



Enabling an Intelligent Planet

Product Catalog 2016 - 2017

Embedded Computing

Comprehensive Embedded Boards, Systems and Modules with Design-in Services

- Integrated IoT Solutions
- RISC Computing Platforms
- Computer On Modules
- Embedded Single Board Computers
- Industrial Motherboards
- Embedded PCs
- Fanless Embedded Box PCs
- Digital Signage and Display
- Gaming Platforms
- Industrial Display Systems
- Industrial Storage SQFlash Solutions
- Embedded Software Solutions and Distribution
- Design To Order Services

ADVANTECH

Enabling an Intelligent Planet

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About Embedded Computing

Worldwide Leadership in Embedded Design and Services

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

Integrated Embedded Computing Solutions

Beyond Embedded Leadership in the IoT Era



Embedded Boards

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

IoT Gateway & Intelligent Systems

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

Industrial Displays and Modules

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

IoT Software Solutions and Platform Services

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

Design-in Services

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

WISE-PaaS: IoT Software Platform Services

Powerful Development Capabilities and Win-Win IoT Partnership

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

<p>WISE-PaaS/RMM Remote Monitoring and Management</p> <p>WISE-PaaS/RMM is a powerful device management software that collects IoT terminal data through remotely managing devices and safeguarding equipment and critical data with real-time backups, and application restoration from Acronis.</p>	<p>Microsoft Azure for Cloud Platform Service</p> <p>Advantech is partnering with Microsoft® through the Microsoft CSP (Cloud Solution Provider) Program. Microsoft Azure is pre-integrated with WISE-PaaS to provide cloud services that allow you to quickly deploy infrastructure and services that meet all your business needs.</p>
<p>WISE-PaaS/Security for Cloud-based Security Management</p> <p>World leading security brand McAfee offers Whitelisting, Blacklisting, and Data Security to ensure top security for your systems and services.</p>	<p>RESTful API for Easy Access Across Different Programming Platforms</p> <p>No matter which operating system or language, development can be easily integrated and information uploads through HTTP Request.</p>
<p>WebAccess+ Integrated Software Suite and Solutions</p> <p>WebAccess+ is an integrated software suite which combines WebAccess/SCADA, WebAccess/NMS (Network Management Software), WebAccess/IVS (Intelligent Video Software) and WebAccess/IMM (Interactive Multimedia) for diverse customers' need.</p>	<p>Comprehensive Development Service</p> <p>Training and consulting services are provided that help VIP members pick up IoT technologies easily on the IoT Developer Forum; this shortens the design phase, and gets your IoT solution to a faster, solidier, and higher quality launch.</p>



WISE-PaaS Alliance Win-Win IoT Partnership

Wireless IoT Sensor Node Solutions

Powered by WISE-1000 & 3000 Series

Advantech Wireless IoT Solution provides simply, quickly and completed from sensor to cloud wireless IoT Solution. By integrated wireless network management and cloud connectivity platform with WISE-PaaS IoT software, Advantech provides scalable sensor manageability for data acquisition solutions. Within Advantech IoT solutions, customers are able to take the latest technologies, which adopt Advantech crucial validation tests, and get the first-in-market solution to keep the best competition.



Leading Technology Design & Services

Complete RF Design & Certification Ready

To simplify the development of Wireless IoT applications, Advantech offers verified wireless gateway and node devices with software for IoT developers.



Standard Modular Design –M2.COM IIoT Sensor Node

Advantech creates a new open standard called M2.COM, it is a sensor platform using a simple module design to provision a solid, standard platform for IoT nodes and various sensors.



Value-added IoT Software Built-in

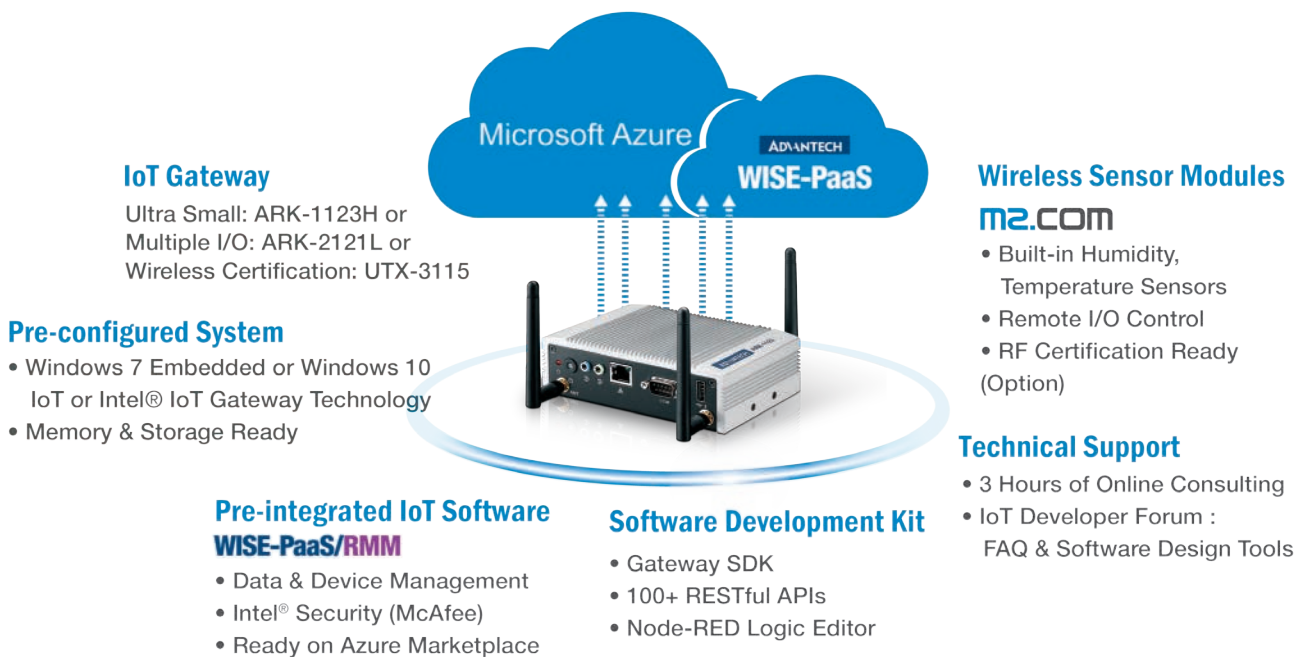
Each IoT project needs to integrate wireless technology, seamless connect to cloud, receive data, and take actions. All of these need software to enable. Advantech WISE-PaaS/RMM IoT software platform can help build IoT application quickly.



IoT Gateway Starter Kit

Pre-integrated HW/SW/Services Packages

Advantech also provides pre-integrated gateway starter kit to jumpstart your IoT innovation. The kit simplified integration, minimize development cost, and accelerate time-to-market. There are three gateways selected for the Starter Kit, which are based on Intel IoT Gateway Technology and verified through the Microsoft Azure Certified for IoT program: Wi-Fi/3G CE/FCC/UL RF certified UTX-3115, ultra-small ARK-1123H, and the multiple I/O ARK-2121L. They are both designed to withstand harsh environments, with good scalability for networking and versatile I/O communication. Besides the ready-to-run gateway system, a software solution is also included in the package. This includes WISE-PaaS/RMM Pro version: IoT device remote monitoring and management software for data management, device monitoring/control and security (Intel® Security McAfee). And WISE-PaaS/RMM is ready on Microsoft® Azure Marketplace to enable big data analytic services. As for IoT design-in services, we provides gateway and security SDK, 100+ RESTful APIs, Node-RED logic editor design tools and documents. With 3 hours of online consulting services, customers will have their exclusive account to submit, manage, and track service status.



Real-time Access IoT Developer Forum

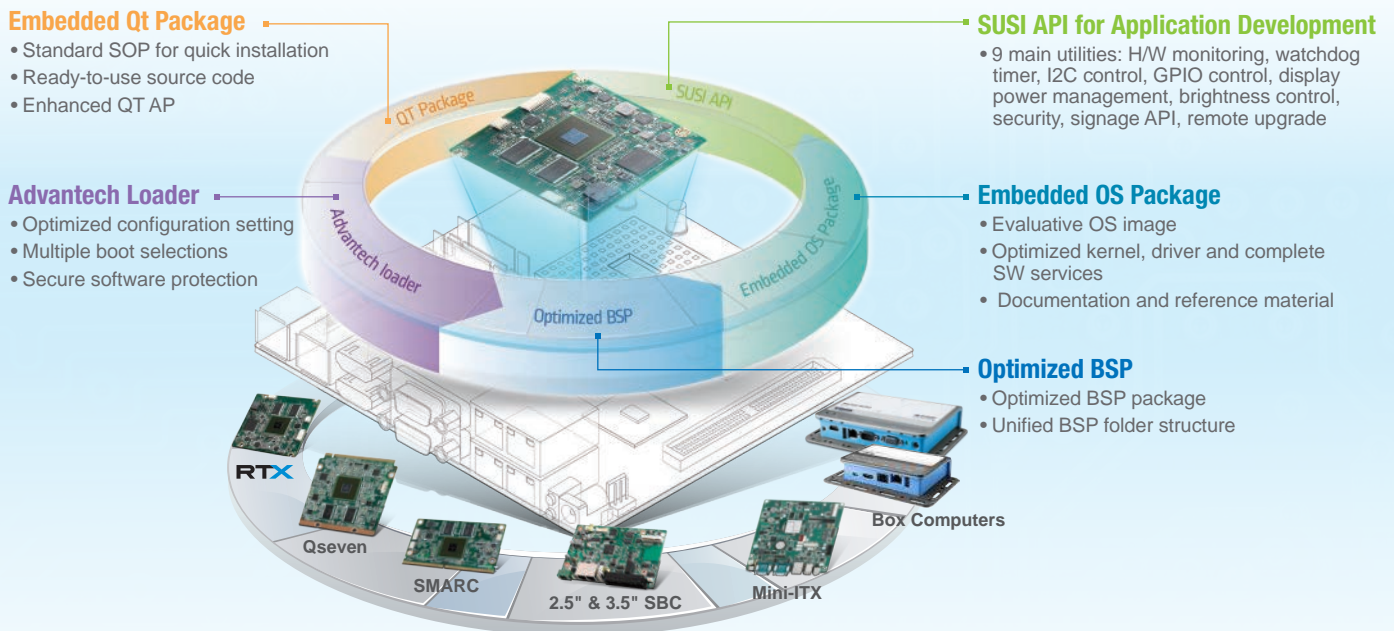
For a quick jump into the core discussion with professional consultants, Advantech built an IoT Developer Forum. The IoT Developer Forum is a real-time, online platform for sharing the IoT technologies news and posting questions. Discuss a variety of development topics, from getting started to working with the latest software and IoT technologies. Any customers who purchase the Starter Kit are eligible to become VIP members in our IoT Developer Forum community. On the Forum there are dedicated Advantech technical experts for technical Q&A, and for download, the latest technical tools and documents that help customers shorten their design phases and speed their launches.

RISC Computing Platforms

Seamless Integration Services for Rapid Application Development

ARM-based technology becomes prominent because of the increased demand for smart phones and other consumer electronics. It attracts IPC user to start understanding ARM technology and plans new relevant products and applications. Advantech provides a standardized, ultra-compact and highly integrated RISC computing solution that can be utilized across multiple embedded PC, system and appliance designs.

Industrial standardization is one of our key mission. For RISC Computer-on-Module, Advantech as a founding member of the SGET consortium, we adopt and promote SMARC and Qseven standard and have developed several products based on the standard. Advantech also leaded a new form factor called RTX (Ruggedized Technology eXtended) to bring more solid, coriaceous and standardized platform for rugged applications.



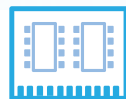
RISC Design-in Services

Advantech provides a full-range of RISC Design-in services including software, hardware and middleware, which expedites your development cycles and speeds your products' time-to-market.



Software

- Middleware/SUSI APIs
- Board Support Package
- Porting Guide
- Customization



Hardware

- Evaluation Kit
- Reference Design
- Design Review
- Trouble Shooting



Integration

- Test Plan/Program
- Function/Reliability Test
- Certification
- Peripherals/Accessories



Production

- Worldwide Delivery
- Global After Services
- Longevity
- Excellent Quality

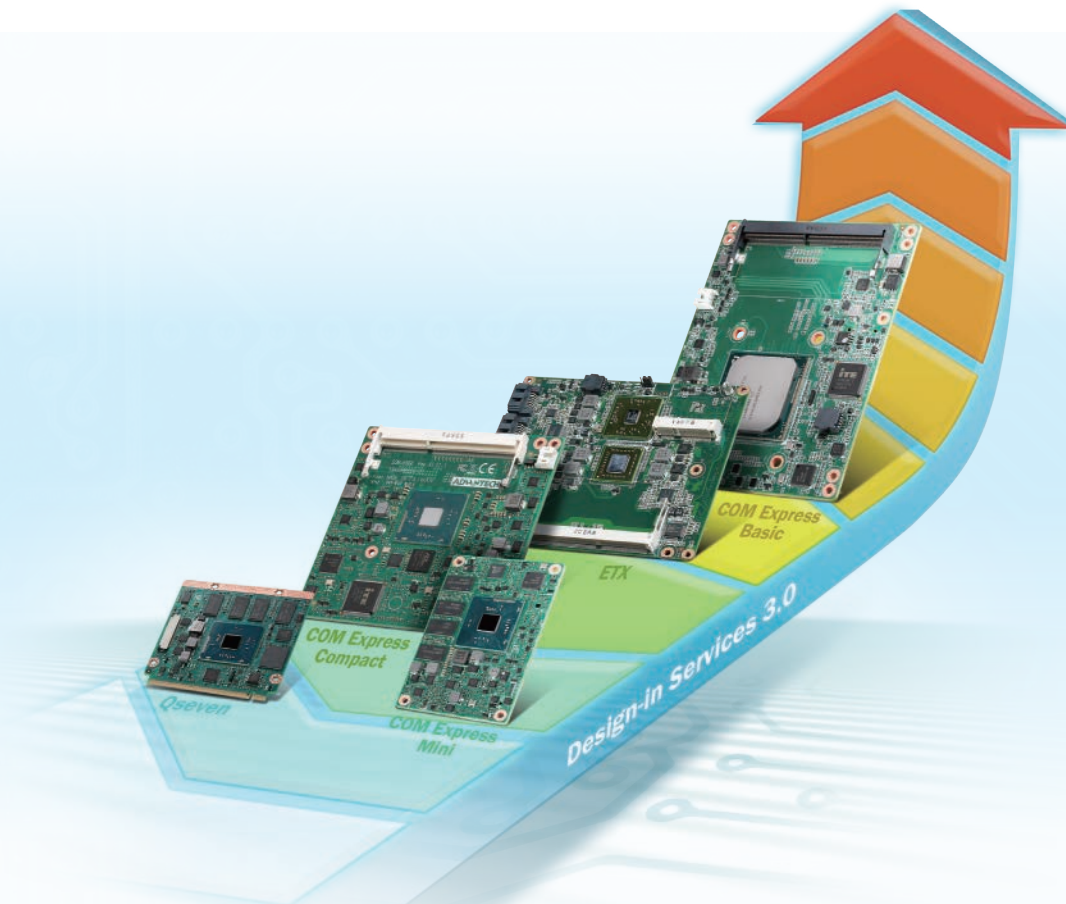
Complete Peripherals and Modules Integration

To speed up the application development, Advantech provides a series of peripheral solutions to help customers integrate industrial-grade peripherals including displays, storages and wireless connectivity modules into their applications. Advantech offers a total solution combined with software and hardware, from peripheral drivers, APIs to customized software configurations; from one single LCD to a standalone HMI, we provide everything need during the application development. The integrated peripherals are also supported with high quality and long longevity as well as other Advantech products. Moreover, the compatibility and functionality of those peripherals are well-verified.

Computer On Module

Pioneering Technology and Design-in Service 3.0

Computer-On-Module, or COM, is a highly integrated board with CPU, chipset, memory, and peripherals designed into a component module. COM requires a carrier board to power up and brings out expansion interfaces and I/O for use. Since the COM architecture provides various standard specifications in different form factors and pin-out types, it not only gives OEM customers flexibility to choose a suitable solution for their applications but also saves development time. The COM standard includes COM Express®, ETX and Qseven, providing a wide variety of interfaces like PCI Express, PCI, ISA, SATA, IDE, USB3.0, etc. These standards cover electrical and mechanical compatibilities for easy replacement or upgrade regardless of the mechanical and thermal design. As a result, COM is one of the most popular choices for customers to design their application-specific solutions.



Key Features



Full Range of Platforms

Advantech provides full range COM products from low power to high performance- server-grade level for customers to choose. COM customers benefit from its flexibility and easy learning curve to serve a variety of applications.



Advanced thermal solution

The Dynamic Heat Conduction System is an innovative technology that benefits high-computing power COM series products. It resolves mechanical tolerance issues and makes a tight CPU to heatsink contact, while preventing board bending and CPU damage. It offers significant heat dissipation efficiency for high-power CPUs. More effective than traditional thermal modules, DHCS provides more than 20 °C temperature drop.



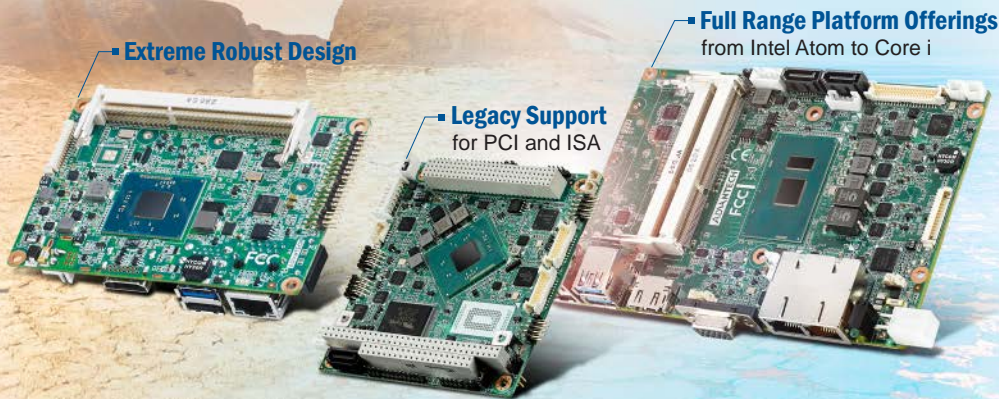
Design-in Services

Advantech COM Design-in Services covers all your questions from the design-in process to volume production, with product lifecycle management. We act as your in-house engineer as well as your personal consultant. Customers benefit from easy selection of modules, accessories and software, all backed up by our expert-integrated team. We transform complex COM development into easy tasks so our customers can better meet new market challenges.

Embedded Single Board Computers

Reliability and Rugged Design with Built-in Intelligence

Advantech Embedded Single Board Computer (SBC) series range from 2.5" Pico-ITX, 3.5", PC/104 Modules and EBX, to 5.25" SBC boards. Embedded SBCs offer standard form factors in compact sizes with rich I/O, high flexibility and easy expansion capabilities, featuring scalable performance to fulfill multiple applications that demand reliable operation and industrial grade design and quality. Moreover, Advantech Embedded SBCs offer ultra low power/extreme performance solutions, fanless designs, compact and low profile architectures, and extended temperature options and longevity. With their rugged features, Advantech Embedded SBCs guarantee the highest reliability and durability in all kinds of extreme environment applications, making it a perfect fit for price-competitive markets, size-sensitive devices, and the harshest of environments.



Key Features:



Full Range of Platforms, Low Power to Extreme Performance

- x86 architecture, Intel & AMD rich platform options
- Rich software options
- Ultra low power down to 4Watts
- Extreme performance to Core i w/ fanless design



Rugged Design with High Reliability

- Wide temperature design
- Fanless for long MTBF
- Military standard option
- Anti-vibration solution



I/O Design Flexibility

- Cableless design
- Changeable coastline
- I/O extension options



Small and Slim

- Standard and innovative form factors
- Off the shelf solutions

Industrial Motherboards

Easily Integrated, Flexible Deployment for Vertical Markets

Advantech industrial motherboard series range from UTX, Mini-ITX and Micro ATX, to ATX form factor boards. These standard form factors allow customers to seamlessly upgrade without compatibility concerns. Compared to the short life cycle of commercial motherboards, Advantech industrial motherboards have strict revision control, which means engineering changes are kept to a minimum to reduce the high cost of design changes, maintenance and upgrade efforts. These industrial motherboard series are ideal solutions for customers who use commercial off-the-shelf products but require the flexibility of PCIe, PCI-X, PCI and AGP card expansion with industrial features like longevity, reliability and manageability. By leveraging our customization experience, we also offer vertical off-the-shelf standard motherboards with intelligent remote management software built-in; these can dramatically save on develop cycles and budgets, and help to optimize your business success.



Key Features:



Thin and Low Profile

- Less than 21mm height motherboards
- Amiable for height constrain applications



Extended Temperature

- -20~70°C option temperature support
- Liable for semi-outdoor and vehicle application



Multi 4k2k Displays

- DP++, HDMI 1.4/2.0 displays
- Multiple interface for diversified resolution support



Fanless Thermal Solution System

- 0-45°C operation temperature
- Noiseless w/ outstanding MTBF



Wide Range DC Input

- Up to 12/19/24V support
- Easy installation and reliability enhancement



USB reliability enhancement

- USB stability enhancement
- Affable installation for ATM and KIOSK application



Extensive I/O expansion

- Numerous USB and COM for plenty of connection
- Optimization for RF module and certification
- M.2 interface for the latest SSD and RF module.



One-stop System & Enclosure Configuration

- Easy configuration from off-the-shelf goods readiness
- Fully SW/HW integration with complete test coverage

Embedded PCs

Full Range Enclosures Designed for Embedded Boards

Advantech Embedded PCs are the full range enclosures designed for 3.5" single board computers and Mini-ITX motherboards, featuring optimized mechanical design and flexible I/O interface options, assuring maximized flexibility for design-in efficiency. Advantech Embedded PCs come with various standard form factors and scalable sizes, allowing quick integration for customer applications.

