dBm at 1 DSSS -87 dBm at 11 CCK -73 dBm at 54 OFDM	Typ. -95 dBm at 1 Mbps Typ. -75 dBm at 54 Mbps Typ. -89 dBm at MCS0 Typ. -89 dBm for BLE	Up to -93 dBm	Up to -127 dBm
Data Rate	50 kbps at FSK mode for Europe 21.9 kbps at SF7 mode for North America 5.47 kbps at SF7 mode for Japan	100 or 600 bps	UDP:16Mbps TCP: 13Mbps	Up to 65 Mbps	250 kbps	100 kbps
I/O Interface	1 UART (4-wire, support RTC/CTS) 1 I <sup>2</sup> C 8 GPIO 1 PWM 1 SPI 4 ADC 1 USB (device only)	1 UART (4-wire, support RTC/CTS) 1 I <sup>2</sup> C 8 GPIO 1 PWM 1 SPI 4 ADC 1 USB (device only)	1 UART (4-wire, support RTC/CTS) 1 I <sup>2</sup> C 2 GPIO 2 PWM 1 SPI 2 ADC (1 for VCC voltage detect)	1 UART (2-wire, support RTS/CTS) 1 I <sup>2</sup> C 1 I <sup>2</sup> S 2 GPIO 1 SPI 4 ADC	1 UART (4-wire, support RTC/CTS) 1 I <sup>2</sup> C 8 GPIO 1 PWM 1 SPI 4 ADC 1 USB (device only)	1 UART (4-wire, support RTC/CTS) 2 I <sup>2</sup> C 6 GPIO 2 PWM 1 SPI 3 ADC
Power Requirement	3.3V	3.3V	3.3V	3.3V	3.3V	3.3V
Operating Temperature	-40 ~ 85 °C	-40 ~ 85 °C	-20 ~ 70 °C	-20 ~ 70 °C	-40 ~ 85 °C	-40 ~ 85 °C
Dimension	22 x 30 mm	22 x 30 mm	22 x 30 mm	22 x 30 mm	22 x 30 mm	22 x 30 mm
Operating System	mbed OS	mbed OS	TI RTOS	ThreadX mbed OS	mbed OS	mbed OS
Certifications	CE/FCC/IC/TELEC/VCCI/ NCC/RCM	CE/FCC/TELEC/RCM	CE/FCC/TELEC	CE/FCC/IC/TELEC/SRRC/ NCC	CE/FCC/IC/TELEC/SRRC/ RCM/NCC	CE/SRRC/TELEC

# Wireless IoT Sensor Nodes and Gateways



## Wireless IoT Gateways

Model Name		WISE-3310	WISE-3610	WISE-3620
Process System	CPU	NXP ARM Cortex-A9 i.MX6 Dual 1 GHz	Qualcomm ARM Cortex-A7 Quad 716MHz	Qualcomm ARM Cortex-A7 Quad 716MHz
	DRAM	1GB DDR3	256MB DDR3L	256MB DDR3L
	Flash	4GB eMMC	128MB	128MB
I/O Interface	Serial Port	1 x RS-232 (CTS, RTX, Tx, Rx)	1 x RS-232/422/485 (DB9 Male)	1 x RS-232/422/485 (DB9 Male)
	USB	-	1 x USB 3.0	1 x USB 3.0
	LAN	1 x 10/100/1000Mbps	1 x LAN 10/100/1000Mbps 1 x WAN 10/100/1000Mbps	1 x LAN 10/100/1000Mbps 1 x WAN 10/100/1000Mbps
	Antenna Port	4 (1 for 100-node SKU, 2 for 200-node SKU, 2 optional for Wi-Fi)	6 (2 for Wi-Fi, 2 for LoRa, 2 optional for 3G/LTE)	4 (2 for Wi-Fi, 2 optional for 3G/LTE)
Wireless	Standard	IEEE 802.15.4e	IEEE 802.11a/b/g/n/ac LoRa	IEEE 802.11a/b/g/n/ac
	Frequency Band	2.4000~2.4835 GHz	Wi-Fi: 2.4GHz/5GHz LoRa: 863~870MHz, 902~928MHz, 470~510MHz	2.4GHz/5GHz
	Data Rate	250 kbps	Wi-Fi 11n 2x2 40MHz max: 300Mbps 11ac 2x2 80MHz max: 866.7Mbps LoRa: EU868 max: 50 Kbps (DR7) US902 & TW920 max: 21.9 Kbps (DR13) JP923 & CN470 max: 5.47 Kbps (DR5)	11n 2x2 40MHz max: 300Mbps 11ac 2x2 80MHz max: 866.7Mbps Support MU-MIMO
	Support Nodes	100 / 200	500	200
	Expansion	1 x half size mini PCIe slot for Wi-Fi	1 x full size mini PCIe slot for 3G/LTE Dual microSIM slots	2 x full size mini PCIe slots for 3G/LTE Dual microSIM slots
Platform	OS	Linux	OpenWRT Linux	OpenWRT Linux
Indicator and Button	LED	2 for WSN status, 1 Yellow LED for WSN1 1 Green LED for WSN2	1 Power 1 USB 1 LoRa status 1 2.4G Wi-Fi status 1 5G Wi-Fi status 1 WWAN status	1 Power 1 USB 1 2.4G Wi-Fi status 1 5G Wi-Fi status 1 WWAN status
	Button	1 x Reset button	1 x Reset button	1 x Reset button
	Switch	1 x Power Switch	-	-
	SD Socket	1 x SD slot	1 x microSD slot	1 x microSD slot
Mechanical	Dimensions	180mm x 114mm x 31mm	188mm x 150mm x 39mm	188mm x 150mm x 39mm
	Mounting	Metal bracket wall mount	Metal bracket wall mount	Metal bracket wall mount
Environmental	Operating Temperature	0 ~ 40 °C	-20 ~ 70 °C	-20 ~ 70 °C
Power	DC-input	DC-input 9~ 24V	DC-input 9~ 24V	DC-input 9~ 24V
	Power Consumption	3.96W (Max)	18W (Max)	16W (Max)
Certifications		CE/FCC/VCCI/NCC	CE/FCC/IC/TELEC/SRRC/NCC	CE/FCC/IC/TELEC/SRRC/NCC



## IoT Gateway Starter Kit Package



Model Name		WISE-DK3310	WISE-DK3610	WISE-DK3620
Description		Mesh IoT Gateway Starter Kit Package	LoRa IoT Gateway Starter Kit Package	Wi-Fi IoT Gateway Starter Kit Package
Wireless Technology		Smart Mesh	LoRa	Wi-Fi
Packing List		WISE-3310 Mesh IoT Gateway x 1 WISE-1540 Mesh Sensor Node x 3 WISE-DB1500 M2.COM Development Board with built-in temperature & humidity sensor x 3 WISE-ED20 Debug Board x 3 Account for free trial WISE-PaaS Accessories: cables, antenna, adapter Air Pressure and IAQ sensors extension board x 3	WISE-3610 LoRa IoT Gateway x 1 WISE-1510 LoRa Sensor Node x 3 WISE-DB1500 M2.COM Development Board with built-in temperature & humidity sensor x 3 WISE-ED20 Debug Board x 3 Account for free trial WISE-PaaS Accessories: cables, antenna, adapter Air Pressure and IAQ sensors extension board x 3	WISE-3620 LoRa IoT Gateway x 1 WISE-1520 LoRa Sensor Node x 3 WISE-DB1500 M2.COM development board with built-in temperature & humidity sensor x 3 WISE-ED20 Debug Board x 3 Account for free trial WISE-PaaS Accessories: cables, antenna, adapter Air Pressure and IAQ sensors extension board x 3
Gateways	Serial Port	1 x RS-232/422/485 (DB9 Male)	1 x RS-232/422/485 (DB9 Male)	1 x RS-232 (CTS, RTX,Tx,Rx)
	USB	1 x USB 3.0	1 x USB 3.0	-
	LAN	1 x LAN 10/100/1000Mbps 1 x WAN 10/100/1000Mbps	1 x LAN 10/100/1000Mbps 1 x WAN 10/100/1000Mbps	1 x 10/100/1000Mbps
	Antenna Port	6 (2 for Wi-Fi, 2 for LoRa, 2 optional for 3G/LTE)	6 (2 for Wi-Fi, 2 for LoRa, 2 optional for 3G/LTE)	4 (1 for 100-node SKU, 2 for 200-node SKU, 2 optional for Wi-Fi)
	Operating System	OpenWRT Linux	OpenWRT Linux	Linux
	Operating Temperature	0 °C ~ 40 °C	-20 °C ~ 70 °C	-20 °C ~ 70 °C
Sensor Nodes	I/O Interface	1 UART (4-wire, support RTC/CTS) 1 I <sup>2</sup> C 8 GPIO 1 PWM 1 SPI 4 ADC 1 USB (device only)	1 UART (4-wire, support RTC/CTS) 1 I <sup>2</sup> C 8 GPIO 1 PWM 1 SPI 4 ADC 1 USB (device only)	1 UART (4-wire, support RTC/CTS) 1 I <sup>2</sup> C 2 GPIO 2 PWM 1 SPI 2 ADC (1 for VCC voltage detect)
	Operating System	mbed OS	mbed OS	TI RTOS
	Operating Temperature	-40 ~ 85 °C	-40 ~ 85 °C	-20 ~ 70 °C
Sensors	Embedded Sensor	Temperature & humidity sensor Air Pressure & IAQ sensor	Temperature & humidity sensor Air Pressure & IAQ sensor	Temperature & humidity sensor Air Pressure & IAQ sensor
	Software Package	<b>WISE-PaaS/RMM</b> Remote Monitoring and Management <b>arm MBED</b> MBED Cloud Services		

# Computer On Modules



Model Name		SOM-5992	SOM-5991	SOM-5899	SOM-5898	SOM-5897
Form Factor		COM Express Basic	COM Express Basic	COM Express Basic	COM Express Basic	COM Express Basic
Pin-out Type		COM R3.0 Type 7	COM R2.1 Type 6	COM R3.0 Type 6	COM R2.1 Type 6	COM R2.1 Type 6
Processor System	CPU	Intel® Xeon® Processor D-1500 Product Family	Intel® Xeon® Processor D-1500 Product Family	8th Gen. Intel Core i7/i5/i3/Xeon	7th Gen. Intel Core i7/i5/i3/Xeon	6th Gen. Intel Core i7/i5/i3/Celeron/ Xeon
	Base Frequency	2.2 - 1.3GHz	2.2 - 1.3GHz	2.4GHz	3.0 - 2.1GHz	2.8 - 1.9GHz
	Processor Core	16/12/8/6/4/2	16/12/8/6/4/2	6	4/2	4/2
	LLC	24/18/12/9/6/3MB	24/18/12/9/6/3MB	9MB	8/6/3MB	8/6/3MB
	CPU TDP	45/35/25W	45/35/25W	45W (other SKU TBD)	45/35/25W	45/35/25W
	Chipset	-	-	Intel QM370/CM246	Intel QM175/CM238	Intel QM170/CM236
Memory	Technology	DDR4 1866/2133/2400MHz	DDR4 1866/2133/2400MHz	DDR4 1866/2133/2400MHz	DDR4 1866/2133/2400MHz	DDR4 1866/2133MHz
	ECC Support	ECC and non-ECC	ECC and non-ECC	non-ECC and ECC (Xeon SKU Only)	non-ECC and ECC (Xeon SKU Only)	non-ECC and ECC (Xeon SKU Only)
	Max. Capacity	64GB	32GB	48GB	32GB	32GB
	Socket	4x 260P SODIMM	2 x 260P SODIMM	3 x 260P SODIMM	2 x 260P SODIMM	2 x 260P SODIMM
Graphics	Controller	-	-	Intel® HD Graphics	Intel® HD Graphics	Intel® HD Graphics
	Max. Frequency	-	-	TBD	1.05GHz ~ 350MHz	1.05GHz ~ 350MHz
	VGA	-	-	1	1	1
	LCD (TTL/LVDS/eDP)	-	-	LVDS 2-CH 18/24-bit BOM optional eDP	LVDS 2-CH 18/24-bit BOM optional eDP	LVDS 2-CH 18/24-bit BOM optional eDP
	DDI (HDMI/DVI/DisplayPort)	-	-	2 BOM optional 3	2 BOM optional 3	2 BOM optional 3
	SDVO	-	-	-	-	-
	TV-out	-	-	-	-	-
	Multiple Displays	-	-	Dual/Triple	Dual/Triple	Dual/Triple
Expansion	PCIe x16	1 (x16, x8, x4)	1	1 (x16, x8, x4)	1 (x16, x8, x4)	1 (x16, x8, x4)
	PCIe x8	1 (x8, x4)	-	-	-	-
	PCIe x1	7 (x4, x2, x1)	8	8 (x4, x2, x1)	8 (x4, x2, x1)	8 (x4, x2, x1)
	PCI Masters	-	-	-	-	-
	PCI Masters	-	-	-	-	-
	ISA Bus	-	-	-	-	-
	LPC	1	1	1	1	1
Serial Bus	SMBus	1	1	1	1	1
	I2C Bus	1	1	1	1	1
	CAN Bus	-	-	1 (optional)	1 (optional)	1 (optional)
Ethernet	Controller	Intel I210AT/I210IT	Intel I210AT	Intel I219LM	Intel I219LM	Intel I219LM
	Speed	10/100/1000Mbps	10/100/1000Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000Mbps
I/O	SATA	2	4	4	4	4
	PATA Channel	-	-	-	-	-
	USB3.0	4	4	4	4	4
	USB2.0	4	4	8	8	8
	Audio	-	-	HD Audio	HD Audio	HD Audio
	SPI Bus	1	1	1	1	1
	GPIO	8	8	8	8	8
	SDIO (GPIO pin shared)	-	-	-	-	-
	Watchdog	1	1	1	1	1
	COM Port	2 (2-wire)	2 (2-wire)	2 (2-wire)	2 (2-wire)	2 (2-wire)
	LPT/FDD	-	-	-	-	-
	PS/2	-	-	-	-	-
	IR	-	-	-	-	-
	Onboard Storage	-	-	-	-	-
	TPM	TPM2.0	TPM2.0	TPM 2.0	TPM 2.0	Optional TPM 2.0
Power	Power Type	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
	Supply Voltage	Vin: 8.5-20V VSB: 4.75-5.25V RTC Battery: 2.0-3.3V	Vin: 8.5-20V VSB: 4.75-5.25V RTC Battery: 2.0-3.3V	Vin: 8.5-20V VSB: 4.75-5.25V RTC Battery: 2.0-3.3V	Vin: 8.5-20V VSB: 4.75-5.25V RTC Battery: 2.0-3.3V	Vin: 8.5-20V VSB: 4.75-5.25V RTC Battery: 2.0-3.3V
	Power Consumption Max. (burn-in)	50.26 W	48.74 W	TBD	48.05 W	43.41 W
	Power Consumption Idle	12.3W	11W	TBD	6.8W	5.2W
Environment	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)	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 95mm (4.92" x 3.74")	125 x 95mm (4.92" x 3.74")	125 x 95mm (4.92" x 3.74")	125 x 95mm (4.92" x 3.74")



Model Name	SOM-5894	SOM-5893	SOM-5892	SOM-5890	
Form Factor	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	
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
	Chipset	Intel QM87	A77E	Intel QM77	Intel QM67
Memory	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	16GB	16GB	16GB
	Socket	2 x 204P SODIMM	2 x 204P SODIMM	2 x 204P SODIMM	2 x 204P SODIMM
Graphics	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 18/24-bit	LVDS 2-CH 18/24-bit	LVDS 2-CH 18/24-bit
	DDI (HDMI/DVI/DisplayPort)	3	3 (optional)	3	3
	SDVO	-	-	1	1
	TV-out	-	-	-	-
Multiple Displays	Dual/Triple	Dual/Triple/Quad	Dual/Triple	Dual	
Expansion	PCIe x16	1 (x16, x8, x4)	1 (x16, x8, x4)	1 (x16, x8, x4)	1 (x16, x8, x4)
	PCIe x1	7 (x4, x2, x1)	-	7	7
	PCI Masters	-	-	-	-
	PCI Masters	-	-	-	-
	ISA Bus	-	-	-	-
	LPC	1	1	1	1
Serial Bus	SMBus	1	1	1	1
	I2C Bus	1	1	1	1
	CAN Bus	-	-	-	-
Ethernet	Controller	Intel I217LM	Intel I211AT	Intel 82579LM	Intel 82579LM
	Speed	10/100/1000Mbps	10/100/1000 Mbps	10/100/1000Mbps	10/100/1000Mbps
I/O	SATA	4	4	4	4
	PATA Channel	-	-	-	-
	USB3.0	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	-	-	-	-
	PS/2	-	-	-	-
	IR	-	-	-	-
	Onboard Storage	-	-	-	-
Power	TPM	Optional	Optional	Optional	-
	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 RTC Battery: 2.0-3.3V	Vin: 8.5-20V VSB: 4.75-5.25V RTC Battery: 2.0-3.3V	Vin: 12V VSB: 4.75-5.25V RTC Battery: 2.0-3.3V	Vin: 12V VSB: 4.75-5.25V RTC Battery: 2.0-3.3V
	Power Consumption Max. (burn-in)	41.8 W	39.6 W	41.8 W	42.8 W
Environment	Power Consumption Idle	8.5 W	16.8 W	5.4 W	9.6 W
	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)
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")

# Computer On Modules

**NEW**



Model Name	SOM-6898	SOM-6897	SOM-6896	SOM-6894		
Form Factor	COM Express Compact	COM Express Compact	COM Express Compact	COM Express Compact		
Pin-out Type	COM R2.1 Type 6	COM R2.1 Type 6	COM R2.1 Type 6	COM R2.1 Type 6		
Processor System	CPU	i7-7600U/i5-7300U/i3-7100U/ Celeron3965U	i7-6600U/i5-6300U/i3-6100U/ Celeron3955U	i7-5650U/i5-5350U/i3-5010U/ Celeron3765U	i7-4650U/i5-4300U/i3-4010U/ Celeron2980U	
	Base Frequency	2.8 - 2.2GHz	2.6 - 2.0GHz	2.2 - 1.8GHz	1.9 - 1.6GHz	
	Processor Core	2	2	2	2	
	LLC	4/3/2 MB	4/3/2MB	4/3/2 MB	4/3/2MB	
	CPU TDP	15W	15W	15W	15W	
	Chipset	Integrated PCH-LP	Integrated PCH-LP	Integrated PCH-LP	Integrated PCH-LP	
	Memory	Technology	DDR4 2133	DDR3L-1600	DDR3L 1600	DDR3L 1600
ECC Support		-	-	-	-	
Max. Capacity		32GB	16GB	16GB	16GB	
Socket		2 x 204P SODIMM	2 x 204P SODIMM	2 x 204P SODIMM	2 x 204P SODIMM	
Graphics		Controller	Intel® HD Graphics 620/610	Intel® HD Graphics 620/610	Intel® HD Graphics 6000/5500	Intel® HD Graphics 5000/4400
	Max. Frequency	1.1GHz - 300MHz	1.15GHz - 300MHz	1GHz - 850MHz	1.1 - 1GHz	
	VGA	1	1	1	1	
	LCD (TTL/LVDS/eDP)	LVDS 2-CH 18/24-bit BOM optional eDP	LVDS 2-CH 18/24-bit BOM optional eDP	LVDS 2-CH 18-bit/24-bit	LVDS 2-CH 18/24-bit	
	DDI (HDMI/DVI/DisplayPort)	2 (DDI2 for option)	2 (DDI2 for option)	2 (DDI2 for option)	2 (DDI2 for option)	
	SDVO	-	-	-	-	
	TV-out	-	-	-	-	
	Multiple Displays	Dual/Triple	Dual/Triple	Dual/Triple	-	
	Expansion	PCIe x16	-	-	-	-
		PCIe x1	4PClex1, 1PClex4; 5PClex1 (Optional)	5 PCIe x1; 4 PCIe x1 + 1 PCIe x4 (Optional)	4	4
PCI Masters		-	-	-	-	
PCI Masters		-	-	-	-	
ISA Bus		-	-	-	-	
Serial Bus	LPC	1 (24MHz)	1 (24MHz)	1 (24MHz)	1 (24MHz)	
	SMBus	1	1	1	1	
	I2C Bus	1	1	1	1	
	CAN Bus	-	-	-	-	
Ethernet	Controller	Intel I219LM	Intel I219LM	Intel I218LM	Intel I218LM	
	Speed	10/100/1000 Mbps	10/100/1000Mbps	10/100/1000Mbps	10/100/1000Mbps	
I/O	SATA	2 (3 for optional)	2 (3 for optional)	4	4	
	PATA Channel	-	-	-	-	
	USB3.0	4	4	2	2	
	USB2.0	8	8	8	8	
	Audio	HD Audio	HD Audio	HD Audio	HD Audio	
	SPI Bus	1	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	-	-	-	-	
	PS/2	-	-	-	-	
	IR	-	-	-	-	
	Onboard Storage	eMMC (optional)	-	-	-	
	Power	TPM	TPM2.0	Optional	Optional	-
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: 4.75-20V, VSB: 4.75-5.25V RTC Battery: 2.0-3.3V	Vin: 4.75-20V, VSB: 4.75-5.25V RTC Battery: 2.0-3.3V	Vin: 4.75-20V, VSB: 4.75-5.25V RTC Battery: 2.0-3.3V	Vin: 4.75-20V, VSB: 4.75-5.25V RTC Battery: 2.0-3.3V	
Power Consumption Max. (burn-in)		21.69W	12.81W	22.58W	20.44W	
Environment	Power Consumption Idle	3.28W	2.76W	3.13W	4.48W	
	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)	
Mechanical	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)	
	Dimensions	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")	95 x 95 mm (3.74" x 3.74")	



**NEW**



Model Name		SOM-6869	SOM-6868	SOM-6867
Form Factor		COM Express Compact	COM Express Compact	COM Express Compact
Pin-out Type		COM R2.1 Type 6	COM R2.1 Type 6	COM R2.1 Type 6
Processor System	CPU	Intel® Atom™ E3900 & Pentium® and Celeron® N Series Processors	Intel® Pentium N3710 Intel Celeron N3160/N3060/N3010 Intel Atom™ X5-E8000	Intel® Atom E3800 and Celeron® Processor Series
	Base Frequency	1.6/1.6/1.3/1.1/1.1GHz	1.6/1.6/1.6/1.04/1.04GHz	1.19/1.75/1.33/2GHz
	Processor Core	4/4/2/4/2	4/4/2/2/4	4/2/2/4
	LLC	2MB	2MB	2/1/1/2MB
	CPU TDP	12/9.5/6.5/6/6W	6/6/6/4/5W	10/8/6/10W
	Chipset	-	-	-
Memory	Technology	DDR3L 1866	DDR3L 1600	DDR3L 1333
	ECC Support	B1 version only	-	-
	Max. Capacity	8GB	8GB	8GB
	Socket	2 x 204P SODIMM	2 x 204P SODIMM	2 x 204P SODIMM
Graphics	Controller	Intel HD Graphics	Intel HD Graphics	Intel HD Graphics
	Max. Frequency	550 - 750MHz	320 - 700MHz	792 - 854MHz
	VGA	1	-	1
	LCD (TTL/LVDS/eDP)	LVDS 2-CH 18/24-bit BOM optional eDP	-	LVDS 2-CH 18-bit/24-bit
	DDI (HDMI/DVI/DisplayPort)	1 BOM optional 2	2	1 BOM optional 2
	SDVO	-	-	-
	TV-out	-	-	-
	Multiple Displays	Triple	Triple	Dual
Expansion	PCIe x16	-	-	-
	PCIe x1	4 (Optional 5)	5	3 (Optional 4)
	PCI Masters	-	-	-
	PCI Masters	-	-	-
	ISA Bus	-	-	-
	LPC	1	1	1
Serial Bus	SMBus	1	1	1
	I2C Bus	1	1	1
	CAN Bus	1 Optional	-	-
Ethernet	Controller	Intel I210	Intel I211AT	Intel I210
	Speed	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps
I/O	SATA	2	2	2
	PATA Channel	-	-	-
	USB3.0	2	4	1
	USB2.0	8	8	8
	Audio	HD Audio	HD Audio	HD Audio
	SPI Bus	-	1	1
	GPIO	-	8	8
	SDIO (GPIO pin shared)	-	-	-
	Watchdog	1	1	1
	COM Port	2 (2-wire)	2 (2-wire)	2 (2-wire)
	LPT/FDD	-	-	-
	PS/2	-	-	-
	IR	-	-	-
	Onboard Storage	-	-	1 (Option)
	TPM	TPM2.0	Optional TPM1.2	-
Power	Power Type	ATX: Vin, VSB; AT: Vin	ATX: Vin, VSB, AT: Vin	ATX: Vin, VSB, AT: Vin
	Supply Voltage	Vin: 4.75-20V, VSB: 4.75-5.25V RTC Battery: 2.0-3.3V	Vin: 4.75-20V, VSB: 4.75-5.25V RTC Battery: 2.0-3.3V	Vin: 4.75-20V, VSB: 4.75-5.25V RTC Battery: 2.0-3.3V
	Power Consumption Max. (burn-in)	14.76W (N4200)	8.66W (N3710)	15.36W (E3845)
	Power Consumption Idle	4.46W (N4200)	4.51W (N3710)	9.48W (E3845)
Environment	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	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")

# Computer On Modules

**NEW**



Model Name		SOM-7569	SOM-7568	SOM-7567	
Form Factor		COM Express Mini	COM Express Mini	COM Express Mini	
Pin-out Type		COM R2.1 Type 10	COM R2.1 Type 10	COM R2.1 Type 10	
Processor System	CPU	Intel® Atom™ E3900 & Pentium® and Celeron® N Series Processors	Intel® Pentium N3710 Intel Celeron N3160/N3060/N3010 Intel Atom™ X5-E8000	Intel® Atom E3800 and Celeron® Processor Series	
	Base Frequency	1.6/1.3/1.1GHz	1.6/1.04GHz	2.00/1.91/1.83/1.46/1.33GHz	
	Processor Core	4/2	4/2	4/2/1	
	LLC	2MB	2MB	2/1/512KB	
	CPU TDP	12/9/6W	6/5/4W	10/7.5/6/5W	
	Chipset	Integrated in CPU	Integrated in CPU	Integrated in CPU	
Memory	Technology	One channel DDR3L 1866 MT/s	Dual Channel DDR3L-1600	DDR3L 1333/1066	
	ECC Support	Support by default	-	-	
	Max. Capacity	8GB	8GB	4GB	
	Socket	Onboard DDR	Onboard	Onboard	
Graphics	Controller	Intel HD Graphics	Intel HD Graphics	Intel HD Graphics	
	Max. Frequency	550-750MHz	320-700MHz	400-854MHz	
	VGA	-	-	-	
	LCD (TTL/LVDS/eDP)	LVDS: Single-channel 18/24-bit, up to 1366 x 768 eDP: Up to 4096x2160 @ 60 Hz	LVDS: Single channel 18/24-bit, up to 1366 x 768 Optional eDP: Up to 3840 x 2160 @ 30Hz or 2560 x 1600 @ 60Hz; eDP Version 1.4	LVDS 1-ch 18/24-bit, up to 1366 x 768 resolution	
	DDI (HDMI/DVI/DisplayPort)	HDMI 1.4b: Upto 3840 x 2160 @ 30 Hz DP 1.2: Upto 4096x160 @ 60 Hz	HDMI & DisplayPort: Up to 3840 x 2160 @ 30Hz or 2560 x 1600 @ 60Hz, 24 bpp; HDMI Version 1.4b; DisplayPort Version 1.1a	Up to 2560 x 1600 resolution	
	SDVO	-	-	-	
	TV-out	-	-	-	
	Multiple Displays	Dual	Dual	Dual	
Expansion	PCIe x16	-	-	-	
	PCIe x1	4 PCIe x1, 1PClex4 (optional)	3 (Optional 4)	3 (Optional 4)	
	PCI Masters	-	-	-	
	ISA Bus	-	-	-	
Serial Bus	LPC	Yes	Yes	Yes	
	SMBus	Yes	Yes	Yes	
	I <sup>2</sup> C Bus	Yes	Yes	Yes	
Ethernet	CAN Bus	Optional	-	-	
	Controller	Intel I210IT/I210AT	Intel I211AT	Intel I210IT	
I/O	Speed	10/100/1000 Mbps	Speed 10/100/1000 Mbps	10/100/1000 Mbps	
	SATA	2 Ports, Support Gen 1 (1.5 Gb/s) or Gen2 (3 Gb/s) and Gen3.1 (6Gb/s)	2 Ports, Support Gen3 (6Gb/s) and Gen2 (3 Gb/s) or Gen 1 (1.5 Gb/s)	1 (Optional 2)	
	PATA Channel	-	-	-	
	USB3.0	2	2	1	
	USB2.0	8	8	4	
	Audio	Intel® HD Audio	Intel HD Audio	HD Audio	
	SPI Bus	Yes	Yes	1	
	GPIO	8-bit GPIO	8-bit GPIO	8	
	SDIO (GPIO pin shared)	Optional	Support 4 GPI and 4 GPO	-	
	Watchdog	65536 level, 0 ~ 65535 sec	65536 level, 0 ~ 65535 sec	0 ~ 65535 sec	
	COM Port	2 Ports (2-Wire)	2 Ports (2-Wire)	2 (2-wire)	
	LPT/FDD	-	-	-	
	PS/2	-	-	-	
	IR	-	-	-	
	Onboard Storage	Up to 64GB eMMC 5.0 interface	eMMC4.51, 4GB to 32GB	MLC SSD up to 64GB, SLC SSD up to 32GB	
	TPM	TPM2.0 (B1 version only)	-	-	
	Power	Power Type	ATX, AT	ATX: Vin, VSB, AT: Vin	ATX: Vin, VSB, AT: Vin
		Supply Voltage	Vin: 4.75-20V, VSB: 4.75-5.25V RTC Battery: 2.0-3.3V	Vin: 4.75-20V, VSB: 4.75-5.25V RTC Battery: 2.0-3.3V	Vin: 4.75-20V, VSB: 4.75-5.25V RTC Battery: 2.0-3.3V
		Power Consumption Max. (burn-in)	12.886 W (N4200), 11.999 W (N3350)	6.99 W (N3700)	16.56 W (E3845)
		Power Consumption Idle	2.555 W (N4200), 2.783 W (N3350)	2.64 W (N3700)	8.04 W (E3845)
Environment	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	84 x 55 mm (3.3" x 2.17")	84 x 55 mm (3.3" x 2.17")	84 x 55 mm (3.3" x 2.17")	

**NEW**



Model Name		SOM-3569	SOM-3568	SOM-3567	SOM-4466	
Form Factor		Qseven	Qseven	Qseven	ETX	
Pin-out Type		Qseven 2.1	Qseven 2.1	Qseven 2.1	ETX 3.0	
Processor System	CPU	Intel® Atom™ E3900 & Pentium® and Celeron® N Series Processors	Intel Pentium N3710 Intel Celeron N3160/N3060/N3010 Intel Atom™ X5-E8000	Intel® Atom E3800 and Celeron® Processor Series	AMD G-Series T56N/T40E/T16R	
	Base Frequency	1.6 - 1.1GHz	1.04 - 1.6GHz	1.33GHz - 2.00GHz	615MHz - 1G	
	Processor Core	4/2	4/2	4/2	1	
	LLC	2MB	2MB	2/1MB & 512KB	512KB	
	CPU TDP	6/9/12W	6/5/4W	10/8/6/5W	4.5/6.4/18W	
	Chipset	-	-	-	AMD A55E	
Memory	Technology	LPDDR4-2400	DDR3L-1600	DDR3L-1333/1066	DDR3 1066	
	ECC Support	-	-	-	-	
	Max. Capacity	Up to 8GB	8GB	8GB	4GB	
	Socket	Onboard	Onboard	Onboard	1 x 204P SODIMM	
Graphics	Controller	Intel® HD Graphics	Intel® HD Graphics	Intel® HD Graphics	AMD Radeon HD6320/HD6250	
	Max. Frequency	550-750MHz	320-700MHz	400 - 854MHz	276MHz	
	VGA	-	-	-	1	
	LCD (TTL/LVDS/eDP)	Dual Channel 18/24-bit LVDS, up to 1920 x 1200	LVDS 2-CH 18/24-bit BOM optional eDP	LVDS 2-CH 18/24-bit	LVDS 1-CH 18/24-bit TTL 1-CH 18-bit	
	DDI (HDMI/DVI/DisplayPort)	1 DDI port supports HDMI/DP HDMI 1.4b: up to 3840 x 2160 @ 30Hz DP 1.2: up to 4096 x 2160 @ 60Hz	2	1	-	
	SDVO	-	-	-	-	
	TV-out	-	-	-	-	
	Multiple Displays	Dual Display	Dual/Triple	Dual	Dual	
	Expansion	PCIe x16	-	-	-	-
		PCIe x1	4 PCIe x1	3 (Optional 4)	3 (Optional 4)	-
PCI Masters		-	-	-	4	
ISA Bus		-	-	-	1	
LPC		1	1	1	-	
Serial Bus	SMBus	1	1	1	1	
	I <sup>2</sup> C Bus	1	1	1	1	
	CAN Bus	1	-	-	-	
Ethernet	Controller	Intel I210IT	Intel I211AT	Intel I210IT	Realtek RTL8105E	
	Speed	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100 Mbps	
I/O	SATA	2 Ports, Support Gen3.1 (6Gb/s) and Gen2 (3 Gb/s) or Gen 1(1.5 Gb/s)	2	2	2	
	PATA Channel	-	-	-	2	
	USB3.0	1 Port (up to 2 Ports by BOM option)	2	1	-	
	USB2.0	8 Ports	5	6	4	
	Audio	HD Audio	HD Audio	HD Audio	HD Audio	
	SPI Bus	Support SPI BIOS EEPROM	1	1	-	
	GPIO	-	-	-	1	
	SDIO (GPIO pin shared)	Support SD 3.0	-	-	-	
	Watchdog	65536 level, 0 ~ 65535 sec	1	1	1	
	COM Port	4-wire COM 2 Ports; optional mux with GPIO 8-bit	1 (4-wire)	1 (4-wire)	2	
	LPT/FDD	-	-	-	1	
	PS/2	-	-	-	KB/MS	
	IR	-	-	-	1	
	Onboard Storage	eMMC5.0, 4GB to 64GB	eMMC4.51 up to 32GB	eMMC4.51 up to 32GB	mSATA socket	
	TPM	Yes	-	-	-	
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: 5V±5%, VSB: 5V±5%, RTC Battery: 2.0-3.3V	Vin: 5V±5%, VSB: 5V±5%, RTC Battery: 2.0-3.3V	Vin: 5V±5%, VSB: 5V±5%, RTC Battery: 2.0-3.3V	Vin: 4.75-5.25V, VSB: 4.75-5.25V	
	Power Consumption Max.	11.73 W (N4200)	6.64 W	11.96 W (E3845)	7.75 W	
	Power Consumption Idle	4.43 W (N4200)	5.52 W	3.28 W (E3845)	6.1 W	
Environment	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)	
Mechanical	Dimensions	70 x 70 mm (2.75" x 2.75")	70 x 70 mm (2.75" x 2.75")	70 x 70 mm (2.75" x 2.75")	114 x 95 mm (3.74" x 4.5")	

# Embedded Single Board Computers

**NEW**

**NEW**



## MI/O Extension 3.5" SBCs

Model Name		MIO-5350	MIO-5251	MIO 5272	MIO-5271	MIO-5270	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
Processor System	CPU	Intel® Pentium N4200 Celeron N3350 & Atom™ E3950/E3940/E3930	Intel Atom E3825/ E3845, Celeron J1900	Intel Core i7-7600U/i7-6600U/ i5-6300U/i3-6100U / Celeron 3955U	Intel Core i5-4300U, Celeron 2980U	AMD G-Series T56N/ T40E/ T40R	Intel Core i7-3555LE/ i7-3517UE / i3-3217UE/ Celeron 1047UE
	CPU TDP	6W/6W/12W/9W/6W	6W/ 10W/ 10W	15W	15W	18W/ 6.4W/ 5.5W	25W/ 17W/ 17W/ 17W
	Frequency	1.1GHz/1.1GHz/1.6GHz/1.6GHz/1.3GHz	1.33 GHz/ 1.91 GHz/ 2(Turbo: 2.42) GHz	2.8(Turbo: 3.9)GHz/ 2.6(Turbo: 3.4)GHz/ 2.4(Turbo: 3.0) GHz/ 2.3 GHz/ 2.0 GHz	1.9(Turbo: 2.9) GHz/ 1.6 GHz	1.65 GHz/ 1.0 GHz/ 1.0 GHz	2.5(Turbo: 3.0) GHz/ 1.7(Turbo: 2.6) GHz/ 1.6 GHz/ 1.4 GHz
	Core Number	4/2/4/4/2	2/ 4/ 4	2	2	2/ 2/ 1	2
	L2 Cache	2	1MB/ 2MB	-	-	1MB/ 512KB/ 512KB	-
	L3 Cache	-	-	4MB/4MB/ 3MB/ 3MB/ 2MB	3MB/ 2MB	-	4MB/ 4MB/ 3MB/ 2MB
	BIOS	AMI UEFI 64 Mb	AMI UEFI 128 Mbit	-	AMI UEFI 128 Mb	AMI UEFI 32Mbit	AMI UEFI 64Mbit
Chipset	-	-	-	-	AMD A50M	Intel QM77	
Memory	Technology	DDR3L 1867 MHz	DDR3L 1066/1333MHz	DDR3L 1333/1600 MHz	DDR3L 1333/1600 MHz	DDR3 1066 MHz, 1333MHz only for T56N	DDR3 1600MHz, DDR3L 1333 MHz
	Max. Capacity	8 GB	8 GB	16 GB	8 GB	8 GB	8 GB
	Socket	1 x 204-pin SODIMM	1 x 204-pin SODIMM	2 x 204-pin SODIMM	1 x 204-pin SODIMM	1 x 204-pin SODIMM	1 x 204-pin SODIMM
Display	Controller	Intel Gen9 graphic engine	Intel Gen7 graphic engine	Intel® HD Graphics 500 series	Intel® HD Graphics 4400 / Intel HD Graphics (Celeron)	AMD Radeon™ HD 6320/6250/6250	Intel® HD Graphics 4000 / Intel® HD Graphics (Celeron)
	Graphic Memory	Share with system memory up to 1792MB	Share with system memory up to 384 MB	Share with system memory up to 398MB	Share with system memory up to 1792MB	Share with system memory up to 384MB	Share with system memory up to 1792MB
	VGA	2560 x 1600 at 60Hz	Up to 2560 x 1600 at 60Hz	Up to 1920 x 1200 at 60 Hz	Up to 1920 x 1200 at 60 Hz	T56N up to 2560 x 1600, T40R & T40E up to 1920 x 1200 at 60Hz	Up to 2048 x 1536 at 75Hz
	LCD (LVDS/eDP)	48-bit LVDS up to WUXGA 1920 x 1200 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 60 Hz	LVDS 48-bit, up to 2560 x 1600 at 60 Hz
	DDI (HDMI/DVI/DisplayPort)	HDMI 1.4a for HD video playback, 1080P at 60Hz DisplayPort*, up to 2560 x 1600 at 60Hz	HDMI: up to 1920 x 1080 at 60Hz DisplayPort (optional): up to 2560 x 1600 at 60Hz	HDMI: up to 4096 x 2160 at 24 Hz	HDMI: up to 4096 x 2304 at 24Hz DisplayPort (optional): up to 3200 x 2000 at 60Hz	HDMI: up to 1920 x 1080 at 60Hz & 366pp	HDMI: up to 1920 x 1200 at 24Hz DisplayPort (optional): up to 2560 x 1600 at 60Hz
	Multiple Display	VGA + LVDS (eDP *) + HDMI (DP*)	VGA+HDMI/DP, VGA+LVDS/eDP, HDMI/DP+LVDS/eDP	VGA + HDMI + LVDS	VGA+LVDS, VGA+HDMI/DP, HDMI/DP+LVDS, VGA+HDMI/DP+LVDS	VGA+LVDS, VGA+HDMI, HDMI+LVDS	VGA+LVDS, VGA+HDMI/DP, HDMI/DP+LVDS, VGA+LVDS + DP (coastline) + DP (MIoE)
Expansion Interface	Mini PCIe	1 x Full size	1 x Full-size	2 x Full-size	1 x Full-size, 1 x Half-size	1 x Full-size	1 x Full-size, 1 x Half-size
	SIM Socket	-	1	1	1	-	-
	SMBus	1	1	1	1	1	1
	PC	1 (Shares with SMBus pin) DisplayPort(optional), SMBus, 3 x USB2.0, LPC, 1 x PCIe x1, line out, +5Vsb/+12Vsb power, Power On, Reset*	1 (Shares with SMBus pin) SMBus, 3xUSB2.0, LPC, 1 x PCIe, line-out, DisplayPort (optional), Reset, Power On, +5Vsb, +12Vsb	1 (Shares with SMBus pin) SMBus, USB3.0, LPC, 2 x PCIe, line-out DisplayPort (optional), Reset, PowerOn, +5Vsb, +12Vsb	1 (Shares with SMBus pin) SMBus, 3 x USB2.0, LPC, 1 x PCIe, line-out DisplayPort (optional), Reset, PowerOn, +5Vsb, +12Vsb	1 (Shares with SMBus pin) SMBus, 3 x USB2.0, LPC, 4 x PCIe, line-out, DisplayPort (optional), Reset, PowerOn, +5Vsb, +12Vsb	1 (Shares with SMBus pin) SMBus, 1 x USB3.0, LPC, 4 x PCIe x1, line-out, DisplayPort, Reset, PowerOn, +5Vsb, +12Vsb
	MIoE	-	-	-	-	-	-
Ethernet	Controller	GbE1 & GbE2: Intel i210	GbE1 & GbE2: Intel i210	GbE1: Intel i219, GbE2: Intel i210	GbE1: Intel i219, GbE2: Intel i210	GbE1 & GbE2: Realtek RTL8111E-VB-GR	GbE1: Intel E2579LM, GbE2: Intel 82583V
	Speed	10/100/1000Mbps	10/100/ 1000 Mbps	10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps
	Connector	RJ45 x 2	RJ45 x 2	RJ45 x 2	RJ45 x 2	RJ45 x 2	RJ45 x 2
Audio	Audio Interface	High Definition Audio	High Definition Audio	High Definition Audio	High Definition Audio	High Definition Audio	High Definition Audio
	CODEC	Realtek ALC888S	Realtek ALC888S	Realtek ALC888S	Realtek ALC888S	Realtek ALC892	Realtek ALC892
	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	
WatchDog Timer	255 levels timer interval, programmable by software	255 levels timer interval	255 levels timer inte	255 levels timer interval	255 levels timer interval	255 levels timer interval	
Storage	SATA	2* SATAIII (Max. Data Transfer Rate up to 6.0 Gb/s)	1, up to 3Gb/s (300MB/s)	2, up to 6 Gb/s (600 MB/s)	2, up to 6 Gb/s (600 MB/s)	2, up to 3Gb/s (300 MB/s)	2, up to 6.0 Gb/s (600 MB/s)
	mSATA	1 x Full size	1 x Full-size	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, default support miniPCIe	Supports either mSATA or full size miniPCIe
	CFast	-	-	-	-	1	-
I/O	USB3.0	2	1	2	2	-	2
	USB2.0	4 (2 from Rear, 2 from Internal)	3 (3 from rear, 1 from internal)	4 (2 from rear, 2 from internal)	3 (2 from rear, 1 from internal)	6 (4 from rear, 2 from internal)	4 (2 from rear, 2 from internal)
	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	2xRS-232, 2xRS-232/422/485 with RS-485 auto flow control	2 x RS-232, 2 x RS-232/422/485 with RS-485 auto flow control	2 x RS-232/422/485 with RS-485 auto flow control	2 x RS-232, 1 x RS-232/422/485 with RS-485 auto flow control	3 x RS-232, 1 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
	Smart Fan	-	-	-	-	1 (T56N only)	1
Security	TPM 2.0 (optional)	-	TPM 2.0 (optional)	-	-	-	
Power	Power Type	AT/ATX	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	Single 12V DC power input	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	ATX 2x2P (DC Jack optional)	ATX 2x2P (DC Jack optional)	ATX 2x2P (DC Jack optional)	ATX 2x2P/ DC Jack	ATX 2x2P/ DC Jack
	Power Consumption (Idle)	N4200: 0.4A @ 12V (4.80W) N3350: 0.4A @ 12V (4.80W)	E3825: 5.42 W / E3845: 6.12W / J1900: 5.88 W	i7 7600U: TBD i7 6600U: 6.46 W / i5 6300U: 5.26 W / i3 6100U: 5.02 W / Celeron 3955U: 4.88 W	i5 4300U: 4.68 W Celeron 2980U: 4.56 W	T40R: 7.08 W / T40E: 6.36 W / T56N: 7.8 W	i7 3517UE: 23.5 W / i7 3555LE: 27.7 W / i3 3217UE: 18.08 W / Celeron 1047UE: 13.2 W
	Power Consumption (Full Load)	N4200: 1.26A @ 12V (15.12W) N3350: 1.29 @ 12V (15.48W)	E3825: 9.72 W / E3845: 11.04W / J1900: 13.32 W	i7 7600U: TBD(W) i7 6600U: 22.03 W / i5 6300U: 20.87 W / i3 6100U: 20.45 W / Celeron 3955U: 17.81 W	i3 4300U: 29.52 W / Celeron 2980U: 20.52 W	T40R: 9.6 W / T40E: 9.84 W / T56N: 16.2 W	i7 3517UE: 27.6 W / i7 3555LE: 32.5 W / i3 3217UE: 22.08 W / Celeron 1047UE: 17.88 W
Battery	Lithium 3V / 210 mAh	Lithium 3V / 210 mAh	Lithium 3V / 210 mAh	Lithium 3V / 210 mAh	Lithium 3V / 210 mAh	Lithium 3V / 210 mAh	
Environment	Operational Temperature	(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)
Physical Characteristics	Dimensions (L x W x H)	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")
Operating System	Microsoft Windows	Yes	Yes	Yes	Yes	Yes	Yes
	Linux	Yes	Yes	Yes	Yes	Yes	Yes
	SUSIAccess/WISE-PaaS/RMM	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



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## MI/O Extension 2.5" Pico-ITX



Model Name		MIO-2360	MIO-2263	MIO-2270	MIO-3260	MIO-6300
Form Factor		2.5" MI/O-Ultra (Pico-ITX)	2.5" MI/O-Ultra (Pico-ITX)	2.5" MI/O-Ultra (Pico-ITX)	2.5" MI/O-Ultra (Pico-ITX)	-
Processor System	CPU	Intel® Pentium N4200/ Intel® Celeron N3350	Intel Atom E3825/ Intel Celeron J1900	AMD G-Series SoC GX-415GA/ AMD G-Series SoC GX-210JA	Intel Atom E3825/ Intel Celeron N2930	Intel Celeron N2930, 1.83 GHz (Quad-Core)
	CPU TDP	6W	6W/ 10W	15W/ 6W	6W/ 7.5W	7.5W
	Frequency	2.5GHz/2.4GHz	1.33 GHz/ 2.0(Turbo: 2.42) GHz	1.5 GHz/ 1.0 GHz	1.33 GHz/ 1.83(Turbo: 2.16) GHz	1.83 GHz (Quad-Core)
	Core Number	4/2	2/ 4	4/ 2	2/ 4	4
	L2 Cache	2	1 MB/ 2 MB	2 MB/ 1 MB	1 MB/ 2 MB	2
	L3 Cache	-	-	-	-	-
	BIOS	AMI EFI 64 Mbit	AMI EFI 64 Mbit	AMI EFI 32 Mbit	AMI EFI 64 Mbit	AMI EFI 64 Mbit
Memory	Technology	DDR3L-1866MHz	DDR3L 1066/ 1333 MHz	DDR3/3L 1600/ 1066 MHz	DDR3L 1066/ 1333 MHz	DDR3L 1333 MHz for N2930
	Max. Capacity	8GB	8 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
Display	Controller	Intel Gen9 graphic engine	Intel Gen7 graphic engine	AMD Radeon HD 8330E/ 8180	Intel Gen7 graphic engine	Intel Gen7 graphic engine
	Graphic Memory	Share with system memory up to 1792MB	Share with system memory up to 384 MB	Share with system memory up to 384 MB	Share with system memory up to 384 MB*	Share with system memory up to 1792MB
	VGA	up to 1920x1200	Up to 2560 x 1600 at 60Hz	Up to 2048 x 1536 at 60Hz	Up to 2560 x 1600 at 60Hz	2560 x 1600 at 60Hz
	LCD (TTL/LVDS/eDP)	24-bit up to 1440 x 900 at 60Hz	LVDS 18/24-bit, up to 1440 x 900 at 60 Hz	LVDS 18-bit, up to 1600 x 900 at 60 Hz	LVDS 18/24-bit, up to 1440 x 900 at 60 Hz	single channel 24-bit LVDS up to 1440 x 900 at 60Hz
	DDI (HDMI/DVI/DisplayPort)	HDMI 1.4b(3840x2160@30Hz)	HDMI 1.4a 1920x1200 at 60 Hz/ 24bpp	HDMI 1.4a 1920x1200 at 60 Hz/ 24bpp	-	HDMI 1.4a for HD video playback, 1080P at 60Hz Displayport*, up to 2560 x 1600 at 60Hz
	Multiple Display	VGA+LVDS, HDMI+LVDS	VGA+LVDS, HDMI+LVDS	VGA+LVDS, HDMI+LVDS	LVDS+VGA, LVDS+DP/HDMI, VGA+DP/HDMI	VGA+LVDS
Expansion Interface	Triple Display	-	-	-	-	-
	Mini PCIe	1 x Half size	1 x Half size	1 x Half size	1 x Full-size	2 x Full size
	SIM Socket	1	-	-	-	-
	SMBus	1	1	1	1 (from 64pin connector B)	1
	FC	1 (Shares with SMBus pin)	-	-	1 (from 64pin connector B)	1 (Shares with SMBus pin)
	MI0e	SMBus, 2 x USB3.0, LPC, 2 x PCIe x1, line out, DisplayPort/HDMI*, +5 Vsb/+12 Vsb power, Power On, Reset, SATA*	2 x USB2.0, 2 PCIe x1, LPC, HD Audio line-out, DP or HDMI supported by request, 5 Vsb/12 Vsb power	2 x USB2.0, 2 PCIe x1, LPC, HD Audio line-out, DP or HDMI supported by request, 5 Vsb/12 Vsb power	SMBus, USB3.0, LPC, 2 x PCIe x1, Line out, DisplayPort/HDMI*, +5 Vsb/+12 Vsb power, Power On, Reset	-
	64-pin connector A	-	-	-	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, Line out, Mic-in, 2 x RS-232/422/485	-	
Ethernet	Controller	GbE1: Intel i210 GbE2: Intel i210	Intel i210	GbE Realtek RTL8111E	Intel i210	GbE1: Intel i210 GbE2: Intel i210
	Speed	10/100/1000Mbps	10/100/1000Mbps	10/100/1000Mbps	10/100/1000Mbps	10/100/1000Mbps
	Connector	RJ45 x 1	RJ45	RJ45	from 64pin connector A	RJ45 x 3
Audio	Audio Interface	High Definition Audio	High Definition Audio	High Definition Audio	High Definition Audio	High Definition Audio
	CODEC	Realtek ALC888S	Realtek ALC888S	Realtek ALC888S	Realtek ALC888S	Realtek ALC888S
	Amplifier	-	Optional via MI0e	Optional via MI0e	Optional via MI0e	Optional via MI0e
Connector	Line-in, Line-out, Mic-in	Line-in, Line-out	Line-in, Line-out	Line-in, Line out, Mic-in (from 64pin connector B)	Line-in, Line-out, Mic-in	
WatchDog Timer	255 levels timer interval, programmable by software					
Storage	SATA	2* SATAIII (Max. Data Transfer Rate up to 6.0 Gb/s)	1, up to 3Gb/s (300 MB/s)	1, up to 6Gb/s (600 MB/s)	1, up to 3Gb/s (300 MB/s)	2 (2nd SATA is by request), up to 3Gb/s (300 MB/s)
	mSATA	1	1	1 (Integrates USB signal, supports either mSATA or USB interface module)	1 (Integrates USB signal, supports either mSATA or USB interface module)	1 x Full size
	CompactFlash	-	-	-	-	-
I/O	USB3.0	2	1	2	1 (from MI0e)	1
	USB2.0	6	3 (1 from rear, 2 from internal)	2 (from internal)	4 (from internal)	3 (1 from Rear, 2 from Internal)
	GPIO	8-bit general purpose input/output	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
	COM Port	2 x RS-232/422/485	1 x RS-232, 1 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	2 RS-232/422/485 (form 64-pin connector B)	2xRS-232, 2xRS-232/422/485 with RS-485 auto flow control
	Reset Button	1	1	1	1	1
	Fan	-	-	1	-	-
Power	Power Type	AT/ATX	Single 12V DC power input	Single 12V DC power input	Single 12V DC power input	AT/ATX
	Power Supply Voltage	Single 12V DC power input	single 12V input, ±10%	single 12V input, ±10%	single 12V input, ±10%	Dual 12V/24V DC power input
	Connector	ATX, AT	ATX 1x2p, DC Jack (optional)	ATX 1x2p, DC Jack (optional)	From 64pin connector A	ATX 2x2P
	Power Consumption (Idle)	N3350: 0.41 @ 12V (4.89 W)	J1900: 10.59W E3825: 7.08W	GX-415GA: 12.6W GX-210JA: 5.93W	E3835: 4.47W N2930: 5.08W	TBD
	Power Consumption (Full Load)	N3350: 1.09 A @ 12 V (12.90 W)	J1900: 12.48W E3825: 9.12W	GX-415GA: 15.12W GX-210JA: 10.2W	N2930: 5.08W E3835: 7.13W N2930: 9.73W	7W
Battery	Lithium 3 V / 210 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)	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)	(Operational humidity: 40 °C @ 95% RH Non-Condensing)
Physical Characteristics	Dimensions (L x W x H)	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")	146 x 102 mm (5.7" x 4")
	Operating System	Microsoft Windows	Yes	Yes	Yes	Yes
Certification	Linux	Yes	Yes	Yes	Yes	Yes
	SUSIAccess/WISE-PaaS/RMM	Yes	Yes	Yes	Yes	Yes
	iManager	Yes	-	-	-	Yes
EMC	CE, FCC	CE, FCC	CE, FCC	CE, FCC	CE, FCC	

# Embedded Single Board Computers

**NEW**

**NEW**

## 3.5" Single Board Computers



Model Name		PCM-9366	PCM-9365	PCM-9310	PCM-9376	PCM-9375
Form Factor		3.5" SBC	3.5" SBC	3.5" SBC	3.5" SBC	3.5" SBC
Processor System	CPU	Intel® Pentium N4200/ Intel® Celeron N3350	Intel Celeron N2930/ Intel Atom E3825	Intel Celeron N3160/N3060, Intel® Atom E8000	AMD G-Series T16R/ T40E	AMD Geode LX800
	CPU TDP	6W/6W	7.5W/ 6W	6W/ 4.5W	4.5/ 6.4 W	3.6 W
	Frequency	2.5GHz/2.4GHz	1.83/ 1.33 GHz (Burst: 2.16 GHz/ -)	1.6 GHz	615 MHz/ 1.0GHz	500 MHz
	Core Number	4/1	4/2	4/2	1/2	1
	L2 Cache	2MB	2MB/ 1MB	2/ 1 MB	512 KB	128 KB
	BIOS	AMI EFI 16Mbit	AMI UEFI BIOS at 64 Mbit	AMI UEFI BIOS at 64 Mb	AMI EFI 32Mbit	Award 4Mbit
Memory	Chipset	-	Intel Atom SoC	-	AMD A55E	AMD C5536
	Technology	DDR3L-1866MHz	DDR3L 1333 MHz for N2930, DDR3L 1066 MHz for E3825	DDR3L-1600MHz	DDR3/DDR3L 1066 MHz	DDR 333/400 MHz
	Max. Capacity	8GB	4 GB	8 GB	4 GB	1 GB
	Socket	1 x 204-pin SODIMM	-	1 x 204-pin SODIMM	1 x 204-pin SODIMM	1 x 200-pin SODIMM
Display	Onboard Memory	-	Onboard 2GB/ 4GB	-	1 GB	-
	Controller	Intel Gen9 graphic engine	Intel Gen7 graphic engine	Intel Celeron N3160/N3060	AMD G-series T16R/T40E	AMD Geode LX800
	Graphic Memory	Share with system memory up to 1792MB	-	-	Optimized shared memory Architecture up to 384 MB system memory	Optimized shared memory architecture up to 64MB system memory
	VGA	up to 1920x1200	2560 x 1600 at 60Hz	1920 x 1200 at 60Hz	Supports up to 1920 x 1200 at 85Hz	Supports up to 1920 x 1440 @ 32bpp (85Hz)
	LCD (TTL/LVDS/eDP)	up to 1920x1200	48-bit dual LVDS up to WUXGA 1920 x 1200 at 60Hz, the 2nd LVDS is supported by request Supports 3.3/5/12V for VDD power, 1A/5V/12V for inverter	LVDS: Single/dual-ch 18/24bit up to 1920 x 1200 at 60Hz eDP: eDP 1.3 up to 2560x1440 (Optional)	Supports single/dual channel 18/24-bit LVDS up to 1920 x 1200, 24-bit TTL	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)
	DDI (HDMI/DW/DisplayPort)	HDMI 1.4a for HD video playback, 1080P at 60Hz	HDMI 1.4a for HD video playback, 1080P at 60Hz	HDMI: 1.4b up to 2560x1600 at 60Hz	-	-
Expansion Interface	Multiple Display	VGA + LVDS * eDP + HDMI	VGA + LVDS, HDMI* + LVDS, LVDS + LVDS*	VGA + HDMI + LVDS/eDP	VGA+LVDS, VGA+TTL, LVDS+TTL	VGA + LVDS, VGA + TTL
	Mini PCIe	1 x Full size	1x Full-size	2x Full-size	1 (Half-size), Full-size supported by request	-
	LPC	-	-	-	1	-
	SIM Socket	1	-	-	-	-
	SMBus	1	1	1 (shared with I2C)	1 (shared with FC)	-
	I2C Bus	1 (Shares with SMBus pin)	1 (shared with SMBus pin)	1 (shared with SMBus)	1 (shared with SMBus)	optional
	PC/104	-	-	-	1	1
Ethernet	Controller	GbE1: Intel i210 GbE2: Intel i210	Realtek RTL8111E-VL-CG	GbE1/2: RTL8111E	GbE1/2 Realtek RTL8111E	GbE 1/2 Realtek RTL8139
	Speed	10/100/1000Mbps	10/100/1000Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100 Mbps
	Connector	RJ45 x 2	RJ45 x 2	RJ45 x 2	RJ45 on GbE1, box header on GbE2	RJ45 on Ethernet1, box header on Ethernet2
Audio	Audio Interface	High Definition Audio	HD Audio	HD Audio	HD Audio	AC97
	CODEC	Realtek ALC888S	Realtek ALC888S, HD audio	Realtek ALC892	Realtek ALC892, High Definition Audio (HD)	Realtek ALIC203, AC97
	Amplifier	-	-	-	-	Max. 2.2W/ch Stereo into a 3(Ω) Load
WatchDog Timer	Connector	Line-in, Line-out, Mic-in	pin header (Line-in, Line out, Mic-in)	Line-in, line-out, mic-in	pin header (Line-in, Line out, Mic-in)	pin header (Line-in, Line out, Mic-in, speaker-out)
	Yes	-	Yes	-	Yes	Yes
Storage	SATA	1* SATAIII (Max. Data Transfer Rate up to 6.0 Gb/s)	1, up to 3Gb/s (300 MB/s)	1x SATAIII (up to 600 MB/s), 1x SATA II (optional, up to 300 MB/s)	2 x SATAII (Max. Data Transfer Rate 300 MB/s)	-
	mSATA	1 x Full size	1 x Full-size	1x Full-size (support Mini PCIe by request)	1 (Full-size)	-
	IDE	-	-	-	-	1
	CompactFlash	-	-	-	-	CompactFlash Type I/II (Primary Master IDE Channel)
	Floppy	-	-	-	-	1 (Shared with LPT)
I/O	USB3.0	2	4	4	4	4
	USB2.0	4	4	4	4	4
	GPIO	16-bit general purpose input/output	8-bit	8-bit GPIO	8-bit GPIO	8-bit GPIO
	LPT	-	-	-	-	1 (Shared with Floppy)
	COM Port	2xRS-232, 2xRS-232/422/485 with RS-485 auto flow control	3 RS-232 (ESD protection: Air gap ±15kV, Contact ±8kV)	4 (2x RS-232, 2x RS-232/422/485)	4 (2xRS-232, 2xRS-232/422/485)	4 (3xRS-232, 1xRS-232/422/485)
	PS/2 KB/Mouse	-	-	-	1	1
	Reset Button	1	-	-	1	1
Power	Smart Fan	-	-	-	-	-
	Power Type	AT/ATX	-	Single 12V DC power input	AT/ ATX	AT/ ATX
	Power Supply Voltage	9-36V DC power input	12V ± 10%	12V ± 10%	5V±5% (+12V option for LCD, PC/104)	5V±5% (+12V option for LCD, PC/104)
Power	Connector	2x2P phenix power connector	1x4Pin power connector	ATX 2x2P (DC Jack Optional)	1x4pin power connector	1x4pin power connector
	Power Consumption (Idle)	N4200: 0.4A @ 12V (4.80W) N3350: 0.4A @ 12V (4.80W)	PCM-9365E-2GS3A1E : 0.39A @ 12V (4.68W) PCM-9365EV-4GS3A1E : 0.44A @ 12V (5.28W) PCM-9365N-4GS8A1E : 0.509A @ 12V (6.108W)	N3150.03A @ 12V (12.27 W) N3060 0.35A @12 V (10.20 W) E8000 0.85A @ 12V (10.20W)	T40E: 1.67A @ 5V (8.35W) 1.48 A @ 5 V (7.4 W)	0.6 A @ 5 V, 0.03A @ 12V (3.36 W)
	Power Consumption (Full Load)	N4200: 1.26A @ 12V (15.12W) N3350: 1.29 @ 12V (15.48W)	PCM-9365E-2GS3A1E : 0.49A @ 12V (5.88W) PCM-9365EV-4GS3A1E : 0.554A @ 12V (6.648W) PCM-9365N-4GS8A1E : 0.745A @ 12V (8.94W)	N3150 0.58 A @ 12 V (7.05 W) N3060 0.38 A @ 12 V (4.55 W) E8000 0.58A @ 12V (6.95W)	T40E: 2.34A @5V (11.7W) 2.28 A @ 5 V (11.4 W)	1.2 A @ 5 V, 0.23A @ 12V (8.76 W)
	Battery	Lithium 3 V / 210 mAh	Lithium 3 V / 210 mAh	Lithium 3V/ 210 mAh	Lithium 3 V / 210 mAh	Lithium 3 V / 196 mAh
Environment	Operational Temperature	(Operational humidity: 40 °C @ 95% 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 @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)
	Physical Characteristics	Dimensions (L x W x H)	146 x 102 mm (5.7" x 4")	146 x 102 mm (5.7" x 4"), same as 3.5"	146 x 102mm	146 x 102 mm
Operating System	Construction	-	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
	SUSIAccess	Yes	SUSI4	Yes	Yes	Yes
	iManager	Yes	Yes	Yes	CE, FCC	CE, FCC
Certification	EMC	CE, FCC	CE,FCC	CE, FCC	-	-

**NEW**



## 5.25" Single Board Computers

Model Name		PCM-9563	MIO-9290
Form Factor		5.25"	5.25"
Processor System	CPU	Intel® Pentium N4200 Celeron N3350 & Atom™ E3950/E3940/E3930	Intel Core I & Celeron 1020E (rPGA988 socket)
	CPU TDP	6W/6W/12W/9W/6W	up to 45W
	Frequency	1.1GHz/1.1GHz/1.6GHz/1.6GHz/1.3GHz	up to 2.3(Turbo: 3.3) GHz
	Core Number	4/2/4/4/2	up to 4 core
	L2 Cache	2	-
	L3 Cache	-	up to 6MB
	BIOS	AMI EFI 16Mbit	AMI EFI 64Mbit
Memory	Technology	DDR3L-1866MHz	DDR3/DDR3L 1333/1600 MHz
	Max. Capacity	8GB	8 GB x 2
	Socket	1 x 204-pin SODIMM	2 x 204-pin SODIMM
Display	Controller	Intel Gen9 graphic engine	Intel Ivy Bridge Processor + Intel QM77
	Graphic Memory	Share with system memory up to 1792MB	Share with system memory up to 512 MB
	VGA	up to 1920x1200	-
	LCD (TTL/LVDS/eDP)	up to 1920x1200	Yes
	DDI (HDMI/DVI/DisplayPort)	DP 1.2a (1920 x1200@60Hz) / HDMI 1.4b(1920 x1200@30Hz) Displayport*, up to 1920 x1200 at 60Hz	DisplayPort: Yes HDMI: Yes DVI-I: Yes
Expansion Interface	Mini PCIe	1	2 (Full-size, shared with mSATA)
Ethernet	Controller	GbE1: Intel i210 GbE2: Intel i210	GbE1: Intel 82579LM GbE2: Intel i210
	Speed	10/100/1000Mbps	10/100/1000 Mbps
	Connector	RJ45 x 3	RJ45 x 2
	i2C	1 (Shares with SMBus pin)	-
	MIOe	-	SMBus, 3 x USB2.0, LPC, 4 x PCIe, line out, Displayport, 5 Vsb/12 Vsb power
Audio	Audio Interface	High Definition Audio	HD Audio
	CODEC	Realtek ALC888S	Realtek ALC892
WatchDog Timer		255 levels timer interval, programmable by software	Yes
	SATA	2" SATAIII (2nd SATAIII by request)	2 SATA III (up to 600 MB/s)
Storage	mSATA	1 x full size mSATA	1 (Full-size, shared with mini PCIe)
	CompactFlash	-	-
I/O	USB3.0	2	4
	USB2.0	6	2
	SPI Bus	-	-
	GPIO	8-bit general purpose input/output	16-bit
	LPT	-	-
	COM Port	4 x RS-232, 2 x RS-422/485	4 x RS-232 (2 with Tx/Rx only) 2 x RS-232/422/485
	PS/2 KB/Mouse	1	-
	Reset Button	1	1
	Power Button	-	1
	Smart Fan	1	Yes
	SMBus	1	1
	i2C Bus	1	1 (Shares with SMBus)
	Power	Power Type	AT/ATX
Power Supply Voltage		Single 12V DC power input	Single 12V input, ± 10%
Power Consumption (Idle)		N4200: 0.44 @ 12V (5.28W) N3350: 0.48 @ 12V (5.76W)	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)
Power Consumption (Full Load)		N4200: 1.32 @ 12V (15.84W) N3350: 1.36 @ 12V (16.32W)	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)
Battery	Lithium 3 V / 210 mAh	Lithium 3 V / 210 mAh	
Environment	Operational Temperature	(Operational humidity: 40 °C @ 95% RH Non-Condensing)	0 ~ 60 °C (32 ~ 140 °F) (Operational humidity: 40 °C @ 95% RH Non-Condensing)
Physical Characteristics	Dimensions (L x W x H)	203 x 146 mm	203 x 146 mm
	Construction	-	Copper with fan design
Operating System	Microsoft Windows	Yes	Yes
	Linux	Yes	Yes
	SUSI/Access/WISE-PaaS/RMM	Yes	Yes
	iManager	Yes	Yes
Certification	QNX	-	Yes
	EMC	CE, FCC	CE, FCC

# Embedded Single Board Computers



## PC/104 CPU Modules

Model Name		PCM-3365	PCM-3356
Form Factor		PC/104-Plus	PC/104
Processor System	CPU	Intel Atom E3825/E3845/N2930	AMD® G-Series™ Processor T16R /T40E
	Frequency	1.33GHz/1.91GHz/1.83GHz	615 MHz/ 1.0 GHz
	Core Number	2/4/4	1/2
	L2 Cache	1MB/2MB/2MB	512 KB
	BIOS	AMI UEFI BIOS at 64 Mb	AMI 32-Mbit
Memory	Chipset	1 x 204-pin SODIMM	AMD A55E
	Technology	DDR3L 1066MHz/1333MHz/1333MHz	DDR3L 1066 MHz
	Max. Capacity	8GB	SO-DIMM: 4GB / On-board: 1GB
	Socket	-	1 x 204-pin SODIMM
Display	Onboard Memory	-	Onboard 1GB (by sku)
	Controller	Intel Gen7 graphic engine	AMD® G-Series™ Processor T16R/T40E
	Graphics Engine	Gen 3.5 graphic core, DX9 compliant, MPEG2 Hardware AccelerationDirectX11, OpenGL3.2, OpenCL1.1 Full HW acceleration, decode: H.264, MPEG2/4, VC-1, WMV9. Encode: H.264, MPEG2	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
	Graphics Memory	Share with system memory up to 384 MB	Optimized shared memory architecture up to 384 MB system memory
Expansion Interface	HDMI/DVI	DVI 1.0 (DVI-D), up to 1920x1080	-
	Multiple Displays	VGA + LVDS, VGA + HDMI/DVI, HDMI/DVI + LVDS	LVDS+VGA
	Mini PCIe	1 x Full-size	1 half size
	SMBus	1 (configurable to PC by customer's request)	1
	PC Bus	1 (supported by request)	-
	PC/104	-	1
	PC/104-Plus	1	-
Ethernet	Controller	Intel I210	GbE1: Realtek RTL8111E-VB-GR GbE2: Realtek RTL8111E-VB-GR
	Speed	10/100/1000 Mbps	10/100/1000 Mbps
	Connector	Pin Header	Box Header
Audio	Codecs	Intel High Definition audio interface (requires an audio extension module P/N: PCE-SA01-00A1E)	Realtek ALC892
WatchDog Timer		Output System Reset, Programmable counter from 1 ~ 255 sec	Output System reset, Programmable 1 ~ 255 sec
Storage	SATA	1 SATA II	1 SATA II
	mSATA	1 x Full-size (default, SATA signal shared with Onboard flash)	1 half size
	IDE	-	-
	CompactFlash	-	-
	Onboard Flash	16GB/32GB/64GB (by request)	-
	Floppy	-	-
I/O	USB2.0	6	4
	SPI Bus	-	-
	GPIO	8-bit GPIO	8-bit GPIO
	LPT	-	-
	COM Port	3 (1 x RS-232/422/485, 2 RS-232)	3 x RS-232/422/485
	PS/2 KB/Mouse	1	-
Power	Power Type	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)
	Power Consumption (Idle)	E3825: 4.474W E3845: 4.72W N2930: 4.417W	T16R: 1.17 A @ +5 V (5.85 W) T40E: 1.22 A @ +5 V (6.1 W)
	Power Consumption (Full Load)	E3825: 5.675W E3845: 8.581W N2930: 6.845W	T16R: 1.43 A @ +5 V (7.15 W) T40E: 1.77 A @ +5 V (8.85 W)
	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	0.735kg (1.62lb) (with heat-sink)	0.590 kg (1.30 lb)
Operating System	Microsoft Windows	Yes	Yes
	Linux	Yes	Yes
	SUSIAccess	Yes	Yes
Certifications	EMC	CE, FCC	CE, FCC