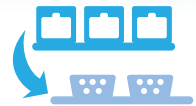


Key Features:



Full Range Enclosure Offerings

- Designed for 3.5" SBCs and THIN mITX boards series
- Cover low-power to extreme performance platforms
- Mini-size to middle compact design



Optimized Mechanical Design

- I/O design flexibility
- Multiple mounting capability (Wall/ VESA-mount, DIN rail)
- Fanless/fan-based options
- Easy assembly and maintenance



Quick Integration with Local Service

- Configure-to-order service
- One-stop peripheral integration
- Fast delivery with local access



- EPC-S Series**
- Featuring slim design
 - Designed for Entry-to-middle end MIO-Compact SBC or 3.5" SBCs



- EPC-C Series**
- Featuring compact design
 - Designed for medium-to-high performance 3.5" SBCs



- EPC-X Series**
- Featuring expandable design
 - Designed for 3.5" SBCs with extension boards or MIOe modules



- EPC-T Series**
- Featuring thin design
 - Designed for thin Mini-ITX motherboards, under 1U height

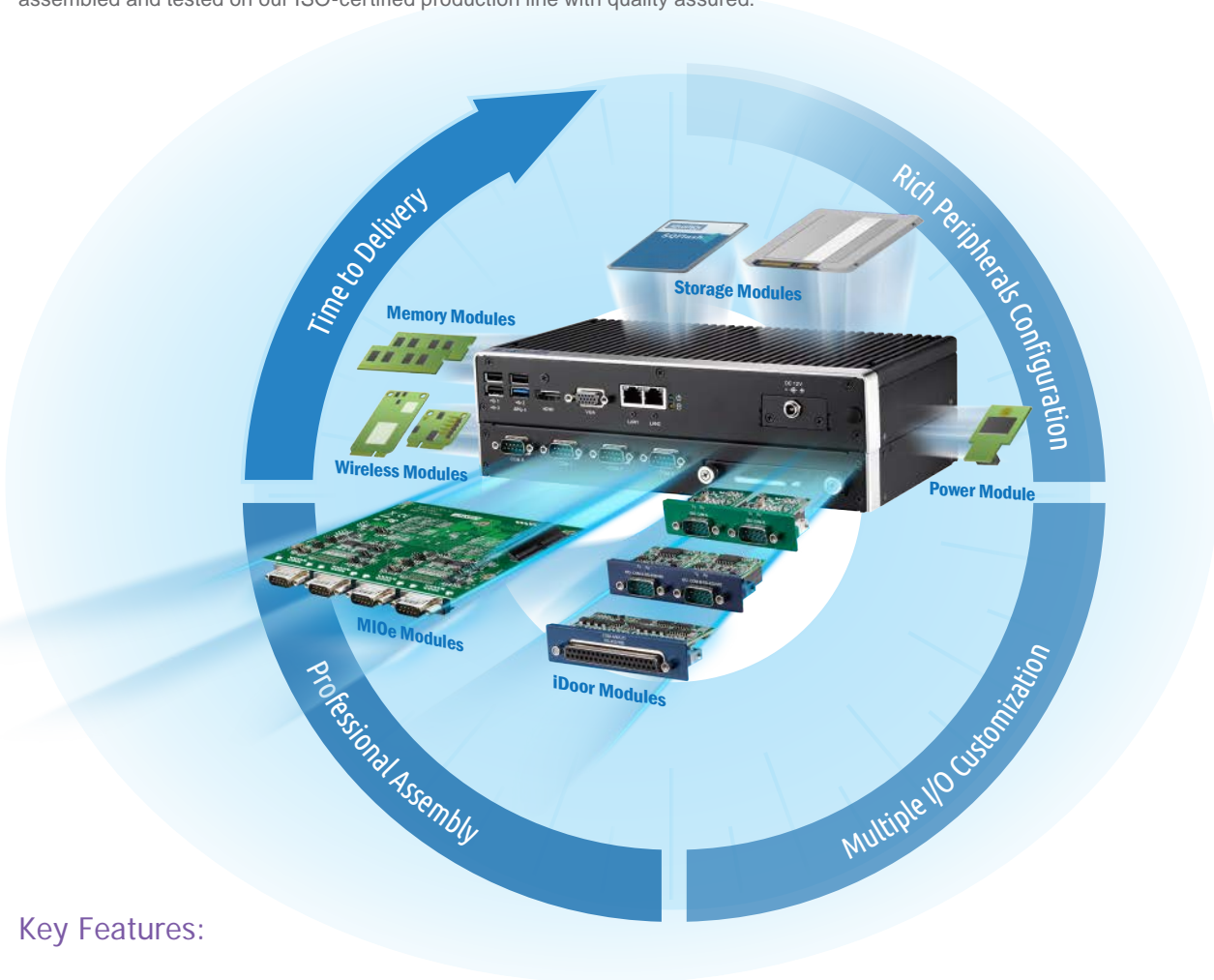


- EPC-B Series**
- Featuring scalable design
 - Designed for standard Mini-ITX and THIN Mini-ITX motherboards

Fanless Embedded Box PCs

Fully Modular Design for Quick Customization

ARK fanless box computer has been providing ruggedized x86 computing solutions, with all the industrial characteristics such as supreme thermal design, extended operating temperature support, anti-shock and vibration. These highly reliability computing platforms are not just hardware, but also build-in with intelligent software providing many self-sensing software services like self-diagnosing, remote management, backup & recovery and anti-virus. Furthermore, in order to fulfill various applications in IoT era, Advantech ARK series provide fully Modular design with CTOS service for quick customization. All the tailored configurations, including multiple I/O customization, rich peripherals configuration, add on modules, OS, customized BIOS, and accessories are assembled and tested on our ISO-certified production line with quality assured.

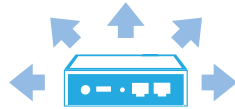


Key Features:



Multiple I/O Modular Design

- Full selection of MI/O Extension and iDoor modules
- 100+ expansion capability
- Quick I/O customization



Rich Peripherals Integration

- Fully configurable with industrial-grade peripherals
- Flexible selection of storage/ wireless/ memory/ power modules
- Embedded OS & software integration



Configure-to-order Service

- ISO certified assembly
- Fast local customization service
- Optimized delivery time



Web-Based Smart Signage Solutions

The Key to Accelerating Signage Applications

Advantech has powered thousands of DOOH applications in various fields with turnkey signage offerings. All Advantech digital signage players come pre-loaded content management software, WebAccess/IMM, and device management software, WISE-PaaS/RMM at no extra cost. Advantech provides comprehensive signage media players with wide selections of varied computing power and cost structures from entry-level fanless, to high-end systems supporting independent multiple displays. Our highly integrated solutions help SIs implement networked signage applications and create a powerful customer experience for vertical success in Retail, Transportation, Healthcare, Industrial and Education industries.



Application-ready Solution

- Hardware/software integrated solution
- Guaranteed compatibility
- Complete offerings from entry level to high performance platforms

Web-based Management

- Remote edit, dispatch, monitoring & reporting
- Public/ Private LAN
- Supports multi-input display walls

Streamlined Design Services

- Flexible customization
- Global support
- High quality and reliability



Entry Level Series

- High cost/ performance ratio solutions
- Low-power & Fanless design



Advanced Computing Series

- Intel Core i series solutions
- Powerful computing performance



Multi-Display Series

- Video wall solutions
- Flexible multiple outputs, up to 1x3, 2x2, 2x3, 3x2



OPS Series

- Intel Open Pluggable Standard solutions
- Slot-in & Cableless design

WebAccess/IMM

WISE-PaaS/RMM

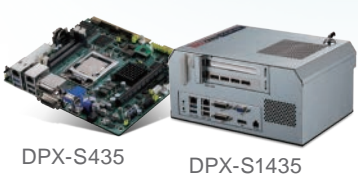
intel Security

Acronis

Innovations in Gaming Computing

Powered by Industry-focused Design-To-Order Services

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, employing up-to-date technologies for gaming solutions to meet the requirements for Casino Machines, AWP's, VLT's, Multiplayer Games, Arcade Games, and Pachislots.



- Standalone (S Series)**
- Full feature set of I/O, COMs, & security features
 - Unrivalled performance range, scalability, long lifecycle & low power
 - Intel® 4th Generation Core™/ Intel® Core™ Duo /AMD R-Series APU



- Economy (E Series)**
- Full feature set of I/Os and COMs
 - Cost-effective integrated gaming boards & systems
 - AMD Embedded G-Series/Intel 4th Generation Core™ i



- ConnectBus® (C Series)**
- Backplane architecture for easy and low cost maintenance
 - Easy to port application code
 - AMD Embedded R-Series APU

Industrial Display Systems

Differentiating Solutions for Every Application

Advantech designs, develops and manufactures display systems that meet the tough demands of industrial display markets such as transportation, gaming, medical, outdoor signage, and many system integration markets globally. Combining proven technologies and flexible manufacturing, Advantech creates class leading solutions for your customers that deliver significant product differentiation and competitive advantage. All our products range from 5.7" to 55", from indoor to outdoor with demonstrable advantages in quality, project control and cost. With streamlined design-in services, Advantech offers cost led or delivery time led full customized solutions depending on customer demand. Our customer-centric approach reinforces all of our activities and in an essential part of the thousands of products we ship daily.



Optical Technology

- High Brightness up-to 2,000nit
- Thermal Design
- Anti-reflective coating
- Privacy and Polarizing Filters
- Optical Bonding

Touch & Protection

- All touch technologies
- Decal printing
- Vandal proof solutions
- Multi-touch & gesture control
- Surface engineered cover glass

Mechanical Design

- Aluminum/Steel/Stainless Chassis
- Open, Closed Frame, Proflat designs
- Panel cutting
- Optional IP54/IP65 solution

Electronic Capability

- Compatible signal cable set
- A/D card design
- DICOM for medical
- Network diagnostic
- Data collection at point of display

Product Portfolio



Industrial Touch LCDs IDK-1000 Series

- 5.7"~21.5" size options
- 200~450 nits brightness
- LVDS signal interface



High Brightness LCDs IDK-2000 Series

- 8.4"~31.5" size options
- 1,200 nits high brightness
- LVDS signal interface



Slim Open Frame/ Panel Mount Monitors IDS-3100/3200

- 6.5"~21.5" size options
- DVI/VGA interface
- Panel/Rear/VESA mounting



Proflat Touch Monitor IDP31 Series

- 10.4" ~21.5" size options with IP54 rating
- HDMI/DVI/VGA
- Panel/VESA mounting



Digital Signage Displays DSD-3000/DSD-5000

- 28"~55" size options
- HDMI/DP/DVI/VGA/OPS interface
- Wall/Ceiling mount

SQFlash Enterprise SSD Solutions

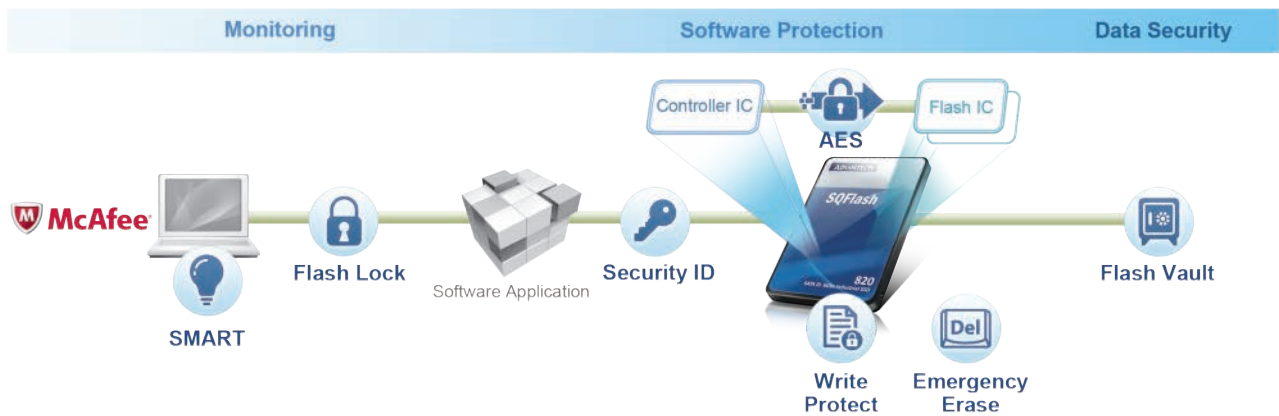
With Advanced Security and Industrial-grade Reliability

The latest SQFlash enterprise SSD series is designed with the most advanced multi-core SSD controller technology which pushes SSD performance to next level for enterprise applications. The whole product series comes with our SQFlash Utility with McAfee Anti-virus built-in that provides an ultimate security solution for software protection, data security, and internal encryption; helping build a more secure system with minimal effort. Advantech's SQFlash Enterprise SSD series includes 2.5" SATA SSD, 2.5" U.2 PCIe SSD (SFF-8639), and M.2 2280 SSD in both SATA III and PCIe III x4 interfaces.



SQFlash Value-Added Software Services and Package

To implement security functions on flash storage or the host system always requires huge software and firmware effort. SQFlash security and software package simplifies this process by offering complete utilities and API for each of the security functions such as: Security ID, Write Protection, and Emergency Erase. System integrators can easily integrate these functions into their system design to accomplish higher security level solutions. Also, McAfee Anti-virus function is integrated into this package from 2016, which can help end user to have better protection from malwares.



Customization service for hardware and software

In industrial markets, it's common to have special applications require either unique hardware design or specific software functionality. Advantech is fully experienced and capable in providing such customization services to perfectly meet field requirements.

Embedded Software Solutions and Distribution

Ensuring Device Manageability, Security and Connectivity in IoT

The Internet of Things connects all kinds of electronic devices via the Internet. It is a web-enabled data exchange that empowers devices with “smartness”. In other words, the IoT aims to integrate the physical world with the virtual world by using the Internet as the middleware to communicate and exchange information. Due to the sheer number of products and devices, some of which use non-standard specifications, there are often unconventional requirements demanded of IoT devices and the environments that support them. For instance, many problems emerge from the limited form-factors and power available to IoT devices. Others issues arise from the way in which IoT devices are manufactured and operated.

The best approaches are much more like traditional consumer product design, combined with existing best practices for server-side and Internet connectivity that need to be factored in. We can summarize the overall requirements into some key categories:

- Connectivity and communications
- Device Management
- Data collection, analysis, and actuation
- Scalability
- Security and Privacy



Embedded Software Distribution

Advantech offers more than just a distributing license; it offers a series of value-added services, including hosting embedded solution seminars, hands-on training, and software APIs and utilities. Customers can leverage Advantech’s professional embedded solution development capability to streamline their businesses.

Windows Embedded OS	Intel Security Solutions	Backup and Recovery(Acronis)
<ul style="list-style-type: none"> • Windows 10 IoT • Windows Embedded Compact • Windows Embedded Standard • Windows Embedded Server • Windows Embedded Industry/Pro 	<ul style="list-style-type: none"> • McAfee Integrity Control • McAfee Embedded Control • McAfee Application Control with ePO • McAfee Application Control without ePO 	<ul style="list-style-type: none"> • Acronis True Image Personal 2014 • Acronis True Image 2014 Premium • Acronis Server Backup OEM 2013 w/UR • Acronis Backup for Windows Server

Design To Order Services

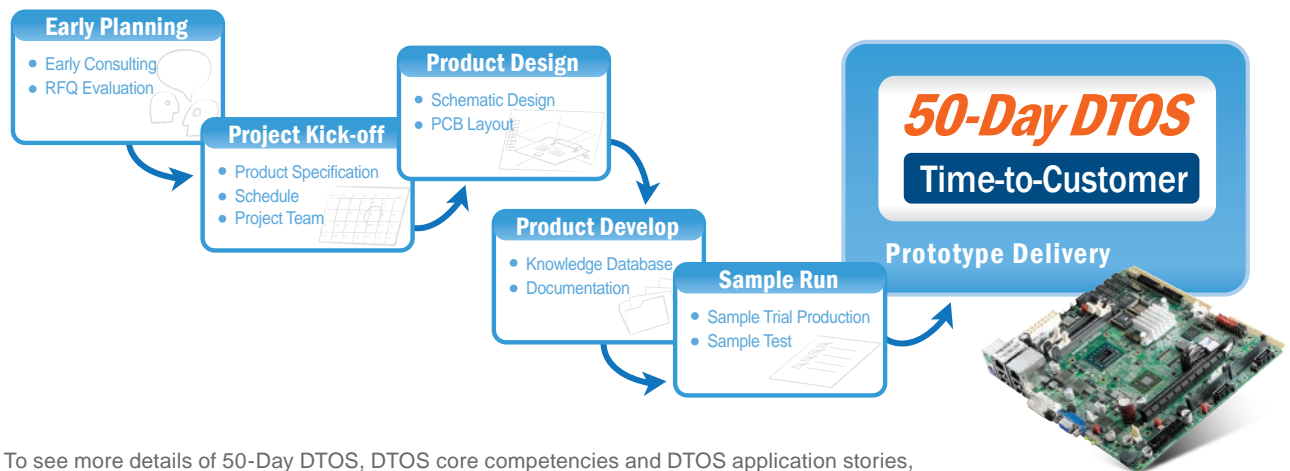
Enabling Your IoT & Vertical Solutions through One-stop Customization Services

Advantech Design To Order Services (DTOS) is a design service which provides tailor-made systems or boards to meet specific application requirements through advanced, innovative and world leading technologies, diverse levels of customization, flexibility of manufacture, and global technical & logistical support. Advantech DTOS offers you the advantages of faster project development, lower risk and the assurance of working with a trusted global leader for win-win solutions.



50-Day Time-to-Prototype, the key for Faster Time-to-Customer

With dedicated regional DTOS assignment crew, strict project workflow, integrated infrastructure, and highly proficient project development, we promise our customers a quality and speedy 50-Day Design To Order Services.



To see more details of 50-Day DTOS, DTOS core competencies and DTOS application stories, please visit DTOS at <http://www.advantech.com/dtos>

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



Introduction

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

Application Requirements

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

System Solutions

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

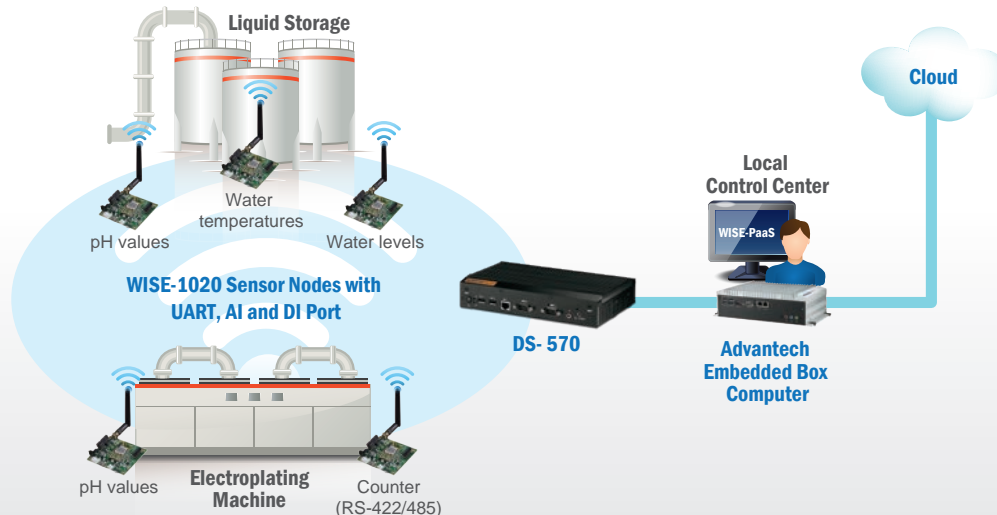
The Advantech WISE IoT Solution includes

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

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

Benefits

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



Electronic Bus Fare Collection System



Introduction

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

Application Requirements

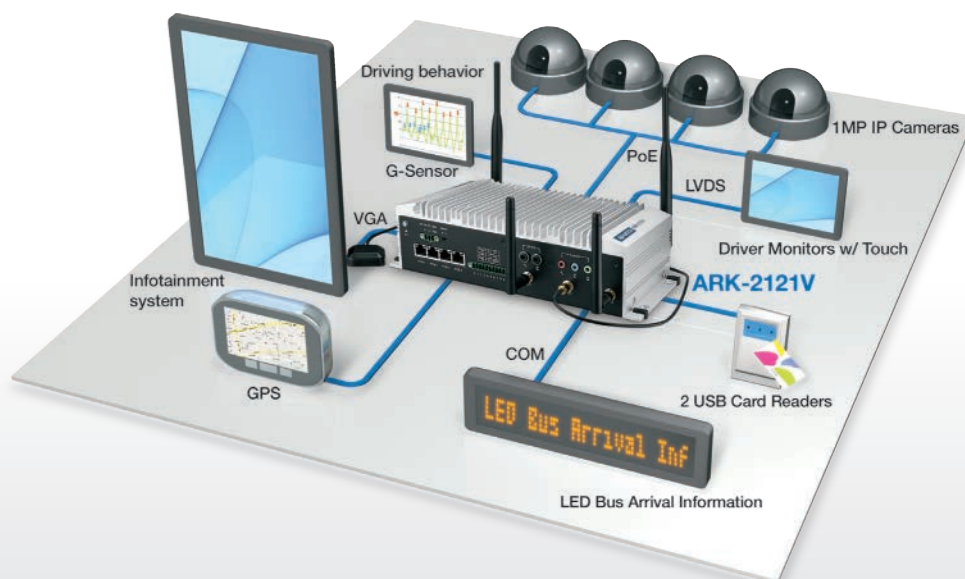
The vehicular environment is beset by electrical variations, shock and vibration, dust, and sometimes temperature extremes. To ensure safety and reliability, in-vehicle computers require special designs that combat these evils, and these design features distinguish them from standard IT products. In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

System Solutions

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

Benefits

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



Intelligent COM Module for Logistics Info System



Introduction

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

Application Requirements

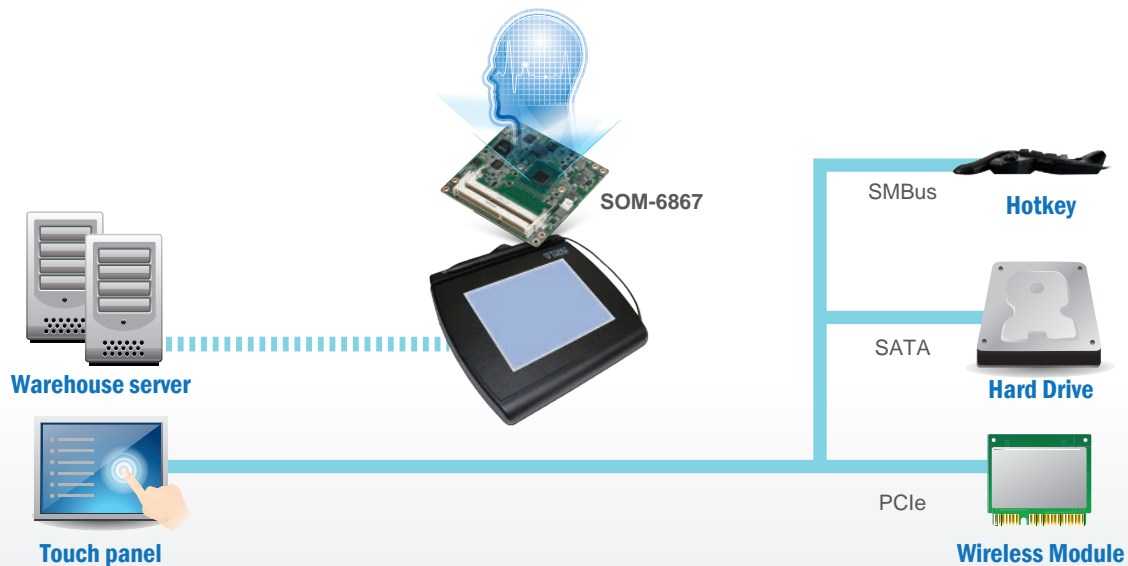
Today's customers expect to receive their orders fast. But it can take several employees in order to keep up with the latest updates on the supply of goods and logistics, and to quickly point out their locations in a warehouse. To achieve rapid response, what the customer needed was a simple, all-in-one,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

System Solutions

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

Benefits

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



Outdoor Self-service Bicycle Rental System



Introduction

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

Application Requirements

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

System Solutions

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

Benefits

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



Intelligent Wayfinding Signs Enhance Drivers' Experience



Introduction

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

Application Requirements

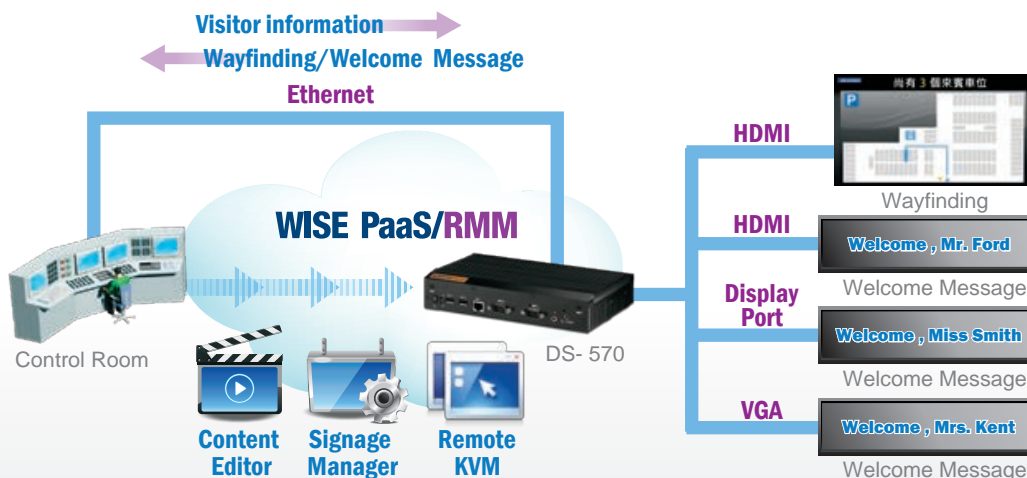
The wayfinding signage needed to be wirelessly connected to the central room identification systems so that it could instantly display the parking space directions and location dynamically. Moreover, the signage needed to be able to drive two to three 55-inch LCD screens placed on each floor of the parking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

System Solutions

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

Benefits

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



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



Introduction

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

Application Requirements

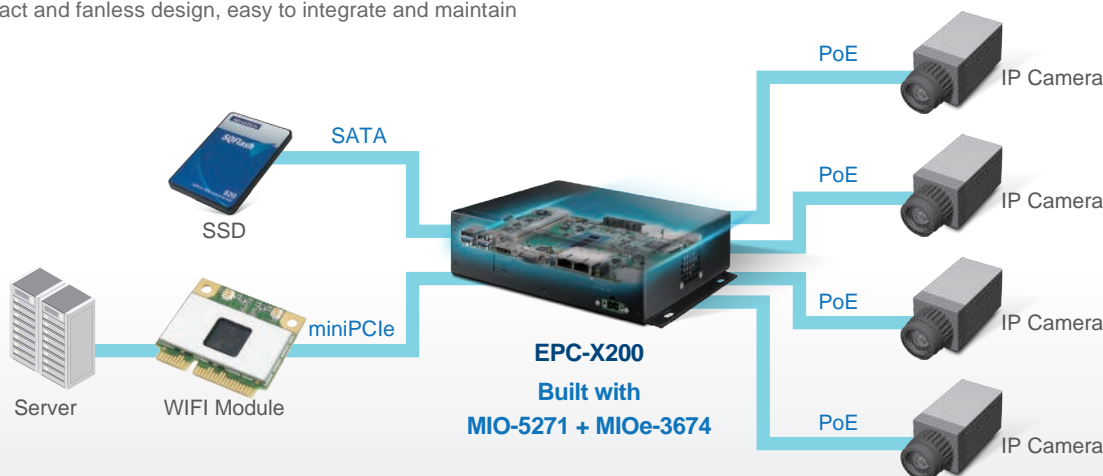
A valued customer who was in the process of designing a mobile in-vehicle NVR application, needed a system with LAN connecting to IP cameras and wireless connection to a video server. IP camera also requires a power cable to input power. Because it was a mobile solution, it needed to be small in size and easy to upgrade, and it also needed to be a high performance platform capable of the highest graphic processing and data transmission. For all these reasons, Advantech expansible embedded PC – a compact and expansible 3.5" SBC chassis EPC-X200, bundled with 3.5" single board computer MIO-5271 and MIOe-3674 PoE module, is an ideal option in the scenario.

System Solutions

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

Benefits

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



IoT-powered Logistics Monitoring Systems



Introduction

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

Application Requirements

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

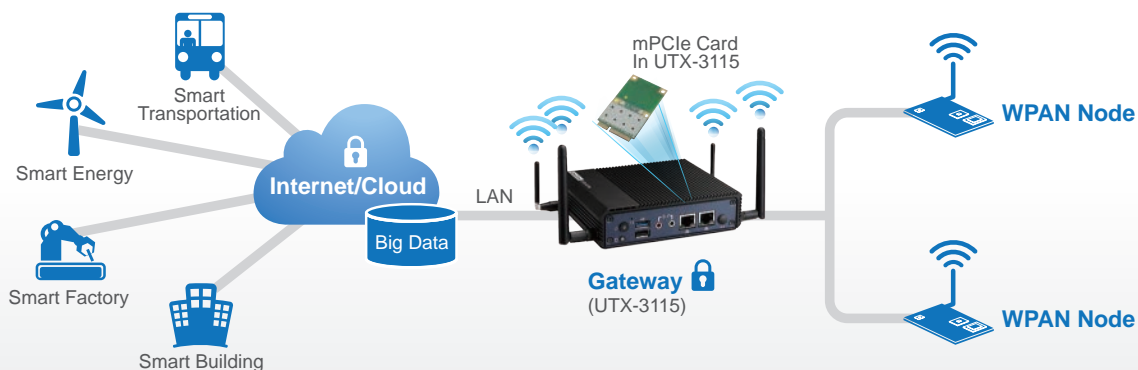
System Solutions

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

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

Benefits

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



Intelligent Agriculture System with Advantech Intelligent Gateway and Sensor Node Integration



Introduction

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

Application Requirements

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

System Solutions

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

UBC-330 Box PC:

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

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

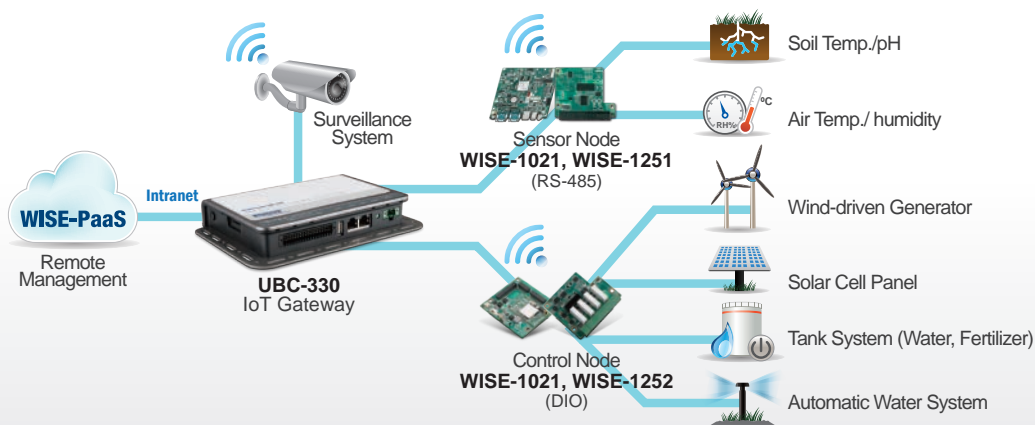
Connects temperature, humidity and PH value sensors through RS-422 or RS-485, and transforms analog data into digital data and sends it to a sensor gateway.

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

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

Benefits

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



Wireless IoT Gateways & Nodes



Wireless IoT WSN Gateways

Model Name		WISE-3310
Process System	CPU	NXP i.MX6 Dual 1 GHz
	DRAM	On-board DDR3 1 GB
	FLASH	4 MB SPI NOR Flash and 4 GB eMMC
I/O Interface	COM	1 RS232 (CTS, RTS,Tx,Rx)
	LAN	1 10/100/1000 Mbps
	Antenna port	2 SMA (for 200-node SKU) 1 SMA (for 100-node SKU)
Wireless	Standard	IEEE 802.15.4e
	Frequency Band	2.4000 ~ 2.4835 GHz
	Support Nodes	Up to 200 (for 200-node SKU) Up to 100 (for 100-node SKU)
Software	OS	Linux 3.10.17
Mechanical	Dimensions	205 x 126 x 31 mm (LxWxH) with a metal plate 180 x 114 x 31 mm without a metal plate
	Mounting	Metal bracket wall mount
Environmental	Operating Temperature	0 ~ 40 °C
	Operating Humidity	5% ~ 95% Relative Humidity, non-condensing

Quick Cloud Connection

- BSP/SDK development tool
- WISE-Agent built in for cloud connectivity

Easy Wireless Sensor Integration

- SDK/API development support
- Verified WSN and API
- Sensor wireless connectivity

Remote Device Management

- Remote monitoring and management
- Device security and protection
- RESTful APIs for application integration



Wireless IoT WSN Modules

Model Name	WISE-1520	WISE-1020	WISE-1021
Form Factor	M2.COM	Board-to-Board	Board-to-Board
MCU	TI CC3200	Linear/Dust LTP5800	Linear/Dust LTP5800 with TI MSP430
Wireless frequency	2.412 ~ 2.484 GHz	2.4000 ~ 2.4835 GHz	2.4000 ~ 2.4835 GHz
Standard	IEEE 802.11 b/g/n	IEEE 802.15.4e	IEEE 802.15.4e
Analog Input	2-channel (12bits), 0 to 1.4V	3-channel (10bits), 0 to 1.8V	10-channel (12bits), 0 to 3.6V
Digital I/O	2	DI:4 and DO:3	6
UART/I2C/SPI/PWM	UART 1 /I2C 1 / SPI 1 / PWM 2	UART *1 (for API)	UART 2/ I2C 2/ SPI 3/ PWM 1
Operation Temperature	-20 to +70 °C	-40 to +85 °C	-40 to +85 °C
Power Requirement	DC 3.3 V	Micro USB DC Power: DC 5V 3-Pin DC Input Power: DC 5-12V	DC 5-30V
Dimension	22.0 x 30.0mm	75 x 60 x 14.7 mm	65.0 x 55.0 mm

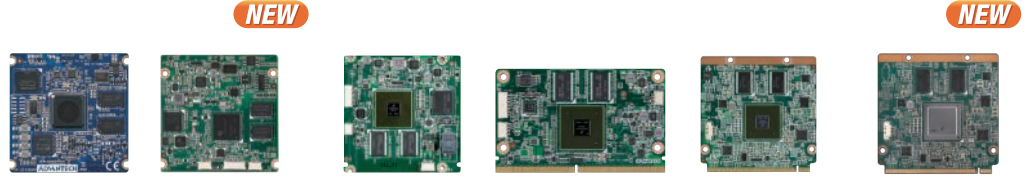


WISE-1021 Extension Boards

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

RISC Computing Platforms

Computer-on-Modules



Model Name		ROM-1210	ROM-3310	ROM-3420	ROM-5420	ROM-7420	ROM-7421
Form Factor		RTX V1.6	RTX V2.0	RTX V2.0	SMARC V1.0	Qseven V1.20	Qseven V2.0
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
	Technology	DDR3 800 MHz	DDR3 800 MHz	DDR3 1066 MHz	DDR3 1066 MHz	DDR3 1066 MHz	DDR3 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	Onboard 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	4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader	4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader	4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader	4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader
	LVDS	2 24-bit LVDS, 1024 x 768 at 60Hz	-	1 Single 24-bit LVDS, 1366 x 768 at 60Hz	1 Single 24-bit LVDS, 1366 x 768 at 60Hz	2 24-bit LVDS, 1366 x 768 for 1ch; 1920x1080 for 2ch at 60Hz	2 24-bit LVDS, 1366 x 768 for 1ch; 1920 x 1080 for 2ch
Graphics	HDMI	-	-	1920 x 1080 at 60Hz	1920 x 1080 at 60Hz	1920 x 1080 at 60Hz	1920 x 1080 at 60Hz
	Parallel RGB	1 24-bit TTL, 1600 x 1200 at 60Hz	1 24-bit TTL, 1366 x 768 at 60Hz	1 24-bit TTL, 1920 x 1200 at 60Hz	1 24-bit TTL, 1920 x 1200 at 60Hz	-	-
	VGA	-	-	-	-	1920x1080 at 60Hz	-
	Graphics Engine	1 IPU. OpenGL ES 2.0 for 3D, BitBit for 2D and OpenVG 1.1	Integrated LCD Interface Display Driver (LIDD) Controller	2 IPU. OpenGL ES 2.0 for 3D, BitBit for 2D and OpenVG 1.1	2 IPU. OpenGL ES 2.0 for 3D, BitBit for 2D and OpenVG 1.1	2 IPU. OpenGL ES 2.0 for 3D, BitBit for 2D and OpenVG 1.1	2 IPU. OpenGL ES 3.0 for 3D, BitBit for 2D and OpenVG 1.1
	H/W Video Codec	Decoder: MPEG-4 ASP, H.264 HP, H.263, MPEG-2 MP, MJPEG BP Encoder: MPEG-4 SP, H.264 BP, H.263, MJPEG BP	-	Decoder: MPEG-4 ASP, H.264 HP, H.263, MPEG-2 MP, MJPEG BP Encoder: MPEG-4 SP, H.264 BP, H.263, MJPEG BP	Decoder: MPEG-4 ASP, H.264 HP, H.263, MPEG-2 MP, MJPEG BP Encoder: MPEG-4 SP, H.264 BP, H.263, MJPEG BP	Decoder: MPEG-4 ASP, H.264 HP, H.263, MPEG-2 MP, MJPEG BP Encoder: MPEG-4 SP, H.264 BP, H.263, MJPEG BP	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	Freescal i.MX53 integrated RMII	TI AM3352 Integrated RGMII	Freescal i.MX6 integrated RGMII	Freescal i.MX6 integrated RGMII	Freescal i.MX6 integrated RGMII
	Speed	1 x 10/100 Mbps	1 x 10/100/1000 Mbps	1 x 10/100/1000 Mbps	1 x 10/100/1000 Mbps	1 x 10/100/1000 Mbps	1 x 10/100/1000 Mbps
RTC		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
I/O	PCIe	-	-	1 PCIe x 1	1 PCIe x 1	1 PCIe x 1	1 PCIe x 1
	SATA	1 SATA I	-	1 SATA II	1 SATA II	1 SATA II	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)
	Audio	I²S	I²S	I²S	I²S	I²S	I2S
	SPDIF	-	-	-	1	-	-
	SDIO	2	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)
	SPI	1	1	2	4	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
	GPIO	20	10	10	12	8	8
	I²C	2	1	4	5	3	1
	Camera Input	-	-	1 MIPI v1.0, 4 x Lane	1 MIPI v1.0, 4 x Lane	-	-
	System Bus	Address:25 bits Data:16 bits	-	Address: 26 bits Data: 16 bits	-	-	-
	Touch	1	-	-	-	-	-
	Keypad	6 x 6 Matrix	-	-	-	-	-
	Power	Power Supply Voltage	3.3 ~ 3.6 V	5 ~ 24 V	5 ~ 24 V	3 ~ 5.25 V	5 V
Power Consumption		2.2W	2.11W (Max)	3.3W (Max)	3.4W (Max)	3.4W (Max)	4W (Max)
Environment	Operational Temperature	0 ~ 60° C/ -40 ~ 85° C	0 ~ 60° C/ -40 ~ 85° C	0 ~ 60° C/ -40 ~ 85° C	0 ~ 60° C/ -40 ~ 85° C	0 ~ 60° C/ -40 ~ 85° C	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
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
Operating System		Linux	Linux	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

RISC Computing Platforms

Single Board Computers



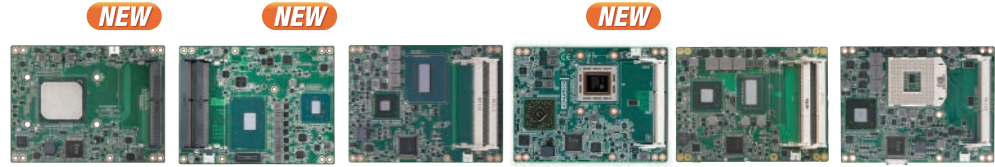
Model Name		RSB-3410	RSB-3851	RSB-4210	RSB-4221	RSB-4410	RSB-4411
Form Factor		2.5" SBC	2.5" SBC	3.5" SBC	3.5" SBC	3.5" SBC	3.5" SBC
Processor System	CPU	NXP ARM Cortex-A9 i.MX6 Dual-Lite 1 GHz	Intel Quark x1000 400 MHz	NXP ARM Cortex-A8 i.MX53 800 MHz	TI Sitara AM3358 Cortex A8 1.0 GHz	NXP ARM Cortex-A9 i.MX6 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	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	On-board DDR3 1 GB
	Flash	4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader	4 MB SPI NOR Flash for Advantech boot loader	4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader	4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader	4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader	4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader
Graphics	LVDS	1 x 18/24-bit LVDS, up to 1366 x 768 at 60Hz	-	2 x 24-bit LVDS, 1280 x 768 for 1ch; 1920 x 1080 for 2ch at 60Hz	1 x 18-bit LVDS, 1366 x 768 for 1ch	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
	HDMI	1920 x 1080 at 60Hz	-	-	-	1920 x 1080 at 60Hz	1920 x 1080 at 60Hz
	VGA	-	-	1600 x 1200 at 60Hz	-	1920 x 1080 at 60Hz	1920 x 1080 at 60Hz
	Graphics Engine	1 IPU. OpenGL ES 2.0 for 3D, BitBlit for 2D and OpenVG 1.1	-	1 IPU. OpenGL ES 2.0 for 3D, BitBlit for 2D and OpenVG 1.1	Integrated LCD Interface Display Driver (LIDD) Controller	2 IPU. OpenGL ES 2.0 for 3D, BitBlit for 2D and OpenVG 1.1	2 IPU. OpenGL ES 2.0 for 3D, BitBlit for 2D and OpenVG 1.1
	H/W Video Codec	Decoder: MPEG-4 ASP, H.264 HP, H.263, MPEG-2 MP, MJPEG BP Encoder: MPEG-4 SP, H.264 BP, H.263, MJPEG BP	-	Decoder: MPEG-4 ASP, H.264 HP, H.263, MPEG-2 MP, MJPEG BP Encoder: MPEG-4 SP, H.264 BP, H.263, MJPEG BP	-	Decoder: MPEG-4 ASP, H.264 HP, H.263, MPEG-2 MP, MJPEG BP Encoder: MPEG-4 SP, H.264 BP, H.263, MJPEG BP	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 RMI	Freescale i.MX53 integrated RMI	TI AM3358 integrated RGMII	Freescale i.MX6 integrated RGMII	Freescale i.MX6 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	1 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	256-level timer interval from 0~128 sec	1~6553s, default 60s, power on/off 1s	256-level timer interval from 0~128 sec	1~6553s, default 60s, power on/off 1s
I/O	SATA	-	-	1	-	-	1
	SATA Power	-	-	Yes	-	-	1
	USB	1 USB 2.0 Host 1 USB OTG	1 USB 2.0 Host	3 USB 2.0 Host 1 USB 2.0 OTG	2 x USB Type A and 2 x USB pin header	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
	Audio	-	-	Line-in, Speaker-out, Mic-in	-	1 x Line-out	1 x Line-out, 1 x Mic-in via pin header
	SPDIF	-	-	-	-	-	-
	SDIO	1 SD Slot	1 SD Slot	1 SD Slot, 1 Pin header	-	1 SD Slot	1 SD Slot
	Serial Port	1 x 4 wire RS-232	1 x 4 wire RS-232	2 x 2 wire RS-232 by pin header, 1 x 2 wire RS-232/422/485 by DB9	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	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
	SPI	-	-	1	-	-	1
	CAN	-	-	1	1	-	2
	GPIO	-	-	20 GPIO w/o Isolation	12 w/ isolation	-	20 GPIO w/o Isolation
	I ² C	-	-	1	1	-	2
	System Bus	-	-	Address : 25 pins Data : 16 pins	-	-	-
	Touch	-	-	4-wire resistive type	-	-	-
	Keypad	-	-	6 x 6 matrix	-	-	-
Button	-	-	-	1 x Reset button	1 x Reset button	-	
Indicator	LED	1 Power LED 1 Programmable LED	1 Green LED for system power 1 Green LED for user define	-	-	1 Power LED 1 RF Status LED	1 Power LED
Expansion	Mini PCIe	2x mini PCIe slot (One only USB signal)	1x mini PCIe slot	1 x mini PCIe slot (Only USB Signal)	-	1 x mini PCIe slot	1 x mini PCIe slot
	M.2	-	-	-	1 x M.2	-	1 x M.2 slot
	SD Socket	1x SD slot	1 x 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	1 x SIM slot
Power	Power Supply Voltage	12 V	12 V	12 V , 19 V , 24 V	12 V	12 V	12 V , 19 V , 24 V
	Power Type	DC-in	DC-in	DC-in	DC-in	DC-in	DC-in
	Power Consumption	4.4W (Max)	2.76W (Max)	3.8W (Max)	TBC	5.6W (Max)	TBD
Environment	Operational Temperature	0 ~ 60° C	0 ~ 60° C	0 ~ 60° C / -40 ~ 85° C	0 ~ 60°C	0 ~ 60°C / -40 ~ 85°C	0 ~ 60°C / -40 ~ 85°C
	Operating Humidity	5%~95% Relative Humidity, non-condensing	5%~95% Relative Humidity, non-condensing	5%~95% Relative Humidity, non-condensing	5%~95% Relative Humidity, non-condensing	5%~95% Relative Humidity, non-condensing	5%~95% Relative Humidity, noncondensing
Mechanical	Dimensions (W x D x H)	100 x 72 x 19 mm	100 x 72 x 21 mm	146 x 102 x 20 mm	146 x 102 x 20 mm	146 x 102 x 20 mm	146 x 102 x 20 mm
Operating System		Linux Android	Linux	Linux	Android Linux	Linux Android	Linux Android
Certifications		CE/FCC Class B	CE/FCC Class B	CE/FCC Class A	CE/FCC Class B	CE/FCC Class B	CE/FCC Class B