# Industrial Motherboards

**NEW**



UTX

Model Name		UTX-3115	UTX-3117
Processor System	CPU	Intel E3826 / E3815 processor	Intel® Apollo Lake E3900 series & N series Processor
	Core Number	Dual core / Single Core	Quad Core / Dual Core
	BIOS	AMI EFI 64 Mbit, SPI	AMI EFI 16 Mbit, SPI
	Chipset	-	-
Memory	Technology	DDR3L 1333/1600 MHz SDRAM	Dual channel DDR3L 1866 MHz SDRAM
	Max. Capacity	4 GB/update to 4GB/per DIMM	8GB/ up to 8GB per DIMM
	Socket	1 x 204-pin DDR3L SODIMM (Non-ECC)	2 x 204-pin DDR3L SODIMM (Non-ECC)
Display	Controller	Intel HD Graphics	Intel HD Graphics GEN9
	VGA	1	-
	HDMI	2	1
	Display Port	-	1
Storage	2.5" HDD bay	1 (support 2.5" HDD/SSD, max 7.5 mm height)	1(support 2.5" HDD/SSD, max 7.5mm height)
	mSATA	1, colay with F/S miniPCIE	1, colay with H/S miniPCIE
Ethernet	Interface	10/100/1000 Mbps	10/100/1000 GbE LANs.
	Controller	LAN1: Intel I210AT LAN2: Realtek 8111G	LAN1: Intel I210AT LAN2:Realtek 8111G
	Connector	2(RJ-45)	2(RJ45)
Audio	Chipset	Realtek ALC892, High Definition Audio(HD)	Realtek ALC892, High Definition Audio(HD)
	Connector	Mic in / Line out	Mic-in, Line-out combo
Internal expansion Slot	Mini-PCle	2 (1x F/S miniPCIE sito, 1x H/S miniPCIE slot)	2 (1x F/S miniPCIE slot, 1x H/S miniPCIE slot), 1 M.2(E-Key)
	SIM socket	1	1
Front Panel	USB	2 (1 x USB 3.0, 1 x USB 2.0)	2 ( USB 3.0 )
	Audio	Mic in / Line out	Mic-in, Line-out Combo
	LAN	2	2
	Power button	1	1
	LED Indicators	1(HDD LED)	1(HDD LED)
Rear Panel	HDMI	2 (1xHDMI, 1x Micro HDMI)	1
	VGA	1	- (change to DP1.2 port)
	USB	1(Micro USB)	-
	USB	1(USB3.0)	2 (USB3.0)
	COM	2 (1xRS-232, 1xRS-422)	2 (1RS-232 & 1RS-422/485)
	Power jack	1(DC12V)	1 (DC12~24V)
Power	Control	1 (Power Button)	1(Power button)
	Voltage	12V <sub>oc</sub> ± 10%	12~24V <sub>oc</sub> ± 10%
	Power Consumption	12V@0.88A	12V@0.61A
	Power Adapter	AC to DC DC12V/3A, 36W	AC to DC adapter 12/24V/3A
Environment	Operating Temperature	-20 ~ 60 °C (32 ~ 104 °F)	-20 ~ 60 °C (32 ~ 104 °F) with RF module by max system performance
	Non-operating Temperature	-40 ~ 85 °C and 95% @ 40 °C Non-Condensing	-40 ~ 85 °C and 95% @ 40 °C Non-Condensing
	Vibration	3G (with 2.5" SSD)	3G (with 2.5" SSD)
Dimensions (W x H x D)	Dimensions (W x H x D)	138.5 x 35.98 x 116.4 mm (5.5" x 1.4" x 4.6")	152 x 37.1 x 128 mm (5.6" x 1.46" x 5.04")
Weight	Weight	1.0kg	1.2KG
Certification	EMC	CE/FCC/CCC/KC/VCCI/BSMI	CE/FCC/BSMI/CCC
	Safety	UL/CB/BSMI/CCC	UL,CB,BSMI,CCC

# Industrial Motherboards



## Mini-ITX

Model Name		AIMB-203	AIMB-205	AIMB-215 B1	AIMB-216	AIMB-217
Form Factor		Mini-ITX	Mini-ITX	THIN Mini-ITX	THIN Mini-ITX	THIN Mini-ITX
Processor System	CPU	Intel Core i7/ i5/ i3/ Pentium/ Celeron	Intel 7th & 6th Gen Core i7/ i5/ i3/ Pentium/Celeron	Intel Celeron J1900 / N2930 / N2807	Intel Pentium N3710 & Celeron N3160/N3010 & Atom x5-E8000	Intel Pentium N4200/Celeron N3350/Atom x7-E3950
	Socket	LGA 1150	LGA1151	FCBGA	FCBGA	FCBGA
	Max. Speed	3.1 / 2.9 / 2.4 GHz	3.6/3.3/2.4/3.4/3.2/ 2.8/2.6 GHz	QC 2.0 / 1.83 GHz; DC 1.58 GHz	QC 1.6/QC 1.6/DC 1.04/QC 1.04 GHz	QC 1.1/DC 1.1/QC 1.6 GHz
	TDP	95 W / 65 W / 54 W / 45 W / 35 W	65W/51W/54W/35W	10 / 7.5 / 4.3 W	6 / 6 / 4 / 5 W	6 W/6 W/12 W
	Front Side Bus	-	-	-	-	-
	L2 Cache	-	-	2 MB / 2 MB / 1 MB	2MB	2MB
	L3 Cache	8 MB / 6 MB / 4 MB / 3 MB	8 MB/6 MB/4 MB/3 MB/2 MB	-	-	-
	Chipset	Intel H81	H110	-	-	-
	BIOS	AMI EFI 64 Mbit, SPI	AMI EFI 128 Mbits, SPI	AMI EFI 16 Mbit, SPI	AMI EFI 16 Mbit, SPI	AMI EFI 128 Mbit, SPI
Expansion Slot	M.2	-	1 (B Key)	-	1 (B Key)	1 (E Key)
	Mini PCIe	2	1	2	1	1
	PCIe	PCIe x16, 1 slot	PCIe x 16	PCIe x1, 1 slot	PCIe x1, 1 slot	PCIe x1, 1 slot
Memory	Technology	Dual channel DDR3L 1333/1600 MHz SDRAM	Dual Channel DDR4 2133/2400 MHz SDRAM	Dual / Dual / Single channel DDR3L 1333 MHz SDRAM	Dual channel DDR3L 1600/1066 MHz SDRAM	Dual channel DDR3L 1866 MHz SDRAM
	Max. Capacity	16 GB	32GB	8 / 8 / 4 GB	8GB/ up to 8GB per DIMM	8GB/ up to 8GB per DIMM
	Socket	2 x 204-pin SODIMM	2 x 260-pin SODIMM	2 / 2 / 1 x 204-pin SODIMM	2 x 204-pin SODIMM	2 x 204-pin SODIMM
Graphics	Controller	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
	HDMI	-	-	-	1	1
	DVI	1	1	-	1	-
Ethernet	Interface	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: Realtek 8111G LAN2:Realtek 8111G	LAN1:Realtek RTL8111E LAN2:Realtek RTL8111E	LAN1:Realtek RTL8111G LAN2:Realtek RTL8111G	LAN1: Realtek 8111G LAN2:Realtek 8111G
	Connector	RJ-45 x 2	RJ-45 x 2	RJ-45 x2	RJ-45 x 2	RJ-45 x 2
TPM	Optional	Optional	optional	Optional	Optional	
SATA	Max Data Transfer Rate	600 MB/s, 300MB/s	600 MB/s	300 MB/s	600 MB/s	600 MB/s
	Channel	2, 1	2	2	2	2
	eSATA/mSATA	-/1	-/1	-/1	-/-	-/1
Rear I/O	VGA/DVI/HDMI/DP	1/1/-/1	1/1/-/1	1/-/1	-/1/1/1	1/1/-/1
	Ethernet	2	2	2	2	2
	USB	4 (2 x USB 3.0; 2 x USB 2.0)	8 (4x USB 3.0; 4xUSB2.0)	4 (1 x USB 3.0/3 x USB 2.0)	4 ( USB 3.0 )	4 ( USB 3.0 )
	Audio	Mic-in, Line-in, Line-out	Mic-in, Line-in, Line-out	Line-out	Line-out	Line-out
	Serial	1 (RS-232)	-	-	-	-
	PS/2	2	-	-	-	-
	DC Jack	-	-	1	1	1
	LVDS & Inverter	1	1	1	1	1
Internal Connector	DVI	-	-	-	-	-
	USB	4 (USB 2.0)	6 (USB 2.0), USB11/12/13/14 is optional	4 (USB 2.0)	6 (USB 2.0), USB7/8/9/10 is optional	8 (USB 2.0), USB9/10/11/12 is optional
	Serial	8 (7 x RS-232; 1 x RS-232/422/485)	8 (7 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)
	Parallel	1	-	-	-	-
	SATA	3	2	2	2	2
	CompactFlash	-	-	-	-	-
	GPIO	8-bit GPIO	8-bit GPIO	8-bit GPIO	8-bit GPIO	8-bit GPIO

NEW



## Mini-ITX

Model Name		AIMB-225	AIMB-226	AIMB-227	AIMB-230
Form Factor		THIN Mini-ITX	Mini-ITX	THIN Mini-ITX	THIN Mini-ITX
Processor System	CPU	AMD Mobile G-series GX-424CC/GX-412HC	AMD Bald Eagle RX-427BB/RX-225FB	AMD Merline Falcon RX-421BD/RX-216GD	Intel Celeron 2980U/i3-4010U/i5-4300U/i7-4650U
	Socket	FT3b	FP3	FP4	MCPBGA
	Max. Speed	QC 2.4 GHz/1.2 GHz	QC 2.7GHz/DC 2.2GHz	QC 2.1GHz/DC 1.6GHz	1.6 GHz/1.7 GHz/ 1.9 GHz/3.3 GHz
	TDP	25W/7W	35W/17W	35W/15W	15W/15W/15W/15W
	Front Side Bus	-	-	-	-
	L2 Cache	2 MB/2 MB	2 MB	2 MB/1 MB	256 KB
	L3 Cache	-	-	-	2 M/3 M/3 M/4 M
	Chipset	-	AMD A77E	-	-
BIOS	AMI EFI 32Mbit, SPI	AMI EFI 32Mb, SPI	AMI EFI 64Mbit, SPI	AMI EFI 64Mbit, SPI	
Expansion Slot	M.2	-	-	1 E key	-
	Mini PCIe	2	2	1	2
	PCIe	PCIe x4, 1 slot	PCIE x16, 1 slot PCIE x1, golden-finger	PCIe x8, 1 Slot (BF/PF support PCIe x4)	-
Memory	Technology	Single channel DDR3L 1600/1333 MHz SDRAM	Dual channel DDR3(L) 2133/1866/1600 MHz SDRAM	Dual Channel DDR4 2133MHz SDRAM	Dual channel DDR3L 1600 MHz SDRAM
	Max. Capacity	16 GB	16 GB	16GB	16 GB
	Socket	2 x 204-pin SODIMM	2 x 204-pin SODIMM	2 x 260-pin SO-SIMM	2 x 204-pin SODIMM
Graphics	Controller	AMD Radeon™ R5E/R3E Graphics	AMD Radeon™ HD 9000	AMD Radeon 3rd Generation GCN (Up to 8 CUs)	Intel HD Graphics 5000
	LCD	Dual channel 48-bit LVDS	Dual channel 48-bit LVDS; Single Channel 24-bit LVDS	Dual channel 48-bit LVDS	Dual channel 48-bit LVDS
	HDMI	-	2	1	1
	DVI	1 (DVI-I)	-	1 (DVI-D)	-
Ethernet	Interface	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps
	Controller	LAN1: Realtek 8111G LAN2: Realtek 8111G	LAN1: Realtek 8111G LAN2: Realtek 8111G	LAN1: Realtek 8111G LAN2: Realtek 8111G	LAN1:Realtek RTL8111E LAN2:Realtek RTL8111E
	Connector	RJ-45 x 2	RJ-45 x 2	RJ-45 x 2	RJ-45 x 2
TPM	Optional	optional	optional	Optional	
SATA	Max Data Transfer Rate	600 MB/s	600 MB/s	600 MB/s	600 MB/s
	Channel	2	3	2	3
	eSATA/mSATA	-/1	1/2	0/1(colay SATA1)	-
Rear I/O	VGA/DVI/HDMI/DP	-/1/-/1	-/-/2/2	-/1/1/1	-/-/1/1
	Ethernet	2	2	2	2
	USB	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 3.0, 2 x USB 2.0)	4 (USB 3.0)
	Audio	Line-out	Mic In, Line-out, Line-in	Line out	Mic-in, Line-out
	Serial	-	1 (RS-232)	-	-
	PS/2	-	-	-	-
	DC Jack	1	1 (4pin phoenix connector)	1	1
	Internal Connector	LVDS & Inverter	1	1	1
DVI		-	-	-	-
USB		4 (USB 2.0)	8 (USB2.0)	MF supports 4(2 x USB 3.0, 2 x USB 2.0)	2 (USB 2.0)
Serial		5 (4 x RS-232; 1 x RS-232/422/485)	4 (3 xRS232; 1 x RS-232/422/485)	6(5 RS232,1 x RS232/ 422/485,1support Cctalk, 1 Support TTL)	2 (1 x RS-232; 1 x RS-232/422/485)
Parallel		1	-	-	-
SATA		2	3	2	3
CompactFlash/ eMMC		-/-	-/-	-/-	-/-
GPIO		8-bit GPIO	16-bit GPIO	8-bit GPIO	8-bit GPIO

# Industrial Motherboards



**NEW**

**NEW**

## Mini-ITX

Model Name		AIMB-231	AIMB-232	AIMB-242	AIMB-274
Form Factor		THIN Mini-ITX	THIN Mini-ITX	Mini-ITX	Mini-ITX
Processor System	CPU	Intel Celeron 3765U/i3-5010U /i5-5350U/i7-5650U	Intel core i7-6600u /i5-6300u / i3-6100u/celeron 3955u Intel core i7-7600u/i5-7300u/ i3-7100u/celeron 3965u	Intel core i7-6820EQ/core i7-6822EQ/ core i5-6440EQ/Xeon E3-1515M v5	Intel Core i7/ i5/ i3/ Pentium/ Celeron
	Socket	MCPBGA	BGA1356	BGA 1440	LGA 1150
	Max. Speed	1.9 GHz/2.1 GHz/ 1.8 GHz/3.1 GHz	2.6GHz/2.4GHz/ 2.3GHz/2GHz	2.8GHz/2.0GHz/2.7GHz/2.8GHz	3.1 / 2.9 / 2.4 GHz
	TDP	15W/15W/15W/15W	15W/15W/15W/15W	45W/25W/45W/45W	95W / 65W /54W / 45W / 35W
	Front Side Bus	-	-	-	-
	L2 Cache	512 KB	-	-	-
	L3 Cache	2 M/3 M/3 M/4 M	4 MB/3 MB/3 MB/2 MB	8MB/8MB/6MB/8MB	8 MB/6 MB/4 MB/3 MB
	Chipset	-	-	Intel QM170/CM236	Intel Q87
BIOS	AMI EFI 128 Mbit, SPI	AMI uEFI 16 Mbit, SPI	AMI EFI 128 Mbit, SPI	AMI EFI 128 Mbit, SPI	
Expansion Slot	M.2	-	-	1 (B Key)	-
	Mini PCIe	2	2	2	2
	PCIe	-	-	PCIe x16, 1 slot	PCIe x16, 1 slot
Memory	Technology	Dual channel DDR3L 1600 MHz SDRAM	Dual Channel DDR4 2133 MHz SDRAM	Dual channel DDR4 2133 MHz SDRAM	Dual channel DDR3/DDR3L 1333/1600 MHz SDRAM
	Max. Capacity	16 GB	16GB	32GB / up to 16GB per DIMM	16 GB
	Socket	2 x 204-pin SODIMM	2 x 260-pin SODIMM	2 x 260-pin SODIMM	2 x 204-pin SODIMM
Graphics	Controller	Intel HD Graphics 6000	Intel HD Graphics 520	Intel® HD Graphics 530/Intel® Iris™ Pro Graphics P580	Intel HD Graphics
	LCD	Dual channel 48-bit LVDS	Dual channel 48-bit LVDS	Dual channel 48-bit LVDS	Dual channel 48-bit LVDS
	HDMI	1	1	1 (HDMI 2.0)	1
	DVI	-	-	-	-
Ethernet	Interface	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps
	Controller	LAN1: Intel PHY i218-LM LAN2: Intel i210	LAN1: Intel PHY i219-LM LAN2: Intel i211	LAN1: Intel PHY i219-LM LAN2: Intel i211AT (WG2: i210)	LAN1: Intel i217LM, LAN2: Intel i211AT
	Connector	RJ-45 x 2	RJ-45 x 2	RJ-45 x 2	RJ-45 x 2
TPM		Optional	Optional	Optional	Optional
SATA	Max Data Transfer Rate	600 MB/s	600 MB/s	600 MB/s	600 MB/s
	Channel	3	2	2	4
	eSATA/mSATA	-/1	-/1	-/1	1/1
Rear I/O	VGA/DVI/HDMI/DP	-/-/1/2	-/-/1/1	-/-/1/2	1/-/1/1
	Ethernet	2	2	2	2
	USB	4 (USB 3.0)	4 (USB 3.0) 1 (USB 2.0)	8 (USB 3.0)	4 (USB 3.0)
	Audio	Mic-in, Line-out	Mic-in, Line-out	Mic-in, Line-in, Line-out	Mic-in, Line-in, Line-out
	Serial	-	-	1	1 (RS-232)
	PS/2	-	-	-	-
	DC Jack	1	1	-	-
Internal Connector	LVDS & Inverter	1	1	1	1
	DVI	-	-	-	-
	USB	2 (USB 2.0)	2 (USB 2.0) 2 (USB 3.0)	1 (USB 2.0)	6 (USB 2.0)
	Serial	2 (1 x RS-232; 1 x RS-232/422/485)	2 (RS-232)	1 (RS-232/422/485)	1 (RS-232/422/485)
	Parallel	-	-	-	-
	SATA	3	2	2	4
	CompactFlash/ eMMC	-/-	-/-	-/-	-/-
GPIO		8-bit GPIO	8-bit GPIO	8-bit GPIO	8-bit GPIO



NEW



NEW



## Mini-ITX

Model Name		AIMB-275	AIMB-281	AIMB-285	AIMB-290
Form Factor		Mini-ITX	Mini-ITX	Mini-ITX	Mini-ITX
Processor System	CPU	Intel 7th & 6th Gen Core i7/ i5/ i3/ Pentium/Celeron	Intel Xeon/ Core i7/ i5/ i3/ Pentium/ Celeron	Intel 7th & 6th Gen Core i7/ i5/ i3/ Pentium/Celeron	Intel ATOM C3958/ C3558
	Socket	LGA1151	LGA 1155	LGA1151	FCBGA1310
	Max. Speed	3.6/3.3/2.4/3.4/3.2/ 2.8/2.6 GHz	3.5 / 3.0 / 3.1 / 2.7 GHz	3.6/3.3/2.4/3.4/3.2/ 2.8/2.6 GHz	2.0GHz/ 2.2GHz
	TDP	65W/54W/ 51W/ 35W	95W/ 45W/ 65W/ 55W	65W/54W/ 51W/ 35W	31W/ 16W
	Front Side Bus	-	-	-	-
	L2 Cache	-	-	-	16MB/ 8MB
	L3 Cache	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 Q170/H110	Intel H61	Intel H110	-
	BIOS	AMI EFI 128 Mbits,SPI	AMI EFI 32 Mbit, SPI	AMI EFI 128 Mbits,SPI	AMI EFI 128Mbit SPI
Expansion Slot	M.2	1 (B Key)	-	-	-
	Mini PCIe	1	1	2	1
	PCIe	PCIe x16, 1 slot	PCIe x4, 1 slot	PCIe x 4	PCIe x4, 1 slot
Memory	Technology	Dual Channel DDR4 2133/2400 MHz SDRAM	Dual channel DDR3 1066/1333/ 1600 MHz SDRAM	Dual Channel DDR4 2133/2400 MHz SDRAM	Dual Channel DDR4 2133/2400MHz Non-ECC U-DIMM
	Max. Capacity	32GB	8 GB	32GB	32GB
	Socket	2 x 260-pin SODIMM	2 x 204-pin SODIMM	2 x 260-pin SODIMM	2 x 288-pin DDR4 DIMM
Graphics	Controller	Intel® HD Graphics	Intel HD Graphics	Intel® HD Graphics	-
	LCD	Dual channel 48-bit LVDS	Dual channel 48-bit LVDS; Single Channel 24-bit LVDS	Dual channel 48-bit LVDS	ASPEED AST2500/2510 (VGA)
	HDMI	1(HDMI 2.0)	-	1	-
	DVI	-	1	-	-
Ethernet	Interface	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000/10GbE Mbps
	Controller	LAN1: Intel PHY i219-LM LAN2: Intel i211	LAN1:Realtek RTL8111E LAN2: Realtek RTL8111E	LAN1: Realtek 8111G LAN2:Realtek 8111G	LAN 1/2: Marvell 88E1512 (1GbE) LAN3/LAN4: Intel X557-AT2 (10GbE) LAN 5: RTL8201 (IPMI)
	Connector	RJ-45 x 2	RJ-45 x 2	RJ-45 x 2	RJ-45 x 5
TPM		Optional	-	Optional	Optional
SATA	Max Data Transfer Rate	600 MB/s	300 MB/s	600 MB/s	600 MB/s
	Channel	3	3	3	6
	eSATA/mSATA	-/1	-/1	-/1	-/1
Rear I/O	VGA/DVI/HDMI/DP	1/-/1/1	1/1/-/-	-/-/1/1	1/-/-/-
	Ethernet	2	2	2	5
	USB	4 (USB 3.0)	6 (USB 2.0)	4 (USB 3.0)	4 (3x USB3.0, 1x USB2.0)
	Audio	Mic-in, Line-out, Line-in	Mic-in, Line-out	Mic-in, Line-out	-
	Serial	1 (RS-232)	2 (RS-232)	-	1
	PS/2	-	1	-	-
	DC Jack	-	-	1	-
	Internal Connector	LVDS & Inverter	1	1	1
	DVI	-	-	-	-
	USB	6 (2 USB 3.0, 4 USB 2.0)	2 (USB 2.0)	4 (USB 2.0)	2 (USB 2.0)
	Serial	1 (RS-232/422/485)	4 (RS-232)	2 (1 x RS-232; 1 x RS-232/422/485)	1 (RS-232/422/485)
	Parallel	-	-	-	-
	SATA	3	3	3	6
	CompactFlash/ eMMC	-/-	-/-	-/-	-/eMMC
	GPIO	8-bit GPIO	8-bit GPIO	8-bit GPIO	8-bit GPIO

# Industrial Motherboards

**NEW**



## MicroATX

Model Name		AIMB-501	AIMB-502	AIMB-503	AIMB-505
Form Factor		Micro-ATX	Micro-ATX	Micro-ATX	Micro-ATX
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 & 7th Gen Core i7/ i5/ i3 / Pentium/ Celeron
	Socket	LGA 1155	LGA 1155	LGA 1150	LGA1151
	max. speed	3.4 G/3.3 G/3.1 G/ 3.0G/2.9 G/2.5 GHz	3.5 G/3.4 G/3.0 G/3.3 G/2.9 G/2.7G/2.5 G	3.5 G/3.1 G/2.9 G/2.4 G	3.4/3.2/2.8/2.7/2.6/2.4/2.3 GHz
	TDP	95W / 77W / 65W / 55W	95W / 77W / 65W / 55W	65 W / 45 W / 35 W	65W / 51W / 35W
	L2 cache	-	-	-	-
	L3 cache	8MB/6MB/3MB/2MB	8MB/6MB/3MB/2MB	8 MB/6 MB/4 MB/3 MB	8 MB/6 MB/4 MB/3 MB/2 MB
	Chipset	Intel H61	Intel Q77/C216	Intel H81	Intel H110
	BIOS	AMI EFI 64 Mbit, SPI	AMI EFI 64 Mbit, SPI	AMIEFI 64 Mbit, SPI	AMI EFI 128 Mbits,SPI
Expansion Slot	PCI	2	1	1 (G2)	1
	PCIe x16	1	1 (QG2), 2 (WG2)	1	1
	PCIex8	-	-	-	-
	PCIe x4	-	-	1 (F)	-
	PCIe x1	1	1	1 (F); 2 (G2/L)	2
Memory	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 2133/2400 MHz SDRAM
	Max. Capacity	16 GB	32 GB	16 GB	32GB
	Socket	2 x 240-pin DIMM	4 x 240-pin DIMM	2 x 240-pin DIMM	2 x 288-pin DIMM
Graphics	Controller	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
	VGA	-	1	1	1
	LCD	Dual channel 48-bit LVDS	-	Dual channel 48-bit LVDS (Optional)	Dual channel 48-bit LVDS (Optional)
	DVI-D	1	1	1	1
	HDMI	-	1	-	-
	DP/eDP	-	-	1/-	1/1
	Dual Display	CRT1+LVDS, CRT1+DVI, CRT1+CRT2 (G2)	CRT+HDMI, CRT+DVI, HDMI+DVI	CRT+DP, CRT+DVI, DVI+DP, CRT+LVDS (Option), DVI+LVDS (Option), DP+LVDS (Option)	VGA + DVI, VGA + DP, VGA + eDP, DVI + DP, DVI + eDP, DP + eDP
Triple Display	-	CRT + HDMI + DVI	-	-	
Ethernet	Interface	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
	Connector	RJ-45 x2	RJ-45 x2	RJ-45 x2	RJ-45 x2
TPM		Optional	Optional	Optional	Optional
SATA	Max Data Transfer	300 MB/s	300 MB/s 600 MB/s	300 MB/s 600 MB/s	600 MB/s
	Channel	4	6 / 2	1 / 2	3
	eSATA/mSATA	-	1 / 1	0 / 1	-/1
EIDE	Mode	-	-	-	-
	Channel	-	-	-	-
I/O Interface	VGA	2/ 1	1	1	1
	USB	10 (USB2.0)/ 8(USB2.0), 2(USB 3.0)	2 (USB 2.0), 4 (USB 3.0)	7 (USB 2.0), 2 (USB 3.0)	6(USB 2.0),8(USB 3.0)
	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)
	Parellel	1	-	1	1
	SIM Card Holder	-	-	1	-
	PS/2	2	-	2	1(onboard)
	Ethernet (GbE)	2	2	2	2
	IEEE 1394	-	-	-	-
	Audio	Mic-in, Line-out	Mic-in, Line-out	Mic-in, Line-out	Mic-in, Line-out
	GPIO	8 bit	14 bit (6 bit non-programmable, 8 bit programmable)	8 bit	8-bit



ATX

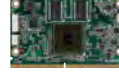


Model Name		AIMB-582	AIMB-584	AIMB-585
Form Factor		Micro-ATX	Micro-ATX	Micro-ATX
Processor System	CPU	Intel Xeon/ Core i7/ i5/ i3/ Pentium/ Celeron	Intel Xeon/ Core i7/ i5/ i3/ Pentium/ Celeron	Intel Xeon/ 6th & 7th Gen Core i7/ i5/ i3/ Pentium/ Celeron
	Socket	LGA 1155	LGA 1150	LGA1151
	max. speed	3.5 G/3.4 G/3.0 G/3.3 G/2.9 G/ 2.7G/2.5 G	3.5 G/3.1 G/2.9 G/2.4 G	3.6/3.3/2.4/3.4/3.2/2.8/2.6 GHz
	TDP	95 W / 77 W / 65 W / 55 W	95 W / 65 W / 45 W / 35 W	80W / 65W / 51W / 35W
	L2 cache	-	-	-
	L3 cache	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 Q77/C216	Intel Q87/C226	Intel Q170/C236/H110
	BIOS	AMI EFI 64 Mbit, SPI	AMI EFI 128 Mbit, SPI	AMI EFI 128 Mbits, SPI
Expansion Slot	PCI	2	-	-
	PCIe x16	1	1	1
	PCIex8	1	1	1(L sku: 0)
	PCIe x4	1	1	1(L sku: 0)
	PCIe x1	-	-	1(L sku: 2)
Memory	Technology	Dual channel DDR3 1333/1600 MHz SDRAM	Dual channel DDR3 1333/1600 MHz SDRAM	Dual channel DDR4 2133/2400 MHz SDRAM
	Max. Capacity	32 GB	32 GB	64GB
	Socket	4 x 240-pin DIMM	4 x 240-pin DIMM	4x288- pin DIMM
Graphics	Controller	Intel HD Graphics	Intel HD Graphics	intel HD
	VRAM	Shared system memory up to 1 GB	Shared system memory up to 1 GB	Shared system memory up to 1 GB
	VGA			1 (onboard)
	LCD	Dual channel 48-bit LVDS	Dual channel 48-bit LVDS	-
	DVI-D	1	1	1
	HDMI	-	-	1
	DP/eDP	1 / 1	1 / 1	1/1
	Dual Display	CRT + DP, CRT + DVI, DVI + DP, CRT + LVDS (or eDP), DVI + LVDS (or eDP), DP + LVDS (or eDP)	CRT + DP, CRT + DVI, DVI + DP, CRT + 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
	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
	Ethernet	Interface	10/100/1000 Mbps	10/100/1000 Mbps
Controller		LAN1: Intel 82579LM LAN2: Intel 82583V	LAN1: Intel I217LM LAN2: Intel I211AT	LAN1: Intel I219LM LAN2: Intel I211AT(WG2: I210)
Connector		RJ-45 x2	RJ-45 x2	RJ-45 x2
TPM	Optional	Optional	Optional	
SATA	Max Data Transfer	300 MB/s 600 MB/s	300 MB/s 600 MB/s	600 MB/s
	Channel	4 (SW RAID) / 2 (SW RAID)	6 (SW RAID)	4 (SW RAID)
	eSATA/mSATA	-	-	-/1
EIDE	Mode	-	-	-
	Channel	-	-	-
I/O Interface	VGA	1	1	1 (on board, option)
	USB	8 (USB 2.0), 4 (USB 3.0)	8 (USB 2.0), 4 (USB 3.0)	2 (USB 2.0), 12 (USB 3.0)
	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)
	Parallel	1	1	-
	SIM Card Holder	-	-	-
	PS/2	2	2	1(onboard)
	Ethernet (GbE)	2	2	2
	IEEE 1394	-	-	-
	Audio	Mic-in, Line-out	Mic-in, Line-out	Mic-in, Line-out
	GPIO	8 bit	8 bit	16-bit

Model Name		SIMB-A31
Form Factor		ATX
Processor System	CPU	Intel Core i7/ i5/ i3/ Pentium/ Celeron
	Socket	LGA 1150
	Max. Speed	3.5 / 3.1 / 2.9 / 2.4 GHz
	Front Side Bus	-
	L2 Cache	8 MB / 6 MB / 4 MB / 3 MB
	TDP	65 W / 54 W / 45 W / 35 W
	Chipset	Intel H81
	BIOS	AMI EFI 64 Mbit, SPI
Expansion Slot	PCI	3
	MINI PCI	1
	PCIe	PCIe x1, 2 slot PCIe x16, 1 slot
Memory	Technology	Dual channel DDR3/L 1333/1600 MHz SDRAM
	Max. Capacity	16 GB
	Socket	2 x 240-pin DIMM
Graphics	Controller	Intel HD Graphics
	DVI	1
Ethernet	Interface	10/100/1000 Mbps
	Controller	LAN1: Realtek 8111G LAN2: Realtek 8111G
	Connector	RJ-45 x 2
TPM		Optional
SATA	Max Data Transfer Rate	300 MB/s (SATA 2.0) 600 MB/s (SATA 3.0)
	Channel	1/2 (SATA2.0 / SATA3.0)
Rear I/O	VGA/DVI/HDMI	1/1/-
	Ethernet	2
	USB	4 (2 x USB 3.0, 2 x USB 2.0)
	Audio	Mic-in, Line-in, Line-out
	Parallel	-
	Serial	1 (RS-232/422/485, supplies 5 V/ 12 V); 1 (RS-232)
	PS/2	2
Internal Connector	USB	5 (USB 2.0)
	Serial	2 (RS-232, supplies 5 V/ 12 V); 2 (RS-232)
	Parallel	1
	IDE	-
	SATA	3 (2 x SATA III, 1 x SATA II)
	GPIO	8-bit GPIO

# RISC Computing Solutions

## Computer-on-Modules



**NEW**

**NEW**

**NEW**

Model Name		ROM-1210	ROM-3310	ROM-3420	ROM-5420 B1	ROM-7420	ROM-7421	ROM-7510
Form Factor		RTX V1.6	RTX V2.0	RTX V2.0	SMARC V1.1	Qseven V1.2	Qseven V2.0	Qseven 2.0/2.1
Processor System	CPU	NXP ARM Cortex-A8 i.MX53 800 MHz	TI AM3352 Cortex-A8 1 GHz	NXP ARM Cortex-A9 i.MX6 1 GHz	NXP ARM Cortex-A9 i.MX6 1 GHz	NXP ARM Cortex-A9 i.MX6 1 GHz	NXP ARM Cortex-A9 i.MX6 Plus 1 GHz	TI Sitara AM5728 Cortex-A15 1.5 GHz
	Technology	DDR3 800 MHz	DDR3 800 MHz	DDR3 1066 MHz	DDR3 1066 MHz	DDR3 1066 MHz	DDR3 1066 MHz	DDR3L 1066 MHz
Memory	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	On-board DDR3 1 GB/2 GB	On-board DDR3L 2 GB
	Flash	4 x GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader	4 x GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader	4 x GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader	4 x GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader	4 x GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader	4 x GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader	8 x GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader
Graphics	LVDS	2 x 24-bit LVDS, 1024 x 768 at 60Hz	-	1 x 24-bit LVDS, 1366 x 768 at 60Hz	1 x 24-bit LVDS, 1366 x 768 at 60Hz	2 x 24-bit LVDS, 1366 x 768 for 1ch; 1920x1080 for 2ch at 60Hz	2 x 24-bit LVDS, 1366 x 768 for 1ch; 1920 x 1080 for 2ch at 60Hz	2 x 24-bit LVDS, 1366 x 768 for 1ch; 1920 x 1080 for 2ch at 60Hz
	HDMI	-	-	1920 x 1080 at 60Hz	1920 x 1080 at 60Hz	1920 x 1080 at 60Hz	1920 x 1080 at 60Hz	1920 x 1080 at 60Hz
	Parallel RGB	1 x 24-bit TTL, 1600 x 1200 at 60Hz	1 x 24-bit TTL, 1366 x 768 at 60Hz	1 x 24-bit TTL, 1920 x 1200 at 60Hz	1 x 24-bit TTL, 1920 x 1200 at 60Hz	-	-	-
	VGA	-	-	-	-	1920x1080 at 60Hz	-	-
	Graphics Engine	1 x IPU, OpenGL ES 2.0 for 3D, BitBit for 2D and OpenVG 1.1	Direct3D Mobile, OGL-ES 1.1 and 2.0, OpenVG 1.0, and OpenMax	2 x IPU, OpenGL ES 2.0 for 3D, BitBit for 2D and OpenVG 1.1	2 x IPU, OpenGL ES 2.0 for 3D, BitBit for 2D and OpenVG 1.1	2 x IPU, OpenGL ES 2.0 for 3D, BitBit for 2D and OpenVG 1.1	2 x IPU, OpenGL ES 3.0 for 3D, BitBit for 2D and OpenVG 1.1	2D-Graphics Accelerator (BB2D) Subsystem and Dual-Core PowerVR® SG544™ 3D GPU
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	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	Video Processing Engine (VPE)	
Ethernet	Chipset	NXP i.MX53 integrated RMII	TI AM3352 Integrated RGMII	NXP i.MX6 integrated RGMII	NXP i.MX6 integrated RGMII	NXP i.MX6 integrated RGMII	NXP i.MX6 Plus integrated RGMII	TI Sitara 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	1 x 10/100/1000 Mbps	1 x 10/100/1000 Mbps
RTC		Yes	Yes	Yes	Yes	Yes	Yes	Yes
WatchDog Timer		256-level timer interval, from 0 ~ 128 sec	1~6553s, default 60s, power on/off 1s	256-level timer interval, from 0 ~ 128 sec	256-level timer interval, from 0 ~ 128 sec	256-level timer interval, from 0 ~ 128 sec	1~6553s, default 60s, power on/off 1s	256-level timer interval, from 0 ~ 128 sec
I/O	PCIe	-	-	1 PCIe x1	1 PCIe x1	1 PCIe x1	1 PCIe x1	1 PCIe x2, 1-lane
	SATA	1 SATA I	-	1 SATA II	1 SATA II	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	4 USB 2.0 (1 USB OTG)	1 x USB3.0, 1 x USB 2.0 OTG, 4 x USB2.0 Host
	Audio	I2S	I2S	I2S	I2S	I2S	I2S	I2S
	SPDIF	-	-	-	1	-	-	-
	SDIO	2	1	1	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)	2 UART (2 x 4 wire w/ 3.3V)	2 UART (2 x 4 wire w/ 3.3V)
	SPI	1	1	2	4	1	1	1
	CAN	2 x CAN bus 2.0 A/B	2 x CAN bus 2.0 A/B	2 x CAN bus 2.0 A/B	2 x CAN bus 2.0 A/B	2 x CAN bus 2.0 A/B	1 x CAN bus 2.0 A/B	1
	GPIO	20	10	10	12	8	8	8
	I2C	2	1	4	5	3	2	2
	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	-	-	-	-	-	-
PWM	-	-	-	-	-	-	2	
Power	Power Supply Voltage	3.3 ~ 3.6 V	5 ~ 24 V	5 ~ 24 V	3 ~ 5.25 V	5 V	5V	5V
	Power Consumption	2.2W	2.11W (Max)	3.3W (Max)	3.4W (Max)	3.4W (Max)	4W (Max)	10W (Burning)
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	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	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	70 x 70 mm	70 x 70 mm
Operating System		Linux	Linux	Linux Android	Linux Android	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	CE/FCC Class B	CE/FCC Class B