Box Computers



Model Name		UBC-200	UBC-220	UBC-221	UBC-222	UBC-330	UBC-DS31
Processor System	CPU	NXP ARM Cortex-A9 i.MX6 1 GHz	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 1066 MHz	DDR3 800 MHz	DDR3 800 MHz	DDR3 800 MHz	DDR3 800 MHz	DDR3 1066 MHz
Memory	Capacity	On-board DDR3 1 GB/2 GB	On-board DDR3 1 GB	On-board DDR3 512 MB	On-board DDR3 512 MB	On board DDR3 512 MB	On-board DDR3 1 GB
	Flash	4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader	4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader	4 MB SPI NOR Flash for Advantech boot loader	4 MB SPI NOR Flash for Advantech boot loader	4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader	4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader
Graphics	LVDS	-	1 24-bit LVDS, 1366 x768 at 60Hz	-	-	-	-
	HDMI	1920 x 1080 at 60Hz	1920 x 1080 at 60Hz	-	-	-	1920 x 1080 at 60Hz
	VGA	-	-	-	-	-	1920 x 1080 at 60Hz
	Graphics Engine	2 IPU, OpenGL ES 2.0 for 3D, BitBlit for 2D and OpenVG 1.1	1 IPU, OpenGL ES 2.0 for 3D, BitBlit for 2D and OpenVG 1.1	-	-	-	2 IPU, OpenGL ES 2.0 for 3D, BitBlit for 2D and OpenVG 1.1
	H/W Video Codec	Decoder: MPEG-4 ASP, H.264 HP, H.263, MPEG-2 MP, Encoder: MPEG-4 SP, H.264 BP, H.263	Decoder: MPEG-4 ASP, H.264 HP, H.263, MPEG-2 MP, MJPEG BP, Encoder: MPEG-4 SP, H.264 BP, H.263, MJPEG BP	-	-	-	Decoder: MPEG-4 ASP, H.264 HP, H.263, MPEG-2 MP, Encoder: MPEG-4 SP, H.264 BP, H.263
Ethernet	Chipset	Freescall i.MX6 integrated RGMII	Freescall i.MX6 integrated RGMII	Intel Quark integrated RMII	Intel Quark integrated RMII	TI AM3352 Integrated RGMII	Freescall i.MX6 integrated RGMII
	Speed	1 x 10/100/1000 Mbps	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		256-level timer interval from 0~128 sec	1~6553s, default 60s, power on/off 1s	1~6553s, default 60s, power on/off 1s	1~6553s, default 60s, 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	power on/off 1s	1 USB 2.0 Host	1 USB 2.0 Host	1 USB 2.0 Host	1 USB 2.0 Host
	Audio	HDMI Audio	HDMI Audio	-	-	-	1 x Line-out
	SDIO	1 x SD slot	1 x SD slot	1 x SD slot	1 x SD slot	1 x SD slot	1 x SD slot
	Serial Port	-	1 x 4 wire RS-232	1 x 4 wire RS-232	1 x 4 wire RS-232	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 GPI/ 2 GPO w/isolation	4x GPIO	4 GPI/ 4 GPO w/ isolation	-
	CANBus	-	-	-	-	1	-
	I2C	-	-	-	-	1	-
	Button	1 x Reset button	-	-	-	1 x Reset button	1 x Reset button
Indicator	LED	1 Green LED for system power	1 Green LED for system power 1 Green LED for user define	1 Green LED for system power 1 Green LED for user define	1 Green LED for system power 1 Green LED for 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	1x mini PCIe slot	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	1 x SD slot	1x SD slot	1 x SD slot	1 x SD slot	1 x SD slot	1 x SD slot
	SIM	1x SIM slot	1x SIM slot	1 x SIM slot	1 x SIM slot	-	1x SIM slot
	Antenna Hole	1x Antenna hole	1 x Antenna hole	1x Antenna hole	1x Antenna hole	1 x Aetenna hole	1x Antenna hole
	Others	-	1x Internal antenna support	-	-	-	-
Power	Power Supply Voltage	12 V , 19 V , 24 V	12V	12 V / PoE 802.3 at Class 3	5 V	12 V , 19 V , 24 V	12 V
	Power Type	DC-in	DC-in	DC-in / PoE 802.3 at Class 3	DC-in	DC-in	DC-in
	Power Consumption	6.6W (Max)	4.4W (Max)	2.76W (Max)	2.76W (Max)	3.3W (Max)	3.8W (Max)
Environment	Operational Temperature	0 ~ 60° C / -20 ~ 70° C	0 ~ 60° C	0 ~ 60° C	0 ~ 60° C	0~60°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	5%~95% Relative Humidity, non-condensing
Mechanical	Dimensions (W x D x H)	108 x 79 x 30 mm	120 x 89 x 30 mm	120 x 89 x 30 mm	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 by option	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	312g	215g	210g	210g	265g	265g
Operating System		Linux Android	Linux Android	Linux	Linux	Linux	SUSIAccess for Signage
Certifications		CE/FCC Class B	CE/FCC Class B	CE/FCC Class B	CE/FCC Class B	CCC / CE / FCC Class B	CCC / CE / FCC Class B

Computer On Modules



Model Name		SOM-5991	SOM-5897	SOM-5894	SOM-5893	SOM-5892	SOM-9890
Form Factor		COM Express Basic	COM Express Basic	COM Express Basic	COM Express Basic	COM Express Basic	COM Express Basic
Pin-out Type		COM R2.1 Type 6	COM R2.1 Type 6	COM R2.1 Type 6	COM R2.1 Type6	COM R2.0 Type 6	COM R2.0 Type 6
Processor System	CPU	Intel® Xeon® Processor D-1500 Product Family	6th Gen. Intel Core i7/i5/i3/Celeron	4th Gen. Intel Core i7/i5/i3/Celeron	AMD R-Series Bald Eagle	3rd Gen. Intel Core i7/i5/i3/Celeron	3rd Gen. Intel Core i7/i5/i3/Celeron
	Base Frequency	2.0 - 1.4GHz	2.8 - 1.96GHz	2.7-1.56GHz	2.7 - 2.2GHz	2.7-1.4GHz	2.7-2.2GHz
	Processor Core	16/8/4/2	4/2	4/2	4/2	4/2/1	4/2
	LLC	24/12/6/3MB	8/6/3MB	6/3/2MB	4/2MB	6/4/3/2/1MB	6/3/2MB
	CPU TDP	45/35/25W	45/35/25W	47/37/25W	35W/17W	45/35/25/17W	45/35W
Chipset	-	QM170	Intel QM87	A77E	Int I QM77	Intel QM77	
Memory	Technology	DDR4-2400	DDR4-2400	DDR3L 1600/1333	DDR3 2133 ; DDR3L 1866/1600	DDR3/DDR3L 1600/1333	DDR3/DDR3L 1600/1333
	ECC Support	Support	-	B1 version only	-	B1 version only	-
	Max. Capacity	32GB	32GB	16GB	32GB	16GB	16GB
	Socket	2 x 260P SODIMM	2 x 260P SODIMM	2 x 204P SODIMM	2 x 204P SODIMM	2 x 204P SODIMM	2 x 204P SODIMM
Graphics	Controller	-	Intel® HD Graphics	Intel HD Graphics	AMD Radeon HD9000	Intel HD Graphic	Intel HD Graphic
	Max. Frequency	-	1000 - 950MHz	1GHz - 900MHz	686MHz	1GHz - 900MHz	1GHz - 900MHz
	VGA	-	1	1	1	1	1
	LCD (TTL/LVDS/eDP)	-	LVDS 2-CH 18/24-bit BOM optional eDP	LVDS 2-CH 18/24-bit	LVDS 2-CH 18-bit/24-bit	LVDS 2-CH 18/24-bit	LVDS 2-CH 18/24-bit
	DDI (HDMI/DVI/DisplayPort)	-	2 BOM optional 3	3	4	3	3
	SDVO	-	-	-	-	1	1
	TV-out	-	-	-	-	-	-
	Multiple Displays	-	3	Dual/Triple	Dual/Triple/Quad	Dual/Triple	Dual/Triple
Expansion	PCIe x16	1	1	1	1(option)	1	1
	PCIe x1	8	8	7	7	7	7
	PCI Masters	-	-	-	-	-	-
	ISA Bus	-	-	-	-	-	-
	LPC	1	1	1	1	1	1
Serial Bus	SMBus	1	1	1	1	1	1
	I2C Bus	1	1	1	1	1	1
	CAN Bus	-	-	-	-	-	-
Ethernet	Controller	i210E	i219LM	Intel i217LM	Intel i211AT	Intel 82579LM	Intel 82579LM
	Speed	10/100/1000Mbps	10/100/1000Mbps	10/100/1000Mbps	10/100/1000 Mbps	10/100/1000Mbps	10/100/1000Mbps
I/O	SATA	4	4	4	4	4	4
	PATA Channel	-	-	-	-	-	-
	USB3.0	4	4	4	4	4	4
	USB2.0	4	8	8	4	8	8
	Audio	-	HD Audio	HD Audio	HD Audio	HD Audio	HD Audio
	SPI Bus	1	1	1	-	1	1
	GPIO	8	8	8	8	8	8
	SDIO (GPIO pin shared)	-	-	-	-	-	-
	Watchdog	1	1	1	1	1	1
	COM Port	2 (2-wire)	2 (2-wire)	2 (2-wire)	2 (2-wire)	2 (2-wire)	2 (2-wire)
	LPT/FDD	-	-	-	-	-	-
	PS/2	-	-	-	-	-	-
	IR	-	-	-	-	-	-
	Onboard Storage	-	-	-	-	-	-
	TPM	Optional	Optional	Optional	1	Optional	Optional
Power	Power Type	ATX: Vin, VSB, AT: Vin	ATX: Vin, VSB, AT: Vin	ATX: Vin, VSB, AT: Vin	ATX: Vin, VSB, AT: Vin	ATX: Vin, VSB, AT: Vin	ATX: Vin, VSB, AT: Vin
	Supply Voltage	Vin: 8.5-20V VSB: 4.75-5.25V	Vin: 8.5-20V VSB: 4.75-5.25V	Vin: 8.5-20V, VSB: 4.75-5.25V	Vin: 8.5-20V VSB: 4.75-5.25V	Vin: 11.4-12.6V, VSB: 4.75-5.25V	Vin: 11.4-12.6V, VSB: 4.75-5.25V
	Power Consumption Max.	TBD	TBD	41.8 Watt	TBD	41.8 Watt	41.8 Watt
	Power Consumption Idle	TBD	TBD	8.5 Watt	TBD	5.4 Watt	4.7 Watt
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)	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)	-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 95 mm (4.92" x 3.74")	125 x 95mm (4.92" x 3.74")	125 x 95mm (4.92" x 3.74")

NEW



NEW



NEW

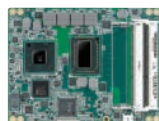


NEW



SOM-6897	SOM-6896	SOM-6894	SOM-6868	SOM-6867	SOM- 7568	SOM-7567
COM Express Compact	COM Express Compact	COM Express Compact	COM Express Compact	COM Express Compact	COM Express Mini Module Compatible	COM Express Mini
COM R2.1 Type 6	COM R2.1 Type 6	COM R2.1 Type 6	COM R2.1 Type 6	COM R2.0 Type 6	COM R2.1 Type 10	COM R2.1 Type 10
6th Gen. Intel Core i7/i5/i3/Celeron U-Series	Intel 5th Generation Core i Processor	4th Gen. Intel Core i7/i5/i3/Celeron (U-Processor Line)	Intel® Pentium™/ Celeron™ N3700 Series SoC	Intel Atom E3800 & Celeron J1900	Intel® Pentium™ and Celeron™ N3000 Series SoC	Intel Atom E3845/E3825/E3815 Intel Celeron J1900/N2930
2.6 - 2.0GHz	TBD	1.9 - 1.6GHz	1.6 - 1.04GHz	1.91/ 2.0GHz	1.6/1.04GHz	1.33G~2GHz
2	2	2	4/2	4	4/2	4/2/1
4/3/2MB	TBD	4/3/2MB	2MB	2MB	2MB	2/1/0.5MB
15W	15W	15W	6/4W	10W	6/4W	10/7.5/6/5W
-	N/A	-	-	-	-	-
DDR3L-1600	DDR3L 1600 MHz	DDR3L 1600/1333	DDR3L-1600	DDR3L 1333	Dual Channel DDR3L-1600	DDR3L 1333/1066
-	-	-	-	-	-	-
16GB	16GB	16GB	8GB	8GB	4GB	4GB
2 x 204P SODIMM	2 x 204P SODIMM	2 x 204P SODIMM	2 x 204P SODIMM	2 x 204P SODIMM	Onboard memory	Onboard
Intel® HD Graphics	Intel® HD Graphics	Intel HD Graphic	Intel® HD Graphics	Intel HD Graphic	Intel® HD Graphics	Intel HD Graphics
1050 - 900MHz	TBD	1.1 - 1GHz	700 - 600MHz	688MHz	700MHz	400-854MHz
1	1	1	1	1	-	-
LVDS 2-CH 18/24-bit BOM optional eDP	LVDS 2-CH 18-bit/24-bit	LVDS 2-CH 18/24-bit	LVDS 2-CH 18/24-bit BOM optional eDP	LVDS 2-CH 18-bit/24-bit	LVDS: Single channel 18/24-bit, up to 1366 x 768	LVDS 1-CH 18/24-bit
"1 BOM optional 2"	2 (DDI2 for option)	-	"1 BOM optional 2"	2	2	1
-	-	2 (DDI 2: Optional)	-	-	-	-
-	-	-	-	-	-	-
3	Dual/Triple	Dual/Triple	3	Dual	Dual	Dual
-	-	-	-	-	-	-
5 Controllers, 8 Lanes	4	4	5	3	3	3 (Optional 4)
-	-	-	-	-	-	-
-	-	-	-	-	-	-
1	1 (24MHz)	1	1	1	1	1
1	1	1	1	1	1	1
1	1	1	1	1	1	1
-	-	-	-	1	-	Optional
i219LM	Intel i218LM	Intel i218LM	i211AT	Intel i210	Intel® i210AT	Intel i210E
10/100/1000Mbps	10/100/1000Mbps	10/100/1000Mbps	10/100/1000 Mbps	10/100/1000 Mbps	Speed 10/100/1000 Mbps	10/100/1000 Mbps
"3/2 (Sku dependency)"	4	4	2	2	2	1 (Optional 2)
-	-	-	-	-	-	-
4	2	2	4	1	2	1
8	8	8	8	8	8	4
HD Audio	HD Audio	HD Audio	HD Audio	HD Audio	HD Audio	HD Audio
1	-	1	1	-	-	1
8	8	8	8	8	8-bit GPIO	8
-	-	-	SD3.0	-	-	-
1	1	1	1	1	1	1
2 (2-wire)	2 (2-wire)	2 (2-wire)	2 (2-wire)	2 (2-wire)	2 (2-Wire)	2 (2-wire)
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	1 (option)	-	SLC/MLC SSD
Optional	Yes	-	Optional	-	-	-
ATX: Vin, VSB, AT: Vin	ATX: Vin, VSB, AT: Vin	ATX: Vin, VSB, AT: Vin	ATX: Vin, VSB, AT: Vin	ATX: Vin, VSB, AT: Vin	ATX: Vin, VSB, AT: Vin	ATX: Vin, VSB, AT: Vin
Vin: 8.5-20V VSB: 4.75-5.25V	"Vin: 4.75-20V VSB: 4.75-5.25V"	Vin: 4.75-20V VSB: 4.75-5.25V	Vin: 4.75-20V VSB: 4.75-5.25V	"Vin: 4.75-20V VSB: 4.75-5.25V"	Vin: 4.75 (5-5%) ~ 20V (19+5%), VSB: 5V±5%, RTC Battery: 2.0-3.3V	Vin: 4.75-20V, VSB: 4.75-5.25V
TBD	TBD	20.6W	TBD	TBD	TBD	TBD
TBD	TBD	4.4W	TBD	TBD	TBD	TBD
0 ~ 60° C (32 ~ 140° F)	0 ~ 60° C (32 ~ 140° F)	0 ~ 60° C (32 ~ 140° F)	0 ~ 60° C (32 ~ 140° F)	0 ~ 60° C (32 ~ 140° F)	0 ~ 60° C (32 ~ 140° F)	0 ~ 60° C (32 ~ 140° F)
-40 ~ 85° C (-40 ~ 185° F)	-40 ~ 85° C (-40 ~ 185° F)	-40 ~ 85° C (-40 ~ 185° F)	-40 ~ 85° C (-40 ~ 185° F)	-40 ~ 85° C (-40 ~ 185° F)	-40 ~ 85° C (-40 ~ 185° F)	-40 ~ 85° C (-40 ~ 185° F)
95 x 95 mm (3.74" x 3.74")	95 x 95 mm (3.74" x 3.74")	95 x 95 mm (3.74" x 3.74")	95 x 95 mm (3.74" x 3.74")	95 x 95 mm (3.74" x 3.74")	84 x 55 mm (3.3" x 2.17")	84 x 55 mm (3.3" x 2.17")

Computer On Modules



Model Name		SOM-5790	SOM-5788	SOM-6765	SOM-6763
Form Factor		COM Express Basic	COM Express Basic	COM Express Compact	COM Express Compact
Pin-out Type		COM R2.0 Type 2	COM R1.0 Type 2	COM R2.0 Type 2	COM R1.0 Type 2
Processor System	CPU	2nd Gen. Intel Core i7/i5/i3/Celeron	Intel Core i7/i5/i3/Celeron	Intel Atom D2550/N2600/N2800	Intel Atom D525/N455
	Base Frequency	2.5 - 1.4GHz	2.53 - 1.06GHz	1.86 - 1.6GHz	1.8-1.66GHz
	Processor Core	4/2/1	2/1	2	2/1
	LLC	6/4/3/2/1.5MB	4/3/2MB	1MB	1MB/512KB
	CPU TDP	45/35/25/17W	35/25/18W	10/6.5/3.5W	13/6.5W
Memory	Chipset	Intel QM67	Intel QM57	Intel NM10	Intel ICH8M
	Technology	DDR3 1333/1066	DDR3 1333/1066/800	DDR3 1066/800	DDR3 800/667
	ECC Support	-	B1 version only	-	-
	Max. Capacity	16GB	8GB	4GB/2GB	4GB/2GB
Graphics	Socket	2 x 204P SODIMM	2 x 204P SODIMM	1 x 204P SODIMM	1 x 204P SODIMM
	Controller	Intel HD Graphic	Intel HD Graphic	Intel GMA3650/3600	Intel GMA3150
	Max. Frequency	1.1GHz - 800MHz	766 - 500MHz	640 - 400MHz	400/200MHz
	VGA	1	1	1	1
	LCD (TTL/LVDS/eDP)	LVDS 2-CH 18/24-bit	LVDS 2-CH 18/24-bit	D Series: LVDS 1-CH 18/24-bit N Series: LVDS 1-CH 18-bit	LVDS 1-CH 18/24-bit
	DDI (HDMI/DVI/DisplayPort)	-	2	2	-
	SDVO	1	-	-	-
	TV-out	-	Optional	-	-
	Multiple Displays	Dual	Dual	Dual	Dual
	Expansion	PCIe x16	-	-	-
PCIe x1		5	6	2 (Optional 4)	5
PCI Masters		4	4	4	4
ISA Bus		-	-	-	-
Serial Bus	LPC	1	1	1	1
	SMBus	1	1	1	1
	I2C Bus	1	1	1	1
Ethernet	CAN Bus	-	-	-	-
	Controller	Intel 82579LM	Intel 82577LM	Intel 82583V	Intel 82567V
I/O	Speed	10/100/1000Mbps	10/100/1000Mbps	10/100/1000 Mbps	10/100/1000 Mbps
	SATA	4	4	2	3
	PATA Channel	1	1	1	1
	USB3.0	-	-	-	-
	USB2.0	8	8	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	-	-	-	-
	LPT/FDD	-	-	-	-
	PS/2	-	-	-	-
	IR	-	-	-	-
	Power	Onboard Storage	-	-	-
TPM		-	-	-	-
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: 11.4-12.6V, VSB: 4.75-5.25V	Vin: 11.4-12.6V, VSB: 4.75-5.25V	Vin: 11.4-12.6V, VSB: 4.75-5.25V	Vin: 11.4-12.6V, VSB: 4.75-5.25V
Environment	Power Consumption Max.	40.1 Watt	42.7 Watt	10.3 W	16.1 Watt
	Power Consumption Idle	11.4 Watt	7.9 Watt	7.06 W	13.2 Watt
Mechanical	Operating Temp.	0 ~ 60° C (32 ~ 140° F)	0 ~ 60° C (32 ~ 140° F)	0 ~ 60° C (32 ~ 140° F)	0 ~ 60° C (32 ~ 140° F)
	Extended Temp. (Optional)	-	-40 ~ 85° C (-40 ~ 185° F)	-40 ~ 85° C (-40 ~ 185° F)	-40 ~ 85° C (-40 ~ 185° F)
Mechanical	Dimensions	125 x 95mm (4.92" x 3.74")	125 x 95mm (4.92" x 3.74")	95 x 95 mm (3.74" x 3.74")	95 x 95 mm (3.74" x 3.74")



SOM-3568	SOM-3567	SOM-3565	SOM-4466	SOM-4455
Qseven	Qseven	Qseven	ETX	ETX
Qseven 2.0	Qseven 2.0	Qseven R1.2	ETX 3.0	ETX 3.0
Intel® Pentium™/Celeron™ N3700 Series SoC	Intel Atom/Celeron E3800/J1900/N2900 Series SoC	Intel Atom N2600	AMD G-Series T16R	AMD LX800
1.6 - 1.04GHz	2.0 - 1.33GHz	1.6GHz	615MHz	500MHz
4/2	4/2/1	2	1	1
2MB	2/1/0.5MB	1MB	512KB	128KB
6/4W	10/7.5/6/5W	3.5W	4.5W	3.6W
-	-	Intel NM10	AMD A55E	AMD CS5536
DDR3L-1600	DDR3L-1333/1066	DDR3 800	DDR3 1066	DDR 400/333
-	-	-	-	-
8GB	4GB	2GB	4GB	1GB
Onboard	Onboard	Onboard	1 x 204P SODIMM	1 x 200P SODIMM
Intel® HD Graphics	Intel® HD Graphics	Intel GMA3600	AMD Radeon HD6250	AMD LX800
700 - 600MHz	792 - 400MHz	400MHz	276MHz	-
-	-	-	1	1
LVDS 2-CH 18/24-bit BOM optional eDP	LVDS 2-CH 18/24-bit BOM optional eDP	LVDS 1-CH 18-bit	LVDS 1-CH 18/24-bit TTL 1-CH 18-bit	LVDS 1-CH 18/24-bit TTL 1-CH 18-bit
1	1	1	-	-
-	-	-	-	-
-	-	-	-	-
2	2	Dual	Dual	Dual
-	-	-	-	-
3 BOM optional 4	3 BOM optional 4	3 (Optional 4)	-	-
-	-	-	4	4
-	-	-	1	1
1	1	1	-	-
1	1	1	1	1
1	1	1	1	1
-	-	-	-	-
i211AT	i211AT	Intel 82574L	Realtek RTL8105E	Realtek RTL8100CL
10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100 Mbps	10/100Mbps
2	2	Up to 2	2	2
-	-	-	2	2
Up to 3	1	-	-	-
4 BOM optional 5	6	8	4	4
HD Audio	HD Audio	HD Audio	Line-in/Line-out/MIC	Line-in/Line-out/MIC
1	1	1	-	-
-	-	8	1	1
SD3.0	SD3.0	-	-	-
1	1	1	1	1
1 (4-wire)	1 (4-wire)	1 (2-wire)	2	2
-	-	-	1	1
-	-	-	KB/MS	KB/MS
-	-	-	1	1
eMMC4.51 up to 32GB	eMMC4.51 up to 32GB	SLC/MLC SSD	mSATA socket	CF socket
-	-	-	-	-
ATX: Vin, VSB, AT: Vin Vin: 4.75-5.25V VSB: 4.75-5.25V	ATX: Vin, VSB, AT: Vin Vin: 4.75-5.25V VSB: 4.75-5.25V	ATX: Vin, VSB, AT: Vin Vin: 4.75-5.25V, VSB: 4.75-5.25V	ATX: Vin, VSB, AT: Vin Vin: 4.75-5.25V, VSB: 4.75-5.25V	ATX: Vin, VSB, AT: Vin Vin: 4.75-5.25V, VSB: 4.75-5.25V
TBD	TBD	7.8 Watt.	7.75 Watt.	10.05 Watt.
TBD	TBD	4.9 Watt.	6.1 Watt.	9.0 Watt.
0 ~ 60° C (32 ~ 140° F)	0 ~ 60° C (32 ~ 140° F)	0 ~ 60° C (32 ~ 140° F)	0 ~ 60° C (32 ~ 140° F)	0 ~ 60° C (32 ~ 140° F)
-40 ~ 85° C (-40 ~ 185° F)	-40 ~ 85° C (-40 ~ 185° F)	-40 ~ 85° C (-40 ~ 185° F)	-40 ~ 85° C (-40 ~ 185° F)	-20 ~ 80° C (-4 ~ 176° F)
70 x 70 mm (2.75" x 2.75")	70 x 70 mm (2.75" x 2.75")	70 x 70mm (2.75" x 2.75")	114 x 95 mm (3.74" x 4.5")	114 x 95 mm (3.74" x 4.5")

MI/O Extension SBCs



NEW

Model Name	MIO-5250	MIO-5251	MIO-5270	
Form Factor	3.5" MI/O-Compact	3.5" MI/O-Compact	3.5" MI/O-Compact	
Processor System	CPU	Intel Atom D2550/ N2600	Intel Atom E3825/ E3845, Celeron J1900	AMD G- Series T56N/ T40E/ T40R
	CPU TDP	10W/ 3.5W	6W/ 10W/ 10W	18 W/ 6.4 W/ 5.5 W
	Frequency	1.86 GHz/ 1.6 GHz	1.33 GHz/ 1.91 GHz/ 2(Turbo: 2.42) GHz	1.65 GHz/ 1.0 GHz /1.0 GHz
	Core Number	2	2/ 4/ 4	2/ 2/ 1
	L2 Cache	1MB	1MB/ 2MB	1MB/ 512KB/ 512KB
	L3 Cache	-	-	-
	BIOS	AMI EFI 16Mbit	AMI UEFI 64Mbit	AMI EFI 32Mbit
Memory	Chipset	Intel NM10	-	AMD A50M
	Technology	DDR3 1066 MHz/DDR3 800MHz	DDR3L 1066/1333MHz	DDR3 1066 MHz, 1333MHz only for T56N
	Max. Capacity	4 GB	8 GB	4 GB
Display	Socket	1 x 204-pin SODIMM	1 x 204-pin SODIMM	1 x 204-pin SODIMM
	Controller	Integrated Intel GMA 3600 series	Intel Gen7 graphic engine	AMD Radeon™ HD 6320/6250/6250
	Graphic Engine	DirectX® 9 and OpenGL3.0 HW Accelerated Decode: MPEG2, H.264, VC-1	DirectX11, OpenGL3.2, OpenCL1.2 HW Encode: H.264 (MPEG2 and MVC only for J1900)	DirectX® 11 and OpenGL 4.1 Blu-ray™; Hardware decode (UVD 3); H.264, VC-1 & MPEG2
	Graphic Memory	Share with system memory up to 256 MB	Share with system memory up to 384 MB	Share with system memory up to 384MB
	VGA	Up to 1920 x 1200 at 60 Hz	Up to 2560 x 1600 at 60Hz	T56N up to 2560 x 1600, T40R & T40E up to 1920 x 1200 at 60Hz
	LCD (LVDS/eDP)	LVDS1 18/24-bit, N2600: up to 1366 x 768 at 60 Hz, LVDS2 48-bit, D2550: up to 2560 x 1600 at 60Hz	LVDS 48-bit, up to 1920 x 1200 at 60Hz eDP (optional): up to 2560 x 1600 at 60Hz	LVDS 48-bit, up to 1920 x 1200 at 60 Hz
	DDI (HDMI/DVI/DisplayPort)	HDMI: up to 1920 x 1200 at 60Hz	HDMI: up to 1920 x 1080 at 60Hz DisplayPort (optional): up to 2560 x 1600 at 60Hz	HDMI: up to 1920 x 1080 at 60Hz & 36bpp
Expansion Interface	Multiple Display	VGA+LVDS, VGA+HDMI, HDMI+LVDS	VGA+HDMI/DP, VGA+LVDS/eDP, HDMI/DP+LVDS/eDP	VGA+LVDS, VGA+HDMI, HDMI+LVDS
	Mini PCIe	1 x Full-size	-	1 x Full-size
	SIM Socket	1	1	-
	SMBus	1	1	1
Ethernet	Temperature	1 (Shares with SMBus pin)	1 (Shares with SMBus pin)	1 (Shares with SMBus pin)
	Controller	GbE1 & GbE2: Intel 82583V	GbE1 & GbE2: Intel i210	GbE1 & GbE2: Realtek RTL8111E-VB-GR
	Speed	10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps
Audio	Connector	RJ45 x 2	RJ45 x 2	RJ45 x 2
	Audio Interface	High Definition Audio	High Definition Audio	High Definition Audio
	CODEC	Realtek ALC892	Realtek ALC888S	Realtek ALC892
WatchDog Timer	Amplifier	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
	WatchDog Timer	255 levels timer interval	255 levels timer interval	255 levels timer interval
Storage	SATA	1, up to 3Gb/s (300 MB/s)	1, up to 3Gb/s (300MB/s)	2, up to 3Gb/s (300 MB/s)
	mSATA	1 x Full-size (default miniPCIe)	1 x Full-size	1 x Full-size (default miniPCIe)
	CFast	1	-	1
I/O	USB3.0	-	1	-
	USB2.0	6 (4 from rear, 2 from internal)	3 (3 from rear, 1 from internal)	6 (4 from rear, 2 from internal)
	GPIO	8-bit general purpose input/output	8-bit general purpose input/output	8-bit general purpose input/output
	COM Port	2 x RS-232, 2 x RS-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	3 x RS-232, 1 x RS-232/422/485 with RS-485 auto flow control
	Reset Button	1	1	1
	Smart Fan	-	-	1 (T56N only)
Security	TPM	-	-	-
	Power Type	Single 12V DC power input	Single 12V DC power input	Single 12V DC power input
Power	Power Supply Voltage	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
	Power Consumption (Idle)	N2600: 7.27 W D2550: 9.95 W	E3825: 5.42 W E3845: 6.12W J1900: 5.88 W	T40R: 7.08 W T40E: 6.36 W T56N: 7.8 W
	Power Consumption (Full Load)	N2600: 8.75 W D2550: 12.35 W	E3825: 9.72 W E3845: 11.04W J1900: 13.32 W	T40R: 9.6 W T40E: 9.84 W T56N: 16.2 W
	Battery	Lithium 3 V / 210 mAh	Lithium 3 V/ 210 mA	Lithium 3 V / 210 mAh
Environment	Operational Temp.	0 ~ 60° C (32 ~ 140° F)	0 ~ 60° C (32 ~ 140° F)	0 ~ 60° C (32 ~ 140° F)
	Extended Temp.	-40° C ~ 85° C (-40 ~ 185° F)	-40 ~ 85° C (-40 ~ 185° F)	-40° C ~ 85° C (-40 ~ 185° F)
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")
	Weight	0.74 kg (1.63 lb), weight of total package	0.5 kg (1.1 lb), weight of total package	0.78 kg (1.72 lb), weight of total package
Certification	EMC	CE, FCC	CE, FCC	CE, FCC



NEW

Model Name	MIO-5271	MIO 5272	MIO-5290	
Form Factor	3.5" MI/O-Compact	3.5" MI/O-Compact	3.5" MI/O-Compact	
Processor System	CPU	Intel Core i5-4300U, Celeron 2980U	Intel Core i7-6600U/ i5-6300U /i3-6100U / Celeron 3955U	Intel Core i7-3555LE/ i7-3517UE / i3-3217UE/ Celeron 1047UE
	CPU TDP	15W	15W	25 W/ 17 W/ 17W/ 17W
	Frequency	1.9(Turbo: 2.9) GHz/ 1.6 GHz	2.6(Turbo: 3.4)GHz/ 2.4(Turbo: 3.0) GHz/ 2.3 GHz/ 2.0 GHz	2.5(Turbo: 3.0) GHz/ 1.7(Turbo: 2.6) GHz/1.6 GHz/1.4 GHz
	Core Number	2	2	2
	L2 Cache	-	-	-
	L3 Cache	3MB/ 2MB	4MB/ 3MB/ 3MB/ 2MB	4MB/ 4MB/ 3MB/ 2MB
	BIOS	AMI UEFI 128 Mb	AMI UEFI 128 Mbit	AMI EFI 64Mbit
Memory	Chipset	-	-	Intel QM77
	Technology	DDR3L 1333/1600 MHz	DDR3L 1333/1600 MHz	DDR3 1600MHz, DDR3L 1333 MHz
	Max. Capacity	8 GB	16 GB	8 GB
Display	Socket	1 x 204-pin SODIMM	2 x 204-pin SODIMM	1 x 204-pin SODIMM
	Controller	Intel® HD Graphics 4400 / Intel HD Graphics (Celeron)	Intel® HD Graphics 500 series	Intel® HD Graphics 4000 / Intel® HD Graphics (Celeron)
	Graphic Engine	DirectX11.1, OpenGL 4.0, and OpenCL 1.2 Full AVC/VC1/MPEG2 HW Decode	DirectX11.3, OpenGL 4.4, and OpenCL 2.1 Full AVC/VC1/MPEG2 HW Decode	DirectX11, OpenGL 3.1, and OpenCL 1.1 Full AVC/VC1/MPEG2 HW Decode
	Graphic Memory	Share with system memory up to 1792MB	Share with system memory up to 3968MB	Share with system memory up to 1792MB
	VGA	Up to 1920 x 1200 at 60 Hz	Up to 1920 x 1200 at 60 Hz	Up to 2048 x 1536 at 75Hz
	LCD (LVDS/eDP)	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 2560 x 1600 at 60 Hz
	DDI (HDMI/DVI/DisplayPort)	HDMI: up to 4096 x 2304 at 24Hz DisplayPort (optional): up to 3200 x 2000 at 60Hz	HDMI: up to 4096 x 2160 at 24 Hz	HDMI: up to 1920 x 1200 at 24Hz DisplayPort (optional): up to 2560 x 1600 at 60Hz
Expansion Interface	Multiple Display	VGA+LVDS, VGA+HDMI/DP, HDMI/DP+LVDS, VGA+HDMI/DP+LVDS	VGA+HDMI, VGA+LVDS, HDMI+LVDS, VGA+HDMI+LVDS	VGA+LVDS, VGA+HDMI/DP, HDMI/DP+LVDS, VGA+LVDS + DP (coastline) + DP (MIOe)
	Mini PCIe	1 x Full-size, 1 x Half-size	2 x Full-size	1 x Full-size, 1 x Half-size
	SIM Socket	1	1	-
	SMBus	1	1	1
	iPC	1 (Shares with SMBus pin)	1 (Shares with SMBus pin)	1 (Shares with SMBus pin)
Ethernet	MIOe	SMBus, 3 x USB2.0, LPC, 1 x PCIe, line-out Displayport (optional), Reset, PowerOn, +5Vsb, +12Vsb	SMBus, USB3.0, LPC, 2 x PCIe, line-out Displayport (optional), Reset, PowerOn, +5Vsb, +12Vsb	SMBus, 1 x USB3.0, LPC, 4 x PCIe x1, line-out, Displayport, Reset, PowerOn, +5Vsb, +12Vsb
	Controller	GbE1: Intel i218, GbE2: Intel i210	GbE1: Intel i219, GbE2: Intel i210	GbE1: Intel 82579LM, GbE2: Intel 82583V
	Speed	10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps
Audio	Connector	RJ45 x 2	RJ45 x 2	RJ45 x 2
	Audio Interface	High Definition Audio	High Definition Audio	High Definition Audio
WatchDog Timer	CODEC	Realtek ALC888S	Realtek ALC888S	Realtek ALC892
	Amplifier	Optional via MIOe	Optional via MIOe	Optional via MIOe
Storage	Connector	Line-in, Line-out, Mic-in	Line-in, Line-out, Mic-in	Line-in, Line-out, Mic-in
	WatchDog Timer	255 levels timer interval	255 levels timer inte	255 levels timer interval
	SATA	2, up to 6 Gb/s (600 MB/s)	2, up to 6 Gb/s (600 MB/s)	2, up to 6.0 Gb/s (600 MB/s)
	mSATA	1 x Full-size (default miniPCIe)	1 x Full-size (default miniPCIe)	1 x Full-size (default miniPCIe)
I/O	CFast	-	-	-
	USB3.0	2	2	2
	USB2.0	3 (2 from rear, 1 from internal)	4 (2 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
	COM Port	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	1 x RS-232, 1 x RS-232/422/485 with RS-485 auto flow control
	Reset Button	1	1	1
	Smart Fan	-	-	1
Power	Security	-	TPM 2.0 (optional)	-
	Power Type	Single 12V DC power input	Single 12V DC power input	Single 12V DC power input
Power	Power Supply Voltage	Supports single 12V input, ±10%	Supports single 12V input, ± 10%	Supports single 12V input, ± 10%
	Connector	ATX 2x2P (DC Jack optional)	ATX 2x2P (DC Jack optional)	ATX 2x2P/ DC Jack
	Power Consumption (Idle)	i5 4300U: 4.68 W Celeron 2980U: 4.56 W	i7 6600U: 6.46 W, i5 6300U: 5.26 W, i3 6100U: 5.02 W,	i7 3555LE: 27.7 W i3 3217UE: 18.08 W Celeron 1047UE: 13.2 W
	Power Consumption (Full Load)	i3 4300U: 29.52 W Celeron 2980U: 20.52 W	i7 6600U: 22.03 W, i5 6300U: 20.87 W, i3 6100U: 20.45 W,	i7 3555LE: 32.5 W i3 3217UE: 22.08 W Celeron 1047UE: 17.88 W
	Battery	Lithium 3 V / 210 mA	Lithium 3 V / 210 mA	Lithium 3 V / 210 mAh
Environment	Operational Temp.	0 ~ 60° C (32 ~ 140° F)	0 ~ 60° C (32 ~ 140° F)	0 ~ 60° C (32 ~ 140° F)
	Extended Temp.	-40 ~ 85° C (-40 ~ 185° F)	-40° C ~ 85° C (-40 ~ 185° F)	-40° C ~ 85° C and 60° C @ 95% RH Non-Condensing
Physical Characteristics	Dimensions (L x W x H)	146 x 102mm (5.7" x 4")	146 x 102 mm (5.7" x 4")	146 x 102 mm (5.7" x 4")
	Weight	0.74 kg (1.63 lb), weight of total package	0.67 kg (1.48lb), weight of total package	0.84 kg (1.72lb), weight of total package
Certification	EMC	CE, FCC	CE, FCC	CE, FCC