## Box Computers



Model Name		UBC-220	UBC-221	UBC-222	UBC-330	UBC-DS31
Processor System	CPU	NXP ARM Cortex-A9 i.MX6 1 GHz	Intel Quark x1000 400MHz	Intel Quark x1000 400MHz	TI AM3352 Cortex-A8 1 GHz	NXP ARM Cortex-A9 i.MX6 1 GHz
	Technology	DDR3 800 MHz	DDR3 800 MHz	DDR3 800 MHz	DDR3 800 MHz	DDR3 1066 MHz
Memory	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 x GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader	4 x MB SPI NOR Flash for Advantech boot loader	4 x MB SPI NOR Flash for Advantech boot loader	4 x GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader	4 x GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader
	LVDS	1 x 24-bit LVDS, 1366 x768 at 60Hz	-	-	-	-
Graphics	HDMI	1920 x 1080 at 60Hz	-	-	-	1920 x 1080 at 60Hz
	VGA	-	-	-	-	1920 x 1080 at 60Hz
	Graphics Engine	1 x IPU, OpenGL ES 2.0 for 3D, BitBit for 2D and OpenVG 1.1	-	-	-	2 x IPU, 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 Encoder: MPEG-4 SP, H.264 BP, H.263
Ethernet	Chipset	NXP i.MX6 integrated RGMII	Intel Quark integrated RMI	Intel Quark integrated RMI	TI AM3352 Integrated RGMII	NXP i.MX6 integrated RGMII
	Speed	1 x 10/100/1000 Mbps	2 x 10/100 Mbps (One w/ PoE)	2 x 10/100 Mbps	2 x 10/100/1000 Mbps	1 x 10/100/1000 Mbps
WatchDog Timer		1~6553s, default 60s, power on/off 1s	1~6553s, default 60s, power on/off 1s	1~6553s, power on/off 1s	1~6553s, default 60s, power on/off 1s	256-level timer interval from 0~128 sec
I/O	USB	1 USB 2.0 Host	1 USB 2.0 Host	1 USB 2.0 Host	1 USB 2.0 Host	1 USB 2.0 Host
	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	1 x 4 wire RS-232/422/485 4 x 2 wire RS-232 w/ ESD protection	1 x 4 wire RS-232
	GPIO	-	2 GPIO / 2 GPO w/isolation	-	4 GPIO / 4 GPO w/ isolation	-
	CANBus	-	-	-	1	-
	I2C	-	-	-	1	-
	Button	-	-	-	1 x Reset button	1 x Reset button
Indicator	LED	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 Yellow LED for user define	1 Green LED for system power 1 Green LED for RF status	1 Green LED for system power 1 Green LED for RF status
Expansion	Mini PCIe	2x mini PCIe slot	1x mini PCIe slot	1x mini PCIe slot	1x mini PCIe slot (Only USB Signal)	1x 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	-	1x SIM slot
	Antenna Hole	1 x Antenna hole	1x Antenna hole	1x Antenna hole	1 x Aetenna hole	1x Antenna hole
	Others	1x Internal antenna support	1x Internal antenna support	1x Internal antenna support	-	-
Power	Power Supply Voltage	12V	12 V / PoE 802.3 at Class 3	5 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)	2.76W (Max)	3.3W (Max)	3.8W (Max)
Environment	Operational Temperature	0 ~ 60 °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)	120 x 89 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, VESA 75/100 by option	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	215g	210g	210g	265g	265g
Operating System		Linux Android	Linux	Linux	Linux	SUSIAccess for Signage
Certifications		CCC/CE/FCC/VCCI	CE/FCC Class B	CE/FCC Class B	CCC / CE / FCC Class B	CCC / CE / FCC Class B

# RISC Computing Solutions

## Single Board Computers



Model Name		RSB-3410	RSB-3850	RSB-3851	RSB-4220	RSB-4221
Form Factor		2.5" SBC	2.5" SBC	2.5" SBC	3.5" SBC	3.5" SBC
Processor System	CPU	NXP ARM Cortex-A9 i.MX6 Dual-Lite 1 GHz	Intel Quark x1000 400MHz	Intel Quark x1000 400 MHz	TI Sitara AM3352 Cortex A8 1 GHz	TI Sitara AM3358 Cortex A8 1.0 GHz
	Technology	DDR3 800 MHz	DDR3 800 MHz	DDR3 800 MHz	DDR3 800 MHz	DDR3 800 MHz
Memory	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 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
	LVDS	1 x 18/24-bit LVDS, up to 1366 x 768 at 60Hz	-	-	1 18-bit LVDS, 1366 x 768	1 x 18-bit LVDS, 1366 x 768 for 1ch
Graphics	HDMI	1920 x 1080 at 60Hz	-	-	-	-
	VGA	-	-	-	-	-
	Graphics Engine	1 IPU, OpenGL ES 2.0 for 3D, BitBit for 2D and OpenVG 1.1	-	-	Direct3D Mobile, OGL-ES 1.1 and 2.0, OpenVG 1.0, and OpenMax	Direct3D Mobile, OGL-ES 1.1 and 2.0, OpenVG 1.0 and OpenMax
	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	-	-	-	-
Ethernet	Chipset	Freescale i.MX6 integrated RGMII	Intel Quark integrated RMII	Intel Quark Integrated RMII	TI AM3352 integrated RGMII	TI AM3358 integrated RGMII
	Speed	1 x 10/100/1000 Mbps	2 x 10/100 Mbps	2 x 10/100 Mbps	2 x 10/100/1000 Mbps	2 x 10/100/1000 Mbps
WatchDog Timer		1~6553s, default 60s, power on/off 1s	1~6553s, default 60s, power on/off 4s	1~6553s, default 60s, power on/off 1s	1~6553s, default 60s, power on/off 4s	1~6553s, default 60s, power on/off 1s
I/O	SATA	-	-	-	-	-
	SATA Power	-	-	-	-	-
	USB	1 USB 2.0 Host 1 USB OTG	1 x USB 2.0 Host	1 USB 2.0 Host	1 x USB 2.0 Host/OTG (Jumper selection)	2 x USB Type A and 2 x USB pin header
	Audio	-	-	-	-	-
	SPDIF	-	-	-	-	-
	SDIO	1 SD Slot	1 x SD slot	1 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	1 x 4-wire RS-232/422/485 and 5 x 2-wire RS-232 w/ESD protection	3 x 2 wires RS-232 by pin header 1 x 4 wires RSB-232/422/485 by DB9 1 x 2 wires RSB-232 by DB9
	SPI	-	-	-	-	-
	CAN	-	-	-	1	1
	GPIO	-	4	-	8 GPIO w/Isolation	12 GPIO w/o Isolation
	I2C	-	-	-	1	1
	System Bus	-	-	-	-	-
	Touch	-	-	-	-	-
	Keypad	-	-	-	-	-
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 Programmable LED	1 Power LED 1 Programmable LED	-
	Expansion	Mini PCIe 2x mini PCIe slot (One only USB signal)	1x mini PCIe slot	1x mini PCIe slot	1x mini PCIe slot	-
Power	M.2	-	-	-	-	1 x M.2
	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 Supply Voltage	12 V	12 V	5V	12 V , 19 V , 24 V	12 V
Environment	Power Type	DC-in	DC-in	DC-in	2-pole lockable DC-in	DC-in
	Power Consumption	4.4W (Max)	2.76W (Max)	2.76W (Max)	4W (Max)	2.4W (burning)
	Operational Temperature	0 ~ 60 °C	0 ~ 60 °C	0 ~ 60 °C	0 ~ 60 °C/ -40 ~ 85 °C	0 ~ 60°C
Mechanical	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
	Dimensions (W x D x H)	100 x 72 x 19 mm	100 x 72 x 21 mm	100 x 72 x 21 mm	146 x 102 x 16 mm	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 B	CE/FCC Class B	CE/FCC Class B



Model Name		RSB-4410	RSB-4411	RSB-4760	RSB-4680	RSB-6410
Form Factor		3.5" SBC	3.5" SBC	3.5" SBC	3.5" SBC	Mini-ITX SBC
Processor System	CPU	NXP ARM Cortex-A9 i.MX6 1 GHz	NXP ARM Cortex-A9 i.MX6 1 GHz	Qualcomm Snapdragon™ 410 APQ8016 ARM Cortex-A53 1.2 GHz	Rockchip ARM Cortex-A17 RK3288 Quad core 1.6 GHz	NXP ARM Cortex-A9 i.MX6 1 GHz
	Technology	DDR3 1066 MHz	DDR3 1066 MHz	LPDDR3 1066MHz	DDR3L 1333MHz	DDR3 1066 MHz
Memory	Capacity	On-board DDR3 1 GB	On-board DDR3 1 GB	On-board DDR3 1 GB/2 GB	On-board DDR3L 2GB	On-board DDR3 1 GB/2 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	8 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader	8GB eMMC NAND Flash for O.S. and Advantech boot loader	8 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader
Graphics	LVDS	1 x 18-bit LVDS, up to 1366 x 768 at 60Hz	1 18/24-bit LVDS, 1366 x 768 for 1ch; 1920 x 1080 for 2ch at 60Hz	-	1 x 18/24-bit LVDS, 1366 x 768 for 1ch; 1920 x 1080 for 2ch at 60Hz	1 18/24-bit LVDS, 1366 x 768 for 1ch; 1920 x 1080 for 2ch at 60Hz
	HDMI	1920 x 1080 at 60Hz	1920 x 1080 at 60Hz	1920 x 1080 at 60Hz	3840 x 2160 at 60Hz	1920 x 1080 at 60Hz
	VGA	1920 x 1080 at 60Hz	1920 x 1080 at 60Hz	-	1920 x 1200 at 60Hz	1920 x 1080 at 60Hz
	Graphics Engine	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	Adreno™ A306 3D graphics core	OpenGL ES1.1/2.0/3.0, OpenCL 1.1, DirectX11	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: 30 fps 1080p (MPEG-4/H.264/H.263/DivX/MPEG2/VC1/Soreson/VP8) Encoder: 30 fps 720p (H.264 Baseline/MPEG-4); 30 fps 1080p (MPEG-4/H.264/VP8/H.263)	Decoder:MPEG-1, MPEG-2, MPEG-4, H.263, H.264, AVS, VC-1, VP8, MVC Encoder:H.264 (BP@level4.0, MP, HP@level4.0), MVC and VP8	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
	Chipset	NXP i.MX6 integrated RGMII	NXP i.MX6 integrated RGMII	Microchip LAN7500	TI DP83867	NXP i.MX6 integrated RGMII
Ethernet	Speed	1 x 10/100/1000 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
WatchDog Timer		256-level timer interval from 0~128 sec	1~6553s, default 60s, power on/off 1s	1~6553s, default 60s, power on/off 1s	Yes	1~6553s, default 60s, power on/off 1s
I/O	SATA	-	1	-	-	1
	SATA Power	-	1	-	-	1
	USB	1 USB 2.0 Host 2 USB 2.0 Pin Header	1 x USB OTG, 2 x USB Type A and 3 x USB pin header	2 USB 2.0 Host, 1 micro USB OTG	1 x USB OTG, 2 x USB 2.0 Host 3 x USB 2.0 Pin Header	6 x USB 2.0 Host
	Audio	1 x Line-out	1 x Line-out, 1 x Mic-in via pin header	1 x Line-out, 1 x Mic-in via pin header	1 x Line-out, 1 x Mic-in via pin header	1 x Line-out, 1 x Mic-in
	SPDIF	-	-	-	-	-
	SDIO	1 SD Slot	1 SD Slot	1 SD Slot	1 Micro SD Slot	1 SD Slot
	Serial Port	2 x 2 wire RS-232 by pin header 1 x 4 wire RS-232 by DB9	2 x 2 wires RS-232 pin header 1 x 4 wires RSB-232/422/485, DB9	1 x 4-wire RS-232/422/485	1 x 4-wire RS-232/485, DB9 1 x 2-wire RS-232/Debug port, pin header selected by jumper 2 x 4-wire RS-232, pin header 2 x 8-wire RS-232, pin header	3 x 4-wire RS-232 and 1 x 4-wire RS-232/422/485
	SPI	-	1	1	1	-
	CAN	-	2	-	-	-
	GPIO	-	20 GPIO w/o Isolation	8 x GPIO via D-SUB 9 / 8 x GPIO via pin header (3.3V TTL level)	8 x GPIO via pin header (3.3V TTL level)	18 GPIO w/o Isolation
	I2C	-	2	1	1	-
	System Bus	-	-	-	-	-
	Touch	-	-	-	-	-
	Keypad	-	-	-	-	-
Button	1 x Reset button	-	-	1 x Reset button 1 x Power button by pin header	1 x Reset button 1 x Power button by pin header	
Indicator	LED	1 Power LED 1 RF Status LED	1 Power LED	1 Green LED for system power 1 Green LED for RF Status	1 Green LED for system power 1 Green LED for WLAN status	1 Green LED for system power
Expansion	Mini PCIe	1 x mini PCIe slot	1 x mini PCIe slot	1 x mini PCIe slot	1 x mini PCIe slot	1 x mini PCIe slot
	M.2	-	1 x M.2 2230 Key E slot	1 x M.2 2230 Key E slot	1 x M.2 2230 Key E slot	1 x M.2 2230 E-key slot
	SD Socket	1 x SD slot	1 x SD slot	1 x SD slot	1 x Micro SD Slot	1 x SD slot
	SIM	1 x SIM slot	1 x SIM slot	1 x SIM slot	1 x SIM slot	1 x SIM slot
Power	Power Supply Voltage	12 V	12 V , 19 V , 24 V	9-36V	12V	12 V
	Power Type	DC-in	DC-in	DC-in	DC-in	DC-in
	Power Consumption	5.6W (Max)	5.6W (Max)	6W (Max)	TBD	7W (Max)
Environment	Operational Temperature	0 ~ 60°C / -40 ~ 85°C	0 ~ 60°C / -40 ~ 85°C	0 ~ 60 °C	0 ~ 60 °C	0 ~ 60 °C
	Operating Humidity	5 ~ 95% Relative Humidity, non-condensing	5 ~ 95% Relative Humidity, noncondensing	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)	146 x 102 x 20 mm	146 x 102 x 20 mm	146 x 102 x 20 mm	146 x 102 x 20 mm	170 x 170 x 35 mm
Operating System		Linux Android	Linux Android	Yocto Linux Android Debian Linux	Linux Android	Linux Android
Certifications		FCC Class B	CE/FCC Class B	CE/FCC Class B	CE/FCC Class B	CE/FCC Class B

# Fanless Embedded Computers

## Ultra Small Series



Model Name		ARK-10	ARK-1122H ARK-1122HS	ARK-1122C
Processor System	CPU	Intel Celeron Processor J1900 Quad Core SoC	Intel Atom N2600	Intel Atom N2600
	Frequency	2.0 GHz (Up to 2.41 GHz turbo burst)	1.6 GHz	1.6 GHz
	Core Number	4	2	2
	BIOS	AMI EFI 64 Mbit	AMI EFI 16Mbit	AMI EFI 16Mbit
	Chipset	-	Intel NM10	Intel NM10
Memory	Technology	DDR3L 1333MHz	DDR3 800MHz	DDR3 800MHz
	Max. Capacity	8GB (2 GB Memory Built In)	4 GB	4 GB
	Socket	1 x 204-pin SO-DIMM	1 x 204-pin SODIMM/ 2GB Built-In (HS SKU)	1 x 204-pin SODIMM
Display	VGA	1 x VGA, up to 1920 x 1200 at 60Hz	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	-
	Multiple Display	-	Dual	-
Expansion Interface	Mini PCIe	1 x Full-size Mini PCIe	1 x Half-size Mini PCIe	1 x Half-size Mini PCIe
	SIM Socket	-	-	-
	PCIe	-	-	-
	PCI	-	-	-
	PCIe + PCI	-	-	-
	ARK Plus	-	-	-
Ethernet	Controller	GbE1: Intel i210-IT GbE GbE2: Intel i210-IT GbE	GbE1: Intel 82583V, supports wake on LAN	GbE1: Intel 82583V, supports wake on LAN
	Speed	10/100/1000 Mbps	10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps
Audio	Audio Interface	HD Audio	HD Audio	-
	CODEC	Realtek ALC888S	Realtek ALC892	-
	Connector	2 (Line-in, Line out)	2 (Line-in, Line out)	-
WatchDog Timer	Yes	Yes	Yes	
Storage	SATA	1 x 500GB 2.5" 24x7 SATA HDD Built In	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	1x Half size mSATA	1 x Full Size mSATA	1 x Full Size mSATA
	CompactFlash/Cfast/ SD card	-	-	-
I/O	USB3.0	1	-	-
	USB2.0	2	4	4 (Standard) or 2 (Option 2.5" drive bay version)
	GPIO	-	-	-
	COM Port	2 (2 x RS232/ 422/ 485)	1 (1 x RS-232)	4 (2 x RS-232, 2 x RS-232/422/485, selected by BIOS)
Power	Power Type	ATX	ATX	ATX
	Power Supply Voltage	12 V <sub>DC</sub>	12 V <sub>DC</sub> , ± 10%	12 V <sub>DC</sub> , ± 10%
	Connector	Lockable DC Jack	Lockable DC Jack	Lockable DC Jack
	Power Consumption (Idle)	5.64W	6.89W	5.4W
	Power Consumption (Full Load)	14.04W	11.45W	9.47W
	Power Adaptor	AC to DC, DC12V/3A, 36W	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 ~ 50 °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
	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
	Vibration Resistance	0.5Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis	With SSD/mSATA: 3Grms	With SSD/mSATA: 3Grms
	Shock Protection	10G, IEC 60068-2-27, half sine, 11 ms duration	With SSD/mSATA: 30G	With SSD/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
	Weight	1.2 kg (2.65 lb)	1.2 kg (2.65 lb)	1.2 kg (2.65 lb)
	Mounting	Wall/VESA/DIN-rail mounting	Optional DIN Rail/ VESA/ Wall mounting	Optional DIN Rail/ VESA/ Wall mounting
Operating System	Microsoft Windows	Yes (WES7, Windows 7, WE8S, Windows 8)	Yes (Windows 7 Pro 32bit, WES7 32bit, XP Embedded, XP Embedded by project support); WES7E Built-In HS SKU	Yes (Windows 7 Pro 32bit, WES7 32bit, XP Embedded (XP Embedded by project support)
	Linux	Yes (by Project)	-	-
APIs	WISE-PaaS/RMM	Yes	Yes	Yes
	SUSI API	-	-	-
	Other	-	McAfee, Acronis	McAfee, Acronis
Certification	EMC	CE/FCC Class B, BSMI	CE/FCC Class A, CCC, BSMI	CE/FCC Class A, CCC, BSMI
	Safety Certifications	CB, UL, CCC, BSMI	CB, UL, CCC, BSMI, KC	CB, UL, CCC, BSMI, KC



Model Name		ARK-1122F	ARK-1123L	ARK-1123C	ARK-1123H
Processor System	CPU	Intel Atom N2800	Intel® Atom DC E3825	Intel® Atom DC E3825	Intel® Celeron QC J1900
	Frequency	1.86 GHz	1.33 GHz	1.33 GHz	2.0 GHz
	Core Number	2	2	2	4
	BIOS	AMI EFI 16Mbit	AMI EFI 64 Mbit	AMI EFI 64 Mbit	AMI EFI 64 Mbit
	Chipset	Intel NM10	Intel® Atom DC E3825	Intel® Atom DC E3825	Intel® Celeron QC J1900
Memory	Technology	DDR3 1066MHz	DDR3L 1066MHz	DDR3L 1066MHz	DDR3L 1333MHz
	Max. Capacity	4 GB	8GB	8GB	8GB
	Socket	1 x 204-pin SODIMM	1 x 204-pin SODIMM	1 x 204-pin SODIMM	1 x 204-pin SODIMM
Display	VGA	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	-	-	2 x lockable HDMI, 1920 x 1080
	Multiple Display	Dual	-	-	-
Expansion Interface	Mini PCIe	1 x Half-size Mini PCIe 1 x Full-size Mini PCIe w/SIM Holder	1 x Full-size Mini PCIe	1 x Full-size Mini PCIe	1 x Full-size Mini PCIe
	SIM Socket	1	-	-	-
	PCIe	-	-	-	-
	PCI	-	-	-	-
	PCIe + PCI	-	-	-	-
Ethernet	Controller	GbE1: Intel 82583V, GbE2: Intel 82583V, All support Wake on LAN	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
	Speed	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps
	Audio Interface	HD Audio	HD Audio	HD Audio	HD Audio
Audio	CODEC	Realtek ALC892	Realtek ACL888S	Realtek ACL888S	Realtek ACL888S
	Connector	2 (Line-in, Line out)	2 (Line-in, Line out)	2 (Line-in, Line out)	2 (Line-in, Line out)
WatchDog Timer		Yes	Yes	Yes	Yes
Storage	SATA	-	1 x 2.5" SATA HDD bay	1 x 2.5" SATA drive bay	1 x 2.5" SATA drive bay
	mSATA	1 x Full Size mSATA	1 x Half-Size mSATA	1 x Half-Size mSATA	1 x Half-Size mSATA
	CompactFlash/Cfast/SD card	-	-	-	-
I/O	USB3.0	-	1	1	1
	USB2.0	3	1	2	2
	GPIO	-	8-bit Programmable DIO	-	-
	COM Port	1 (1 x RS-232)	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)
Power	Power Type	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%
	Connector	Lockable DC Jack	Lockable DC Jack	Lockable DC Jack	Lockable DC Jack
	Power Consumption (Idle)	7.84W	5.28W	5.28W	5.64W
	Power Consumption (Full Load)	13.15W	8.16W	8.16W	14.04W
Environment	Power Adaptor	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	Lockable AC to DC, DC12 V/3 A, 36 W
	Operating Temperature (air flow 0.7 m/sec)	With standard temperature mSATA devices: 0 ~ 40 °C With extended temperature mSATA devices: -20 ~ 60 °C	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
	Non-operating Temperature	-40~ 85 °C and 95% @ 40 °C 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: 3Grms	With mSATA/SSD : 3 Grms	With mSATA/SSD : 3 Grms	With mSATA/SSD : 3 Grms
	Shock Protection	With mSATA: 30G	With mSATA/SSD: 30G	With mSATA/SSD: 30G	With mSATA/SSD: 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
	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)
	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 (Windows 7 Pro 32bit, WES7 32bit, XP Embedded (XP Embedded by project support))	Yes (WES7, Windows 7, WE8S, Windows 8 and Windows 10 (32-bit support by project))	Yes (WES7, Windows 7, WE8S, Windows 8, Windows 10 (32-bit support by project))	Yes (WES7, Windows 7, WE8S, Windows 8 and Windows 10 (32-bit support by project))
	Linux	-	Yes (Ubuntu 14.04 LTS x64)	Yes (Ubuntu 14.04 LTS x64)	Yes (Ubuntu 14.04 LTS x64)
APIs	WISE-PaaS/RMM	Yes	Yes	Yes	Yes
	SUSI API	-	-	-	-
	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 B, CCC, BSMI	CE/FCC Class B, CCC, BSMI
	Safety Certifications	CB, UL, CCC, BSMI	CB, UL, CCC, BSMI	CB, UL, CCC, BSMI, KC	CB, UL, CCC, BSMI



# Fanless Embedded Computers

## Slim & Mountable Series

NEW



NEW



NEW



Model Name		ARK-1124C	ARK-1124U	ARK-1124H	ARK-1550
Processor System	CPU	Intel Celeron N3350 Dual Core SoC	Intel Celeron N3350 Dual Core SoC	Intel Atom E3940 Quad Core Soc	Intel® Celeron 2980U Intel® Core i5 4300U
	Frequency	1.1 GHz, turbo burst 2.4 GHz	1.1GHz, turbo burst 2.4 GHz	1.6 GHz, turbo burst 1.8 GHz	1.6 GHz / 1.9 GHz
	Core Number	2	2	4	2
	BIOS	AMI EFI 64 Mbit	AMI EFI 64 Mbit	AMI EFI 64 Mbit	AMI EFI 128 Mbit
	Chipset	-	-	-	Intel® Celeron 2980U Intel® Core i5 4300U
Memory	Technology	DDR3L 1866 MHZ	DDR3L 1866 MHZ	DDR3L 1866 MHZ	DDR3L 1333/1600 MHZ
	Max. Capacity	8GB	8GB	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
Display	Graphic Engine	-	-	-	DirectX11.1, OpenGL 4.0, and OpenCL 1.2
	VGA	1 x VGA Up to 2048 x 1280	1 x VGA Up to 2048 x 1280	-	Up to 1920 x 1200
	LCD (TTL/LVDS/eDP)	-	-	-	Up to 1920 x 1200 (optional)
	DDI (HDMI/DVI/DisplayPort)	-	-	HDMI1: 3840 x 2160 @ 30Hz HDMI2: 3840 x 2160 @ 30Hz	Lockable HDMI, up to 4096 x 2304 @24Hz
	Multiple Display	-	-	Dual HDMI Display	Dual Displays by VGA + HDMI
Expansion Interface	Mini PCIe	1 x Full-size Mini PCIe	1 x Full-size Mini PCIe 1 x M.2 E Key	1 x Full-size Mini PCIe 1 x M.2 E Key	1 x Full-size Mini PCIe w/ SIM
	SIM Socket	-	1	-	1
	ARK Plus	AMO-1101	AMO-110	AMO-1101	-
	iDoor	Yes	Yes	Yes	-
Ethernet	Controller	GbE: Intel i210 GbE	GbE1: Intel i210 GbE GbE2: Intel i210 GbE	GbE1: Intel i210 GbE GbE2: Intel i210 GbE	GbE 1: Intel i218 GbE 2: Intel i210 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 ALC888S	Realtek ALC888S	Realtek ALC888S	Realtek ALC888S
	Connector	2 (Line in, line out)	2 (Line in, line out)	2 (Line in, line out)	3 (Line-in, Line-out, Mic-in)
WatchDog Timer	Yes	Yes	Yes	Yes	
Storage	SATA	1 x 2.5" SATAIII HDD bay	1 x 2.5" SATAIII HDD bay	1 x 2.5" SATAIII HDD bay	1 x Hot-Swappable 2.5" SATA HDD bay
	mSATA	1x Half size mSATA	-	1x Half size mSATA	1 x Full-size mSATA (share with miniPCIe slot)
	CompactFlash/Cfast/SD card	-	-	-	-
I/O	USB3.0	2	4	4	2
	USB2.0	0	0	0	2
	GPIO	-	-	-	8-bit Programmable DIO
	COM Port	4 (4 x RS232/ 422/ 485)	2 (2 x RS232/ 422/ 485)	1 (1 x RS232/ 422/ 485)	3 (1 x RS-232, 2 x RS-232/422/485)
Power	Power Type	AT/ATX	AT/ATX	AT/ATX	AT/ATX
	Power Supply Voltage	12 Vdc (Option 12-24 Vdc)	12 Vdc (Option 12-24 Vdc)	12 Vdc (Option 12-24 Vdc)	12 Vdc, ± 10%
	Connector	Lockable DC Jack	Lockable DC Jack	Lockable DC Jack	DC jack with power adaptor locker
	Power Consumption (Idle)	5.5W	5W	TBC	5.64W (2980U) / 10.56W (4300U)
	Power Consumption (Full Load)	18.8W	33.7W	TBC	15.12W (2980U) / 28.2W (4300U)
Environment	Power Adaptor	AC to DC, DC12V/3A, 36W	AC to DC, DC12V/5A, 60W	AC to DC, DC12V/5A, 60W	AC to DC, DC 12V/5A 60W (optional)
	Operating Temperature (air flow 0.7 m/sec)	-20 ~ 60 °C	-20 ~ 60 °C	-20 ~ 60 °C	With extend temperature peripherals: -20 ~ 55 °C With standard temperature peripherals: 0 ~ 40 °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 40 °C @ 95% RH Non-Condensing
	Vibration Resistance	With SSD: 3 Grms	With SSD: 3 Grms	With SSD: 3 Grms	With mSATA/SSD: 3 Grms
	Shock Protection	With SSD: 30 G	With SSD: 30 G	With SSD: 30 G	With mSATA/SSD: 30G
Physical Characteristics	Dimensions (W x H x D)	133 x 46.4 x 94.2 mm	133 x 46.4 x 94.2 mm	133 x 46.4 x 94.2 mm	223 x 46.6 x 133.0 mm
	Weight	1.1 kg (2.42lb)	1.1 kg (2.42lb)	1.1 kg (2.42lb)	1.9 kg (4.18 lbs)
Operating System	Mounting	Wall/VESA/DIN-rail mounting (Optional)	Wall/VESA/DIN-rail mounting (Optional)	Wall/VESA/DIN-rail mounting (Optional)	Wall Mounting (Standard) / VESA & DIN-Rail Mounting Kit (Optional)
	Microsoft Windows	Yes (Windows 10)	Yes (Windows 10)	Yes (Windows 10)	Yes (Windows 10, Windows 8, Windows 7, WES8, WES7)
APIs	Linux	Yes (by Project)	Yes (by Project)	Yes (by Project)	Yes (by Project)
	WISE-PaaS/RMM	Yes	Yes	Yes	Yes
	SUSI API	-	-	-	-
Certification	Other	McAfee, Acronis	McAfee, Acronis	McAfee, Acronis	McAfee, Acronis
	EMC	CE/FCC Class B, CCC, BSMI	CE/FCC Class B, CCC, BSMI	CE/FCC Class B, CCC, BSMI	CE/FCC Class A, CCC, BSMI
Safety Certifications	CB, UL, CCC, BSMI	CB, UL, CCC, BSMI	CB, UL, CCC, BSMI	CB, UL, CCC, BSMI, KC	

## Multiple I/O Series



Model Name	ARK-2120L	ARK-2120F	ARK-2121L	ARK-2121F	ARK-2150L	
Processor System	CPU	Intel Atom N2600 / Intel Atom D2550	Intel Atom D2550	Intel Celeron QC J1900	Intel Celeron QC J1900	3rd Gen <sup>®</sup> Intel Celeron 1047UE / Core i3-3217UE / Core i7-3517UE
	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	1.4GHz / 1.6 GHz/ 1.7 GHz (up to 2.8GHz)
	Core Number	2	2	4	4	2
	BIOS	AMI EFI 16Mbit	AMI EFI 16Mbit	AMI EFI 64Mbit	AMI EFI 64Mbit	AMI EFI 64Mbit
	Chipset	Intel Atom N2600/D2550 + Intel NM10	D2550 + Intel NM10	-	-	Intel QM77
Memory	Technology	DDR3 1066 MHz (D2550), DDR3 800 MHz (N2600)	DDR3 1066 MHz	DDR3L 1333MHz	DDR3L 1333MHz	DDR3 1600MHz/DDR3L 1333 MHz
	Max. Capacity	4 GB	4 GB	8GB	8GB	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
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	DirectX11, OpenGL 3.1, and Open CL 11
	VGA	Up to 1920 x 1200	Up to 1920 x 1200	Up to 2048 x 1152	Up to 2048 x 1152	Up to 2048 x 1536
	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	HDMI:1920 x 1200 @ 60Hz
Expansion Interface	Multiple Display	Dual	Dual	Dual	Dual	Dual
	Mini PCIe	1 x Full-size Mini PCIe with SIM	1 x Full-size Mini PCIe with SIM	1 x Full-size Mini PCIe with SIM	2 x Full-size Mini PCIe (1 with SIM holder)	2 x Full-size Mini PCIe (One supports mSATA & the other with SIM holder) 1 x Half-size Mini PCIe
	SIM Socket	1	1	1	1	1
	ARK Plus iDoor	-	-	Yes	-	-
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	GbE1: Intel 82579LM, 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	HD Audio	HD Audio
	CODEC	Realtek ALC892	Realtek ALC892	Realtek ALC888S	Realtek ALC888S	Realtek ALC892
	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)	3 (Line-in, Line out, Mic-in)
WatchDog Timer	Yes	Yes	Yes	Yes	Yes	
Storage	SATA	1 x 2.5" SATA HDD bay	1 x 2.5" SATA HDD bay	1 x 2.5" SATA HDD bay	1 x 2.5" SATA HDD bay	1 x 2.5" SATA HDD bay
	mSATA	-	-	1	1	1 (Supports either mSATA or full size miniPCIe, selected by BIOS, default support miniPCIe)
	CompactFlash/Cfast/SD card	1 CFast	1 CFast	-	-	-
I/O	USB3.0	-	-	1	1	2
	USB2.0	6	5	3	5 external, 1 internal	4
	GPIO	8-bit Programmable DIO	8-bit Programmable DIO	-	4ch digital input and 4ch digital output with 3kV isolation	8-bit Programmable DIO
	COM Port	4 (3 x RS232, 1 x RS232/422/485)	6 (2 x RS232, 4 x RS232/422/485)	4 (2 x RS232, 2 x RS232/422/485)	6 (6 x RS232/ 422/ 485)	4 (2 x RS232, 2 x RS232/422/485)
Power	Power Type	AT/ATX	AT/ATX	AT/ATX	AT/ATX	AT/ATX
	Power Supply Voltage	12 V <sub>oc</sub> , ± 10%	12 ~ 24 V <sub>oc</sub>	9 ~ 36 V <sub>oc</sub>	9 ~ 36 V <sub>oc</sub>	12 V <sub>oc</sub> , ± 10%
	Connector	Lockable DC Jack	2-pin phoenix head	2-pin phoenix head	2-pin phoenix head	Lockable DC Jack
	Power Consumption (Idle)	8.9W	9.2W	7.3W	8.4W	9.6W
	Power Consumption (Full Load)	11W	11.59W	13.3W	16.2W	24.96W
Environment	Power Adaptor	Lockable AC to DC, DC12 V/3 A, 36 W (Optional)	Lockable AC to DC, DC19 V/4.73A, 90 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, DC12 V/5 A, 60 W (Optional)
	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	With extend temperature peripherals: -20 ~ 60 °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	-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	With SSD: 5 Grms
Physical Characteristics	Shock Protection	With SSD: 50 G	With SSD: 50 G	With SSD: 30 G	With SSD: 30 G	With SSD: 50 G
	Dimensions (W x H x D)	264.5 x 69.2 x 133.0 mm	264.50 x 68.39 x 133.0 mm	264.5 x 68.4 x 133.0 mm	264.5 x 68.4 x 133.0 mm	264.5 x 75.1 x 133.0 mm
	Weight	2.3 kg (5.07 lb)	2.3 kg (5.51 lb)	2.3 kg (5.07 lb)	2.3 kg (5.07 lb)	2.3 kg (5.07 lb)
Operating System	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	Desk/ Wall/ VESA/ DIN-Rail mounting
	Microsoft Windows	Yes (Windows 7)	Yes (Windows 7)	Yes (Windows 7, Windows 8 and Windows 10 (32-bit support by project))	Yes (Windows 7, Windows 8 and Windows 10 (32-bit support by project))	Yes (Windows 7, Windows 8 and Windows 10 (32-bit support by project))
APIs	Linux	-	-	Yes (by Project)	Yes (by Project)	Yes (by Project)
	WISE-PaaS/RMM	Yes	Yes	Yes	Yes	Yes
	SUSI API	Yes	Yes	Yes	Yes	Yes
Certification	Other	McAfee, Acronis	McAfee, Acronis	McAfee, Acronis	McAfee, Acronis	Intel AMT 8.0, 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	UL, CCC, BSMI	UL, CCC, BSMI, KC	CB, UL, CCC, BSMI, KC	UL, CCC, BSMI, KC for ARK-2150L-S7A1E only

# Fanless Embedded Computers

## Multiple I/O Series



**NEW**



**NEW**

Model Name		ARK-2150F	ARK-2230L	ARK-2250L
Processor System	CPU	3rd Gen <sup>1</sup> Intel Core i7-3517UE	Intel J1900	Intel i7-6600U Intel i5-6300U Intel i3-6100U
	Frequency	1.7 GHz (up to 2.8GHz)	2.0GHz	2.6/2.4/2.3GHz
	Core Number	2	4	2/2/2
	BIOS	AMI EFI 64Mbit	AMI EFI 64Mbit	AMI UEFI 128 Mbit
	Chipset	Intel QM77	-	-
Memory	Technology	DDR3 1600MHz/ DDR3L 1333 MHz	DDR3L 1333MHz	DDR3L 1600MHz
	Max. Capacity	8 GB	8GB	16GB
	Socket	1 x 204-pin SODIMM	1 x 204-pin SODIMM	1 x 204-pin SODIMM
Display	Graphic Engine	DirectX11, OpenGL 3.1, and Open CL 1.1	DirectX 11.1, OCL 1.2 and OGL 3.2	DirectX 11.3, OpenGL 4.4, and OpenCL 2.1
	VGA	Up to 2048 x 1536	Up to 2048 x 1152	Up to 1920 x 1200
	DDI (HDMI/DVI/DisplayPort)	HDMI: 1920 x 1200 @ 60Hz DVI-D: 1920 x 1200	HDMI 1.4a for HD video playback, 1080P at 60Hz	HDMI 1.4a for HD video playback, 4096 x 2160 @ 24Hz
	Multiple Display	Dual	Dual	VGA+HDMI (Option triple display)
Expansion Interface	Mini PCIe	2 x Full-size Mini PCIe (Supports mSATA & SIM) 1 x Half-size Mini PCIe	1 x Full-size Mini PCIe	2 x Full-size Mini PCIe
	SIM Socket	1	1	1
	ARK Plus	-	AMO-2000 series	AMO-2000 series
	i Door	-	Yes	Yes
Ethernet	Controller	GbE1: Intel 82579LM, GbE 2/3/4: Intel 82583V All support wake on LAN	GbE1: Intel I-210IT GbE2: Intel I-210IT	GbE1: Intel I219-LM GbE2: Intel I-210IT
	Speed	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 ALC888	Realtek ALC888
Connector	3 (Line-in, Line out, Mic-in)	3 (Line-in, Line out, Mic-in)	2 (Line-out, Mic-in)	
WatchDog Timer		Yes	Yes	Yes
Storage	SATA	1 x 2.5" SATA HDD bay	1 x 2.5" SATA HDD bay	1 x 2.5" SATA HDD bay
	mSATA	1 (Supports either mSATA or full size miniPCIe, selected by BIOS, default support miniPCIe)	1	1x Full size mSATA
	CompactFlash/Cfast/SD card	-	-	-
I/O	USB3.0	3	1	4
	USB2.0	3	4	2
	GPIO	4ch digital input and 4ch digital output with 2.5kV isolation	1 x 8 bit DIO	1 x 8 bit DIO
	COM Port	4 (4 x RS232/ 422/ 485)	4 (2 x RS232, 2 x RS232/422/485)	4 (4 x RS232/ 422/ 485)
	Power Type	AT/ATX	AT/ATX	AT/ATX
Power	Power Supply Voltage	12 ~ 24 V <sub>DC</sub>	12 V <sub>DC</sub> (Option 9-36 V <sub>DC</sub> )	12 V <sub>DC</sub> (Option 9-36 V <sub>DC</sub> )
	Connector	2-pin phoenix head	Lockable DC Jack	Lockable DC Jack
	Power Consumption (Idle)	10.3W	7.3W	7.96W/ 7.8W/ 6.92W
	Power Consumption (Full Load)	25.7W	13.3W	43.28W/ 42.8W/ 41.72W
	Power Adaptor	Lockable AC to DC, DC19 V/3.42 A, 65 W (Optional)	AC to DC, DC12V/5A, 60W (Optional)	AC to DC, DC12V/5A, 60W (Option)
	Environment	Operating Temperature (air flow 0.7 m/sec)	With extend temperature peripherals: -20 ~ 60 °C With HDD: 0 ~ 45 °C	-20 ~ 60 °C
Non-operating Temperature		-40 ~ 85 °C and 40 °C @ 95% RH Non-Condensing	-40~ 85 °C and 95% @ 40 °C Non-Condensing	-40~ 85 °C and 95% @ 40 °C Non-Condensing
Vibration Resistance		With SSD: 5 Grms	With SSD: 3 Grms	With SSD: 3 Grms
Shock Protection		With SSD: 50 G	With SSD: 30 G	With SSD: 30 G
Physical Characteristics	Dimensions (W x H x D)	264.5 x 75.1 x 133.0 mm	260 x 44 x 140.2 mm	260 x 54 x 140.2 mm
	Weight	2.8 kg (6.17lb)	2.3 kg (5.07lb)	2.3 kg (5.07lb)
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
	Microsoft Windows	Yes (Windows 7, Windows 7 Embedded, XP Professional, XP Embedded)	Yes (Windows 10, WES8, Windows 8, WES7, Windows 7)	Yes (Windows 10, Windows 8.1, WES7, Windows 7)
Operating System	Linux	Yes (Ubuntu v12.04/CentOS 6.6)	Yes (by Project)	Yes (by Project)
	WISE-PaaS/RMM	Yes	Yes	Yes
APIs	SUSI API	Yes	Yes	Yes
	Other	Intel AMT 8.0, McAfee, Acronis	McAfee, Acronis	McAfee, Acronis
Certification	EMC	CE/FCC class A, CCC, BSMI	CE/FCC Class B, CCC, BSMI	CE/FCC Class B, CCC, BSMI
	Safety Certifications	UL, CCC, BSMI, KC	UL, CCC, BSMI, KC	UL, CCC, BSMI

## Multi Expansion Series



NEW

NEW

Model Name		ARK-3405	ARK-3500	ARK-3510	ARK-3520L	ARK-3530
Processor System	CPU	Intel Celeron N3160	3rd gen <sup>®</sup> Intel Core i7-3610QE/ i5-3610ME/i3-3120ME/ Celeron 1020E rPGA processor support	3rd gen <sup>®</sup> Intel Core i7-3610QE/ i5-3610ME/i3-3120ME/ Celeron 1020E rPGA processor support	6th gen <sup>®</sup> Intel i7-6820EQ/ i5-6440EQ/i3-6100E	6th & 7th gen <sup>®</sup> Intel i7-7700(T)/ i5-7500(T)/i3-7300(T)
	Frequency	1.6 GHz (Up to 2.24 GHz)	2.3 GHz/2.7 GHz/2.4 GHz/2.2 GHz	2.3 GHz/2.7 GHz/2.4 GHz/2.2 GHz	2.8/2.7/2.7GHz	3.6/2.9/3.4/2.7/4.0/3.5GHz
	Core Number	4	4/2/2/2	4/2/2/2	4/4/2	4/4/4/2/2
	BIOS	AMI EFI 64 Mbit BIOS	AMI EFI 64Mbit	AMI EFI 64Mbit	AMI EFI 128 Mbit	AMI EFI 128Mbit
Memory	Chipset	-	Intel QM77	Intel QM77	Intel QM170	C236
	Technology	DDR3L 1600MHz	DDR3/DDR3L 1600MHz	DDR3/DDR3L 1600MHz	DDR4 2133MHz	DDR4 2133MHz
	Max. Capacity	8 GB	16GB	16GB	32GB	32GB
Display	Socket	1 x 204-pin SODIMM	2 x 204-pin SODIMM	2x204-pin SODIMM	2 x 260-pin SODIMM	2 x 260-pin SODIMM
	VGA	1920 x 1200	VGA integrated in DVI-I port	VGA integrated in DVI-I port	1920 x 1200	1920 x 1200 @ 60Hz
	LCD (TTL/LVDS/eDP)	-	-	-	-	-
	DDI (HDMI/DVI/ DisplayPort)	HDMI 1.4b, 2560 x 1600 @ 60Hz; 3840 x 2160 @ 30Hz DVI-D: 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 <sup>®</sup> 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 <sup>®</sup> processor)	HDMI 1.4b for HD video playback, 3840x2160@30Hz	HDMI 3840 x 2160 @ 30Hz 2nd HDMI / DVI-D/ DP (Optional)
Expansion Interface	Multiple Display	Triple Independent Display VGA + HDMI + DVI-D	Triple/Dual	Triple/Dual	Triple / Dual VGA + HDMI + optional 3rd display	Triple/Dual/VGA+HDMI + Optional 3rd Display
	PCI Express x 4	-	1 slot, ARK-3500F	-	-	-
	PCI Express x 1	2 x PCIe x 1 (Optional)	1 slot, ARK-3500F	-	-	-
	Mini PCIe	2 x Full-size Mini PCIe	2 x Full-size Mini PCIe with SIM (share with mSATA)	2 x Full-size Mini PCIe with SIM (share with mSATA)	2 x Full-size Mini PCIe (1 share with mSATA)	2 x Full-size MiniPCIe (share with mSATA)
	SIM socket	1 x SIM socket	2 x SIM socket	2 x SIM socket	1 x SIM socket	1 x SIM Socket
	PCIe	-	-	-	2 x PCIe x 4 (Optional)	2 x PCIe x 4 (Optional)
	PCI	2 x PCI (Default)	2 slots, ARK-3500P	-	2 x PCI (Optional)	2 x PCI (Optional)
	PCIe + PCI	1 x PCI + 1 x PCIe x1 (Optional)	-	-	2 x PCI + 1 x PCIe x 4 (Optional)	-
Ethernet	Controller	GbE1: Intel I-210IT GbE2 : Intel I-210IT	GbE1: Intel 82579LM GbE2 : Intel I-210IT	GbE1: Intel 82579LM GbE2 : Intel I-210IT	GbE1: Intel I219-LM GbE2 : Intel I-210IT	GbE1 : Intel I210-LM GbE2 : Intel I-210IT
	Speed	10/100/1000 Mbps	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 ALC892	Realtek ALC892	Realtek ALC892	Realtek ALC888	Realtek ALC888
WatchDog Timer	Connector	2 (Line out, Mic-in)	2 (Line out, Mic-in)	2 (Line out, Mic-in)	2 (Line out, Mic-in)	2 (Line out, Mic in)
	i Door	Yes	-	-	Yes	Yes
Storage	SATA	2 x 2.5" SATAIII HDD bay	2 x 2.5" SATAIII HDD bay	2 x 2.5" SATAIII HDD bay	1 x 2.5" SATAIII HDD bay	2 x 2.5" SATA HDD Bays
	CompactFlash/Cfast/ SD card	1 internal SD Card slot	1 Cfast	1 Cfast	-	-
	mSATA	-	2 (shared with mini-PCIe)	2 (shared with mini-PCIe)	1 (shared with mini-PCIe)	2 (shared with mini-PCIe)
I/O	USB 3.0	3	4	4	6	8
	USB2.0	3 x external, 1 x internal	2	2	2	-
	GPIO	1 x 8 bit DIO	16 bit DIO	-	1 x 16 bit DIO	16bit (Optional)
	COM Port	4 (2 x RS232, 2 x RS232/ 422/ 485)	8 (4 x RS232, 4 x RS232/ 422/ 485)	4 (2 x RS232, 2 x RS232/ 422/ 485)	8 (4 x RS232, 4 x RS232/422/485)	4 x RS-232/422/485, 2 x RS-232 (Optional)
Power	Power Type	AT/ATX	AT/ATX	AT/ATX	AT/ATX	AT/ATX
	Power Supply Voltage	9 Vdc ~ 36 Vdc	9 Vdc ~ 34 Vdc	12 Vdc ± 10% (optional 9 ~ 34 Vdc)	12 Vdc (optional 9 ~ 36 Vdc)	9-36 Vdc
	Connector	4 pin phoenix head	4-pin terminal block	Lockable DC jack	Lockable DC jack	4 pin Phoenix Head
	Power Consumption (Idle)	9.7W	19.2W/ 16.4W/ 14.8W/ 16.4W	19.2W/ 16.4W/ 14.8W/ 16.4W	11.4W	TBC
	Power Consumption (Full Load)	22.8W	60W/ 36.5W/ 30W/ 31.8W	60W/ 36.5W/ 30W/ 31.8W	68.4W/ 46.5W/ 42.75W	TBC
Environment	Power Adaptor	AC to DC, DC 12V/7A, 84W (Optional)	Lockable AC to DC DC 12V 120W (Optional)	Lockable AC to DC, DC12V / 7A 84W (Optional)	Lockable AC to DC DC 12V 150W (Optional)	Lockable AC to DC DC 24V 220W (Optional)
	Operating Temperature (air flow 0.7 m/sec)	With extend temp peripherals: -10 ~ 55 °C With 2.5" HDD: 0 ~ 40 °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	With extend temp peripherals: -20 ~ 60 °C With HDD: 0 ~ 40 °C	With extend temp peripherals: -20 ~ 50 °C With HDD: 0 ~ 40 °C
	Non-operating Temperature	-40~ 85 °C and 95% @ 40 °C 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 95% @ 40 °C Non-Condensing	-40~ 85 °C and 95% @ 40 °C Non-Condensing
	Vibration Resistance	With SSD: 3 Grms With HDD: 0.3grms	With SSD: 5 Grms	With SSD : 3Grms	With SSD: 3 Grms	With SSD 3Grms
Physical Characteristics	Shock Protection	With SSD: 30 G	With SSD 30G	With SSD 50G	With SSD: 30 G	With SSD 30G
	Dimensions (W x H x D)	142.8 x 198 x 215 mm	290 x 110 x 232 mm	290 x 90 x 232 mm	220 x 101 x 233 mm	105 x 205 x 230 mm 156.5 x 205 x 230 mm
	Weight	3.16 kg (6.97lb)	4.8 kg (10.56lb)	4.63 kg	4.8 kg (10.58 lb)	TBC
Operating System	Mounting	Wall/Desk mounting	Desk/Wallmounting	Desk/Wallmounting	Desk/Wall mounting	Desk mounting
	Microsoft Windows	Yes (Windows 10, Windows 8.1, Windows 7, WES8.1 , WES7)	Yes (Windows 8, Windows 7, XP Professional (32bit), XP embedded (32bit))	Yes (Windows 8, Windows 7, XP Professional (32bit), XP embedded (32bit))	Yes (Windows 8.1, Windows 7, Windows 10)	Yes (Windows7, Windows 10)
APIs	Linux	Yes (by Project)	Yes (by Project)	Yes (by Project)	Yes (by Project)	Yes (by Project)
	WISE-PaaS/RMM	Yes	Yes	Yes	Yes	Yes
Certification	SUSI API	Yes	Yes	Yes	Yes	Yes
	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 B, CCC, BSMI	CE/FCC Class B/CCC/BSMI
Safety Certifications	CB, UL, CCC, BSMI, KC	CB, UL, CCC, BSMI, KC	CB, UL, CCC, BSMI	CB, UL, CCC, BSMI	CB/UL/CCC/BSMI	

# Fanless Embedded Computers

## High Value Series

**NEW**



Model Name		ARK-3520P	ARK-6322
Processor System	CPU	6th gen <sup>®</sup> Intel I7-6820EQ/I5-6440EQ/I3-6100E	Intel Celeron J1900 SoC
	Frequency	2.8/2.7/2.7GHz	2.0 GHz, Turbo Boost up to 2.41GHz
	Core Number	4/4/2	4
	BIOS	AMI EFI 128 Mbit	AMI 16Mbit SPI
Memory	Chipset	Intel QM170	-
	Technology	DDR4 2133MHz	DDR3L 1333MHz
	Max. Capacity	32GB	8GB (4GB per SODIMM)
Display	Socket	2 x 260-pin SODIMM	2 x 204-pin SODIMM
	VGA	1920 x 1200	Up to 2048 x 1280
	LCD (TTL/LVDS/eDP)	-	-
	DDI (HDMI/DVI/DisplayPort)	HDMI: 1.4b for HD video playback, 3840 x 2160 @ 30Hz 2nd HDMI :1920 x 1080 (Optional) DVI-D: 4096 x 2160 @ 24Hz (Optional) DP: 4096 x 2304 @ 60Hz (Optional)	DisplayPort: up to 2560 x 1600 @ 60Hz
Expansion Interface	Multiple Display	Triple / Dual VGA + HDMI + optional 3rd display	Dual
	Mini PCIe	2 x Full-size Mini PCIe (1 shared with mSATA)	1 x Full-size Mini PCIe 1 x Half-size Mini PCIe
	SIM socket	1 x SIM socket	-
	PCIe	2 x PCIe x 4 (Optional)	-
	PCI	2 x PCI (Default)	-
	PCIe + PCI	2 x PCI + 1 x PCIe x 4 (Optional)	-
	i Door	Yes	Yes
Ethernet	Controller	GbE1: Intel I219-LM GbE2: Intel I-210IT	GbE1: RTL8111E GbE2: RTL8111E
	Speed	10/100/1000 Mbps	10/100/1000 Mbps
Audio	Audio Interface	HD Audio	HD Audio
	CODEC	Realtek ALC888	Realtek ALC892
	Connector	2 (Line out, Mic-in)	2 (Line-out or Mic-in)
WatchDog Timer		Yes	Yes
Storage	SATA	2 x 2.5" SATAIII HDD bay	1 x 2.5" or 3.5" SATA HDD bay
	CompactFlash/Cfast/SD card	-	-
	mSATA	1 (shared with mini-PCIe)	1 x Full-size mSATA (shared with mini-PCIe slot)
I/O	USB 3.0	6	1
	USB2.0	2	7
	GPIO	1 x 16 bit DIO	-
	LPT	1 (by project support)	-
	COM Port	4 x RS232, 4 x RS232/422/485	5 x RS232, 1 x RS232/422/485
	LAN	2 x RJ45	2 x RJ45
Power	Power Type	AT/ATX	ATX
	Power Supply Voltage	9 ~ 36 V <sub>DC</sub>	12 V <sub>DC</sub> , ± 10%
	Connector	4 pin phoenix head	-
	Power Consumption (Idle)	11.4W	15.7W
	Power Consumption (Full Load)	68.4W/ 46.5W/ 42.75W	24.7W
	Power Adaptor	Lockable AC to DC DC 19V 150W (Optional)	AC to DC, DC12V/5A, 60 W (Optional)
Environment	Regulation	-	-
	Operating Temperature (air flow 0.7 m/sec)	With extend temp peripherals: -20 ~ 60 °C With HDD: 0 ~ 40 °C	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 95% @ 40 °C Non-Condensing	-40~ 85 °C and 40 °C @ 95% RH Non-Condensing
	Vibration Resistance	With SSD: 3 Grms	With HDD: 0.5 Grms
Physical Characteristics	Shock Protection	With SSD: 30 G	With HDD: 10 G
	Dimensions (W x H x D)	220 x 101 x 233 mm	200 x 64 x 200 mm
	Weight	4.4 kg (9.7 lb)	2.0 kg (4.4lb)
Operating System	Mounting	Desk/Wall mounting	VESA/Wall mounting (Optional)
	Microsoft Windows	Yes (Windows 8.1, Windows 7, Windows10)	Yes (Windows 10, Windows 8, Windows 7, WES8, WES7)
	Linux	Yes (by Project)	Yes (by Project)
APIs	SUSIAccess	Yes	Yes
	iManager	Yes	-
	Other	McAfee, Acronis	McAfee, Acronis
Certification	EMC	CE/FCC Class A/CCC/BSMI	CE/FCC Class A/CCC/BSMI
	Safety Certifications	LVD, CCC, BSMI, KC	CB, UL, CCC, BSMI



# Embedded PCs

## EPC-C Series



## EPC-X Series



## EPC-B Series



## EPC Enclosures

Model Name		EPC-C100	EPC-C300	EPC-X200	EPC-B2000
Model Name		EPC-C100	EPC-C300	EPC-X200	EPC-B2000
Supported Form Factor		3.5" SBC	3.5" MIO-Compact	3.5" SBC	Mini ITX (170 x 170 mm)
Compatible Boards		PCM-9362/9363	MIO-5250/5251/5271	PCM-9375/9376	AIMB-273/274/275/203/285/215/217/224/225/226/227/242/205
Thermal Solution		Fanless	Fanless, Fan-based for MIO-5271	Fanless	2 x fan / 1x fan (7cm/39.45CFM each)
Driver Bay	2.5" HDD and Slim ODD	1x2.5"HDD	1 x 2.5"HDD	1x2.5"HDD	2x2.5"HDD or 1x2.5" HDD + 1xSlim ODD
Expansion	Slot		1 x SD card		Low Profile add-on card
	Socket	1 x miniPCIe	1 x mSATA, 1 x miniPCIe	1 x mSATA, 1 x miniPCIe	Depend on different Mother Board
Front Panel I/O		2xUSB, 2xGbE, 1xVGA, 1xCOM, 1x PS/2	4xUSB, 2xGbE, 1xVGA, 1xHDMI	1xGbE, 1xVGA, 1xCOM, 1x PS/2	Up to (4) USB & (4) COM
Rear Panel I/O		4xUSB, 3xCOM, LINE-IN, LINE-OUT, MIC-IN	4xCOM, GPIO, LINE-IN, LINE-OUT, MIC-IN	4xUSB, 3xCOM, 1xGbE, Audio, GPIO, LINE-IN, LINE-OUT, MIC-IN	Depend on different Mother Board
Miscellaneous	LED Indicators	2 (Power LED, HDD LED)	2 (Power LED, HDD LED)	2 (Power LED, HDD LED)	2 (Power LED, HDD LED)
	Switch	1 (Power Switch)	1 (Power Switch)	1 (Power Switch); 1 (Reset Switch)	1 (Power Switch); 1 (Reset Switch)
Power Requirements	Power Input Type (Inlet)	Single 12V DC, 2-Pole Phoenix DC plug in	Single 12V DC, 2-Pole Phoenix DC plug in	12V & 5V (5V for SBC boot up, 12V for LVDS inverter, FAN and PC/104), 4-Pole Phoenix DC plug in	AC Inlet / DC-in Jack
	Power supply	DC input with power adaptor	DC input with power adaptor	DC input with power adaptor	AC input with 150W ATX power supply / DC input with power adaptor
Environment	Operating Temperature	0 ~ 40 °C (32 ~ 104 °F)	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)	-20 ~ 60 °C (-4 ~ 140 °F)
	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
	Vibration (5 ~ 500Hz)	SSD : 30G, IEC 60068-2-27, half sine, 11 ms duration	SSD : 30G, IEC 60068-2-27, half sine, 11 ms duration	SSD : 30G, IEC 60068-2-27, half sine, 11 ms duration	1 Grms (1xHDD+1xODD); 0.5 Grms (2xHDD)
Shock	SSD : 30G, IEC 60068-2-27, half sine, 11 ms duration	SSD : 30G, IEC 60068-2-27, half sine, 11 ms duration	SSD : 30G, IEC 60068-2-27, half sine, 11 ms duration	10G (with 11 ms duration, half sine wave)	
Certification		CE, FCC Class A	CE, FCC Class A	CE, FCC Class A	CE, FCC Class B
Physical Characteristics	Dimensions (W x H x D)	200 x 60 x 145 mm	188 x 54 x 150 mm	220 x 73 x 150 mm	250 x 98 x 255 mm (9.84" x 3.86" x 10.04")
	Weight	0.95kg	1.38kg	1.43kg	3.8 / 3.1 kg

# Embedded PCs

## EPC-R Series



## EPC-S Series



Model Name		EPC-R4760	EPC-R4680	EPC-R6410	EPC-S101	EPC-S201
Barebone system	Description	ARM based Fan-less Barebone System	ARM based Fan-less Barebone System	ARM based Fan-less Barebone System	Fanless barebone w/ memory adoption	Fanless barebone system
Processor System	Compatible Motherboard	RSB-4760	RSB-4680	RSB-6410	PCM-9310	MIO-2360
	Thermal Solution	Fanless	Fanless	Fanless	Fanless	Fanless
	CPU	Qualcomm Snapdragon™ 410 APQ8016 ARM Cortex-A53 1.2 GHz	Rockchip ARM Cortex-A17 RK3288 Quad core 1.6 GHz	NXP ARM Cortex-A9 i.MX6 1 GHz	Intel Celeron N3160/N3060, Atom x5-E8000	Intel Celeron N3350 1.10GHz
	BIOS	Advantech boot loader	Advantech boot loader	Advantech boot loader	AMI UEFI 64Mb SPI	AMI UEFI 64Mb SPI
Memory	Socket	On-board	On-board	On-board	1 x 204-pin SODIMM	1 x 204-pin SODIMM
	Technology	DDR3L 1066MHz	DDR3L 1333MHz	DDR3L 1333MHz	DDR3L-1600	DDR3L-1866
	Max. Capacity	1GB	2GB	2GB	Default 2GB adopted, up to 8GB	8GB
Graphics	Chipset Integrated	Adreno™ 306 GPU	Mali-T764 GPU processor with OpenGL ES3.0, OpenCL1.1 and DirectX11	2 IPU. OpenGL ES 2.0 for 3D, BitBit for 2D and OpenVG 1.1	Intel Gen8LP	Intel Gen9LP
Storage	2.5" HDD Bay	8GB eMMC NAND Flash for O.S. 4MB SPI NOR Flash for ADV.	8GB eMMC NAND Flash for O.S. and Advantech boot loader	8GB eMMC NAND Flash for O.S. 4MB SPI NOR Flash for ADV.	Room for 1 x 2.5" SSD, max. 9.5mm height	-
	mSATA Slot	-	-	-	Full size SATAIII (opt. mPCIe)	Half size SATAIII
Ethernet	Interface	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps
	Controller	Microchip LAN7500	TI DP83867	NXP i.MX6 integrated RMII	LAN1: Realtek RTL8111E LAN2: Realtek RTL8111E	Intel i210
Audio	Connector	RJ45	RJ45	RJ45	RJ-45 x 2	RJ45
	Codec	PM8916	Realtek ALC5660	SGTL5000	Realtek ALC892	Realtek ALC888
Internal expansion Slot	Mini-PCIe	1 x Full-size	1 x Full-size	1 x Full-size	Full size PCIe Gen2 (opt. 2 slots)	Full size PCIe Gen2
	M.2	1 x M.2 Key E slot	1 x M.2 Key E slot	1 x M.2 Key E slot	1	-
	SIM slot	1	1	1	1	-
	SD slot	1 x SD slot	1 x Micro SD slot	1 x SD slot	-	-
Front Panel	DP++	-	-	-	-	-
	DP/HDMI	1 x HDMI	-	-	HDMI 1.4b up to 2560 x 1600	Opt. HDMI 1.4b up to 3840 x 2160
	VGA	-	-	-	1	1
	DVI	-	-	-	-	-
	COM	1 x 4-wire RS-232/485	2 x 4-wire RS-232, 2 x 8-wire RS-232	2 x 4-wire RS-232 1 x debug port	-	1 (RS-232/422/485)
	LAN	1	-	-	2	1
	USB	2 USB 2.0	3 USB2.0	-	4 (USB2.0 x 2, USB3.0 x 2)	2 x USB3.0
	Audio Jack	-	-	-	-	Line-in/Line-out
	Antenna (optional)	2 x antenna hole	3 x antenna hole	2 x antenna hole	up to 1	up to 2
	Rear Panel/ Side Panel	DP++	-	-	-	-
DP/HDMI		-	1	1	-	-
VGA		-	1	1	-	-
DVI		-	-	-	-	-
COM		-	1 x 4-wire RS232/RS485 1 x 2-wire RS232/Debug port	1 x 4-wire RS232/RS485 1 x 4-wire RS232	4 (2 x RS-232, 2 x RS-232/422/485)	1 (RS-232/422/485)
LAN		-	1	1	-	-
USB		2 USB 2.0	2 x USB2.0 Host 1 x USB2.0 OTG	6 x USB2.0 Host	2 (USB2.0)	-
Audio Jack		-	1 x Line out 1 x Mic in	1 x Line out 1 x Mic in	Line-in, Line-out, Mic-in	-
GPIO		-	8 x GPIO by DB9 CONN	-	8-bit	8-bit
Antenna (optional)		3 x antenna hole	2 x antenna hole	2 x antenna hole	up to 1	-
Miscellaneous	LED Indicators	2 (Power LED, WLAN LED)	2 (Power LED, WLAN LED)	1 Green LED for system power	2 (Power LED, HDD LED)	1 (Power LED)
	Switch	NA	1 (Power Switch); 1 (Reset Switch)	1 x Reset button 1 x Power button	1 (Power Switch)	1 (Power Switch)
	Circular Cutouts	-	-	-	1	-
Mounting		Wall mount	Wall mount	Wall mount	Desk mount, VESA mount, DIN rail	Desk mount, Wall mount, DIN rail
Power Requirements	Power Voltage	9-36V	12V	12V	12V DC-in	12V DC-in
	Power Input Type (Inlet)	DC-in	DC-in	DC-in	Phoenix DC plug-in	Phoenix DC plug-in
	Consumption	TBD	TBD	9W (heavy loading burning)	4.5W (idle with Celeron N3060)	TBD
Environment	Operating Temperature	0 ~ 40 °C	0 ~ 50 °C	0 ~ 55 °C	0 ~ 50 °C (32 ~ 122 °F)	0 ~ 50 °C (32 ~ 122 °F)
	Non-operating Temperature	-40 ~ 85 °C	-40 ~ 85 °C	-40 ~ 85 °C	-40 ~ 85 °C (-40 ~ 185 °F)	-40 ~ 85 °C (-40 ~ 185 °F)
	Humidity	5 ~ 95% Relative Humidity, non-condensing	5 ~ 95% Relative Humidity, non-condensing	5 ~ 95% Relative Humidity, non-condensing	Operating: 40 °C @ 95% RH, non-condensing Storage: 60 °C @ 95% RH, non-condensing	Operating: 40 °C @ 95% RH, non-condensing Storage: 60 °C @ 95% RH, non-condensing
	Vibration (5 ~ 500Hz)	IEC60068-2-64 random 2.0Grms IEC60068-2-6 sinusoidal 2.0G	IEC60068-2-64 random 2.0Grms IEC60068-2-6 sinusoidal 2.0G	IEC60068-2-64 random 2.0Grms IEC60068-2-6 sinusoidal 2.0G	IEC60068-2-64 random 3.0Grms IEC60068-2-6 sinusoidal 2.0G	IEC60068-2-64 random 3.0Grms IEC60068-2-6 sinusoidal 2.0G
	Shock	IEC60068-2-27 half-sine 10G/11ms	IEC60068-2-27 half-sine 10G/11ms	IEC60068-2-27 half-sine 10G/11ms	IEC60068-2-27 half-sine 30G/11ms	IEC60068-2-27 half-sine 30G/11ms
Certification		CE/FCC Class B CB/UL/CCC/BSMI	CE/FCC Class B, CCC	CE/FCC Class B CCC/BSMI	CE/FCC Class B CB/UL/CCC/BSMI	CE/FCC Class B CB/UL/CCC/BSMI/KCC
Physical Characteristics	Dimensions (W x H x D)	188 x 150 x 39 mm	190 x 150 x 43 mm	200 x 230 x 50 mm	188 x 39 x 150 mm	134 x 100 x 44mm
	Weight	1.2KG	TBD	2.26KG	0.95kg	TBD

## EPC-T Series



Model Name		EPC-T1215	EPC-T1217	EPC-T1227	EPC-T1231	EPC-T1232
Barebone system	Description	Fan-base / Fanless barebone, w/ adapter, w/o HDD, memory	Fanless barebone, w/ adapter, w/o SSD, memory	Fan-base barebone, w/ adapter, w/o HDD, memory	Fan-based / Fanless barebone, w/ adapter, w/o HDD, memory	Fanless barebone, w/ adapter, w/o SSD, memory
Processor System	Compatible Motherboard	AIMB-215D-S6B1E	AIMB-217D-S6A1E	AIMB-227MG2-01A1E	AIMB-231G2-U5A1E AIMB-231G2-U3A1E	AIMB-T12325W-00Y10
	Thermal Solution	1x chassis fan (4cm/23.8CFM)/ Fanless	Fanless	1x chassis fan (4cm/23.8CFM)/ Fanless	1x chassis fan (4cm/23.8CFM)/ Fanless	Fanless (0.7 m/s air flow)
	CPU	Intel® Bay Trail Quad core Celeron™ J1900 (on board)	Intel Pentium N4200 (on board)	AMD R-sweies Dual Core RX-216GD (onboard)	Intel Core i3-5010U / i5-5350U (on board)	Intel Core™ i5-6300U (on board)
	BIOS	AMI 16 Mbit SPI	AMI 128 Mbit SPI	AMI 16 Mbit SPI	AMI 128 Mbit SPI	AMI uEFI 16 Mbit
Memory	Socket	2 x 204-pin DDR3 SODIMM (Non-ECC)	2 x 204-pin SO-DIMM (Non-ECC)	2 x 260-pin DDR4 SO-DIMM (Non-ECC)	2 x 204-pin DDR3 SODIMM (Non-ECC)	1 x 260-pin DDR4 SO-DIMM (Non-ECC)
	Technology	DDR3L 1066/1333 MHz SDRAM	Dual channel DDR3L 1866 MHz SDRAM	Dual Channel DDR4 2133 MHz SDRAM	DDR3L 1600 MHz SDRAM	DDR4 2133 MHz SDRAM
	Max. Capacity	8 GB/up to 4 GB per SODIMM	8 GB/8 GB per SO-DIMM	16 GB/8 GB per SO-DIMM	16 GB/up to 8 GB per SODIMM	8 GB per SO-DIMM
Graphics	Chipset Integrated	Integrated Intel HD Graphics	Intel Gen 9 Graphics Engines and media encode/decode engine	AMD Radeon 3rd Generation GCN	Intel® HD Graphics 6000	Intel® HD Graphics, Supports OpenGL 5.0, DirectX 1.2, OpenCL 2.1
Storage	2.5" HDD Bay	1 (supports 2.5" HDD/SSD, max 9.5 mm height)	1 (supports 2.5" SSD, max 9.5 mm height)	1 (supports 2.5" HDD/SSD, max 9.5 mm height)	1 (Fan-based supports 2.5" HDD/ Fanless supports 2.5" SSD, max 9.5 mm height)	1 (supports 2.5" 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, F/S x 1 supports mSATA with SIM card holder	1 (share w/ full size Mini-PCIe slot)	1 (share w/ full size Mini-PCIe slot)
Ethernet	Interface	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: Realtek 8111G LAN2: Realtek 8111G	LAN1: Realtek RTL8111G LAN2: Realtek RTL8111G	LAN1: Intel PHY i218-LM LAN2: Intel i210	LAN1: Intel Clarkville I219LM GbE PHY LAN2: Intel Springville I211 GbE
	Connector	2 (RJ-45)	2 (RJ-45)	2 (RJ-45)	2 (RJ-45)	2 (RJ-45)
Audio	Codec	Realtek ALC892, High Definition Audio (HD)	Realtek ALC888S, High Definition Audio (HD)	Realtek ALC892, High Definition Audio (HD)	Realtek ALC892, High Definition Audio (HD)	Realtek ALC892, High Definition Audio (HD)
Internal expansion Slot	Mini-PCIe	1+1 (Full-size, Half-size)	1 (Full-size)	1 (Full-size)	1+1 (Full-size, Half-size)	1+1 (Full-size, SIM card holder)
	M.2	-	1 x M.2 Key E slot (2230)	1 x M.2 Key E slot (2230)	-	-
	SIM slot	1	1	1	1	1
	SD slot	-	-	-	-	-
Front Panel	DP++	-	-	-	-	-
	DP/HDMI	-	-	-	-	-
	VGA	-	-	-	-	-
	DVI	-	-	-	-	-
	COM	5 (RS-232)	5 (4 x RS-232, 1 x RS232/422/485, 1 support 5V/12V)	5 (4 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)
	Lan	-	-	-	-	-
	USB	4 (USB2.0)	4 (USB2.0; optional)	2 (USB2.0)	2 (USB2.0)	2 (USB2.0)
	Audio Jack	2 (Line-Out, Mic-In)	2 (Line-Out, Mic-In)	2 (Line-Out, Mic-In)	2 (Line-Out, Mic-In)	2 (Line-Out, Mic-In)
	Antenna (optional)	up to 2	up to 2	up to 2	up to 2	up to 2
	DP++	1	-	1	1	1
Rear Panel	DP/HDMI	-	1/1	1 (HDMI 1.4)	1	1 (HDMI)
	VGA	1	1	-	-	-
	DVI	-	-	1 (DVI-D)	-	-
	COM	1 (RS-232)	1 (RS232)	1	-	-
	Lan	2 (RJ-45)	2 (RJ-45)	2 (RJ-45)	2 (RJ-45)	2 (RJ-45)
	USB	1 (USB3.0); 3 (USB2.0)	4 (USB3.0)	2 (USB3.0); 2 (USB2.0)	4 (USB3.0)	4 (USB3.0)
	Audio Jack	1 (Line-Out)	1 (line out)	1 (Line-Out)	2 (Line-Out, Mic-in)	2 (Line-Out, Mic-in)
	GPIO	8 bit	8 bit	8 bit	8 bit	8 bit
	Antenna (optional)	up to 2	up to 2	up to 2	up to 2	up to 2
	LED Indicators	2 (Power LED, HDD LED)	2 (Power LED, HDD LED)	2 (Power LED, HDD LED)	2 (Power LED, HDD LED)	2 (Power LED, HDD LED)
Miscellaneous	Switch	1 (Power Switch); 1 (Reset Switch)	1 (Power Switch); 1 (Reset Switch)	1 (Power Switch); 1 (Reset Switch)	1 (Power Switch); 1 (Reset Switch)	1 (Power Switch); 1 (Reset Switch)
	Circular Cutouts	-	-	-	-	-
Mounting		Wall mount, VESA mount, Rack mount, DIN rail	Wall mount, VESA mount, Rack mount, DIN rail	Wall mount, VESA mount, Rack mount, DIN rail	Wall mount, VESA mount, Rack mount, DIN rail	Wall mount, VESA mount, Rack mount, DIN rail
Power Requirements	Power Voltage	12V DC-in	12V DC-in	12V DC-in	12V DC-in	12V DC-in
	Power Input Type (Inlet)	2.5Ø DC jack	2.5Ø DC jack	2.5Ø DC jack	2.5Ø DC jack	2.5Ø DC jack
Environment	Consumption	10.17W (idle with Intel Celeron J1900)	TBD	TBD	14.4W (idle with Intel ULT i5 Processor) 13.4W (idle with Intel ULT i3 Processor)	TBD
	Operating Temperature	Fan-base: 0 ~ 50 °C (32 ~ 122 °F) Fanless: 0 ~ 40 °C (32 ~ 104 °F)	Fanless: 0~45 °C	0 ~ 50 °C (32 ~ 122 °F)	Fan-base: 0 ~ 50 °C (32 ~ 122 °F) Fanless: 0 ~ 45 °C (32 ~ 104 °F)	0 ~ 45 °C (32 ~ 113 °F)
	Non-operating Temperature	-40 ~ 85 °C (-40 ~ 185 °F)	-40 ~ 85 °C (-40 ~ 185 °F)	-20 ~ 60 °C (-4 ~ 140 °F)	-40 ~ 85 °C (-40 ~ 185 °F)	-20 ~ 60 °C (-4 ~ 140 °F)
	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	10~95% @ 40°C, non-condensing
	Vibration (5 ~ 500Hz)	1 Grms (HDD x 1); 3 Grms (SSD x 1)	3 Grms (SSD x 1)	1 Grms (HDD x 1); 3 Grms (SSD x 1)	1 Grms (HDD x 1); 3 Grms (SSD x 1)	3 Grms (SSD x 1)
Certification	Shock	-	-	-	-	-
	Physical Characteristics	Dimensions (W x H x D)	250 x 43 x 210 mm (9.84" x 1.69" x 8.27")	250 x 43 x 210 mm (9.84" x 1.69" x 8.27")	250 x 43 x 210 mm (9.84" x 1.69" x 8.27")	250 x 43 x 210 mm (9.84" x 1.69" x 8.27")
	Weight	3.1kg	3.1kg	3.1kg	3.1kg	3.1kg