MI/O Extension SBCs

NEW

NEW



Model Name	MIO-2261	MIO-2262	MIO-2263	MIO-3260	MIO-2270	
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)	2.5" MI/O-Ultra (Pico-ITX)	
Processor System	CPU	Intel Atom N2600/ N2800	Intel Atom N2600/ N2800	Intel Atom E3825/ Intel Celeron J1900	Intel Atom E3825/ Intel Celeron N2930	AMD G-Series SoC GX-415GA/ AMD G-Series SoC GX-210JA
	CPU TDP	3.5W/ 6.5W	3.5W/ 6.5W	6W/ 10W	6W/ 7.5W	15W/ 6W
	Frequency	1.6 GHz/ 1.86 GHz	1.6 GHz/ 1.86 GHz	1.33 GHz/ 2.0(Turbo: 2.42) GHz	1.33 GHz/ 1.83(Turbo: 2.16) GHz	1.5 GHz/ 1.0 GHz
	Core Number	2	2	2/ 4	2/ 4	4/ 2
	L2 Cache	1MB	1MB	1 MB/ 2 MB	1 MB/ 2 MB	2 MB/ 1 MB
	L3 Cache	-	-	-	-	-
	BIOS	AMI EFI 16Mbit	AMI EFI 16Mbit	AMI EFI 64 Mbit	AMI EFI 64 Mbit	AMI EFI 32 Mbit
Memory	Chipset	Intel NM10	Intel NM10	-	-	-
	Technology	DDR3 800/ DDR3 1066MHz	DDR3 800/ DDR3 1066MHz	DDR3L 1066/ 1333 MHz	DDR3L 1066/ 1333 MHz	DDR3/3L 1600/ 1066 MHz
	Max. Capacity	4 GB	4 GB	8 GB	8 GB	8 GB
Display	Socket	1 x 204-pin SODIMM	1 x 204-pin SODIMM	1 x 204-pin SODIMM	1 x 204-pin SODIMM	1 x 204-pin SODIMM
	Controller	Integrated Intel GMA 3600 series	Integrated Intel GMA 3600 series	Intel Gen7 graphic engine	Intel Gen7 graphic engine	AMD Radeon HD 8330E/ 8180
	Graphic Engine	DirectX® 9 and OpenGL3.0 support HW Accelerated Decode: MPEG2, H.264, VC-1	DirectX® 9 and OpenGL3.0 support HW Accelerated Decode: MPEG2, H.264, VC-1	DirectX® 11, OGL 3.2, OCL 1.1, OGL ES 2.0.2, 2D/ 3D Acceleration Decode: H264, MPEG2, VC-1, WMV9	DirectX® 11, Open GL3.0, Open CL 1.1, OGL ES 2.0, Decode: H.264, MPEG2, VC-1, WMV9	DirectX® 11.1 graphic with LVDA.2, Open GL4.1/ Open CL 1.2, 2D/ 3D Hardware Decode: H.264, MPEG2/4, VC1, MVC
	Graphic Memory	Share with system memory up to 256MB	Share with system memory up to 256MB	Share with system memory up to 384 MB	Share with system memory up to 384 MB"	Share with system memory up to 384 MB
Expansion Interface	VGA	Up to 1920 x 1200 at 60 Hz	Up to 1920 x 1200 at 60 Hz	Up to 2560 x 1600 at 60Hz	Up to 2560 x 1600 at 60Hz	Up to 2048 x 1536 at 60Hz
	LCD (TTL/LVDS/ eDP)	LVDS 18/24-bit, up to 1366 x 768 at 60 Hz	LVDS 18/24-bit, up to 1366 x 768 at 60 Hz	LVDS 18/24-bit, up to 1440 x 900 at 60 Hz	LVDS 18/24-bit, up to 1440 x 900 at 60 Hz	LVDS 18-bit, up to 1600 x 900 at 60 Hz
	DDI (HDMI/DVI/ DisplayPort)	-	-	HDMI 1.4a 1920x1200 at 60 Hz/ 24bpp	-	HDMI 1.4a 1920x1200 at 60 Hz/ 24bpp
	Multiple Display	VGA+LVDS	VGA+LVDS	VGA+LVDS, HDMI+LVDS	LVDS+VGA, LVDS+DP/HDMI, VGA+DP/HDMI	VGA+LVDS, HDMI+LVDS
Ethernet	Mini PCIe	1 x Half-size	1 x Full-size (Default mSATA)	1 x Half size	1 x Full-size	1 x Half size
	SMBus	1	1 (from 64pin connector B)	1	1 (from 64pin connector B)	1
	I ² C	1 (Shares with SMBus pin, supported by request)	1 (from 64pin connector B)	-	1 (from 64pin connector B)	-
	MIOe	SMBus, 2 x USB2.0, 2 x PCIe x1, LPC, Line-out, DP/HDMI (HDMI supported by request), Reset, PowerOn, +5Vsb, +12Vsb	SMBus, 3 x USB 2.0, 2 x PCIe x1, LPC, line out, DP/HDMI (HDMI supported by request), Reset, PowerOn, +5Vsb, +12Vsb	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	2 x USB2.0, 2 PCIe x1, LPC, HD Audio line-out, DP or HDMI supported by request, 5 Vsb/12 Vsb power
	64-pin connector A	-	12V DC input, Inverter, VGA, 2 x USB2.0, 1GbE w/ LED	-	12V DC input, Inverter, VGA, 2 x USB2.0, 1GbE	-
Audio	64-pin connector B	-	SMBus, I2C, Power/Reset button, HDD/Power LED, 2 x USB2.0, 8-bit GPIO, HD Audio Line in/out, 2 x RS-232	-	SMBus, I2C, Power/Reset button, HDD/Power LED, 2 x USB2.0, 8-bit GPIO, HD Audio Line-in, Line out, Mic-in, 2 x RS-232/422/485	-
	Controller	Intel 82583V	Intel 82583V	Intel i210	Intel i210	GbE Realtek RTL8111E
	Speed	10/100/1000Mbps	10/100/1000Mbps	10/100/1000Mbps	10/100/1000Mbps	10/100/1000Mbps
	Connector	RJ45	from 64pin connector A	RJ45	from 64pin connector A	RJ45
WatchDog Timer	Audio Interface	High Definition Audio	High Definition Audio	High Definition Audio	High Definition Audio	High Definition Audio
	CODEC	Realtek ALC892	Realtek ALC892	Realtek ALC888S	Realtek ALC888S	Realtek ALC888S
	Amplifier	Optional via MIOe	Optional via MIOe	Optional via MIOe	Optional via MIOe	Optional via MIOe
Storage	Connector	Line-in, Line out	Line-in, Line out (from 64pin connector B)	Line-in, Line-out	Line-in, Line out, Mic-in (from 64pin connector B)	Line-in, Line-out
	WatchDog Timer	255 levels timer interval, programmable by software	255 levels timer interval, programmable by software	255 levels timer interval, programmable by software	255 levels timer interval, programmable by software	255 levels timer interval, programmable by software
	SATA	1 (Integrates USB signal, supports either mSATA or USB interface module)	1 (Integrates USB signal, supports either mSATA or USB interface module)	1	1 (Integrates USB signal, supports either mSATA or USB interface module)	1 (Integrates USB signal, supports either mSATA or USB interface module)
I/O	mSATA	1, up to 3Gb/s (300 MB/s)	1, up to 3Gb/s (300 MB/s)	1, up to 3Gb/s (300 MB/s)	1, up to 3Gb/s (300 MB/s)	1, up to 6Gb/s (600 MB/s)
	CompactFlash	-	-	-	-	-
	USB3.0	-	-	1	1 (from MIOe)	2
	USB2.0	4 (2 from Rear, 2 from Internal)	4 (from internal)	3 (1 from rear, 2 from internal)	4 (from internal)	2 (from internal)
	GPIO	8-bit general purpose input/output	8-bit GPIO (from 64pin connector B)	8-bit general purpose input/output	8-bit GPIO (from 64pin connector B)	8-bit general purpose input/output
	COM Port	2 x RS-232	2 x RS-232	1 x RS-232, 1 x RS-232/422/485 with RS-485 Auto-flow control	2 RS-232/422/485 (from 64-pin connector B)	1 x RS-232, 1 x RS-232/422/485 with RS-485 Auto-flow control
	Reset Button	1	1	1	1	1
	Fan	-	-	-	-	-
Power	Power Type	Single 12V DC power input	Single 12V DC power input	Single 12V DC power input	Single 12V DC power input	Single 12V DC power input
	Power Supply Voltage	single 12V input, ± 10%	single 12V input, ± 10%	single 12V input, ±10%	single 12V input, ±10%	single 12V input, ±10%
	Connector	ATX 1x2p, DC Jack (optional)	From 64pin connector A	ATX 1x2p, DC Jack (optional)	From 64pin connector A	ATX 1x2p, DC J ack (optional)
	Power Consumption (Idle)	N2600: 4.2 W N2800: 5.52 W	N2600: 5.24 W N2800: 6.12 W	J1900: 10.59W E3825: 7.08W	E3835: 4.47W N2930: 5.08W	GX-415GA: 12.6W GX-210JA: 5.93W
	Power Consumption (Full Load)	N2600: 9.12W N2800: 9.6W	N2600: 8.05 W N2800: 9.8 W	J1900: 12.48W E3825: 9.12W	N2930: 5.08W E3835: 7.13W N2930: 9.73W	GX-415GA: 15.12W GX-210JA: 10.2W
Environment	Battery	Lithium 3V/ 210 mA	Lithium 3V/ 210 mA	Lithium 3V/ 210 mA	Lithium 3V/ 210 mA	Lithium 3V/ 210 mA
	Operational 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)
Physical Characteristics	Extended Temp.	-40° C ~ 85° C (-40 ~ 185° F)	-40° C ~ 85° C (-40 ~ 185° F)	-40 ~ 85° C (-40 ~ 185° F)	-40 ~ 85° C (-40 ~ 185° F)	-
	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")	100 x 72 mm (3.9" x 2.8")
	Weight	0.48 kg (1.06 lb), weight of total package	0.37 kg (0.82 lb), weight of total package	0.46 kg (1.01 lb), weight of total package	MIO-3260L: 0.35 kg (0.77 lb), MIO-3260C: 0.55 kg (1.21 lb), weight of total package	0.45 kg (0.99 lb), weight of total package
Certification	EMC, FCC	CE, FCC	CE, FCC	CE, FCC	CE, FCC	

3.5" Single Board Computers



Model Name	PCM-9310	PCM-9365	PCM-9375	PCM-9376		
Form Factor	3.5" SBC	3.5" SBC	3.5" SBC	3.5" SBC		
Processor System	CPU	Intel/ Celeron	Intel Celeron N2930/ Intel Atom E3825	AMD Geode LX800		
	CPU TDP	6W/ 4.5W	7.5W/ 6W	3.6 W	4.5/ 6.4 W	
	Frequency	1.6 GHz	1.83/ 1.33 GHz (Burst: 2.16 GHz/ -)	500 MHz	615 MHz/ 1.0GHz	
	Core Number	4/ 2	4/2	1	1/ 2	
	L2 Cache	2/ 1 MB	2MB/ 1MB	128 KB	512 KB	
	BIOS	AMI UEFI BIOS at 64 Mb	AMI UEFI BIOS at 64 Mbit	Award 4Mbit	AMI EFI 32Mbit	
Memory	Chipset	-	Intel Atom SoC	AMD CS5536	AMD A55E	
	Technology	DDR3L-1600MHz	DDR3L 1333 MHz for N2930, DDR3L 1066 MHz for E3825	DDR 333/400 MHz	DDR3/DDR3L 1066 MHz	
	Max. Capacity	8 GB	4 GB	1 GB	4 GB	
	Socket	1 x 204-pin SODIMM	-	1 x 200-pin SODIMM	1 x 204-pin SODIMM	
Display	Onboard Memory Controller	-	Onboard 2GB/ 4GB	-	1 GB	
	Controller	Intel Celeron N3160/N3060	Intel Gen7 graphic engine	AMD Geode LX800	AMD G-series T16R/T40E	
	Graphic Engine	Intel Gen8 LP	DirectX11, OpenGL3.2, OpenCL1.1 Full HW acceleration, decode: H.264, MPEG2/4, VC-1, WMV9. Encode: H.264, MPEG2	AMD Geode LX800 2D engine	DirectX11 graphics with UVD3.0, Open CL 1.1, Open GL 4.0 Hardware decode for H.264, VC-1 and MPEG2	
	Graphic Memory	-	-	Optimized shared memory architecture up to 64MB system memory	Optimized shared memory Architecture up to 384 MB system memory	
	VGA	1920 x 1200 at 60Hz	2560 x 1600 at 60Hz	Supports up to 1920 x 1440 @ 32bpp (85Hz)	Supports up to 1920 x 1200 at 85Hz	
	LCD (TTL/LVDS/eDP)	LVDS: Single/dual-ch 18/24bit up to 1920 x 1200 at 60Hz eDP: eDP 1.3 up to 2560x1440 (Optional)	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	24-bit TTL (PCM-9375F) up to 1600 x 1200 @ 32bpp (60Hz) Single channel 18-bit LVDS (PCM-9375E) up to 1600 x 1200 @ 32bpp (60Hz)	Supports single/dual channel 18/24-bit LVDS up to 1920 x 1200, 24-bit TTL	
Expansion Interface	DDI (HDMI/DVI/DisplayPort)	HDMI: 1.4b up to 2560x1600 at 60Hz	HDMI 1.4a for HD video playback, 1080P at 60Hz	-	-	
	Multiple Display	VGA + HDMI + LVDS/eDP	VGA + LVDS, HDMI*+ LVDS, LVDS + LVDS*	VGA + LVDS, VGA + TTL	VGA+LVDS, VGA+TTL, LVDS+TTL	
	Mini PCIe	2x Full-size	1x Full-size	-	1 (Half-size), Full-size supported by request	
	LPC	-	-	-	1	
	SMBus	1 (shared with I2C)	1	-	1 (shared with I2C)	
	I2C Bus	1 (shared with SMBus)	1 (shared with SMBus pin)	optional	1 (shared with SMBus)	
Ethernet	PC/104	-	-	1	1	
	PCI-104	-	1	-	-	
	MIO-160	-	-	-	-	
	Controller	GbE1/2: RTL8111E	Realtek RTL8111E-VL-CG	GbE 1/2 Realtek RTL8139	GbE1/2 Realtek RTL8111E	
Audio	Speed	10/100/1000 Mbps	10/100/1000Mbps	10/100 Mbps	10/100/1000 Mbps	
	Connector	RJ45 x 2	RJ45 x 2	RJ45 on Ethernet1, box header on Ethernet2	RJ45 on GbE1, box header on GbE2	
	Audio Interface	HD Audio	HD Audio	AC97	HD Audio	
	CODEC	Realtek ALC892	Realtek ALC888S, HD audio	Realtek ALC203, AC97	Realtek ALC892, High Definition Audio (HD)	
WatchDog Timer	Amplifier	-	-	Max. 2.2W/ch Stereo into a 3(Ω) Load	-	
	Connector	Line-in, line-out, mic-in	pin header (Line-in, Line out, Mic-in)	pin header (Line-in, Line out, Mic-in, speaker-out)	pin header (Line-in, Line out, Mic-in)	
Storage	WatchDog Timer	-	Yes	Yes	Yes	
	SATA	1x SATAIII (up to 600 MB/s), 1x SATA II (optional, up to 300 MB/s)	1, up to 3Gb/s (300 MB/s)	-	2 x SATAIII (Max. Data Transfer Rate 300 MB/s)	
	mSATA	1x Full-size (support Mini PCIe by request)	1 x Full-size	-	1 (Full-size)	
	IDE	-	-	1	-	
	CompactFlash	-	-	CompactFlash Type I/II (Primary Master IDE Channel)	-	
	Floppy	-	-	1 (Shared with LPT)	-	
I/O	USB2.0	4	4	4	4	
	GPIO	8-bit GPIO	8-bit	8-bit GPIO	8-bit GPIO	
	LPT	-	-	1 (Shared with Floppy)	-	
	COM Port	4 (2x RS-232, 2x RS-232/422/485)	3 RS-232 (ESD protection: Air gap ±15kV, Contact ±8kV)	4 (3xRS-232, 1xRS-232/422/485)	4 (2xRS-232, 2xRS-232/422/485)	
	PS/2 KB/Mouse	-	-	1	1	
	Reset Button	-	-	1	1	
	Smart Fan	-	-	-	-	
	Power Type	Single 12V DC power input	-	AT/ ATX	AT/ ATX	
	Power	Power Supply Voltage	12V ± 10%	12V ± 10%	5V±5% (+12V option for LCD, PC/104)	5V±5% (+12V option for LCD, PC/104)
		Connector	ATX 2x2P (DC Jack Optional)	1x4Pin power connector	1x4pin power connector	1x4pin power connector
Power Consumption (Idle)		0.58A @ 12 V (7.05 W) 0.38A @ 12 V (4.55 W)	PCM-9365E-2GS3A1E : 0.39A @ 12V (4.68W) PCM-9365EV-4GS3A1E : 0.44A @ 12V (5.28W) PCM-9365N-4GS8A1E : 0.509A @ 12V (6.108W)	0.6 A @ 5 V, 0.03A @ 12V (3.36 W)	T40E: 1.67A @ 5V (8.35W) 1.48A @ 5 V (7.4 W)	
Power Consumption (Full Load)		1.03A @ 12 V (12.27 W) 0.85A @ 12 V (10.20 W)	PCM-9365E-2GS3A1E : 0.49A @ 12V (5.88W) PCM-9365EV-4GS3A1E : 0.554A @ 12V (6.648W) PCM-9365N-4GS8A1E : 0.745A @ 12V (8.94W)	1.2 A @ 5 V, 0.23A @ 12V (8.76 W)	T40E: 2.34A @5V (11.7W) 2.28A @ 5 V (11.4 W)	
Environment	Battery	Lithium 3V/ 210 mA	Lithium 3 V / 210 mA	Lithium 3 V / 196 mA	Lithium 3 V / 210 mA	
	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 @ 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)	
Physical Characteristics	Non-Operational Temperature	-40~85° C and 60° C @95% RH non-condensing	-40° C ~ 85° C and 60° C @ 95% RH Non-Condensing	-40 ~ 85° C and 60° C @ 95% RH Non-Condensing	-40 ~ 85° C and 60° C @ 95% RH Non-Condensing	
	Dimensions (L x W x H)	146 x 102mm	146 x 102 mm (5.7" x 4"), same as 3.5"	146 x 102 mm	146 x 102 mm	
Operating System	Weight	0.48 kg (1.06 lb), weight of total package	0.54kg (1.19lb), weight of total package	0.64kg (1.41 lb), weight of total package	0.51kg (1.12 lb), weight of total package	
	Construction	Aluminum with fanless design	Aluminum with fanless design	Aluminum with fanless design	Aluminum with fanless design	
	Microsoft Windows	Yes	Yes	Yes	Yes	
	Linux	Yes	Yes	Yes	Yes	
	SUSIAccess	Yes	SUSI4	Yes	Yes	
Certification	iManager	Yes	Yes	CE, FCC	CE, FCC	
	EMC	CE, FCC	CE, FCC			

5.25" Single Board Computers



NEW

Model Name		MIO-9290	MIO-7270
Form Factor		5.25"	203 x 156 mm
Processor System	CPU	Intel Core I & Celeron 1020E (rPGA988 socket)	Intel 6rd Generation Core™ i7/i5/i3/Celeron mobile processor (FBGA)
	CPU TDP	up to 45W	up to 45W
	Frequency	up to 2.3(Turbo: 3.3) GHz	2.8GHz
	Core Number	up to 4 core	2/4
	L2 Cache	-	-
	L3 Cache	up to 6MB	up to 8MB
Memory	BIOS	AMI EFI 64Mbit	AMI EFI 128Mbit
	Chipset	Intel QM77	Intel QM170
	Technology	DDR3/DDR3L 1333/1600 MHz	DDR4 1866/2133 MHz
Memory	Max. Capacity	8 GB x 2	16GB x 2
	Socket	2 x 204-pin SODIMM	2 x 260-pin SODIMM
Display	Controller	Intel Ivy Bridge Processor + Intel QM77	Intel Skylake-H Processor + Intel QM170
	Graphic Engine	DirectX11, OpenGL 3.1, and OpenCL 1.1	Direct3D 2015, OpenGL 5.0 OpenCL 2.1
	Graphic Memory	Hardware decode acceleration: AVC/H.264, MPEG-2, VC-1	Share with system memory up to 3968MB
	VGA	-	1
	LCD (TTL/LVDS/eDP)	Yes	support by MIOe-732
Expansion Interface	DDI (HDMI/DVI/DisplayPort)	DisplayPort: Yes HDMI: Yes DVI-I: Yes	1 x HDMI 1 x VGA 1 x 3rd display module
	Multiple Display	DP + HDMI + DVI-I	VGA + HDMI + 3rd display module
	Mini PCIe	2 (Full-size, shared with mSATA)	2 (Full size)
	PCI	-	-
Ethernet	PC/104-Plus	-	-
	MIOe	SMBus, 3 x USB2.0, LPC, 4 x PCIe, line out, DisplayPort, 5 Vsb/12 Vsb power	SMBus, 2 x USB2.0, LPC, 4 x PCIe, line out, Displayport, 5 Vsb/12 Vsb power
Audio	Controller	GbE1: Intel 82579LM GbE2: Intel I210	GbE1: Intel I219LM GbE2: Intel I210
	Speed	10/100/1000 Mbps	10/100/1000 Mbps
	Connector	RJ45 x 2	RJ45 x 2
WatchDog Timer	Audio Interface	HD Audio	HD Audio
	CODEC	Realtek ALC892	ALC888-VD2
Storage	Amplifier	-	-
	Connector	Line-in, Line out, Mic-in	Line out, Mic-in
I/O	WatchDog Timer	Yes	Yes
	SATA	2 SATA III (up to 600 MB/s)	2 x SATA III up to 6.0 Gb/s
	mSATA	1 (Full-size, shared with mini PCIe)	1 (Full-size, shared with mini PCIe)
	CompactFlash	-	-
	Floppy	-	-
	USB3.0	4	4
	USB2.0	2	2
	SPI Bus	-	-
	GPIO	16-bit	16-bit
	LPT	-	1
Power	COM Port	4 x RS-232 (2 with Tx/Rx only) 2 x RS-232/422/485	2 x RS-232/422/485
	PS/2 KB/Mouse	-	-
	Reset Button	1	1
	Power Button	1	1
	Smart Fan	Yes	Yes
	SMBus	1	1
	I²C Bus	1 (Shares with SMBus)	1
	Power Type	AT/ ATX	AT/ ATX
	Power Supply Voltage	Single 12V input, ± 10%	Single 12V DC power input
	Power Consumption (Idle)	i7 3610QE w/DDR3: 0.646 A @ 12 V (7.75 W)	-
		i5 3610ME w/DDR3: 0.614 A @ 12 V (7.37 W)	-
	Power Consumption (Full Load)	i3 3120ME w/DDR3: 0.622 A @ 12 V (7.46 W)	-
Celeron 1020E w/DDR3: 0.632 A @ 12 V (7.58 W)		-	
Battery	i7 3610QE w/DDR3: 3.759 A @ 12 V (45.11 W)	-	
	i5 3610ME w/DDR3: 2.375 A @ 12 V (28.5 W)	-	
Environment	i3 3120ME w/DDR3: 1.675 A @ 12 V (20.1 W)	-	
	Celeron 1020E w/DDR3: 1.595 A @ 12 V (19.14 W)	-	
Physical Characteristics	Operational Temperature	Lithium 3 V / 210 mAh 0 ~ 60° C (32 ~ 140° F)	Lithium 3 V / 210 mAh 0 ~ 60° C (32 ~ 140° F)
	Non-Operational Temperature	(Operational humidity: 40° C @ 95% RH Non-Condensing)	(Operational humidity: 40° C @ 95% RH Non-Condensing)
Operating System	Dimensions (L x W x H)	203 x 146 mm	203 x 156 mm
	Weight	0.9 kg (1.98 lb), weight of total package	0.9 kg (1.98 lb), weight of total package
Certification	Construction	Copper with fan design	Aluminum with fanless/with fan design
	Microsoft Windows	Yes	Yes
Certification	Linux	Yes	Yes
	SUSIAccess	Yes	Yes
Certification	iManager	Yes	Yes
	QNX	Yes	Yes
Certification	EMC	CE, FCC	CE FCC Class B