# Embedded PCs

## EPC-B Series



Model Name		EPC-T2285	EPC-T3285	EPC-B2203	EPC-B2205	EPC-B2242	EPC-B2275
Barebone system	Description	Fan-base barebone, w/ adapter, w/o HDD, memory	Fan-base barebone, w/o HDD, memory	Fan-base barebone, w/ 150W PSU, w/o HDD, memory	Fan-base barebone, w/ 150W PSU, w/o HDD, memory	Fan-base barebone, w/ 150W PSU, w/o HDD, memory	Fan-base barebone, w/ 150W PSU, w/o HDD, memory
Processor System	Compatible Motherboard	AIMB-285G2-00A1E	AIMB-285G2-00A1E	AIMB-203G2-00A1E	AIMB-205G2-00A1E	AIMB-242G02-H7A1E	AIMB-275G2-00A1E
	Thermal Solution	2x chassis fan (4cm/23.8CFM)	2x chassis fan (4cm/23.8CFM)	2xchassis fan (7cm/28CFM)	2xchassis fan (7cm/28CFM)	2xchassis fan (7cm/28CFM)	2xchassis fan (7cm/28CFM)
	CPU	Intel® 6th Gen Core™ i processor (LGA1151)	Intel® 6th Gen Core™ i processor (LGA1151)	Intel® 4th Gen Core™ i processor (LGA1150)	Intel® 7th Gen Core™ & 6th Gen Core™ i processor / Pentium / Celeron (LGA1151) with Intel H110 chipset	Intel® Xeon 6th Gen Core™ i mobile processor (BGA) with Intel QM170 chipset	Intel® 7th & 6th Gen Core™ i processor (LGA1151)
Memory	BIOS	AMI EFI 128 Mbit, SPI	AMI EFI 128 Mbit SPI	AMI EFI 64 Mbit SPI	AMI EFI 128 Mbit SPI	AMI EFI 128 Mbit SPI	AMI EFI 128 Mbit, SPI
	Socket	260 PIN DDR4 SO-DIMM (Non-ECC)	2 x 260 PIN DDR4 SO-DIMM	2 x 204-pin DDR3 SO-DIMM (Non-ECC)	2 x 260-pin DDR4 SO-DIMM	2 x 260-pin DDR4 SO-DIMM	2 x 260-pin DDR4 SO-DIMM (Non-ECC)
	Technology	Dual Channel DDR4 2133 MHz SDRAM	Dual Channel DDR4 2133 MHz SDRAM	Dual Channel DDR3/DDR3L @1.5V 1333/1600 MHz SDRAM	Dual channel DDR4 2400/2133 MHz non ECC SDRAM (Only supports DDR4 2133 MHz SDRAM for SKL-S CPU)	Dual Channel DDR4 2133 MHz SDRAM	Dual Channel DDR4 2133 MHz SDRAM
Graphics	Max. Capacity	32 GB/up to 16 GB per SODIMM	32GB (up to 16GB per SO-DIMM)	16 GB/up to 8 GB per SODIMM	Up to 32GB (16GB per SO-DIMM)	32GB (up to 16GB per SO-DIMM)	32 GB/up to 16 GB per SODIMM
	Chipset Integrated	Intel® HD Graphics, Supports OpenGL 5.x, DirectX12, OpenGL 2.X	Intel® HD Graphics, Supports OpenGL 5.x, DirectX12, OpenGL 2.X	Integrated Gfx Gen. 7.5, Supports DirectX11.1, OpenGL 4.0 and OpenGL 1.2	Integrated Intel® HD Graphics 530	Intel® HD Graphics, Supports OpenGL 5.x, DirectX12, OpenGL 2.X	Intel® HD Graphics, Supports OpenGL 5.x, DirectX12, OpenGL 2.X
Storage	2.5" HDD Bay	1 (supports 2.5" HDD/SSD, max 9.5 mm height)	2 (supports 2 x 2.5" HDD/SSD, or 1 3.5" HDD)	2 (supports 2 x 2.5" HDD/SSD, or 1 slim ODD & 1 x 2.5" HDD/SSD)	2 (supports 2 x 2.5" HDD/SSD, or 1 slim ODD & 1 x 2.5" HDD/SSD)	2 (supports 2 x 2.5" HDD/SSD, or 1 slim ODD & 1 x 2.5" HDD/SSD)	2 (supports 2 x 2.5" HDD/SSD, or 1 slim ODD & 1 x 2.5" HDD/SSD)
	mSATA Slot	1+1 (Full-size, Half-size)	1 (share w/ full size Mini-PCIe slot)	1 (Full-size, Half size)	1 (share w/ full size Mini-PCIe slot)	1 (share w/ full size Mini-PCIe slot)	1 (Full-size, Half size)
Ethernet	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 RTL8111G LAN2: Realtek RTL8111G	LAN1: Realtek RTL8111G LAN2: Realtek RTL8111G	LAN1: Realtek 8111E LAN2: Realtek 8111E	LAN1: Realtek RTL8111G LAN2: Realtek RTL8111G	LAN1: Intel I219LM LAN2: Intel I211AT	LAN1: Intel I219LM LAN2: Intel I211AT
	Connector	2 (RJ-45)	2 (RJ-45)	2 (RJ-45)	2 (RJ-45)	2 (RJ-45)	2 (RJ-45)
Audio	Codec	Realtek ALC892, High Definition Audio (HD)	Realtek ALC892, High Definition Audio (HD)	Realtek ALC892, High Definition Audio (HD)	Realtek ALC892, High Definition Audio (HD)	Realtek ALC892, High Definition Audio (HD)	Realtek ALC892, High Definition Audio (HD)
Internal expansion Slot	Mini-PCIe	1+1 (Full-size, Half-size)	1+1 (Full-size, Half-size) 1 PCIe slot (Full height)	2 (1 x F/S; 1 x H/S) DP++: 0	1 (Full-size)	1+1 (Full-size, Half-size)	1+1 (Full-size, Half-size)
	M.2	-	-	-	1 x M.2 Key B slot (2242)	1 x M.2 Key B slot	1 x M.2 Key B slot
	SIM slot	1	1	1	-	-	-
Front Panel	SD slot	-	-	-	-	-	-
	DP++	-	-	-	-	-	-
	DP/HDMI	-	-	-	-	-	-
	VGA	-	-	-	-	-	-
	DVI	-	-	-	-	-	-
	COM	2 (1x RS-232/422/485, 1 x RS-232/422/485 with 5V/12V)	2 (1x RS-232/422/485, 1 x RS-232/422/485 with 5V/12V)	4 (RS232; optional)	4 (Optional)	1 (RS-232/422/485; Option)	1 (RS232/422/485)
	LAN	-	-	-	-	-	-
	USB	4 (USB2.0)	4 (USB2.0)	4 (USB2.0; optional)	2 (USB2.0; Optional)	-	4 (USB2.0; optional)
	Audio Jack	2 (Line-Out, Mic-In)	2 (Line-Out, Mic-In)	-	-	-	-
	Antenna (optional)	up to 2	up to 2	up to 2	up to 2	up to 2	up to 2
Rear Panel	DP++	1	1	-	-	-	-
	DP/HDMI	1 (HDMI 1.4)	1 (HDMI 1.4)	1/0	1/0	2 (DP1.2)/1 (HDMI 2.0)	1/1
	VGA	-	-	1	1	-	1
	DVI	-	-	1	1 (DVI-D)	-	-
	COM	-	-	1 (RS232, supports 5V/12V)	-	1 (RS-232, supports 5V/12V)	1 (RS232, supports 5V/12V)
	LAN	2 (RJ-45)	2 (RJ-45)	2(RJ-45)	2 (RJ-45)	2 (RJ-45)	2(RJ-45)
	USB	4 (USB3.0)	4 (USB3.0)	4(USB3.0)	4 (USB3.0); 4 (USB2.0)	8 (USB3.0)	4(USB3.0)
	Audio Jack	2 (Line-Out, Mic-in)	2 (Line-Out, Mic-in)	3 (Mic in, Line-out, Line in)	3 (line-in, line-out, mic-in)	3 (Mic-in, Line-out, Line-in)	3 (Mic in, Line out, Line in)
	GPIO	8 bit	-	8 bit	8 bit	8 bit	8 bit
	Antenna (optional)	up to 2	up to 2	up to 2	-	-	-
Miscellaneous	LED Indicators	2 (Power LED, HDD LED)	2 (Power LED, HDD LED)	2 (Power LED, HDD LED)	2 (Power LED, HDD LED)	2 (Power LED, HDD LED)	2 (Power LED, HDD LED)
	Switch	1 (Power Switch); 1 (Reset Switch)	1 (Power Switch); 1 (Reset Switch)	1 (Power Switch); 1 (Reset Switch)	1 (Power Switch); 1 (Reset Switch)	1 (Power Switch); 1 (Reset Switch)	1 (Power Switch); 1 (Reset Switch)
	Circular Cutouts	1(Reserved for LVDS cable)	-	-	-	-	-
Mounting	Wall mount, VESA mount, Rack mount, DIN rail	Wall mount, Rack mount	Wall mount	Wall mount	Wall mount	Wall mount	Wall mount
Power Requirements	Power Voltage	12V DC-in	9-36V DC input (Phoenix type conn.)	Power Voltage: 100V-240V AC input	Power Voltage: 100V-240V AC input	Power Voltage: 100V-240V AC input	Power Voltage: 100V-240V AC input
	Power Input Type (Inlet)	2.5Ø DC jack	2.5Ø DC jack	Power Code input	Power Code input	Power Code input	Power Code input
	Consumption	TBD	TBD	TBD	TBD	TBD	TBD
Environment	Operating Temperature	HDD: 0 ~ 45 °C (32 ~ 113 °F) SSD: 0 ~ 50 °C (32 ~ 122 °F)	0 ~ 40 °C (32 ~ 104 °F)	0 ~ 40 °C	0 ~ 40 °C (32 ~ 104 °F)	0 ~ 40 °C (32 ~ 104 °F)	0 ~ 40 °C
	Non-operating Temperature	-40 ~ 85 °C (-40 ~ 185 °F)	-20 ~ 60 °C (-4 ~ 140 °F)	-29 ~ 60 °C	-20 ~ 60 °C (-4 ~ 140 °F)	-20 ~ 60 °C (-4 ~ 140 °F)	-29 ~ 60 °C
	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	10-95% @ 40°C, non-condensing	10-95% @ 40°C, non-condensing
	Vibration (5 ~ 500Hz)	1 Grms (HDD x 1); 3 Grms (SSD x 1)	1 Grms (2.5" HDD x 1); 0.5 Grms (HDD x 2, 3.5" HDD x 1)	1 Grms (HDD*1+ODD*1); 0.5 Grms (HDD*2)	1 Grms (HDD*1+ODD*1); 0.5 Grms (HDD*2)	1 Grms (HDD*1+ODD*1); 0.5 Grms (HDD*2)	1 Grms (HDD*1+ODD*1); 0.5 Grms (HDD*2)
	Shock	-	-	-	-	-	-
Certification	CE/FCC/CCC	CE, FCC	CE/FCC/CCC	CE, FCC	CE, FCC	CE/FCC/CCC	
Physical Characteristics	Dimensions (W x H x D)	250 x 44.2 x 225 mm (9.84" x 1.74" x 8.85")	330 x 44 x 270 mm (13" x 1.73" x 10.62")	250 x 98 x 255 mm (9.84" x 3.86" x 10.04")	250 x 98 x 255 mm (9.84" x 3.86" x 10.04")	250 x 98 x 255 mm (9.84" x 3.86" x 10.04")	250 x 98 x 255 mm (9.84" x 3.86" x 10.04")
	Weight	3.68kg	3.8kg	3.8kg	3.8kg	3.8kg	3.8kg

# Digital Signage Solutions

## Entry Level Series

## Ultra Slim Series



Model Name		DS-100	DS-370	DS-080	DS-081	DS-082
Processor System	CPU	Dual ARM Cortex-A72 + Quad ARM Cortex-A53	Intel Celeron J1900	Intel Core i5-5350U Intel Celeron 3765U	Intel Core i5-6300U Intel Core i5-6200U Intel Core i3-6100U	Intel Core i7-7600U Intel Core i5-7300U Intel Core i5-7200U Intel Core i3-7100U
	BIOS	-	AMI uEFI 64 Mbit	AMI uEFI 128 Mbit	AMI uEFI 128 Mbit	AMI uEFI 128Mbit
	Chipset	-	Integrated in CPU	Integrated in CPU	Integrated in CPU	Integrated in CPU
Memory	Technology	LP-DDR3L-1066MHz	DDR3L 1333MHz	DDR3L 1600MHz	DDR4 2133MHz	DDR4 2133MHz
	Max. Capacity	2GB on board	8GB (4GB per SODIMM)	16GB (8GB per SODIMM)	32GB (16GB per SO-DIMM)	32GB (16GB per SO-DIMM)
	Socket	-	2 x 204-pin SODIMM	2 x 204-pin SODIMM	2 x 260-pin SODIMM	2 x 260-pin SODIMM
Display	Controller	-	CPU Integrated	CPU Integrated	CPU Integrated	CPU Integrated
	Graphic Engine	Mali-T860MP4	Intel HD Graphics	Intel HD 6000 (Core i5-5350U) Intel HD Graphics (Celeron 3765U)	Intel HD Graphics 520	Intel HD Graphics 620
	Graphic Memory	-	Shared system memory	Shared system memory	Shared system memory	Shared system memory
	Multiple Display	Dual	Dual	Dual	Dual	Dual
	Interface	HDMI 2.0 x1, HDMI 1.4 x1	HDMI x 1, DP+ + x1, VGA x1	HDMI 1.4 x 2	HDMI 1.4 x 2	HDMI 2.0 x 1; HDMI 1.4 x 1
	Max. Resolution	4096 x 2304 @ 60Hz	2048 x 1280 @ 60Hz	3840 x 2160 @ 30Hz	4096 x 2304 @ 24Hz	4096 x 2304 @ 60Hz
Expansion Interface	M.2	1	-	-	-	-
	Mini PCIe	-	2	1	1	1
	PCIe x16	-	-	-	-	-
Ethernet	Connector	RJ-45 x 2	RJ-45 x 2	RJ-45 x 2	RJ-45 x 2	RJ-45 x 2
Audio	Connector	1 (Line-out/Mic-in)	2 (SPDIF/ Line-out, Mic-in), supports Jack Sense	1 (SPDIF/ Line-out/ Mic-in), supports Jack Sense	1 (SPDIF/ Line-out/ Mic-in), supports Jack Sense	1 (SPDIF/ Line-out/ Mic-in), supports Jack Sense
WatchDog Timer		Yes	Yes	Yes	Yes	Yes
Storage	SATA	1x 16GB eMMC on board; 1x Micro SD card slot (for expansion)	1 x 2.5" SATA II HDD/SSD;	1 x 2.5" SATA III HDD/SSD	1 x 2.5" SATA III HDD/SSD	1 x 2.5" SATA III HDD/SSD
	mSATA	-	Yes, colay Mini PCIe	Yes, colay Mini PCIe	Yes, colay Mini PCIe	Yes, colay Mini PCIe
I/O	USB3.0	1	1	4	4	4
	USB2.0	1	3	-	-	-
	COM Port	1 (RS-232)	2 (RS-232)	1 (RS-232/422/485) or 2 (RS-422/485) with extension cable	1 x RS-232	1 (RS-232/422/485) or 2 (RS-422/485) with extension cable
Power	Power Supply	DC 12V input	DC 19V input	DC 19V input	DC 19V input	DC 19V input
Environment	Operational Temperature	-10 ~ 60°C (14 ~ 140°F) with 0.7m/s air flow	0 ~ 40°C (32 ~ 104 °F) (w / HDD) 0 ~ 50°C (32 ~ 122 °F) (w/SSD), with 0.7m/s air flow	0 ~ 40°C (32 ~ 104°F) (w / HDD) with 0.7m/s air flow	0 ~ 40°C (32 ~ 104°F) (w / HDD) with 0.7m/s air flow	0 ~ 40°C (32 ~ 104°F) (w / HDD) with 0.7m/s air flow
Physical Characteristics	Dimensions (L x W x H)	TBD	204 x 118.2 x 44.2 mm	180 x 190 x 19 mm	180 x 190 x 19 mm	180 x 190 x 19 mm
Operating System		Android 7.1, Linux Kernel 4.4	Microsoft Windows, Linux (Option)	Microsoft Windows, Linux (Option)	Microsoft Windows, Linux (Option)	Microsoft Windows, Linux (Option)
Certifications	EMC	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, BSMI	CE, FCC Class B, CCC, BSMI
	Safety	UL, CB, CCC, BSMI	UL, CB, CCC, BSMI	UL, CB, CCC, BSMI	UL, CB, CCC, BSMI	UL, CB, CCC, BSMI

## WISE-PaaS/SignageCMS

### Multimedia Management Software

Media Type	Image, Video, Scrolling Text, Bulletin Board, Time, Flash, PowerPoint, Webpage
Program Management	Customize Program Layouts, Program Preview, Urgent Cast
Output	HD/Full HD Output, Portrait/Landscape Display, Multi-screen Output, Audio Output
Schedule Management	Daily/Weekly/Monthly Schedule, Appointment Dispatch, Dispatch Records
Remote Player Management	Unlimited Multipoint Dispatching, Player Group Setting Remote Power on/off (Intel AMT), Remote Software Upgrade, Auto Shutdown Setting, Hardware Monitoring, Software Monitoring, Screenshot Real-time Monitoring
System Management	Authorization Setting, Simultaneous Editing, System backup/ Recovery, Resume Download, Differential Download, App Monitoring
Operating System	Server: Windows 7 or above Windows Server 2008 or above Client: Windows 7 (Embedded/POSReady)



# Digital Signage Solutions

## Multi-Display Series

## OPS Series



Model Name		DS-570	DS-780	DS-980	DS-270	DS-280
Processor System	CPU	Intel Celeron J1900	Intel Core i7-6600U Intel Core i5-6300U Intel Core i3-6100U Intel Celeron-3955U	Intel Core i7-6700TE Intel Core i5-6500TE Intel Core i3-6100TE	Intel Celeron J1900	Intel Core i7-6822EQ Intel Core i5-7442EQ Intel Core i5-6442EQ Intel Core i3-7102EQ Intel Core i3-6102EQ
	BIOS	AMI uEFI 64 Mbit	AMI uEFI 128 Mbit	AMI uEFI 128 Mbit	AMI uEFI 64 Mbit	AMI uEFI 128 Mbit
	Chipset	Integrated in CPU	Integrated in CPU	Intel Q170	Integrated in CPU	Intel QM170
Memory	Technology	DDR3L 1333MHz	DDR4 2133MHz	DDR4 2133MHz	DDR3L 1333MHz	DDR4 2133MHz
	Max. Capacity	8GB (4GB per SODIMM)	32GB (16GB per SODIMM)	32GB (16GB per SODIMM)	8GB (4GB per SODIMM)	32GB (16GB per SODIMM)
	Socket	2 x 204-pin SODIMM	2 x 260-pin SODIMM	2 x 260-pin SODIMM	2 x 204-pin SODIMM	2 x 260-pin SODIMM
Display	Controller	NVIDIA GeForce GT730M	CPU Integrated	CPU Integrated	NVIDIA GeForce GT730M	CPU Integrated
	Graphic Engine	-	Intel HD Graphics 520/510	Intel HD Graphics 530	-	Intel HD Graphics 630/530
	Graphic Memory	1 GB (On board memory)	Shared System Memory	Shared system memory	1GB (On board memory)	Shared system memory
	Multiple Display	Four	Triple	Triple+ (up to six with graphic card)	Dual	Triple
	Interface	HDMI 1.4 x 2, DP+++ x 1, VGA x 1	HDMI 2.0 x 1, HDMI 1.4 x 2	HDMI 2.0 x 1, HDMI 1.4 x 2	JAE TX25 80-pin x 1, HDMI 1.4 x1	JAE TX25 80-pin x 1, HDMI 2.0 x1, DP x1
	Max. Resolution	3840 x 2160 @ 30Hz	4096 x 2160 @ 60Hz	4096 x 2160 @ 60Hz	3840 x 2160 @ 30Hz	4096 x 2304 @ 60Hz
Expansion Interface	M.2	-	1 (2230/1630 E-Key)	1 (2230 E key)	-	-
	Mini PCIe	2	1	1	1	1
	PCIe x16	-	-	1	-	-
Ethernet	Connector	RJ-45 x 2	RJ-45 x 2	RJ-45 x 2	RJ-45 x 1	RJ-45 x 2
Audio	Connector	2 (SPDIF/ Line-out, Mic-in), supports Jack Sense	1(SPDIF/ Line-out/ Mic-in), supports Jack Sense	2 (SPDIF/ Line-out, Mic-in), supports Jack Sense	1 (Line-out), supports Jack Sense	1 (Line-out), supports Jack Sense
WatchDog Timer		Yes	Yes	Yes	Yes	Yes
Storage	SATA	1 x 2.5" SATA II HDD/ SSD	1 x 2.5" SATA III HDD/SSD	1 x 2.5" SATA III HDD/ SSD (top); 1 x 2.5" SATA III SSD (bottom), supports RAID 0/1	1 x 2.5" SATAII HDD/SSD	1 x 2.5" SATA III HDD/ SSD
	mSATA	Yes, colay Mini PCIe	Yes, colay Mini PCIe	Yes, colay Mini PCIe	Yes, colay Mini PCIe	Yes, colay Mini PCIe
I/O	USB3.0	1	4	4	2	3
	USB2.0	3	-	2	-	-
	COM Port	2 (RS-232) or 1 (RS-232/422/485) + 1 (RS-232) (by option)	1 (RS-232)	1 (RS-232)/ 2 (RS-485 & 422 with extension cable)	-	-
Power	Power Supply	DC 19V input	DC 19V input	DC 12V input	DC 12V-24V input (via OPS connector)	DC 12V-19V input (via OPS connector)
Environment	Operational Temperature	0 ~ 40°C (32 ~ 104 °F) (w/ HDD) 0 ~ 65°C (32 ~ 149°F) (w/ SSD) with 0.7m/s air flow	0 ~ 40°C (32 ~ 104 °F) with 0.7m/s air flow	0 ~ 40°C (32 ~ 104°F)	0 ~ 40°C (32~104°F) (w/ HDD) ; 0 ~ 50°C (32~122 ° F) (w/ SSD)	0 ~ 40°C (32 ~104°F) (w/ HDD); 0 ~ 50°C (32 ~122°F) (w/ SSD)
Physical Characteristics	Dimensions (L x W x H)	220 x 150 x 44.2 mm	235 x 175 x 35 mm	267.6 x 205 x 88 mm	200 x 119 x 30 mm	200 x 119 x 30 mm
Operating System		Microsoft Windows, Linux (Option)	Microsoft Windows, Linux (Option)	Microsoft Windows, Linux (Option)	Microsoft Windows, Linux (Option)	Microsoft Windows, Linux (Option)
Certifications	EMC	CE, FCC Class B, CCC, BSMI	CE, FCC Class B, CCC, BSMI	CE, FCC Class B, CCC, BSMI	CE, FCC Class B, CCC, BSMI	CE, FCC Class B, CCC, BSMI
	Safety	UL, CB, CCC, BSMI, LVD	UL, CB, CCC, BSMI	UL, CB, CCC, BSMI	UL, CB, CCC	UL, CB, CCC

## WISE-PaaS/RMM

### Device Monitoring and Management

Device Management	IPC Device Management, Group View, Map View, HW Status Monitoring & Rule Setting, SW Process Monitoring & Rule Setting, Data Auto Report, Dashboard
Remote KVM	Remote KVM, Terminal Mode, Intel AMT Integration , Screenshot
Power Management	Remote On/Off, Hibernate, Power On/Off Scheduling
System Protection	McAfee White List Protection
System Recovery	Acronis Backup/Recovery, Backup/Recovery Scheduling, Hot-Key Recovery
Notification Center	Event Log, Email Notification, SMS Notification
Management Interface	Account/Role management, Mobile Mode, Web-Based Console
Others	RESTful API Web Service

# In-vehicle & Railway Systems

**NEW**

**NEW**

**NEW**



Application		Outdoor NVR		In-Vehicle		Rolling Stock		
Model Name		ARK-2121S	ARK-2151S	ARK-2121V	ARK-2151V	ARK-2250V	ARK-2231R	ARK-2250R
Processor System	CPU	Intel Atom E3845	4th Gen Intel® Core i5 4300U	Intel Atom E3825/E3845	4th Gen Intel Celeron 2980U/Core i5-4300U	6th Gen Intel Core i5-6442EQ/i7-6822EQ	Intel Atom E3845	6th Gen Intel Core i5-6442EQ/i7-6822EQ
	Frequency	1.91 GHz	1.9 GHz	1.33 GHz / 1.91 GHz	1.6 GHz / 1.9 GHz	1.9GHz/2.0GHz	1.91GHz	1.9GHz/2.0GHz
	Core Number	4	2	2/4	2	4	4	4
	BIOS	AMI EFI 64 Mbit	AMI EFI 128 Mbit	AMI EFI 64 Mbit	AMI EFI 128 Mbit	AMI UEFI 128Mbit	AMI EFI 64bit	AMI UEFI 128Mbit
	Chipset	Intel Atom QC E3845	4th Gen Intel® Core i5 4300U	Intel Atom E3825/E3845	4th Gen Intel Celeron 2980U/Core i5-4300U	QM170	Intel Atom E3845	QM170
Memory	Technology	DDR3L 1333 MHz	DDR3L 1600 MHz	DDR3L 1066/1333 MHz	DDR3L 1333/1600 MHz	DDR4 2133MHz	DDR3L 1333	DDR4 2133MHz
	Max. Capacity	8 GB	8 GB	8 GB	8 GB	32G	8G	32G
	Socket	1 x 204-pin SO-DIMM	1 x 204-pin SO-DIMM	1 x 204-pin SODIMM	1 x 204-pin SODIMM	2 x 260-pin SODIMM	1 x 204-pin SODIMM	2 x 260-pin SODIMM
Display	VGA	1 (up to 1600 x 1200)	1 (up to 1600 x 1200)	1 (up to 1600 x 1200)	1 (up to 1920 x 1200)	1 (up to 1920 x 1200)	1 (up to 2560 x 1600)	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 4K at 24 Hz	1 x lockable HDMI, up to 1080P	1 x lockable HDMI, up to 4K at 24 Hz	1 x lockable HDMI, up to 1080P	1 x lockable HDMI, up to 1080P	1 x lockable HDMI, up to 1080P
Expansion Interface	Multiple Display	Dual	Dual	Dual	Dual	Dual	Dual	Dual
	Mini PCIe	1 x Full-size Mini PCIe 1 x Full-size Mini PCIe 2 x Full-size Mini PCIe w/SIM holders	1 x Half-size Mini PCIe 1 x Full-size Mini PCIe 2 x Full-size Mini PCIe w/SIM holders	1 x Full-size Mini PCIe 1 x Full-size Mini PCIe 2 x Full-size Mini PCIe w/SIM holders	1 x Half-size Mini PCIe 1 x Full-size Mini PCIe 2 x Full-size Mini PCIe w/SIM holders	1x M.2 (2230 E Key) 2 x Full-size Mini PCIe w/SIM holders	1 x Full-size Mini PCIe 1 x Full-size Mini PCIe 1 x Full-size Mini PCIe w/SIM holder	1x M.2 (2230 E Key) 2 x Full-size Mini PCIe w/SIM holders
Other	SIM socket	2	2	2	2	2 (accessible)	1 (accessible)	2 (accessible)
	GPS	-	-	Support GPS, GLONASS, GALILEO and QZSS signals	Support GPS, GLONASS, GALILEO and QZSS signals	Support GPS, GLONASS, GALILEO, BeiDou and QZSS signals	Support GPS, GLONASS, GALILEO, BeiDou and QZSS signals	Support GPS, GLONASS, GALILEO, BeiDou and QZSS signals
	G-Sensor	-	-	Yes	Yes	Yes	Yes	Yes
	PoE	4 x 10/100 Mbps PoE	4 x 10/100 Mbps PoE	4 x 10/100 Mbps PoE (E3845)	4 x 10/100 Mbps PoE (E3845)	Optional in 2nd stack: 4/8 x GbE PoE+ (M12 D/X-coded)	Optional in 2nd stack: 4/8 x GbE PoE+ (M12 D/X-coded)	Optional in 2nd stack: 4/8 x GbE PoE+ (M12 D/X-coded)
	CANBus	-	-	optional	optional	optional	optional	optional
Ethernet	Controller	GbE 1 : Intel I210-IT GbE 2 : Intel I210-IT	GbE 1 : Intel I218 GbE 2 : Intel I210-IT	GbE 1 : Intel I210-IT GbE 2 : Intel I210-IT	GbE 1 : Intel I218 GbE 2 : Intel I210-IT	GbE 1 : Intel I210-IT GbE 2 : Intel I219	GbE 1 : Intel I210-IT GbE 2 : Intel I210-IT	GbE 1 : Intel I210-IT GbE 2 : Intel I219
Audio	Audio Interface	HD Audio	HD Audio	HD Audio	HD Audio	HD Audio	HD Audio	HD Audio
	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)	3 (Line-in, Line-out, Mic-in)	3 (Line-in, Line-out, Mic-in)	3 (Line-in, Line-out, Mic-in)
	3G Voice	-	-	1 x Line-out, 1 x Mic-in	1 x Line-out, 1 x Mic-in	-	-	-
WatchDog Timer	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Storage	SATA	1 x 2.5" removable drive bay	1 x 2.5" removable drive bay	1 x 2.5" removable drive bay	1 x 2.5" removable drive bay	1 x 2.5" removable drive bay Optional 2nd 2.5" drive bay in 2nd stack	1 x 2.5" removable drive bay Optional 2nd 2.5" drive bay in 2nd stack	1 x 2.5" removable drive bay Optional 2nd 2.5" drive bay in 2nd stack
	mSATA	1 x Full-size mSATA	1 x Full-size mSATA	1 x Full-size mSATA	1 x Full-size mSATA	1 x Full-size mSATA	1 x Full-size mSATA	1 x Full-size mSATA
I/O	USB 3.0	1	2	1	2	3	1	1
	USB2.0	3	2	3	2	-	2	2
	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	4x DI & 4x DO with isolation	1 x 8bit DIO	1 x 8bit DIO
	COM Port	2 x (RS-232/422/485)	2 x (RS-232/422/485)	2 x RS-232/422/485 + 2 x isolated RS-232/422/485 (E3825)	2 x RS-232/422/485 + 2 x isolated RS-232/422/485 (2980U)	3 x RS-232/422/485	2 x RS-232/422/485	2 x RS-232/422/485
	LAN	2 x RJ45	2 x RJ45	2 x RJ45	2 x RJ45	2 x RJ45	2 x M12 X-code	2 x M12 X-code
Power	Power Supply Voltage	9 ~ 36 V <sub>DC</sub> w/ isolation	9 ~ 36 V <sub>DC</sub> w/ isolation	9 ~ 36 V <sub>DC</sub> w/power ignition management	9 ~ 36 V <sub>DC</sub> w/power ignition management	12/24 V <sub>DC</sub> w/power ignition management	24 V <sub>DC</sub> (48 V <sub>DC</sub> , 72 V <sub>DC</sub> , 110 V <sub>DC</sub> optional)	24 V <sub>DC</sub> (48 V <sub>DC</sub> , 72 V <sub>DC</sub> , 110 V <sub>DC</sub> optional)
	Connector	3-pin Phoenix	3-pin Phoenix	3-pin Phoenix	3-pin Phoenix	5-pin Phoenix	M12 A-coded	M12 A-coded
	Power Adaptor	AC to DC, 19 V <sub>DC</sub> , 120W	AC to DC, 19 V <sub>DC</sub> , 120W	AC to DC, 19 V <sub>DC</sub> , 120W	AC to DC, 19 V <sub>DC</sub> , 120W	AC to DC, 24Vdc, 150W	AC to DC, 24Vdc, 150W	AC to DC, 24Vdc, 150W
	Regulation	-	-	ISO 7637-2 lev.4	ISO 7637-2 lev.4	ISO 7637-2 Lev.4	EN50155 S2&C1	EN50155 S2&C1
Environment	Operating Temperature (air flow 0.7 m/sec)	-30~60 °C	-20 ~ 60 °C	-30~70 °C / -30~60 °C	-20~60 °C	-20~60 °C	-40~70 °C (EN50155 Tx)	-40~70 °C (EN50155 Tx)
	Vibration Resistance	3 Grms	3 Grms	IEC 60721-3-5 Class 5M3	IEC 60721-3-5 Class 5M3	IEC 60721-3-5 Class 5M3, MIL-STD 810G	IEC61373 Category1, Class B	IEC61373 Category1, Class B
	Shock Protection	30 G	30 G	IEC 60721-3-5 Class 5M3	IEC 60721-3-5 Class 5M3	IEC 60721-3-5 Class 5M3, MIL-STD 810G	IEC61373 Category1, Class B	IEC61373 Category1, Class B
Physical Characteristics	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	260 x 67 x 160 mm (260 x 93.6 x 160 mm with 2nd stack)	260 x 57 x 160 mm (260 x 83.6 x 160 mm with 2nd stack)	260 x 67 x 160 mm (260 x 93.6 x 160 mm with 2nd stack)
Operating System	Microsoft Windows	Yes (Win7, 8, 10)	Yes (Win7, 8, 10)	Yes (Win7, 8, 10)	Yes (Win7, 8, 10)	Yes (Win7, 8, 10)	Yes (Win7, 8, 10)	Yes (Win7, 8, 10)
Linux	Yes (by Project)	Yes (by Project)	Yes (by Project)	Yes (by Project)	Yes (by Project)	Yes (By project)	Yes (By project)	
APIs	SUSIAccess	Yes	Yes	Yes	Yes	Yes	Yes	Yes
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	CE/FCC Class B, CCC, BSMI	CE/FCC, CCC, BSMI, EN50155	CE/FCC, CCC, BSMI, EN50155
	Safety Certifications	CB, UL, CCC, BSMI	CB, UL, CCC, BSMI	UL, CCC, BSMI, CB, E-Mark	UL, CCC, BSMI, CB, E-Mark	CB, UL, CCC, BSMI, E-Mark	UL, CCC, BSMI, CB, EN50155	UL, CCC, BSMI, CB, EN50155

# Gaming Computing Platforms



## Standalone Series

Model Name		DPX®-S2445	DPX®-S445	DPX®-S2440	DPX®-S440	DPX®-S1435	DPX®-S435
Form Factor		DPX® Gaming System	DPX® Gaming Board	DPX® Gaming System	DPX® Gaming Board	DPX® Gaming System	DPX® Gaming Board
Processor System	CPU	Intel® 6th / 7th Generation Core™ i		AMD 3rd Generation R-Series (formerly code-named Merlin Falcon)		Intel® 4th Generation Core™ i	
	Socket	LGA 1151		BGA		LGA 1155	
	max. speed	2.9 GHz (3.8) GHz		2.8 (3.4) GHz		2.77GHz	
	TDP	54W		35W		45W	
	Chipset	Q170		SOC		Q87	
BIOS		AMI APTIO UEFI (Gaming optimised)		AMI APTIO UEFI (Gaming optimised)		AMI UEFI 32Mb	
Expansion Slot	PCI	-		-		-	
	MINI PCIe/mSATA	-		-		-	
	PCIe	PCIe x 16		PCIe x 16 (x 8 mode)		PCIe x 16	
	MXM	-		-		-	
Memory	Technology	Dual Channel DDR4 2400MHz		Dual Channel DDR3 2133MHz		Dual Channel DDR3 1600MHz	
	Max. Capacity	32GB		16GB		16GB	
	Socket	2x SODIMM		2x SODIMM		2x SODIMM	
Graphics	Controller	in CPU (GT2-530)		in APU - Radeon R7 (HD10000)		in CPU (HD4600)	
	VGA	-		-		1	
	DVI	-		-		2	
	DP	3		3		1	
	HDMI	-		-		-	
Ethernet	LAN1	GbE		GbE		GbE	
	LAN2	GbE		GbE		GbE	
Storage	SATA	2		2		3	
	CompactFlash	-		-		-	
	Cfast	-		2		2	
Rear I/O	VGA/DVI/HDMI/DP	0/0/0/3		0/0/0/3		1/2/0/1	
	Ethernet	2		2		2	
	USB 2.0	9		8		8	
	USB 3.0	2		3		4	
	Audio	1 (ch5.1), SPDIF		1 (ch5.1), SPDIF		1 (ch5.1)	
	Serial Ports	10		10		10	
	Serial Type RS232/Cctalk/TTL/485	10/2/1/1		10/2/1/1			
Gaming Hardware	SRAM	8MB		8MB		8MB	
	ROM sockets	SPI ROM module		SPI ROM module		PLCC	
	TPM	TPM 2.0/1.2		TPM 2.0/1.2		TPM1.2	
	Audio Amplify	15W+15W+15W (FL,FR, LF)		15W+15W+15W (FL,FR, LF)		13W+13W+13W (FL,FR, LF)	
	Digital Inputs	32 (ESD protected)		32 (ESD protected)		32 (ESD protected)	
	Digital Outputs	32 (OC 500mA 50V)		32 (OC 500mA 50V)		32 (OC 500mA 50V)	
	Intrusion Inputs	8		8		8	
	iButton® / GPIO	2		2		1	
	DPCI Expansion	-		-		1	
	Watchdog Timer	1		1		1	
Dual BIOS	-		-		Yes		
Gaming Software	DPCI Advanced Gaming API & Runtime	Standard		Standard		Standard	
	DPX Connector Peripherals Libraries	Standard		Standard		Standard	
	Embedded OS Support	Standard		Standard		Standard	
	BIOS Customization	Optional		Optional		Optional	
	TPM Suite	Optional		Optional		Optional	
	DPX SAS Connector	Optional		Optional		Optional	
SecureBoot	Optional		Optional		Optional		
Other Features	I2C, Precision RTC, ATX or 12VDC power			LED lamp driver, I2C, Precision RTC, ATX or 12VDC power		-	

## Economy Series

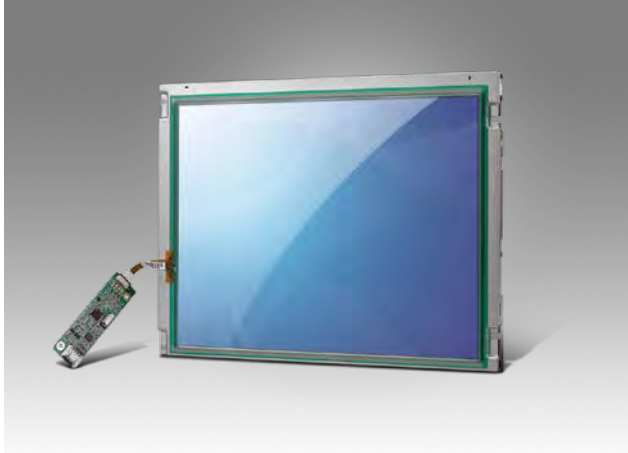


Model Name		DPX®-E135	DPX®-E250
Form Factor		DPX® Gaming System	Extended Mini-ITX
Processor System	CPU	AMD Embedded G-Series APU	Intel 4th Generation Core-I
	Socket	BGA	LGA 1150
	max. speed	2.4 GHz	3.9 GHz
	TDP	25W	65W
	Chipset	SOC	Q87
	BIOS	AMI APTIO UEFI (Gaming optimised)	AMI APTIO UEFI (Gaming optimised)
Expansion Slot	PCI	-	-
	MINI PCIe/mSATA	-	2
	PCIe	-	PCIe x16
	MXM	-	-
Memory	Technology	Dual Channel DDR3 1866MHz	Dual Channel DDR3 1600MHz
	Max. Capacity	16GB	16GB
	Socket	2x SODIMM	2x SODIMM
Graphics	Controller	in APU - Radeon (HD 8000)	in CPU (HD4600)
	VGA	1	0 (VGA signals in DVI-I)
	DVI	-	2. DVI-I, DVI-D
	DP	2	1
	HDMI	-	-
Ethernet	LAN1	GbE	GbE
	LAN2	GbE	GbE
Storage	SATA	2	2
	CompactFlash	-	-
	Cfast	2	-
Rear I/O	VGA/DVI/HDMI/DP	1/0/0/2	0/2/0/1
	Ethernet	2	2
	USB 2.0	7	5
	USB 3.0	2	4
	Audio	1 (ch5.1), SPDIF	1 (ch2.1)
	Serial Ports	10	6
	Serial Type RS232/ Cctalk/TTL/485	4/2/1/1	5/0/0/1
Gaming Hardware	SRAM	8MB	-
	ROM sockets	SPI ROM module	-
	TPM	TPM 2.0/1.2	TPM 2.0/1.2
	Audio Amplify	20W+20W	-
	Digital Inputs	32 (ESD protected)	-
	Digital Outputs	32 (OC 500mA 50V)	-
	Intrusion Inputs	8	-
	iButton® / GPIO	1	8
	DPCI Expansion	-	-
Watchdog Timer	1	1	
Dual BIOS	-	-	
Gaming Software	DPCI Advanced Gaming API & Runtime	Standard	-
	DPX Connector Peripherals Libraries	Standard	Standard
	Embedded OS Support	Standard	Standard
	BIOS Customization	Optional	Optional
	TPM Suite	Optional	Optional
	DPX SAS Connector	Optional	Optional
SecureBoot	Optional	Optional	
Other Features	LED lamp driver, I2C, Precision RTC, ATX or 12VDC power	SIM card, ATX or 12VDC power, LVDS	

# Industrial Display Systems

## IDK-1000

### Industrial Touch LCD Kits



### Features

- 5.7"~28" industrial grade LCD kits with LED backlight
- Suitable for indoor applications
- LVDS signal interface
- Resistive/Projected Capacitive touchscreen support
- Touch controller included with USB cable
- Full compatibility with embedded boards

### Specifications

	IDK-1105	IDK-065	IDK-1107			IDK-1108	IDK-1110W		IDK-1110		IDK-1112	IDK-1115		IDK-1119	IDK-1121		IDK-1128
Size	5.7"	6.5"	7"			8.4"	10.1"		10.4"		12.1"	15"		19"	21.5"		28"
Resolution	640 x 480 (VGA)	640 x 480 (VGA)	800 x 480 (WVGA)	1024 x 600 (WSVGA)	1024 x 600 (WSVGA)	800 x 600 (SVGA)	1024 x 600 (WSVGA)	1280 x 800 (WXGA)	800 x 600 (SVGA)	1024 x 768 (XGA)	800 x 600 (SVGA)	1024 x 768 (XGA)	1024 x 768 (XGA)	1280 x 1024 (SXGA)	1920 x 1080 (FHD)	1920 x 1080 (FHD)	1920 x 358 (FHD)
Brightness (cd/m <sup>2</sup> )	500	800	400	400	500	450	550	500	400	500	450	400	400	350	300	250	700
Colors	262K	262K / 16.2M	262K / 16.2M	262K / 16.2M	262K / 16.2M	262K / 16.2M	262K	262K / 16.2M	262K / 16.2M	16.2M	262K / 16.2M	262K / 16.2M	262K / 16.2M	16.7M	16.7M	16.7M	16.7M
Viewing Angle (H/V°)	140/100	160/140	160/160	150/145	140/120	160/140	120/140	170/170	160/130	176/176	160/140	160/140	160/140	170/160	178/178	178/178	178/178
Contrast Ratio	250:1	600:1	750:1	700:1	600:1	600:1	500:1	800:1	700:1	1000:1	700:1	700:1	700:1	1000:1	5000:1	1000:1	3000:1
Response Time (ms)	50	25	30	25	16	30	25	25	20	25	35	16	16	5	25	14	6.5
Touchscreen	4-Wire Resistive	4-Wire Resistive	4-Wire Resistive	4-Wire Resistive	P-cap	4-Wire Resistive	4-Wire Resistive	P-cap	4-Wire Resistive	P-cap	5-Wire Resistive	5-Wire Resistive	P-cap	5-Wire Resistive	5-Wire Resistive	P-cap	N/A
Signal Interface	LVDS	LVDS	LVDS	LVDS	LVDS	LVDS	LVDS	LVDS	LVDS	LVDS	LVDS	LVDS	LVDS	2 Channel LVDS	2 Channel LVDS	2 Channel LVDS	2 Channel LVDS
Backlight Type	LED	LED	LED	LED	LED	LED	LED	LED	LED	LED	LED	LED	LED	LED	LED	LED	LED
Backlight Life (hrs)	30,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	30,000	50,000
Power Consumption (W)	1.8	3.86	3.7	4.7	3.56	2.94	7.99	6.18	4.8	7.9	6.7	10.6	10.6	20.55	19.82	11.05	38.76
Dimensions (mm)	127 x 98 x 8	153 x 118 x 11	170 x 111 x 8	166 x 104 x 7	165 x 104 x 10	203 x 143 x 8	235 x 146 x 8	231 x 153 x 7	243 x 184 x 7	223 x 176 x 9	279 x 209 x 9	327 x 254 x 12	327 x 254 x 12	396 x 324 x 18	497 x 292 x 13	498 x 292 x 11	734 x 185 x 18
Weight (g)	200	170	165	139	160	250	320	360	365	430	580	1084	1084	1670	2300	1685	1800
Durability (touches)	1 million	1 million	1 million	1 million	50 million ~	1 million	1 million	50 million ~	1 million	50 million ~	10 million	10 million	50 million ~	10 million	10 million	50 million ~	N/A
Surface Hardness	3H	3H	3H	3H	Mohs 5H	3H	3H	Mohs 5H	3H	Mohs 5H	3H	3H	Mohs 5H	3H	3H	Mohs 5H	N/A
Transparency	80%	82.50%	82.50%	82.50%	90%	82.50%	82.50%	91%	82.50%	90%	80%	80%	91%	80%	80%	91%	N/A
Operating Temperature (°C)	-20 ~ 70	-10 ~ 60	-5 ~ 60	-20 ~ 70	-20 ~ 70	-10 ~ 60	-5 ~ 60	-20 ~ 65	-10 ~ 60	-20 ~ 70	-20 ~ 70	-20 ~ 70	-20 ~ 70	0 ~ 50	0 ~ 60	0 ~ 50	-10 ~ 60



## IDK-2000



## High Brightness Industrial LCD Kits

### Features

- 8.4" ~ 21.5" industrial grade LCD kits with LED backlight
- 1200 nits for outdoor applications
- LVDS signal interface
- Resistive touch
- Auto-dimming light sensor (optional)
- Full compatibility with embedded boards

## 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)	1024 x 768 (XGA)	800 x 600 (SVGA)	1024 x 768 (XGA)	1280 x 1024 (SXGA)	1280 x 1024 (SXGA)	1920 x 1080 (FHD)	
	Brightness (cd/m <sup>2</sup> )	1200	1200	1300	1200	1200	1200	1200	1200	
	Colors	262K / 16.2M	262K / 16.2M	262K / 16.2M	262K / 16.2M	262K / 16.2M	16.2M	16.7 M	16.7M	
	Viewing Angle (H/V°)	160/140	160/130	170/170	160/140	160/140	170/160	170/160	178/178	
	Contrast Ratio	600:1	500:1	700:1	700:1	700:1	1000:1	1000:1	5000:1	
	Response Time (ms)	30	35	30	35	16	5	5	16	
	Touchscreen	4-Wire Resistive	5-Wire Resistive	5-Wire Resistive	5-Wire Resistive	5-Wire Resistive	5-Wire Resistive	5-Wire Resistive	5-Wire Resistive	
	Signal Interface	LVDS	LVDS	LVDS	LVDS	LVDS	2 Channel LVDS	2 Channel LVDS	2 Channel LVDS	
	Backlight Type	LED	LED	LED	LED	LED	LED	LED	LED	
	Backlight Life (hrs)	50,000	50,000	70,000	50,000	50,000	50,000	50,000	50,000	
	Power Consumption (W)	5.85	7.1	16.05	8.92	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	230 x 180.2 x 12.3	279 x 209.0 x 9.0	326.5 x 253.5 x 11.5	358.5 x 296.5 x	396 x 324 x 17.8	495.6 x 292.2 x 11.7	
Weight (g)	260	495	480	600	1184	1300	1770	2050		
Touchscreen	Durability (touches)	1 millions	1 million	1 million	10 million	10 million	10 million	10 million	10 million	
	Surface Hardness	3H	3H	3H	3H	3H	3H	3H	3H	
	Transparency	82.50%	82.50%	82.50%	80%	80%	80%	80%	80%	
Environment	Operating Temperature (°C)	-20 ~ 70	-10~60	-10~60	-20 ~ 70	-20 ~ 70	0 ~ 50	0 ~ 50	0 ~ 55	

# Industrial Display Systems

## IDS-3100

### Open Frame Monitors



### Features

- 6.5" ~ 21.5" industrial grade LCD panel with LED backlight
- Slim open frame design with integrated bracket
- Dual VGA/DVI interface
- P-cap/resistive/non-touch options
- Rear/VESA mount
- Optional high brightness solution
- Easy integration with embedded box PCs



### Specifications

Model	IDS-3106	IDS-3110E	IDS-3110		IDS-3112E	IDS-3112		IDS-3115E	IDS-3115	IDS-3115P	IDS-3117E	IDS-3117	IDS-3118W	IDS-3119	IDS-3121W		
LCD Display	Screen Size	6.5"	10.4"	10.4"	10.4"	12.1"	12.1"	12.1"	15"	15"	15"	17"	17"	18.5"	19"	21.5"	
	Resolution	640 x 480 (VGA)	800 x 600 (SVGA)	800 x 600 (SVGA)	1024 x 768 (XGA)	800 x 600 (SVGA)	800 x 600 (SVGA)	1024 x 768 (XGA)	1024 x 768 (XGA)	1024 x 768 (XGA)	1024 x 768 (XGA)	1280 x 1024 (SXGA)	1280 x 1024 (SXGA)	1366 x 768 (HD)	1280 x 1024 (SXGA)	1920 x 1080 (FHD)	
	Colors	16.2M	16.2M	16.2M	16.2M	16.2M	16.2M	16.2M	16.2M	16.2M	16.2M	16.7M	16.7M	16.7M	16.7M	16.7M	
	Viewing Angle (H/V°)	160/140	160/130	160/140	176/176	160/140	160/140	160/140	160/140	160/140	160/140	170/160	170/160	170/160	170/160	178/178	
	Contrast Ratio	600:1	500:1	700:1	1000:1	700:1	700:1	700:1	700:1	700:1	700:1	1000:1	800:1	1000:1	1000:1	1000:1	
	Response Time (ms)	25	35	30	25	35	35	16	16	25	25	5	30	5	5	5	
	Brightness (cd/m²)	800	230	400	500	450	450	600	250	400	500/1200	250	350	300	350	250	
	Backlight Type	LED	LED	LED	LED	LED	LED	LED	LED	LED	LED	LED	LED	LED	LED	LED	
	Backlight Life	50,000	30,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	40,000	50,000	50,000	50,000	30,000	
	Dimensions (mm) (without touch)	215 x 160 x 32.1	279.4 x 220 x 30	279.4 x 220 x 30	279.4x220x30	320.2 x 252 x 30.7	320.2 x 252 x 30.7	320.2 x 252 x 30.7	362 x 288 x 32.8	362 x 288 x 32.8	362 x 288 x 32.8	400 x 344.7 x 33.4	400 x 344.7 x 33.4	478 x 303 x 33	438 x 369.7 x 34.3	546.6 x 299.2 x 45.5	
Weight (kg) (without touch)	0.8	0.95	1	1	1.6	1.6	1.6	3.8	3.8	3.8	4.1	3.45	5	5.2	6		
Environment	Operating Temperature (°C)	0-50	0-45	-20-60	-20-60	0-45	-20-60	-20-60	0-45	-20-60	-20-60	0-45	-20-60	0-55	0-45	0-45	
	Storage Temperature (°C)	-20-60	-20-60	-30-70	-30-70	-20-60	-30-70	-30-70	-20-60	-30-70	-30-70	-20-60	-30-70	-20-60	-20-60	-20-60	
	Humidity (non-condensing)	5-95% @ 40°C	5-95% @ 40°C	5-95% @ 40°C	5-95% @ 40°C	5-95% @ 40°C	5-95% @ 40°C	5-95% @ 40°C	5-95% @ 40°C	5-95% @ 40°C	5-95% @ 40°C	5-95% @ 40°C	5-95% @ 40°C	90% @ 40°C	5-95% @ 40°C	5-95% @ 40°C	
Touchscreen (Optional)	Type	4-Wire Resistive	5-Wire Resistive	5-Wire Resistive	5-Wire Resistive P-cap	5-Wire Resistive	5-Wire Resistive	5-Wire Resistive	5-Wire Resistive	5-Wire Resistive	P-cap	5-Wire Resistive	5-Wire Resistive	5-Wire Resistive P-cap	5-Wire Resistive	5-Wire Resistive P-cap	
	Transparency	80%	81%	81%	81% 90%	80%	80%	80%	80%	80%	89%	80%	80%	80% 86%	80%	80% 87%	
	Surface Hardness	3H	3H	3H	3H 5H	3H	3H	3H	3H	3H	3H	5H	3H	3H	3H	6H 3H	3H 7H
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 output										60W power adapter, with AC 100 - 240V input and DC +12V @ 5A output					

# IDS-3200

## Panel Mount Monitors



### Features

- 6.5" ~ 21.5" industrial grade LCD panel with LED backlight
- Rugged metal front frame design
- Dual VGA/DVI interface
- P-cap/resistive/non-touch options
- Panel/VESA mount
- Optional high brightness solution
- Easy integration with embedded box PCs

### Specifications

Model	IDS-3206	IDS-3210E	IDS-3210	IDS-3212E	IDS-3212		IDS-3215E	IDS-3215	IDS-3217E	IDS-3217	IDS-3219	IDS-3221W		
LCD Display	Screen Size	6.5"	10.4"	10.4"	12.1"	12.1"	12.1"	15"	15"	17"	17"	19"	21.5"	
	Resolution	640 x 480 (VGA)	800 x 600 (SVGA)	800 x 600 (SVGA)	800 x 600 (SVGA)	800 x 600 (SVGA)	1024 x 768 (XGA)	1024 x 768 (XGA)	1024 x 768 (XGA)	1280 x 1024 (SXGA)	1280 x 1024 (SXGA)	1280 x 1024 (SXGA)	1920 x 1080 (FHD)	
	Colors	16.2M	16.2M	16.2M	16.2M	16.2M	16.2M	16.2M	16.2M	16.7M	16.7M	16.7M	16.7M	
	Viewing Angle (H/V°)	160/140	160/130	160/140	160/140	160/140	160/140	160/140	160/140	170/160	170/160	170/160	178/178	
	Contrast Ratio	600:1	500:1	700:1	700:1	700:1	700:1	700:1	700:1	1000:1	800:1	1000:1	1000:1	
	Response Time (ms)	25	35	30	35	35	16	16	16	25	5	30	5	5
	Brightness (cd/m <sup>2</sup> )	800	230	400	450	450	600	250	400	250	350	350	250	
	Backlight Type	LED	LED	LED	LED	LED	LED	LED	LED	LED	LED	LED	LED	
	Backlight Life	50,000	30,000	50,000	50,000	50,000	50,000	50,000	50,000	40,000	50,000	50,000	30,000	
	Dimensions (mm) (without touch)	219 x 171.8 x 37.66	290.2 x 237.64 x 35.1	290.2 x 237.64 x 35.1	323.7 x 262.4 x 36.5	323.7 x 262.4 x 36.5	323.7 x 262.4 x 36.5	365 x 291 x 38	365 x 291 x 38	425 x 357.5 x 39	425 x 357.5 x 39	449.7 x 374.4 x 40.4	551 x 341.6 x 51.7	
Weight (kg) (without touch)	1.2	1.95	2	3	3	3	4.8	4.3	4.45	4.85	6	6.2		
Environment	Operating Temperature (°C)	0~50	0~45	-20~60	0~45	-20~60	-20~60	0~45	-20~60	0~45	-20~60	0~45	0~45	
	Storage Temperature (°C)	-20~60	-20~60	-30~70	-20~60	-30~70	-30~70	-20~60	-30~70	-20~60	-30~70	-20~60	-20~60	
	Humidity (non-condensing)	5~95% @ 40°C	5~95% @ 40°C	5~95% @ 40°C	5~95% @ 40°C	5~95% @ 40°C	5~95% @ 40°C	5~95% @ 40°C	5~95% @ 40°C	5~95% @ 40°C	5~95% @ 40°C	5~95% @ 40°C	5~95% @ 40°C	
Touchscreen (Optional)	Type	4-Wire Resistive	5-Wire Resistive	5-Wire Resistive	5-Wire Resistive	5-Wire Resistive	5-Wire Resistive	5-Wire Resistive	5-Wire Resistive	5-Wire Resistive	5-Wire Resistive	5-Wire Resistive	P-cap	
	Transparency	80%	81%	81%	80%	80%	80%	80%	80%	80%	80%	80%	87%	
	Surface Hardness	3H	3H	3H	3H	3H	3H	3H	3H	3H	3H	3H	7H	
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)											
	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						

# Industrial Display Systems

## IDP31 Series



### Proflat 100% Flat Touch Monitors

#### Features

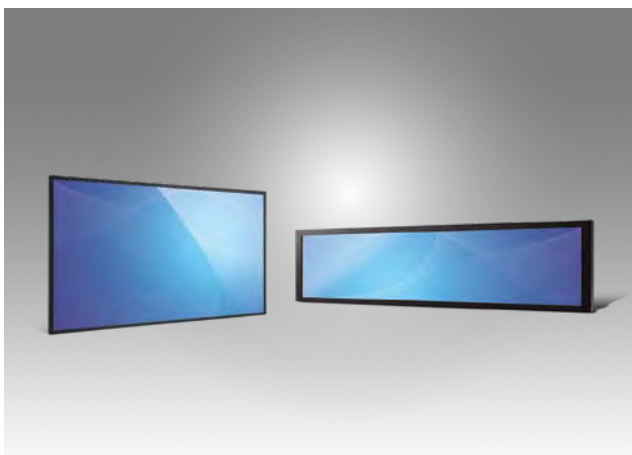
- 10.4", 15", 21.5" industrial grade LCD panel with LED backlight
- 100% flat glass front for easy maintenance
- Elegant rounded edge design, no need for additional enclosures
- HDMI/VGA/DVI interface
- Projected capacitive multi-touch design
- Stand/wall mount
- Portrait & landscape modes support

### Specifications

Model	IDP31-104	IDP31-150	IDP31-215W	
LCD Display	Screen Size	10.4"	15"	21.5"
	Resolution	800 x 600 (SVGA)	1024 x 768 (XGA)	1920 x 1080 (FHD)
	Colors	16.2M	16.2M	16.7M
	Viewing Angle (H/V°)	160/140	160/140	178/178
	Contrast Ratio	700:1	700:1	1000:1
	Response Time (ms)	30	25	5
	Brightness (cd/m <sup>2</sup> )	400	500	250
	Backlight Type	LED	LED	LED
	Backlight Life	50,000	50,000	30,000
Dimensions (mm) (without touch)	259.4 x 205.4 x 42.5	TBD	520.98 x 314.99 x 42.6	
Environment	Operating Temperature (°C)	-20~60	-20~60	0~45
	Storage Temperature (°C)	-30~70	-30~70	-20~60
	Humidity (non-condensing)	5~95% @ 40°C	5~95% @ 40°C	5~95% @ 40°C
Touchscreen (Optional)	Type	P-cap	P-cap	P-cap
	Transparency	86%	86%	86%
	Surface Hardness	6H	6H	6H
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)	HDMI x 1, 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)	
	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	

## DSD-3000/DSD-5000 Series

## Digital Signage Displays



### Features

- 28" ~ 55" size options
- Wide viewing angle
- Fanless design
- HDMI/VGA/DVI/DP interface
- Optional optical touch support
- Stand/wall mount
- Portrait & landscape modes support

## Specifications

		DSD- 3032	DSD- 3055	DSD- 5028	DSD- 5038
LCD Display	Size	32"	55"	28"	38"
	Resolution	1920 x 1080	1920 x 1080	1920 x 358	1920 x 538
	Colors	16.7 M	1073M	16.7M	16.7M
	Viewing Angle (H/V°)	178/178	178/178	178/178	176/176
	Contrast Ratio	3000:1	4000:1	3000:1	4000:1
	Response Time (ms)	8	6.5	6.5	9.5
	Brightness	500	450	700	800
	Backlight Type	LED	LED	LED	LED
	Backlight Life (hrs)	50,000	50,000	50,000	50,000
	Dimensions (mm)	743.6 x 438.11 x 73	1238.6 x 709.4 x 72.5	736.6x 167.3 x 44.35	980.9 x 303.2 x 44.35
Weight (kg)	14	31	3	6.4	
Touchscreen (Optional)	Type	Optical Touch	Optical Touch	N/A	N/A
	Durability	10 million touches	10 million touches	N/A	N/A
	Surface Hardness	7H	7H	N/A	N/A
	Transparency	92%	92%	N/A	N/A
Environment	Temperature (Operating)	5 ~ 45 °C	5 ~ 45 °C	0 ~ 45 °C	0 ~ 45 °C
	Temperature (Storage)	-20 ~ 55 °C	-20 ~ 55 °C	-10 ~ 60 °C	-10 ~ 60 °C
	Humidity	20 ~ 80 % RH	20 ~ 80 % RH	20 ~ 80 % RH	20 ~ 80 % RH
System	I/O Ports	HDMI/VGA/DisplayPort	HDMI/VGA/DisplayPort	VGA/DVI	VGA/DVI
	OSD control	RS-232/RS-485/Remote	RS-232/RS-485/Remote	RS-232	RS-232
	Power Consumption (W)	80	145	40	76



# Industrial Display Systems

## CRV430-CurveView™

Curved touch and non-touch monitors for compelling user engagement and creative industrial design



### Features

- Curved concave format monitors
- Totally unique industrial design
- Compelling user experience
- Large format, deep curved sizes
- Integrated Projected Capacitive (PCAP) Multi-touch
- VGA, DVI, HDMI interface
- Enhanced solution for casino slot machines, gaming, signage, kiosks and other public information terminals
- 43" in Full HD 1920 x 1080
- Portrait or Landscape
- Custom bending and monitor configuration available

## Introduction

CurveView™ is the latest in a series of exciting product innovations from Advantech Display Systems. The introduction of deep curved profiles to a large area display creates exciting opportunities for industrial and user interface design alike. Packaged together with an industrial grade video card and power supply, CurveView™ is available with Triptic™ HDMI 1.4, HDMI 2.0, Display Port and Analog RGB and can be specified with or without 10-point multi-touch overlay. All products can be used in either portrait or landscape mode and are cleverly packaged in such a way that no further mechanical parts are needed other than a VESA mount to create a display system. The use of a metal chassis provides a rugged and stable platform to build solutions for the widest range of applications.

## Typical Applications

- Casino slot machines
- Information kiosks
- Digital advertising
- Way-finders and digital assistants
- Medical
- Gaming

## Specifications

CRV-430W (43" 1500R Concave Monitor)		
Model	CRV-430W	Notes
Backlight	LED	Light Source
Resolution	1920 x 1080 FULL HD	Native resolution. Other resolutions supported by A/D card scaling
Brightness	450 cd/m2	Measured at typ. operating voltage
Viewing angle	89/89/89/89	Left/Right/Up/Down
Contrast Ratio (Resp.Time)	3000:1 (8ms)	In laboratory conditions
Touch Screen (optional)	4mm Multi-touch PCT (10 touches)	Projected capacitive glass overlay
Operating Temp	0 °- 50 °C	Professional use
Input / Output	HDMI 1.4 (2 ports), HDMI 2.0 (2 ports), Display Port, RGB	

## Display

This LCD module has a TFT active matrix type liquid crystal panel 1920 x 1080 pixels, and diagonal size of 43 inch. This module supports 1920 x 1080 mode. Each pixel is divided into red, green and blue subpixels or dots which are arranged in vertical stripes. Grayscale or the brightness of the sub-pixel color is determined with a 8-bit gray scale signal for each dot. The CRV31-CurveView™ has been designed to apply the 8-bit selectable 2 channel LVDS interface method. It is intended to support displays where narrow bezel width, long life, wide viewing angle, high color saturation, and high color depth are very important.

## Display Characteristics

Items	Specification	Unit	Note
Active Screen Size	43	inch	
Display Area	940.896(H) x 529.254(V)	mm	
Outline Dimension	950.896(H) x 575.89(V)	mm	
Driver Element	a-Si TFT active matrix		
Bezel Opening	945.896(H) x 533.25(V)	mm	
Display Colors	8 bit (16.7M)	colors	
Number of Pixels	1920 x 1080	Pixel	
Pixel Pitch	0.49(H) x 0.49(W)	mm	
Pixel Arrangement	RGB vertical stripe		
Display Operation Mode	Normally Black		Haze=44%
Surface Treatment	Anti-Glare, 3H		
Display Orientation	Portrait/Landscape Enable		

# Industrial Flash and Memory Solutions

## SQFlash Industrial Storage Modules

### SATA SSD

Advantech SQFlash industrial storage modules support SATA interface SSD with multiple form factors including with 2.5" SSD, mSATA, M.2, DOM, CFast, Half-Slim, etc. with wide temperature support. Our storage solutions also include complete power failure protection.

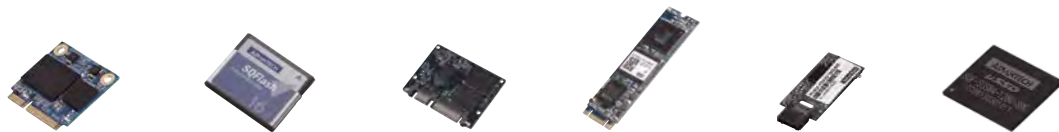
#### Extreme Performance

#### Embedded



Model Name	SQF-S25, 830 series	SQF-SMS, 830 series	SQF-SM8, 830 series	SQF-S25, 640 series	SQF-SM8, 640 series	SQF-SM4, 640 series	SQF-SMS, 640 series
Form Factor	2.5" SATA SSD	mSATA SSD (MO-300A)	M.2 2280 SATA SSD (NGFF)	2.5" SATA SSD	M.2 2280 SATA SSD (NGFF)	M.2 2242 SATA SSD (NGFF)	mSATA SSD (MO-300A)
Transfer Protocol	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s
Connector	7 + 15 pin SATA	Mini PCIe with SATA pin-out	M.2 with B+M key SATA pin-out	7 + 15 pin SATA	M.2 with B+M key SATA pin-out	M.2 with B+M key SATA pin-out	Mini PCIe with SATA pin-out
Flash Type	SLC / Ultra MLC / MLC / 3D V-NAND	SLC / Ultra MLC / MLC / 3D V-NAND	SLC / Ultra MLC / MLC / 3D V-NAND	SLC / Ultra MLC / MLC / 3D V-NAND	SLC / Ultra MLC / MLC / 3D V-NAND	SLC / Ultra MLC / MLC / 3D V-NAND	SLC / Ultra MLC / MLC / 3D V-NAND
Maximum Power Consumption	1,000 mA	1,000 mA	1,000 mA	530 mA	750 mA	500 mA	750 mA
Capacity	64GB ~ 2TB	32GB ~ 1TB	32GB ~ 1TB	16GB ~ 512GB	16GB ~ 1TB	16GB ~ 512GB	16GB ~ 1TB
Maximum Read / Write Performance (MB/s)	Sequential: 550 / 530 Random IOPS@4K: 100K / 100K	Sequential: 540 / 480 Random IOPS@4K: 88K / 91K	Sequential: 540 / 480 Random IOPS@4K: 88K / 91K	Sequential: 560 / 490 Random IOPS@4K: 86K / 91K	Sequential: 560 / 490 Random IOPS@4K: 86K / 91K	Sequential: 560 / 500 Random IOPS@4K: 86K / 91K	Sequential: 560 / 490 Random IOPS@4K: 86K / 91K
Op. Temperature	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	0 ~ 70 °C / -40 ~ 85 °C
SQFlash Utility	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
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

#### Embedded



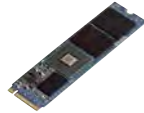
Model Name	SQF-SHM, 640 series	SQF-S10, 640 series	SQF-SLM, 640 series	SQF-SM6, 630 series	SQF-SDM, 630 series	SQF-SUS, 630 series
Form Factor	H/S mSATA SSD (MO-300B)	CFast	Half-Slim SSD	M.2 2260 SATA SSD (NGFF)	SATA DOM	Micro SSD
Transfer Protocol	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s
Connector	Mini PCIe with SATA pin-out	CFast Type-I	7 + 15 pin SATA	M.2 with B+M key SATA pin-out	7-pin Female	Onboard
Flash Type	SLC / Ultra MLC / MLC / 3D V-NAND	SLC / Ultra MLC / MLC / 3D V-NAND	SLC / Ultra MLC / MLC / 3D V-NAND	SLC / Ultra MLC / MLC	SLC / Ultra MLC / MLC	Ultra MLC / MLC
Maximum Power Consumption	500 mA	500 mA	500 mA	500 mA	480 mA	500 mA
Capacity	16GB ~ 256GB	16GB ~ 128GB	16GB ~ 512GB	8GB ~ 256GB	1GB ~ 128GB	2GB ~ 64GB
Maximum Read / Write Performance (MB/s)	Sequential: 560 / 490 Random IOPS@4K: 86K / 91K	Sequential: 560 / 470 Random IOPS@4K: 82K / 82K	Sequential: 560 / 490 Random IOPS@4K: 86K / 91K	SLC: 500 / 150 Ultra MLC: 520 / 170 MLC: 490 / 170	SLC: 500 / 150 Ultra MLC: 520 / 195 MLC: 520 / 200	Ultra MLC: 490/190 MLC: 480/190
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
SQFlash Utility	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
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

# Industrial Flash and Memory Solutions

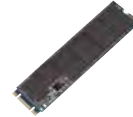
## NVMe SSD

Advantech SQFlash industrial storage modules support the latest PCIe / NVMe interface SSDs such as U.2 and M.2 for enterprise class applications. For the general embedded market, Advantech's unique but widely compatible Mini PCIe / M.2 2230 form factors are also available for higher flexibility of system integration.