PC/104 CPU Modules



NEW



NEW

Model Name		PCM-3356	PCM-3365
Form Factor		PC/104	PC/104-Plus
Processor System	CPU	AMD® G-Series™ Processor T16R/T40E	Intel Atom E3825/E3845/N2930
	Frequency	615 MHz/ 1.0 GHz	1.33GHz/1.91GHz/1.83GHz
	Core Number	1/2	2/4/4
	L2 Cache	512 KB	1MB/2MB/2MB
	BIOS	AMI 32-Mbit	AMI UEFI BIOS at 64 Mb
	Chipset	AMD A55E	1 x 204-pin SODIMM
Memory	Technology	DDR3L 1066 MHz	DDR3L 1066MHz/1333MHz/1333MHz
	Max. Capacity	SO-DIMM: 4GB / On-board: 1GB	8GB
	Socket	1 x 204-pin SODIMM	-
	Onboard Memory	Onboard 1GB (by sku)	-
Display	Controller	AMD® G-Series™ Processor T16R/T40E	Intel Gen7 graphic engine
	Graphics Engine	DirectX 11 graphics with UVD 3.0, Open CL 1.1, Open GL 4.0 Hardware decode (UVD 3) for H.264, VC-1 and MPEG2	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
	Graphics Memory	Optimized shared memory architecture up to 384 MB system memory	Share with system memory up to 384 MB
	HDMI/DVI	-	DVI 1.0 (DVI-D), up to 1920x1080
Multiple Displays		LVDS+VGA	VGA + LVDS, VGA + HDMI/DVI, HDMI/DVI + LVDS
Expansion Interface	Mini PCIe	1 half size	1 x Full-size
	SMBus	1	1 (configurable to I²C by customer's request)
	I²C Bus	-	1 (supported by request)
	PC/104	1	-
	PCI-104	-	-
	PC/104-Plus	-	1
Ethernet	Controller	GbE1: Realtek RTL8111E-VB-GR GbE2: Realtek RTL8111E-VB-GR	Intel I210
	Speed	10/100/1000 Mbps	10/100/1000 Mbps
	Connector	Box Header	Pin Header
Audio	Codecs	Realtek ALC892	Intel High Definition audio interface (requires an audio extension module P/N: PCE-SA01-00A1E Output System Reset, Programmable counter from 1 ~ 255 sec
WatchDog Timer		Output System reset, Programmable 1 ~ 255 sec	Output System Reset, Programmable counter from 1 ~ 255 sec
Storage	SATA	1 SATA II	1 SATA II
	mSATA	1 half size	1 x Full-size (default, SATA signal shared with Onboard flash)
	IDE	-	-
	CompactFlash	-	-
	Onboard Flash	-	16GB/32GB/64GB (by request)
	Floppy	-	-
I/O	USB2.0	4	6
	SPI Bus	-	-
	GPIO	8-bit GPIO	8-bit GPIO
	LPT	-	-
	COM Port	3 x RS-232/422/485	3 (1 x RS-232/422/485, 2 RS-232)
	PS/2 KB/Mouse	-	1
	Power Type	AT/ATX	AT/ATX
Power	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)	T16R: 1.17 A @ +5 V (5.85 W) T40E: 1.22 A @ +5 V (6.1 W)	E3825: 4.474W E3845: 4.72W N2930: 4.417W
	Power Consumption (Full Load)	T16R: 1.43 A @ +5 V (7.15 W) T40E: 1.77 A @ +5 V (8.85 W)	E3825: 5.675W E3845: 8.581W N2930: 6.845W
	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 115 mm (3.8" x 4.5")	96 x 90 mm (3.8" x 3.5")
	Weight	0.590 kg (1.30 lb)	0.735kg (1.62lb) (with heat-sink)
Operating System	Microsoft Windows	Yes	Yes
	Linux	Yes	Yes
	SUSIAccess	Yes	Yes
Certifications	EMC	CE, FCC	CE, FCC

Mini-ITX Motherboards

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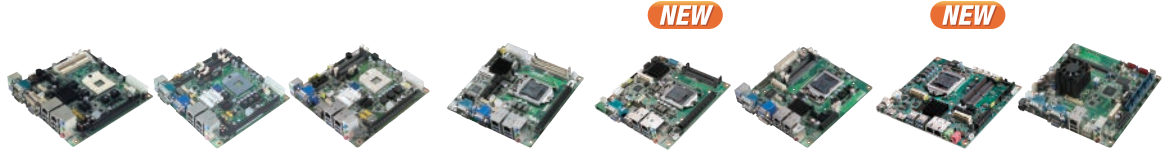


Model Name		AIMB-115	AIMB-201VG	AIMB-203	AIMB-212	AIMB-213	AIMB-214	AIMB-215 B1	AIMB-216
Form Factor		UTX MB	Mini-ITX	Mini-ITX	Mini-ITX	Mini-ITX	Mini-ITX	Mini-ITX	Mini-ITX
Processor System	CPU	Intel ATOM E3826/ E3815	Intel Core i7/ i5/ i3/ Celeron / Pentium	Intel Core i7/ i5/ i3/ Pentium/ Celeron	Intel Atom D510/N450	Intel Atom D525/N455	Intel Atom D2550/ N2600	Intel Celeron J1900/ N2930/N2807	Intel Pentium N3710 & Celeron N3160/ N3010
	Socket	FCBGA	µFC-PGA 988 Socket	LGA 1150	FCBGA	FCBGA	FCBGA	FCBGA	FCBGA
	Max. Speed	DC1.46GHz/ SC1.46GHz	2.3/2.1/2.5/2.2/1.6 GHz	3.1/ 2.9/ 2.4 GHz	DC1.66/SC1.6 GHz	DC1.8/SC1.66 GHz	DC 1.86/1.6 GHz	QC 2.0/1.83 GHz; DC 1.58 GHz	QC 1.6/1.6 GHz; DC 1.04 GHz
	TDP	7W/5W	45 W/35 W	95 W/65 W/54 W/ 45 W/35 W	12 W/6 W	12 W/6 W	10 W/3.5 W	10 W/7.5 W/4.3W	6 W / 6 W / 4 W
	Front Side Bus	533/400MHz	-	-	-	-	-	-	-
	L2 Cache	1 MB	-	-	1 MB /512 KB	1 MB /512 KB	1 MB	2MB/2MB/1MB	2MB
	L3 Cache	-	6 MB/6 MB/3 MB/ 3 MB/2 MB/2 MB	8 MB/6 MB/4 MB/3 MB	-	-	-	-	-
	Chipset	-	Intel QM77	Intel H81	Intel ICH8M	Intel ICH8M	Intel NM10	-	-
BIOS	AMI EFI 16 Mbit, SPI	AMI EFI 64 Mbit, SPI	AMI EFI 64 Mbit, SPI	AMI 16 Mbit, SPI	AMI 16 Mbit, SPI	AMI EFI 16 Mbit, SPI	AMI EFI 16 Mbit, SPI	AMI EFI 16 Mbit, SPI	
Expansion Slot	PCI	-	-	-	1	1	1	-	-
	MINI PCIe	2	1	2	1	1	1	2	1
	M.2	-	-	-	-	-	-	-	1 (B key)
	PCIe	-	-	PCIe x16, 1 slot	-	-	-	PCIe x1, 1 slot	PCIe x1, 1 slot
Memory	Technology	Dual channel DDR3L 1333 MHz SDRAM	Dual channel DDR3 1333/1600 MHz SDRAM	Dual channel DDR3 / DDR3L@1.5V 1333/1600 MHz SDRAM	Single channel DDR2 667 MHz SDRAM	Single channel DDR3 800 MHz SDRAM	Single channel DDR3 1066 MHz SDRAM	Dual / Dual / Single channel DDR3L 1333 MHz SDRAM	Dual channel DDR3L 1600 MHz SDRAM
	Max. Capacity	8 GB	16 GB	16 GB	2 GB	4 GB	4 GB	8 / 8 / 4 GB	8 GB
	Socket	2 x 204-pin SODIMM	2 x 204-pin SODIMM	2 x 204-pin SODIMM	1 x 200-pin SODIMM	2 x 204-pin SODIMM	1 x 204-pin SODIMM	2 / 2 / 1 x 204-pin SODIMM	2 x 204-pin SODIMM
Graphics	Controller	Intel HD Graphics	Intel HD Graphics	Intel HD Graphics	Embedded Gen3.5+ GFX Core, 200/400-MHz render clock frequency for N450/ D510	Embedded Gen3.5+ GFX Core, 200/400-MHz render clock frequency for N455/ D525	Embedded Gen3.5+ GFX Core, 400/640-MHz render clock frequency for N2600/ D2550	Intel HD Graphics	Intel HD Graphics
	LCD	Dual channel 48-bit LVDS	-	Dual channel 48-bit LVDS	Single channel 18-bit LVDS	Single channel 18/24-bit LVDS	Dual channel 48-bit LVDS; Single Channel 18/24-bit LVDS	Dual channel 48-bit LVDS	Dual channel 48-bit LVDS
	HDMI	2	3	-	-	-	1	-	1
	DVI	-	-	1	-	-	-	-	1
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	10/100/1000 Mbps	10/100/1000 Mbps
	Controller	LAN1: Intel i210AT LAN2: Realtek RTL8111G	LAN1: Intel 82579LM	LAN1:Realtek RTL8111E LAN2: Realtek RTL8111E	LAN1: Intel 82567V LAN2: Intel 82583V	LAN1: Intel 82567V LAN2: Intel 82583V	LAN1: Intel 82574L LAN2: Intel 82583V	LAN1:Realtek RTL8111E LAN2:Realtek RTL8111E	LAN1:Realtek RTL8111G LAN2:Realtek RTL8111G
	Connector	RJ-45 x 2	RJ-45 x 1	RJ-45 x 2	RJ-45 x 2	RJ-45 x 2	RJ-45 x 2	RJ-45 x2	RJ-45 x 2
TPM	Yes	-	Optional	-	Optional	optional	optional	Optional	
SATA	Max Data Transfer Rate	300 MB/s	600 MB/s	600 MB/s, 300MB/s	300 MB/s	300 MB/s	300 MB/s	300 MB/s	600 MB/s
	Channel	1	1	2, 1	2	3	3	2	2
	eSATA/ mSATA/M.2	-/1	-	-/1	-	-	-/1	-/1	- / -
Rear I/O	VGA/DVI/HDMI/ DP	-/1/2/-	-/1/3/-	1/1/-/1	1/-/-/1	1/-/-/1	1/-/1/-	1/-/1/-	-/1/1/1
	Ethernet	2	1	2	2	2	2	2	2
	USB	3 (1 x USB 3.0; 2 x USB 2.0)	3 (1 x USB3.0; 2 x USB2.0)	4 (2 x USB 3.0; 2 x USB 2.0)	4 (USB 2.0)	4 (USB 2.0)	4 (USB 2.0)	4 (1 x USB 3.0, 3 x USB 2.0)	4 (USB 3.0)
	Audio	Line-out	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	Line-out	Line-out
	Serial	-	1 (RS-232)	1 (RS-232)	3 (2 x RS-232; 1 x RS-232/422/485)	2 (1 x RS-232; 1 x RS-232/422/485)	2 (1 x RS-232; 1 x R-232/422/485)	-	-
	PS/2	-	-	2	-	-	1	-	-
	DC Jack	1	1	-	1	1	1	1	1
Internal Connector	LVDS & Inverter	1	-	1	1	1	2	1	1
	DVI	-	-	-	-	1	-	-	-
	USB	-	-	4 (USB 2.0)	4 (USB 2.0)	4 (USB 2.0)	2 (USB 2.0)	4 (USB 2.0)	2 (USB 2.0)
	Serial	2 (1 x RS-232; 1 x RS-232/422/485)	-	8 (7 x RS-232; 1 x RS-232/422/485)	3 (RS-232)	4 (4 x RS-232)	4 (RS-232)	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	1	1	3	2	3	3	2	2
CompactFlash	-	CFast x 1	-	CF x 1	CF x 1	CFast x 1	-	-	
GPIO	-	-	8-bit GPIO	8-bit GPIO	8-bit GPIO	8-bit GPIO	8-bit GPIO	8-bit GPIO	



AIMB-217	AIMB-223	AIMB-224	AIMB-225	AIMB-226	AIMB-230	AIMB-231	AIMB-232	AIMB-242
Thin Mini-ITX	Mini-ITX	Mini-ITX	Mini-ITX	Mini-ITX	Mini-ITX	Thin Mini-ITX	Thin Mini-ITX	Mini-ITX
Intel Pentium J4205/ Celeron N3350	AMD Mobile G-series	AMD R-series	AMD Mobile G-series GX-424CC/GX-412HC	AMD RX-427BB/RX- 225FB	Intel Celeron 2980U/ i3-4010U/i5-4300U/ i7-4650U	Intel Celeron 3765U/ i3-5010U/i5-5350U/ i7-5650U	Intel core i7-6600u / core i5-6300u /core i3-6100u/celeron 3955u	Intel core i7-6820EQ/ core i7-6822EQ/ core i5-6440EQ/ Xeon E3-1515M v5
FCBGA	FT1BGA	FS1r2	FT3b	FP3	MCPBGA	FCBGA	BGA1356	BGA 1440
2.5GHz/2.3GHz	DC 1.65GHz	2.3/1.9/2.7/1.5 GHz	QC 2.4 GHz/1.2 GHz	2.7GHz/ 2.2GHz	1.6 GHz/1.7 GHz/ 1.9 GHz/3.3 GHz	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
10 W/6 W	18W	35 W	25W/7W	35W/ 17W	15W/15W/15W/15W	15W/15W/15W/15W	15W	45W/25W/45W/45W
-	-	-	-	-	-	-	-	-
-	512 KB	2 MB/1MB	2 MB/2 MB	2 MB	256 KB	512 KB	-	-
-	-	-	-	-	2 M/3 M/3 M/4 M	2 M/3 M/3 M/4 M	4 MB/3 MB/3 MB/2 MB	8MB/8MB/6MB/8MB
-	AMD A55E	AMD A75M	-	AMD A77E	Lynx Point	Wildcat Point LP	PCH-LP	Intel QM170/CM236
AMI EFI 16 Mbit, SPI	AMI EFI 32 Mbit, SPI	AMI EFI 16 Mbit, SPI	AMI EFI 16 Mbit, SPI	AMI EFI 64 Mbit, SPI	AMI EFI 16 Mbit, SPI	AMI EFI 128 Mbit, SPI	AMI uEFI 16Mbit, SPI	AMI EFI 128 Mbit, SPI
-	1	-	-	-	-	-	-	-
1	1	2	2	2	2	2	2	2
1 (E key)	-	-	-	-	-	-	-	1 (B key)
PCIe x1, 1 slot	PCIe x1, 1 slot	PCIe x8, 1 slot	PCIe x4, 1 slot	PCIe x 16, 1 slot PCIe x 1, golden-finger	-	-	-	PCIe x16, 1 slot
Dual channel DDR3L 1867 MHz SDRAM	Single channel DDR3 1066/1333 MHz SDRAM	Dual channel DDR3 1066/1333/1600 MHz SDRAM	Dual channel DDR3L 1600/1333 MHz SDRAM	Dual channel DDR3/ DDR3L 2133/1600 MHz SDRAM	Dual channel DDR3L 1600 MHz SDRAM	Single channel DDR3L 1600 MHz SDRAM	Dual Channel DDR4 2133 MHz SDRAM	Dual channel DDR4 2133 MHz SDRAM
16 GB	4 GB	16 GB	16 GB	16 GB	16 GB	16 GB	32GB	32 GB
2 x 204-pin SODIMM	1 x 204-pin SODIMM	2 x 204-pin SODIMM	2 x 204-pin SODIMM	2 x 204-pin SODIMM	2 x 204-pin SODIMM	2 x 204-pin SODIMM	2 x 260-pin SODIMM	2 x 260-pin SODIMM
Intel HD Graphics	Integrated ATI Radeon RV7x0	Integrated Radeon HD7000 series	AMD Radeon™ HD 8000 series Graphics	AMD Radeon™ HD 9000	Intel HD Graphics	intel HD 6000/ intel HD	Embedded in processor	Intel® HD Graphics 530/Intel® Iris™ Pro Graphics P580
Dual channel 48-bit LVDS	Dual channel 36/48-bit LVDS	Dual channel 36/48-bit LVDS	Dual channel 48-bit LVDS	Single channel 24-bit/ dual channel 48-bit LVDS	Dual channel 48-bit LVDS	Dual channel 48-bit LVDS	Dual channel 48-bit LVDS	Dual channel 48-bit LVDS
1	1	-	-	2	1	1	1	1 (HDMI2.0)
-	-	-	1	-	-	-	-	-
10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps
LAN1: Realtek 8111G LAN2:Realtek 8111G	LAN1: Realtek RTL8111G- CG LAN2: Realtek RTL8111G- CG	LAN1:Realtek RTL8111E LAN2:Realtek RTL8111E	LAN1: Realtek 8111G LAN2: Realtek 8111G	LAN1:Realtek 8111G LAN2:Realtek 8111G	LAN1:Realtek RTL8111E LAN2:Realtek RTL8111E	LAN1: Intel PHY i218-LM LAN2: Intel i210	LAN1: Intel PHY i219-LM LAN2: Intel i211	LAN1: Intel PHY i219-LM LAN2: Intel i211 AT
RJ-45 x 2	RJ-45 x 2	RJ-45 x 2	RJ-45 x 2	RJ-45 x 2	RJ-45 x 2	RJ-45 x 2	RJ-45 x 2	RJ-45 x 2
Optional	optional	optional	Optional	Optional	Optional	Optional	Optional	Optional
600 MB/s	600 MB/s	600 MB/s	600 MB/s	600 MB/s	600 MB/s	600 MB/s	600 MB/s	600 MB/s
2	4	3	2	3	3	3	2	2
-/1/1	-	-/1	-/1	1/1	-/1	-/1	-/1	-/1/1
1/-/1/1	1/-/1/-	1/-/1/2	-/1/-/1	-/1/2/2	-/1/1/1	-/1/1/2	-/1/1/1	-/1/1/2
2	2	2	2	2	2	2	2	2
4 (USB 3.0)	4 (USB 2.0)	4 (2 x USB 3.0, 2 x USB 2.0)	4 (2 x USB 3.0, 2 x USB 2.0)	4 (2 x USB 2.0; 2 x USB 3.0)	4 (USB 3.0)	4 (USB 3.0)	4 (USB 3.0) 1 (OTG, USB 2.0)	8 (USB 3.0)
Line-out	Mic-in, Line-in, Line-out	Mic-in, Line-in, Line-out	Line-out	Mic in, Line-in, Line-out	Mic-in, Line-out	Mic-in, Line-out	Mic-in, Line-out	Mic-in, Line-in, Line-out
-	2 (RS-232)	1 (RS-232)	-	1	-	-	-	1
-	1	1	-	-	-	-	-	-
1	1	1	1	1	1	1	1	-
1	1	1	1	1	1	1	1	1
-	-	-	-	-	-	-	-	-
4 (USB 2.0)	4 (USB 2.0)	6 (USB 2.0)	4 (USB 2.0)	8 (USB 2.0)	2 (USB 2.0)	2 (USB 2.0)	2 (USB 2.0) 2 (USB 3.0)	1 (USB 2.0)
6 (5 x RS-232; 1 x RS-232/422/485)	4 (RS-232)	5 (4 x RS-232; 1 x RS-232/422/485)	5 (4 x RS-232; 1 x RS-232/422/485)	6 (5 x RS-232; 1 x RS-232/422/485)	2 (1 x RS-232; 1 x RS-232/422/485)	2 (1 x RS-232; 1 x RS-232/422/485)	2 (RS-232)	1 (RS-232/422/485)
-	-	-	0	-	-	-	-	-
2	4	3	2	3	3	3	2	2
-	Cfast x 1	-	-	-	-	-	-	-
8-bit GPIO	8-bit GPIO	8-bit GPIO	8-bit GPIO	16-bit GPIO	8-bit GPIO	8-bit GPIO	8-bit GPIO	8 bit GPIO