### Enterprise



### Embedded



Model Name	SQF-C25, 920 series	SQF-CM8, 920 series	SQF-CMS, 710 series	SQF-CM8, 710 series	SQF-CM3, 710 series
Form factor	2.5" U.2 NVMe SSD	M.2 2280 NVMe SSD (NGFF)	Full-size Mini PCIe SSD	M.2 2280 NVMe SSD (NGFF)	M.2 2230 NVMe SSD (NGFF)
Transfer Protocol	PCIe Gen3 x4	PCIe Gen3 x4	PCIe Gen3 x2	PCIe Gen3 x2	PCIe Gen3 x2
Connector	U.2 NVMe Interface (SFF 8639)	M.2 M-key with PCIe pin-out	Mini PCIe with PCIe pin-out	M.2 B+M key with PCIe pin-out	M.2 A+E key with PCIe pin-out
Flash Type	3D V-NAND	3D V-NAND	3D V-NAND	3D V-NAND	3D V-NAND
Maximum Power Consumption	TBD	TBD	TBD	TBD	TBD
Capacity	200GB ~ 8TB	200GB ~ 4TB	60GB ~ 1.8TB	60GB ~ 1.8TB	30GB ~ 240GB
Maximum Read / Write Performance (MB/s)	Read: up to 2,700 Write: up to 2,300	Read: up to 2,700 Write: up to 2,300	Read: up to 1,600 Write: up to 1,100	Read: up to 1,600 Write: up to 1,100	Read: up to 1,600 Write: up to 1,100
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
SQFlash Utility	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
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

## PATA Storage and SD Card

Advantech SQFlash industrial storage modules support PATA/IDE interface SSDs with multiple form factors such as 2.5" SSD, DOM and CF, optional for PIO transfer mode. And, SD interface products such as SD/SDXC and Micron SD, USB DOMs and eMMC products are also available with wide temperature support to fit industrial applications.



Model Name	SQF-P10 P8/P9	SQF-PDM	SQF-P25 P9	SQF-ISD	SQF-MSD	SQF-MMC	SQF-UPD
Form factor	CF card	PATA DOM	2.5" PATA SSD	Industrial SD card	Industrial Micro SD card	Industrial eMMC	USB Pen Drive
Interface	IDE / PCMCIA	IDE	IDE	SD	SD	eMMC	USB
Transfer Protocol	UDMA 2 / UDMA 4 / UDMA 5	UDMA2 / UDMA 4	UDMA 4	SDIO	SDIO	MMC	USB 3.1/2.0/1.1
Connector	CF Type-I	44-pin Female / 40-pin Female	44-pin Male	SD 9-pin	SD 9-pin	onboard	USB type
Flash Type	SLC / Ultra MLC / MLC	SLC	SLC / Ultra MLC / MLC	SLC / Ultra MLC / MLC	SLC / Ultra MLC / MLC	MLC / 3D V-NAND	MLC
Maximum Power Consumption	160 mA	160 mA	210 mA	100 mA	100 mA	100 mA	190 mA
Capacity	256MB ~ 512 MB 1GB ~ 64GB	1GB ~ 16GB	4GB ~ 256GB	1GB ~ 128GB	1GB ~ 128GB	1GB ~ 128GB	4GB ~ 128GB
Maximum Read / Write Performance (MB/s)	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: 25/15 MLC: 22/10	SLC: 25/15 MLC: 22/10	MLC: TBD
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
SQFlash Utility	Supported	Supported	Supported	Not Supported	Not 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
Vibration	20G, Peak / 80 ~2,000 Hz	20G, Peak / 80 ~2,000 Hz	20G, Peak / 80 ~2,000 Hz	5G, Peak / 10 ~2,000 Hz	5G, Peak / 10 ~2,000 Hz	5G, Peak / 10 ~2,000 Hz	15G, Peak / 10 ~2,000 Hz

# SQRAM Industrial Memory Modules

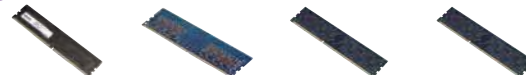
## Embedded DRAM Modules

SQRAM offers a comprehensive product line including unbuffered DIMM and SODIMM for industrial applications, and also verified by different CPU families and Advantech platforms to enhance extreme compatibility. We provide reliable industrial quality by following strict burn-in programs with 100% screen testing before shipment. Lifetime warranty and fixed BOM are a necessary part of SQRAM.

### SODIMM



### UDIMM



Model	SQR-SD4N	SQR-SD4M	SQR-SD3N	SQR-SD3M	SQR-UD4N	SQR-UD4M	SQR-UD3N	SQR-UD3M
Interface	DDR4	DDR4	DDR3L	DDR3L	DDR4	DDR4	DDR3L	DDR3L
Form Factor	SODIMM	SODIMM	SODIMM	SODIMM	UDIMM	UDIMM	UDIMM	UDIMM
Pin Number	260pin	260pin	204pin	204pin	288pin	288pin	240pin	240pin
Frequency(MHz)	2666/2400/2133	2666/2400/2133	1866/1600	1866/1600	2666/2400/2133	2666/2400/2133	1866/1600	1866/1600
Capacity	2/4/8/16GB	2/4/8/16GB	1/2/4/8/16GB	1/2/4/8/16GB	2/4/8/16GB	2/4/8/16GB	2/4/8GB	2/4/8GB
Voltage	1.2V	1.2V	1.35V/1.5V	1.35V/1.5V	1.2V	1.2V	1.35V/1.5V	1.35V/1.5V
Operating Temperature	0 ~ 85 °C	-20 ~ 85 °C	0 ~ 85 °C	-20 ~ 85 °C	0 ~ 85 °C	-20 ~ 85 °C	0 ~ 85 °C	-20 ~ 85 °C
Function	Unbuffered							

## Ruggedized DRAM Modules

SQRAM series delivers extremely durable DRAM memory for harsh environments such as military, aerospace, and in-vehicle applications. Our memory is designed using rigorous test programs including wide temperature (-40 ~ 85 °C), humidity and vibration. Extra ruggedized protection is supported by conformal coatings and underfill.

### SODIMM



### UDIMM



Model	SQR-SD4I	SQR-SD3I	SQR-SD2I	SQR-UD4I	SQR-UD3I
Interface	DDR4	DDR3L	DDR2	DDR4	DDR3L
Form Factor	SODIMM	SODIMM	SODIMM	UDIMM	UDIMM
Pin Number	260pin	204pin	200pin	288pin	240pin
Frequency(MHz)	2666/2400/2133	1866/1600	667/800	2666/2400/2133	1866/1600
Capacity	2/4/8/16GB	1/2/4/8GB	1/2GB	2/4/8/16GB	2/4/8GB
Voltage	1.2V	1.35V/1.5V	1.8V	1.2V	1.35V/1.5V
Operating Temperature	-40 ~ 85 °C	-40 ~ 85 °C	-40 ~ 85 °C	-40 ~ 85 °C	-40 ~ 85 °C
Function	Unbuffered	Unbuffered	Unbuffered	Unbuffered	Unbuffered
Value-Added Service	Conformal Coating/Underfill (Optional)				

## High Performance & Server DRAM Modules

High performance and server DRAM module solutions provide extreme high speed and capacity ECC DIMM and register DIMMs. SQRAM can process large workloads with outstanding speed for HPC applications including data centers, surveillance and IoT applications.

### RDIMM



### UDIMM ECC



### SODIMM ECC



Model	SQR-RD4N	SQR-UD4N(ECC)	SQR-UD3N(ECC)	SQR-SD4(ECC)	SQR-SD3(ECC)
Interface	DDR4	DDR4	DDR3L	DDR4	DDR3L
Form Factor	RDIMM	UDIMM	UDIMM	SODIMM	SODIMM
Pin Number	288pin	288pin	240pin	260pin	260pin
Frequency(MHz)	2666/2400/2133	2666/2400/2133	1600	2666/2400/2133	1600
Capacity	4/8/16/32GB	2/4/8/16GB	2/4/8GB	2/4/8/16GB	2/4/8GB
Voltage	1.2V	1.2V	1.35V/1.5V	1.2V	1.35V/1.5V
Operating Temperature	0 ~ 85 °C	0 ~ 85 °C	0 ~ 85 °C	0 ~ 85 °C / -40 ~ 85 °C	0 ~ 85 °C / -40 ~ 85 °C
Function	ECC	ECC	ECC	ECC	ECC
Register	Yes	x	x	x	x

# Industrial Flash and Memory Solutions

## EXM Embedded Extension Module

### Adapter

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



Model Name	EXM-CMPF1 (A key)	EXM-CMPF1 (E key)	EXM-110 (EMIO-100TL)
Type	M.2 (NGFF) to mPCIe (PCIe+USB) adapter	M.2 (NGFF) to mPCIe (PCIe+USB) adapter	LVDS to 1-Ch RGB TTL port
Communication Interface	PCIe and USB	PCIe and USB	18/24-bit LVDS
Interface Connector	MiniPCIe thru PCIe and USB	MiniPCIe thru PCIe and USB	External 18/24-bit LVDS, DF13-20DP-1.25V
Channel Connector	1 (2230/2242 A key)	1 (2230/2242 E key)	1
Operating Temperature	-40 ~ 85°C	-40 ~ 85°C	-10 ~ 70°C
Storage Temperature	-40 ~ 85°C	-40 ~ 85°C	-40 ~ 85°C
LED Status	Activated indicator	Activated indicator	-
Dimensions (L x W x H)	50.59 x 30 x 15 mm	50.59 x 30 x 15 mm	50.59 x 30 x 15 mm

### PCIe Signal



Model Name	EXM-510 (EMIO-100E)	EXM-523	EXM-520 (EMIO-200SA)	EXM-521 (EMIO-200U3)	EXM-522	EXM-540
Type	PCIe to 1-Ch Giga LAN port	PCIe to 2-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	PCIe
Interface Connector	MiniPCIe thru PCIe	MiniPCIe thru PCIe	MiniPCIe thru PCIe	MiniPCIe thru PCIe	H/S MiniPCIe thru PCIe	MiniPCIe thru PCIe
Channel Connector	1	2	2	2	2	4
Operating Temperature	-40 ~ 85°C	0 ~ 70°C	-10 ~ 70°C	-40 ~ 85°C	-40 ~ 85°C	-40 ~ 85°C
Storage Temperature	-40 ~ 85°C	-40 ~ 85°C	-40 ~ 85°C	-40 ~ 85°C	-40 ~ 85°C	-40 ~ 85°C
LED Status	Reserve the LED signal for external usage	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 + iDoor PCB Board	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

### USB Signal



Model Name	EXM-310 (EMIO-100P)	EXM-311 (EMIO-100S)	EXM-321 (EMIO-210S)	EXM-322 (EMIO-220S)	EXM-320 (EMCB-200U)
Type	USB to 1-Ch Parallel port	USB to 1-Ch High Speed Serial COM port	USB to 2-Ch High Speed RS-232 port	USB to 2-Ch High Speed RS-422/RS-485 port	USB to 2-Ch CANBus 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, 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
Channel Connector	1	1	2	2	2
Operating Temperature	0 ~ 70°C	-40 ~ 85°C	-40 ~ 85°C	-40 ~ 85°C	-40 ~ 85°C
Storage Temperature	-40 ~ 85°C	-40 ~ 85°C	-40 ~ 85°C	-40 ~ 85°C	-40 ~ 85°C
LED Status	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	Activated indicator
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 w20 mm	50.59 x 30 x 15 mm



# Embedded IoT Wireless Modules

## WiFi



Model Name	EWM-W135H/F	EWM-W158F	EWM-W170H	EWM-W151H	EWM-W160M2
Form Factor	Full/Half size Mini PCIe Card	Full Size Mini PCIe Card	Half Size Mini PCIe card	Half Size Mini PCIe Card	M.2 2230 (A-E key)
Wireless Standard	802.11 a/b/g/n	802.11 a/b/g/n	802.11a/b/g/n/ac	802.11 b/g/n	802.11 b/g/n
Chipset	Atheros AR9382	Atheros AR9592-AR1B	Atheros QCA9377-7	Realtek RTL8188EE	Realtek RTL8188EE
Signal Protocol	PCIe Differential	PCIe Differential	USB Differential	PCIe Differential	PCIe Differential
Antenna	2 x U.FL connectors	2 x U.FL connectors	2*U.FL connectors	1 x U.FL connectors	2 x I-PEX MHF4 connectors
Operating Voltage	DC 3.3V ± 5%	DC 3.3V ± 5%	DC 3.3V ± 5%	DC 3.3V ± 5%	DC 3.3V ± 5%
Temperature Range	-10 ~ 70 °C (Operating)	-40 ~ 85 °C (Operating)	-20 ~ +70 °C (Operating)	0 ~ 80 °C (Operating)	0 ~ 70 °C (Operating)
Dimensions (L x W x H)	26.65 x 29.85 x 3.25 mm	50.8 x 29.85 x 2.86 mm	26.65 x 29.85 x 2.75 mm	26.65 x 29.85 x 3.05 mm	22 x 30 x 2.3 mm
Security	64/128/152-bit WEP, WPA, WPA2, 802.1x, TKIP and AES	64/128-bit WEP, WPA, WPA2, 802.1x, TKIP and AES	WAPI, 64/ 128-bit WEP, WPA/WPA2 TKIP and AES	64/128-bit WEP, WPA, WPA2	64/128-bit WEP, WPA, WPA2, 802.1x, TKIP and AES
SISO/MIMO	2T x 2R	2T2R	1T1R	1T1R	1T1R
Data Rate	300Mbps	300Mbps	433Mbps	150Mbps	150Mbps
Bluetooth					
O.S Supported	Win 7/ 8/ 8.1	Win 7/ 8/ 8.1	win7/8/8.1/10	Win 7/ 8/ 8.1/ 10	Win 7/ 8/ 8.1/ 10
Host connector type	PCIe Mini card	PCIe Mini card	PCIe Mini card	PCIe Mini card	PCIe M.2 card

## WiFi+BT



Model Name	EWM-W157H	EWM-W162M2	EWM-W163M2	EWM-W167M2	EWM-W168H
Form Factor	Half Size Mini PCIe Card	M.2-2230(E key)	M.2-2230(A-E key)	M.2-2230(E key)	Half Size Mini PCIe card
Wireless Standard	802.11 ac/a/b/g/n	802.11a/b/g/n/ac+BT4.2	802.11a/b/g/n/ac+BT4.1	802.11b/g/n+BT4.0	802.11a/b/g/n/ac+BT4.2
Chipset	Realtek RTL8821AE	Marvell 88W8897P	Atheros QCA6174A	Realtek RTL8723BS	Realtek RTL8822BE
Signal Protocol	WiFi: PCIe BT: USB Differential	WiFi: PCIe BT: USB Differential	WiFi: PCIe BT: USB Differential	WiFi: SDIO 3.0 BT: UART	WiFi: PCIe BT: USB Differential
Antenna	2 x U.FL connectors	2 x I-PEX MHF4 connectors	2 x I-PEX MHF4 connectors	1 x I-PEX MHF4 connector	2 x I-PEX MHF4 connectors
Operating Voltage	DC 3.3V ± 5%	DC 3.3V ± 5%	DC 3.3V ± 5%	DC 3.3V ± 5%	DC 3.3V ± 5%
Temperature Range	0 ~ 70 °C (Operating)	-30 ~ +80 °C (Operating)	-20 ~ +80 °C (Operating)	0 ~ 70 °C (Operating)	0 ~ 70 °C (Operating)
Dimensions (L x W x H)	26.65 x 29.85 x 3.25 mm	22 x 30 x 2.3 mm	22 x 30 x 2.3 mm	22 x 30 x 2.3 mm	26.65 x 29.85 x 2.75 mm
Security	64/128-bit WEP, WPA, WPA2, 802.1x, TKIP and AES	WAPI, 64/ 128-bit WEP, WPA/WPA2 TKIP and AES	WAPI, 64/ 128-bit WEP, WPA/WPA2 TKIP and AES	WAPI, 64/ 128-bit WEP, WPA/WPA2 TKIP and AES	WAPI, 64/ 128-bit WEP, WPA/WPA2 TKIP and AES
SISO/MIMO	1T1R	2T2R	2T2R	1T1R	2T2R
Data Rate	433Mbps	867Mbps	867Mbps	150Mbps	867Mbps
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), 4.1, 4.2	2.1, 2.1+EDR, 3.0, 3.0+HS, 4.0 (BLE), 4.1	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), 4.1, 4.2
O.S Supported	Win 7/8/8.1/10	Linux	win7/8/8.1/10	Linux	win7/8/8.1/10
Host Type	PCIe Mini card	PCIe M.2 card	PCIe M.2 card	PCIe M.2 card	PCIe Mini card

# Embedded IoT Wireless Modules

## Optional Antenna Selection



Model Name	1750008717-01	1750008772-01
Size (cm)	10.9 x 1.0	15 x 1.0
Support frequency	WiFi Dual band antenna (2.4Ghz and 5Ghz)	WiFi Dual band antenna (2.4Ghz and 5Ghz)
Antenna gain	2.89 dBi @ 2.4-2.5GHz, 3.58dBi @ 5.15-5.85GHz	2.93 dBi @ 2.4-2.5GHz, 4.4dBi @ 5.15-5.85GHz
Polarization	Linear	Linear
Connector	RP-SMA male	RP-SMA male
Impedance	50 ohm	50 ohm

## 3G



Model Name	EWM-C109F601E	EWM-C109F6G1E	EWM-C118HD01E
Radio Technology	HSPA	HSPA	HSPA
Downlink/ Uplink	7.2 Mbps/ 5.76 Mbps	7.2 Mbps/ 5.76 Mbps	7.2 Mbps/ 5.76 Mbps
Frequency Band	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	u-blox LISA-U200	u-blox LISA-U200 and MAX-6	u-blox SARA-U270
Operating Temperature	-40 to +85 °C	-40 to +85 °C	-40 to +85 °C
size	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	-



## GPS

Model Name	EWM-G108H*	EWM-G109H*
GPS Mini Card	Half-size Mini PCIe card	Half-size Mini PCIe card
GPS Type	Hardware standalone	Hardware standalone
Signal Protocol	USB	USB
Chipset	NEO-7	NEO-M8N
Operating Temperature	-40 to +85 °C	-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	GPS module, multi-GNSS (GPS, Beidou, GLONASS, Galileo, QZSS and SBAS)
GPS Acquisition	Cold starts: 29s / Aided starts: 5s / Reacquisition: 1s	Cold starts: 26s / Aided starts: 2
GPS Accuracy	Position 2.5m / SBAS 2.0m	Aided starts: 2
GPS Sensitivity	Tracking: -162 dBm / Cold starts: -148 dBm / Reacquisition: -148 dBm	Tracking: -167 dBm / Cold starts: -148 dBm / Reacquisition: -160 dBm

## 4G LTE CAT4/CAT6



Model Name	EWM-C117FL01E	EWM-C117FL02E	EWM-C141M201E	EWM-C160M201E	EWM-C163M201E
Form Factor	Full Size Mini PCIe Card	Full Size Mini PCIe Card	M.2 3042 (B key)	M.2 3042 (B key)	M.2 3042 (B key)
Radio Technology	LTE CAT4	LTE CAT4	LTE CAT4	LTE CAT6	LTE CAT6
Downlink/ Uplink	FDD LTE Max150Mbps(DL) / 50Mbps(UL)	FDD LTE Max150Mbps(DL) / 50Mbps(UL)	FDD LTE Max150Mbps(DL) / 50Mbps(UL)	FDD LTE Max 300Mbps(DL) / 50Mbps(UL) TDD LTE 112Mbps(DL) / 10Mbps(UL)	FDD LTE Max300Mbps(DL) / 50Mbps(UL)
Frequency Band	4G LTE bands 2 / 4 / 5 / 7 / 17, 3G bands 1/2/4/5/8, GPRS band 850 / 900 / 1800 / 1900	4G LTE bands 1 / 3 / 5 / 7 / 8 / 20, 3G bands 1/2/5/8, GPRS: 850/ 900/1800/1900MHz	4G LTE FDD: 1, 3, 5, 7, 8, 20, 28, 3G bands: 1, 5, 8, GPRS: 850(B5), 900(B8), 1800(B3), 1900(B2)	LTE FDD: 1, 3, 8 /TDD: 38, 39, 40, 41 3G bands: 1, 8	4G LTE FDD: Band 1, 3, 7, 8, 20, 28, 32 3G bands: 1, 8
Main Chipset	u-blox TOBY-L200	u-blox TOBY-L200	Intel 7120M	Intel 7262	Intel 7262
Operating Temperature	-40 ~ +85 °C (Operating)	-40 ~ +85 °C (Operating)	-20 ~ +70 °C (Operating)	-10 ~ +55 °C (Operating)	-30 ~ +65 °C (Operating)
Signal protocol	USB 2.0	USB 2.0	USB 2.0	USB 2.0	USB 2.0
Support area	US	EU/APAC	EMEA	China	EMEA

## Optional Accessories



Model Name	1750008767-01
Length (cm)	150
Cable type	WiFi cable
Cable loss	0.62dB@2500MHz for 1Meter
Polarization	Linear
Connector	SMA(F)/SMA(M)
Impedance	50 ohm

# Wireless ePaper Display Solutions



Model Name		EPD-023B 2.9" Wireless e-Paper Display	EPD-053R 5.65" Wireless e-Paper Display	EPD-132R 13.3" Wireless e-Paper Display
Computing System	MCU	TI 32-bit ARM Cortex-M3	TI 32-bit ARM Cortex-M3	ST 32-bit ARM Cortex-M4
	Memory	RAM 28KB	RAM 28KB	RAM 256KB
Display	Screen Size	2.9"	5.65"	13.3"
	Resolution	296 x 128 pixels	600 x 448 pixels	1600 x 1200 pixels
	Touch Type	-	-	-
Storage	Internal	Flash: 128 KB	Flash: 128 KB	Flash: 1M
	External	SPI Flash: 256 KB	SPI Flash: 512 KB	SPI Flash: 4M x2
Audio	Audio	-	-	-
Network	Standard	IEEE 802.15.4	IEEE 802.15.4	IEEE 802.11b/g/n and Bluetooth Low Energy
	Frequency Band	2.4-GHz	2.4-GHz	2.4000~2.4840 GHz for Wi-Fi 2.4000~2.4835 GHz for BLE
	Channels	16	16	1-13 for Wi-Fi & 79 for BLE
	Channel Separation	5MHz	5MHz	5MHz
	Topology	Star network	Star network	Star network /Mesh topology
	Transmit Power	-21dBm~ +5dBm	-21dBm~ +5dBm	Typ. 14 dBm at 802.11b CCK Mode 1M Typ. 12 dBm at 802.11g OFDM Mode 54M Typ. 12 dBm at 802.11n OFDM Mode MCS0 Max 10 dBm for BLE
	Receiver Sensitivity	-100dBm	-100dBm	Typ. -95dBm at 1 Mbps Typ. -75 dBm at 54 Mbps Typ. -89 dBm at MCS0 Typ. -89 dBm for BLE
	RF Data Rate	250 Kbps	250 Kbps	Up to 65Mbps
	Function	End node	End node	End node
	Antenna	On-board Antenna	On-board Antenna	MHF4 connector
Interface	Interface	LED x3 Function Key x3	LED x1 Function Key x2	LED x1 Function Key x2
Power	Battery	AAA Alkaline battery x4 / CR2450 x2	AAA Alkaline battery x4	Li-Battery: 5V/3350 mAh DC in: 5V
Environment	Operating Temperature	0 ~ 40 °C	0 ~ 40 °C	0 ~ 40 °C
	Non-Operating Temp.	-25 ~ 60 °C	-25 ~ 60 °C	-25 ~ 60 °C
	Operating Humidity	5 ~ 80% relative humidity, non-condensing	5 ~ 80% relative humidity, non-condensing	5 ~ 80% relative humidity, non-condensing
Physical Characteristics	Dimensions (W x H)	79.0 x 36.7 mm	125.4 x 99.5 mm	285.8 x 213.65 mm
	Weight	TBD	TBD	TBD
Operating System	Operating System	RTOS	RTOS	ThreadX v5.6
Certification	CE/FCC/SRRC/NCC	CE/FCC/SRRC/NCC UL/CB Safety	CE/FCC/SRRC/NCC UL/CB Safety	CE/FCC/SRRC/NCC UL/CB Safety

# Embedded Software Distribution



Windows OS				
Product	Windows 10 IoT Enterprise	Windows Embedded Standard	Windows Embedded Enterprise	Windows Embedded Industry and POSReady
Overview	Windows 10 IoT is a family of Windows 10 editions with advanced lockdown capabilities that power a range of industry devices across retail and manufacturing.	This is a componentized OS to let you create custom operating system images to deliver precise functionality to devices.	Windows Embedded Enterprise powers dedicated embedded devices that require compatibility and the flexibility to deploy a custom user interface.	Windows Embedded POSReady is a flexible OS designed to seamlessly connect point-of-service solutions with peripherals, servers, and services.
Benefits	<ul style="list-style-type: none"> <li>One app platform - universal ppp (UAP)</li> <li>Supports unified POS implementation</li> <li>Build-in Embedded lockdown capabilities</li> <li>Full-spectrum interconnectivity</li> </ul>	<ul style="list-style-type: none"> <li>Componentized operating system lets you choose the features that you want</li> <li>Custom branding lets you provide a unique, custom experience from start to finish</li> <li>Lockdown features help ensure predictable customer experience</li> </ul>	<ul style="list-style-type: none"> <li>Take advantage of full Windows to provide a high degree of cross-platform application compatibility</li> <li>Deliver an immersive, natural user experience with multi-touch and Kinect for Windows</li> <li>Easily implement retail peripherals with built-in plug and play capabilities</li> </ul>	<ul style="list-style-type: none"> <li>Take advantage of full Windows 8.1 to provide a high degree of cross-platform application compatibility</li> <li>Easily implement retail peripherals with built-in plug and play capabilities</li> <li>Build and deploy industrial devices with streamlined OS installation</li> </ul>
Min. Hardware Requirement	<ul style="list-style-type: none"> <li>x86 or AMD64 processor</li> <li>1GB CPU or higher</li> <li>1GB of system memory (2GB recommended for 64-bit)</li> <li>16GB free space on hard disk drive</li> </ul>	<ul style="list-style-type: none"> <li>x86 or AMD64 processor</li> <li>900mhz CPU or higher</li> <li>512 MB of system memory (1GB recommended for AMD64)</li> <li>1 GB free space on hard disk drive (HDD) or flash-based Solid State Drive (SSD) (4 GB recommended)</li> </ul>	<ul style="list-style-type: none"> <li>x86 or AMD64 processor</li> <li>1GB CPU or higher</li> <li>1GB of system memory (2GB recommended for 64-bit)</li> <li>16GB free space on hard disk drive (HDD)</li> </ul>	<ul style="list-style-type: none"> <li>x86 or AMD64 processors</li> <li>900mhz CPU or higher</li> <li>512 MB of system memory (1GB recommended for AMD64)</li> <li>1 GB free space on hard disk drive (HDD) or flash-based Solid State Drive (SSD) (4 GB recommended)</li> </ul>
Product	<ul style="list-style-type: none"> <li>Windows 10 IoT Enterprise LTSB</li> <li>Windows 10 IoT Enterprise CBB</li> </ul>	<ul style="list-style-type: none"> <li>Windows Embedded Standard 8</li> <li>Windows Embedded Standard 7</li> </ul>	<ul style="list-style-type: none"> <li>Windows Embedded 8.1 Industry Pro</li> <li>Windows 8.1 pro for embedded system</li> <li>Windows 7 pro/ultimate for embedded system</li> </ul>	<ul style="list-style-type: none"> <li>Windows 8.1 Industry pro retail</li> <li>POSReady 7</li> <li>POSReady2009</li> </ul>

Windows OS			
Product	Windows Embedded Compact	Windows Embedded Server	Microsoft SQL Server for Embedded Systems
Overview	Windows Embedded Compact is a componentized, real-time, small-footprint OS for powering some of the industry's smallest devices.	Windows Server has built-in security, reliability, and availability features intended for application in embedded solutions.	Microsoft SQL Server is intended for application in embedded solutions or purpose-built HW running Windows Embedded Server OS.
Benefits	<ul style="list-style-type: none"> <li>OS for specialized, small-footprint devices that need real-time performance and compatibility with ARM and x86 architectures</li> <li>Platform for sensors-to-cloud intelligent systems applications</li> <li>Focussed on industrial automation, retail and medical devices</li> </ul>	<ul style="list-style-type: none"> <li>Offers a dynamic infrastructure that can scale up, increase hardware ROI, and reduce total cost of ownership</li> <li>Platform features diverse storage choices that can help achieve high-performance, availability and resource efficiency through virtualization and optimization</li> <li>Delivers centralized access and audit policies, leverages built-in security capabilities, and helps lock down your appliances</li> </ul>	<ul style="list-style-type: none"> <li>Breakthrough performance</li> <li>Enterprise scalability across computers, networking, and storage</li> <li>Consistent data platform on-premises to the cloud</li> </ul>
Min. Hardware Requirement	<ul style="list-style-type: none"> <li>1.6 GHz CPU, 384 MB RAM, 1024x768 display</li> <li>100 GB of free hard disk space</li> </ul>	<ul style="list-style-type: none"> <li>1.4 GHz 64-bit processor or higher</li> <li>Minimum: 512 MB system memory</li> <li>Minimum: 32 GB free space</li> </ul>	<ul style="list-style-type: none"> <li>x86 or AMD64 processor</li> <li>1.4 GHz or higher</li> <li>1GB of system memory</li> </ul>
Product	<ul style="list-style-type: none"> <li>Windows Embedded Compact 2013</li> <li>Windows Embedded Compact 7</li> <li>Windows Embedded CE 6.0</li> </ul>	<ul style="list-style-type: none"> <li>Server 2016 for embedded system</li> <li>Server 2012 for embedded system</li> <li>Server 2008 for embedded system</li> </ul>	<ul style="list-style-type: none"> <li>SQL Server 2017 for embedded system</li> <li>SQL server 2016 for embedded system</li> <li>SQL server 2014 for embedded system</li> </ul>



# Embedded Software Distribution



	Embedded Real-Time OS		Security
Product	Wind River Pulsar Linux	Wind River VxWorks	Acronis
Overview	A container-based Linux OS with vital components for the production and commercialization of IoT devices.	VxWorks is the RTOS foundation for successful development of very small devices, large intelligent connected systems, and everything in between.	Provides users with a quick and easy solution to protect data and recover the entire system if the OS crashes. It effectively reduces down-time cost and lowers the risk of data loss.
Benefits	<ul style="list-style-type: none"> <li>Open source software</li> <li>Customized base platform</li> <li>Extensibility via packages and/or containers</li> </ul>	<ul style="list-style-type: none"> <li>Lower system development costs with a single RTOS that scales</li> <li>Complete security for connected devices</li> <li>Ensure compliance with safety and security requirements</li> </ul>	<ul style="list-style-type: none"> <li>Entire computer backup and restore for your system, applications, and files, or can migrate to new hardware with full image backup</li> <li>Restore your computer to bare metal or migrate to a new computer and new hardware</li> <li>Optimized for Windows 10 and recent Mac OS X versions, compatible with Windows XP, 7, 8, and 10</li> </ul>
Min. Hardware Requirement	<ul style="list-style-type: none"> <li>Advantech selected Product</li> </ul>	<ul style="list-style-type: none"> <li>ARM 11 / 11 MPCore / 9 / Cortex A9 MPCore / Cortex A8</li> <li>Intel® Pentium family / Quark/ Xeon/ Xeon LV / Core/ Core 2 Duo / Atom / VxWorks 7</li> </ul>	<ul style="list-style-type: none"> <li>Processor - Pentium 1 GHz</li> <li>1.5 GB of free space on a hard disk CD-RW/DVD-RW drive or USB flash drive for bootable media creation</li> <li>Screen resolution of 1152 x 720</li> </ul>
Product	<ul style="list-style-type: none"> <li>Wind River Pulsar Linux 8</li> </ul>	<ul style="list-style-type: none"> <li>VxWorks 7</li> </ul>	<ul style="list-style-type: none"> <li>Acronis True Image Personal</li> <li>Acronis True Image Full/Premium</li> </ul>



	Security		
Product	McAfee		
Overview	McAfee ePolicy Orchestrator unifies the managing of endpoints, networks, and data. It is a management tool for deploying and configuring embedded security in connected devices.	McAfee whitelisting technology is ideal for protecting systems with low overhead which does not impact system performance and is equally effective in standalone mode without network access.	McAfee blacklisting technology introduces a new framework that allows multiple endpoint defense technologies to communicate in real time, and analyzes and collaborates against new and advanced threats.
Benefits	<ul style="list-style-type: none"> <li>Central security management to monitor and report the data of managed clients</li> <li>Remote deployment of security policies</li> <li>Additional McAfee modules to fulfill different vertical applications</li> <li>Dashboard with analytical reports</li> </ul>	<ul style="list-style-type: none"> <li>Block unauthorized applications and change attempts</li> <li>Change attempts from outside of policy are blocked</li> <li>Monitors file integrity and file changes</li> </ul>	<ul style="list-style-type: none"> <li>Includes several new, advanced malware-scanning features to defend against emerging and targeted attacks</li> <li>Prevents users from browsing to malicious or unauthorized websites</li> <li>Stops malicious inbound and outbound network traffic</li> </ul>
Min. Hardware Requirement	<ul style="list-style-type: none"> <li>64-bit Intel Pentium D or higher</li> <li>2.66 GHz or higher</li> <li>8 GB available RAM</li> </ul>	<ul style="list-style-type: none"> <li>Processor supports x86-64 / AMD64 architectures</li> <li>1-GB RAM (64 bit 2-GB)</li> <li>100-MB free disk</li> </ul>	<ul style="list-style-type: none"> <li>Win 7 1.4 GHz or higher 2 GB RAM</li> <li>Win 10 2 GHz or higher 3GB RAM</li> </ul>
Product	<ul style="list-style-type: none"> <li>McAfee ePO</li> </ul>	<ul style="list-style-type: none"> <li>McAfee Application Control</li> <li>McAfee Embedded Control</li> <li>McAfee Integrity Control</li> </ul>	<ul style="list-style-type: none"> <li>McAfee Endpoint Security 10</li> </ul>

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