Mini-ITX Motherboards



Model Name	AIMB-270	AIMB-272	AIMB-273	AIMB-274	AIMB-275	AIMB-281	AIMB-285	SIMB-MO2
Form Factor	Mini-ITX	Mini-ITX	Mini-ITX	Mini-ITX	Mini-ITX	Mini-ITX	Mini-ITX	Mini-ITX
Processor System	Intel Core i7/i5/i3/Pentium	Intel 2nd gen. Core i7/i5/i3/Celeron	Intel 3rd gen. Core i7/i5/i3/Celeron	Intel Core i7/i5/i3/Pentium/Celeron	Intel Core i7/i5/i3/Pentium/Celeron	Intel Core i7/i5/i3/Pentium/Celeron	Intel Core i7/i5/i3/Pentium/Celeron	Intel Atom D2550/N2600
Socket	µFC-PGA 989 Socket	µFC-PGA 988 Socket	µFC-PGA 988 Socket	LGA 1150	LGA 1150	LGA 1155	LGA1151	FCBGA
Max. Speed	2.66/2.4/1.86 GHz	2.1/2.5/2.2/1.6 GHz	2.3/2.1/2.5/2.2/1.6 GHz	3.7/3.1/2.9/2.4 GHz	3.4/3.2/2.8/2.7/2.6/2.4/2.3 GHz	3.5/3.0/3.1/2.7 GHz	3.4/3.2/2.8/2.7/2.6/2.4/2.3 GHz	DC 1.86/1.6 GHz
TDP	45 W/35 W	45 W/35 W	45 W/35 W	95 W / 65 W / 54 W / 45 W / 35 W	65 W / 35 W	95W/ 45W/ 65W/ 55W	65W/ 35W	10 W/3.5 W
Front Side Bus	-	-	-	-	-	-	-	-
L2 Cache	4 MB/3 MB/2 MB	-	-	-	-	-	-	1 MB
L3 Cache	-	6 MB/3 MB/2 MB	6 MB/3 MB/2 MB	8 MB/6 MB/4 MB/3 MB	8 MB/6 MB/4 MB/3 MB/2 MB	8 MB/6 MB/3 MB/2 MB	8 MB/6 MB/4 MB/3 MB/2 MB	-
Chipset	Intel QM57	Intel QM67/HM65	Intel QM77	Intel Q87	Intel Q170	Intel H61	Intel H110	NM10
BIOS	AMI EFI 64 Mbit, SPI	AMI EFI 64 Mbit, SPI	AMI EFI 64 Mbit, SPI	AMI EFI 128 Mbit, SPI	AMI EFI 128 Mbit, SPI	AMI EFI 32 Mbit, SPI	AMI EFI 128Mbit, SPI	AMI 16 Mbit, SPI
Expansion Slot								
PCI	-	-	-	-	-	-	-	-
MINI PCIe	1	1	1	2	1	1	2	1
M.2					1			
PCIe	PCIe x16, 1 slot	PCIe x16, 1 slot	PCIe x16, 1 slot	PCIe x16, 1 slot	PCIe x16, 1 slot	PCIe x4, 1 slot	PCIex4, 1 slot	PCIe x1, 1 slot
Memory								
Technology	Dual Channel DDR3 800/1066/1333 MHz SDRAM	Dual Channel DDR3 1066/1333 MHz SDRAM	Dual Channel DDR3 1333/1600 MHz SDRAM	Dual channel DDR3/DDR3L@1.5V 1333/1600 MHz SDRAM	Dual channel DDR4 2133 MHz SDRAM	Dual channel DDR3 1066/1333/1600 MHz SDRAM	Dual channel DDR4 2133 MHz SDRAM	Single channel DDR3 1066 MHz SDRAM
Max. Capacity	8 GB	16 GB	16 GB	16 GB	32GB	8 GB	32GB	4 GB/ 2 GB
Socket	2x 204-pin SODIMM	2x 204-pin SODIMM	2x 204-pin SODIMM	2 x 204-pin SODIMM	2 x 260-pin SODIMM	2 x 204-pin SODIMM	2x 260-pin SODIMM	1x 204-pin SODIMM
Graphics								
Controller	Intel HD Graphics	Intel HD Graphics	Intel HD Graphics	Intel HD Graphics	Intel HD Graphics	Intel HD Graphics	Intel HD Graphics	Intel HD Graphics
LCD	Dual channel 48-bit LVDS	Dual channel 48-bit LVDS	Dual channel 48-bit LVDS	Dual channel 48-bit LVDS	Dual channel 48-bit LVDS	Dual channel 48-bit LVDS; Single Channel 24-bit LVDS	Dual channel 48-bit LVDS	Single channel 18-bit LVDS
HDMI	-	1	1	1	1 (HDMI 2.0/1.2)	-	1 (HDMI 1.4)	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	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps
Controller	LAN1: Intel 82577LM, LAN2: Intel 82583V	LAN1: Intel 82579LM, LAN2: Intel 82583V	LAN1: Intel 82579LM, LAN2: Intel 82583V	LAN1: Intel i217LM, LAN2: Intel i211AT	LAN1: Intel PHY i219-LM LAN2: Intel i211 AT	LAN1:Realtek RTL8111E LAN2: Realtek RTL8111E	LAN1: Realtek RLT8111G LAN2: Realtek RLT8111G	LAN1:Realtek RTL8111E
Connector	RJ-45 x 2	RJ-45 x 2	RJ-45 x 2	RJ-45 x 2	RJ-45 x 2	RJ-45 x 2	RJ-45 x 2	RJ-45 x 1
TPM	-	Optional	Optional	Optional	Optional	Optional	Optional	Optional
SATA								
Max Data Transfer Rate	300 MB/s	600 MB/s, 300 MB/s	600 MB/s, 300 MB/s	600 MB/s	600 MB/s	300 MB/s	600 MB/s	300 MB/s
Channel	4	2, 2	2, 2	4	3	3	3	2
eSATA/mSATA	-	-	-/1	1/1	-/1	-/1	-/1	-
Rear I/O								
VGA/DVI/HDMI/DP	1/1/-/-	1/1/1/-	1/-/1/2	1/-/1/1	1/-/1/1	1/1/-/-	-/-/1/1	1/-/1/-
Ethernet	2	2	2	2	2	2	2	1
USB	4 (USB 2.0)	4 (USB 2.0)	4 (USB 3.0)	4 (USB 3.0)	4 (USB 3.0)	6 (USB 2.0)	4 (UBS 3.0)	4 (USB 2.0)
Audio	Mic-in, Line-in, Line-out	Mic-in, Line-in, Line-out	Mic-in, Line-in, Line-out	Mic-in, Line-in, Line-out	Mic-in, Line-in, Line-out	Mic-in, Line-out	Mic-in, Line-out	Mic-in, Line-in, Line-out
Serial	2 (RS-232)	2 (RS-232)	-	1 (RS-232)	1	2 (1x RS-232/422/485, 1x RS-232)	-	2 (RS-232)
PS/2	2	2	2	-	-	1	-	1
DC Jack	-	-	-	-	1 (Phoenix)	-	1	1
Internal Connector								
LVDS & Inverter	1	1	1	1	1	1	1 (optional)	1
DVI	1	1	1	-	-	-	-	-
USB	4 (USB 2.0)	4 (USB 2.0)	4 (USB 2.0)	6 (USB 2.0)	2 (USB 3.0), 4 (USB 2.0)	2 (USB 2.0)	4 (USB 2.0)	3 (USB 2.0)
Serial	4 (RS-232)	4 (RS-232)	2 (RS-232)	1 (RS-232/422/485)	1 (RS-232/422/485)	4 (RS-232)	2 (1 RS-232/ 1 RS-232/422/485)	4 (RS-232)
Parallel	-	-	-	-	-	-	-	-
SATA	4	4	4	4	3	3	3	2
CompactFlash	-	Cfast x 1	Cfast x 1	-	-	-	-	Cfast x 1
GPIO	8-bit GPIO	8-bit GPIO	8-bit GPIO	8-bit GPIO	8 bit GPIO	8-bit GPIO	8 bit GPIO	8-bit GPIO

MicroATX Motherboards



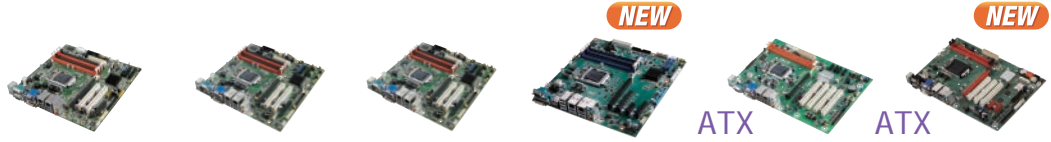
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Model Name	AIMB-501	AIMB-502	AIMB-503	AIMB-505	AIMB-567	AIMB-580	
Form Factor	MicroATX	MicroATX	MicroATX	MicroATX	MicroATX	MicroATX	
Processor System	CPU	Intel Core i7/ i5/ i3/ Pentium/ Celeron	Intel Xeon/ Core i7/ i5/ i3/ Pentium/ Celeron	Intel Core i7/ i5/ i3/ Pentium/ Celeron	Intel 6th Core i7/ i5/ i3 / Celeron	Intel Core 2 Quad/ Core 2Duo/ Pentium Dual-Core/Celeron	Intel Xeon/ Core i7/ i5/ i3/ Pentium/ Celeron
	Socket	LGA 1155	LGA 1155	LGA 1150	LGA1151	LGA775	LGA 1156
	Max. Speed	3.4/3.1/3.3/2.9/2.5 GHz	3.5/3.4/3.0/3.3/2.9/ 2.5 GHz	3.5/3.1/2.9/2.4 GHz	3.4/3.2/2.8/2.7/2.6/ 2.4/2.3 GHz	2.66/3.16/2.6/2.2 GHz	2.93/2.66/3.3/3.06/ 2.8 GHz
	TDP	95 W/65 W	95 W/77 W/65 W/55 W	65 W/54 W/45 W/35 W	65 W/35 W	95 W/65 W	95 W/73 W/65 W
	L2 Cache	-	-	-	-	6 MB/512 KB	8 MB/4 MB/3 MB
	L3 Cache	8 MB/6 MB/3 MB/2 MB	8 MB/6 MB/3 MB/2 MB	8 MB/6 MB/4 MB/3 MB	8 MB/6 MB/4 MB/3 MB/2 MB	-	-
	Chipset	Intel H61/B75	Intel Q77/C216	Intel H81	Intel H110	Intel G41 + ICH7R/ICH7	Intel Q57/3450
	BIOS	AMI EFI 64 Mbit, SPI	AMI EFI 64 Mbit, SPI	AMI EFI 64 Mbit, SPI	AMI EFI 128 Mbit, SPI	AMI 16 Mbit, SPI	AMI 64 Mbit, SPI
Expansion Slot	PCI	2	1	1 (G2)	1	2	2
	PCIe x16	1	1 (QG2) 2 (WG2)	1	1	1	1
	PCIe x8	-	-	-	-	-	-
	PCIe x4	-	-	-	-	1 (G2)	1
	PCIe x1	1	1	2	2	1 (VG)	-
Memory	Technology	Dual channel DDR3 1333/1600 MHz SDRAM	Dual channel DDR3 1333/1600 MHz SDRAM	Dual channel DDR3/L 1333/1600 MHz SDRAM	Dual channel DDR4 2133 MHz SDRAM	Dual channel DDR3 800/1066/1333 MHz SDRAM	Dual channel DDR3 800/1066/1333 MHz SDRAM
	Max. Capacity	16 GB	32 GB	16 GB	32GB	8 GB	16 GB
	Socket	2 x 240-pin DIMM	4 x 240-pin DIMM	2 x 240-pin DIMM	2 x 288-pin DIMM	2 x 240-pin DIMM	4 x 240-pin DIMM
Graphics	Controller	Intel HD Graphics	Intel HD Graphics	Intel HD Graphics	Intel HD Graphics	Intel GMA X4500	Intel HD Graphics
	VRAM	Shared system memory up to 1 GB	Shared system memory up to 1 GB	Shared system memory up to 1 GB	Share with system memory up to 1 GB	Share with system memory up to 352MB	Shared system memory up to 1 GB
	VGA	2 (G2)/ 1 (L & A2)	1	1	1	1	1
	LCD	Dual channel 48-bit LVDS	-	Dual channel 48-bit LVDS	Dual channel 48-bit LVDS	-	-
	DVI-D	1 (A2 only)	1	1	1	1	1
	HDMI	-	1	-	-	-	-
	DP/eDP	-	-	1 / -	1/1 (BOM optional LVDS)	-	-
	Dual Display	VGA+LVDS, VGA+DVI, VGA1 + VGA2	VGA+HDMI, VGA+DVI, HDMI+DVI	DP+DVI, VGA+DP,VGA+DVI	VGA + DVI, VGA + DP, VGA + eDP, DVI + DP, DVI + eDP, DP + eDP	CRT+DVI (G2)	VGA+DVI
	Triple Display	-	CRT + HDMI + DVI	-	-	-	-
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 RTL8111E LAN2: Realtek RTL8111E	LAN1: Intel 82579LM LAN2: Intel 82574L	LAN1: Realtek RTL8111E LAN2: Realtek RTL8111E	LAN1: Realtek RLT8111G LAN2: Realtek RLT8111G	LAN1: Intel 82583V LAN2: Intel 82583V (G2)	LAN1: Intel 82578DM LAN2: Intel 82583V
	Connector	RJ-45 x2	RJ-45 x2	RJ-45 x2	RJ-45 x2	RJ-45 x2	RJ-45 x2
TPM	Optional	Optional	Optional	Optional	-	Optional	
SATA	Max Data Transfer Rate	300 MB/s	300 MB/s 600 MB/s	300 MB/s 600 MB/s	600 MB/s	300 MB/s	300 MB/s
	Channel	4	6 / 2	1 / 2	4	4 (SW RAID - G2)	6 (SW RAID)
	eSATA/ mSATA/M.2	-	1/1/-	- / 1 / -	- / 1 / -	-	-
I/O Interface	USB	10 (USB 2.0)/ 8 (USB 2.0), 2 (USB 3.0)	4 (USB 3.0), 2 (USB 2.0)	2 (USB 3.0), 7 (USB 2.0)	12 (USB 2.0)	8 (USB 2.0)	10 (USB 2.0)
	Serial	10 (8 x RS-232; 2 x RS-232/422/485)	6 (5 x RS-232, 1 x RS-485)	10 (8 x RS-232; 2 x RS-232/422/485)	10 (8 x RS-232; 2 x RS-232/422/485)	4 (3 x RS-232; 1 x RS-232/422/485)	4 (3 x RS-232; 1 x RS-232/422/485)
	Parallel	1	-	1	1	1	1
	SIM Card Holder	-	-	1 (G2)	-	-	-
	PS/2	2	-	2	1 (on board)	2	2
	Ethernet (GbE)	2	2	2	2	2	2
	Audio	Mic-in, Line-out	Mic-in, Line-out	Mic-in, Line-out	Mic-in, Line-out	Mic-in, Line-out	Mic-in, Line-out
	GPIO	8-bit GPIO	14-bit GPIO (6-bit non-programmable, 8-bit programmable)	8-bit GPIO	8-bit GPIO	8-bit GPIO	-

MicroATX / ATX Motherboards

MicroATX



Model Name	AIMB-581	AIMB-582	AIMB-584	AIMB-585	SIMB-A21	SIMB-A31	
Form Factor	MicroATX	MicroATX	MicroATX	Micro-ATX	ATX	ATX	
Processor System	CPU	Intel Xeon/ Core i7/ i5/ i3/ Pentium/ Celeron	Intel Xeon/ Core i7/ i5/ i3/ Pentium/ Celeron	Intel Xeon/ Core i7/ i5/ i3/ Pentium/ Celeron	Intel Xeon/ 6th Gen Core i7/ i5/ i3/ Pentium/Celeron	Intel Core i7/ i5/ i3/ Celeron	Intel Core™ i7/i5/i3/ Pentium
	Socket	LGA 1155	LGA 1155	LGA 1150	LGA1151	LGA 1155	LGA 1150
	Max. Speed	3.4/3.1/3.3/2.9/2.5 GHz	3.5/3.4/3.0/3.3/2.9/ 2.5 GHz	3.5/3.2/3.1/2.9/2.7/2.4/ 2.3 GHz	3.6/3.4/3.3/3.2/2.9/2.8/ 2.7/2.6/2.4/2.3 GHz	2.5 GHz ~ 3.4 GHz	2.3 GHz ~ 3.5 GHz
	TDP	95 W/65 W	95 W/77 W/65 W/55 W	95 W/65 W/54 W/ 45 W/35 W	80W/65W/35W	35 W ~ 95 W	35 W ~ 65 W
	L2 Cache	-	-	-	-	-	-
	L3 Cache	8 MB/6 MB/3 MB/2 MB	8 MB/6 MB/3 MB/2 MB	8 MB/6 MB/4 MB/3 MB	8MB/6MB/4MB/3MB/2MB	8 MB/6 MB/3 MB/2 MB	8 MB/6 MB/4 MB/3 MB
	Chipset	Intel Q67/C206	Intel Q77/C216	Intel Q87/C226	Intel Q170/C236/H110	Intel H61	Intel H81
	BIOS	AMI EFI 64 Mbit, SPI	AMI EFI 64 Mbit, SPI	AMI EFI 128 Mbit, SPI	AMI EFI 128Mbits, SPI	AMI 32 Mbit, SP	AMI 32 Mbit, SP
Expansion Slot	PCI	2	2	2	-	4	3
	PCIe x16	1	1	1	1	1	1
	PCIe x8	-	-	-	1	-	-
	PCIe x4	1	1	1	1	-	-
	PCIe x1	-	-	-	1	1	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 MHz SDRAM	Dual channel DDR3 1066/1333 MHz SDRAM	Dual Channel DDR3/ DDR3L1333/1600 MHz SDRAM
	Max. Capacity	32 GB	32 GB	32 GB	64GB	16 GB	16 GB
	Socket	4 x 240-pin DIMM	4 x 240-pin DIMM	4 x 240-pin DIMM	4x288-pin DIMM	2 x 240-pin DIMM	2 x 240-pin DIMM
Graphics	Controller	Intel HD Graphics	Intel HD Graphics	Intel HD Graphics	Intel HD Graphics	Intel HD Graphics	Intel HD Graphics
	VRAM	Shared system memory up to 1 GB	Shared system memory up to 1 GB	Shared system memory up to 1 GB	Shared system memory up to 1 GB	Shared system memory up to 1 GB	Shared system memory up to 1 GB
	VGA	1	1	1	1 (onboard)	1	1
	LCD	Dual channel 48-bit LVDS	Dual channel 48-bit LVDS	Dual channel 48-bit LVDS	-	-	-
	DVI-D	2	1	1	1	1	1
	HDMI	-	-	-	1	-	-
	DP/eDP	-	1 / 1 (Optional)	1 / 1 (Optional)	1/1	-	-
	Dual Display	VGA+LVDS, VGA+DVI, LVDS+DVI	VGA+DP, VGA+DVI, DVI+DP, VGA+LVDS (or eDP), DVI+LVDS (or eDP), DP+LVDS (or eDP)	VGA+DP, VGA+DVI, DVI+DP, VGA+LVDS (or eDP), DVI+LVDS (or eDP), DP+LVDS (or eDP)	DP++ + HDMI, DP++ + DVI-D, DP++ + eDP/ VGA, HDMI + DVI-D, HDMI + eDP/ VGA, eDP, VGA + DVI-D	VGA+DVI-D	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	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps
Controller		LAN1: Intel 82579LM LAN2: Intel 82583V	LAN1: Intel 82579LM LAN2: Intel 82583V	LAN1: Intel i217LM LAN2: Intel i211AT	LAN1: Intel i219LM LAN2: Intel i211AT	LAN1:Realtek RTL8111E LAN2:Realtek RTL8111E	LAN1:Realtek RTL8111G LAN2:Realtek RTL8111G
Connector		RJ-45 x2	RJ-45 x2	RJ-45 x2	RJ-45 x2	2 x RJ-45	2 x RJ-45
TPM	Optional	Optional	Optional	Optional	TPM Header	Infineon® 9635 TT 1.2 on board	
SATA	Max Data Transfer Rate	300 MB/s 600 MB/s	300 MB/s 600 MB/s	600 MB/s	600 MB/s	300 MB/s	600 MB/s / 300 MB/s
	Channel	4 (SW RAID) / 2 (SW RAID)	4 (SW RAID) / 2 (SW RAID)	6 (SW RAID)	4 (SW RAID)	4	2 / 1
	eSATA / mSATA/ M.2	-	-	-	0/1/0	-	-/1/-
I/O Interface	USB	10 (USB 2.0), 2 (USB 3.0)	8 (USB 2.0), 4 (USB 3.0)	8 (USB 2.0), 4 (USB 3.0)	2(USB 2.0), 12 (USB 3.0)	10 (USB 2.0)	9 (2 USB 2.0, 7 USB 2.0)
	Serial	6 (5 x RS-232, 1 x RS-232/422/485)	6 (5 x RS-232; 1 x RS-232/422/485)	6 (5 x RS-232; 1 x RS-232/422/485)	6 (5 x RS-232; 1 x RS-232/422/485)	6 (1 RS-232/422/485, 5 RS-232, 1 w/ 5V & 12V)	6 (1 RS-232/422/485 w/ 5V & 12V, 5 RS-232, 2 w/ 5V & 12V)
	Parallel	1	1	1	-	-	-
	SIM Card Holder	-	-	-	-	-	1
	PS/2	2	2	2	1 (on board)	2	2
	Ethernet (GbE)	2	2	2	2	2	2
	Audio	Mic-in, Line-out	Mic-in, Line-out	Mic-in, Line-out	Mic-in, Line-out	Mic-in, Line-in, Line-out	Mic-in, Line-in, Line-out
GPIO	8-bit GPIO	8-bit GPIO	8-bit GPIO	16-bit GPIO	8-bit GPIO	8-bit GPIO	

UTX Gateways



UTX System

Model Name		UTX-3115	UTX-3117
Processor System	CPU	Intel E3826 / E3815 processor	Intel Atom E3940 Quad Core 1.8GHz/ E3930 Dual Core 1.8GHz
	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)	2x 204pin 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
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)
	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
	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	1(RS-232)	2 (1RS-232 & 1RS-422/485)
	Power jack	1(DC12V)	1 (DC12~19V)
Power	Control	1 (Power Button)	1(Power button)
	Voltage	12VDC +/- 10%	12~19 VDC, ± 10%
	Power Consumption	12V@0.88A	TBD
	Power Adapter	AC to DC DC12V/3A, 36W	AC to DC adapter 12/19V
Environment	Operating Temperature	-20 ~ 60° C (32 ~ 104° F)	-20 ~ 60° C (32 ~ 104° F)
	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	CE/FCC RF Class B, NCC,SRRC, Telec, KCC
	Safety	UL, PTCRB, GCF, RFIC	UL,CB,BSMI

EPC Enclosures



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-273/272/270/274/203/281/214/213/212/223/224/225/226/230/231/215
Thermal solution		Fanless	Fanless, Fan-based for MIO-5271	Fanless	2 x fan / 1 x 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, 1xPS/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 11ms duration, half sine wave)
Certification		CE,FCC Class A	CE,FCC Class A	CE,FCC Class A	CE, FCC, UL, CB
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

EPC Systems



Model Name	EPC-S100	EPC-T1215	EPC-T1225	EPC-T1231	EPC-T2285	
Barebone system	Fan-less barebone, w/o adapter HDD, memory	Fan-base / Fanless barebone, w/ adapter, w/o HDD, memory	Fan-base / Fanless barebone, w/ adapter, w/o HDD, memory	Fan-base barebone, w/ adapter, w/o HDD, memory	Fan-base barebone, w/ adapter, w/o HDD, memory	
Processor System	Compatible Motherboard	PCM-9310	AIMB-215D-S6B1E	AIMB-225G2-00A1E AIMB-225G2-01A1E	AIMB-231G2-U5A1E AIMB-231G2-U3A1E	AIMB-285G2-00A1E
	Thermal solution	Fan-less	1x chassis fan (4cm/23.8CFM) / Fanless	1x chassis fan (4cm/23.8CFM) / Fanless	1x chassis fan (4cm/23.8CFM)	2x chassis fan (4cm/23.8CFM)
	CPU	Intel® Pentium N3710 / Celeron N3160/N3060 (on board)	Intel® Bay Trail Quad core Celeron™ J1900 (on board)	AMD G-series Quad Core GX-424C / GX-412HC (on board)	Intel Core i3-5010U / i5-5350U (on board)	Intel® 6th Gen Core™ i processor (LGA1151)
Memory	BIOS	AMI UEFI BIOS at 64Mbit	AMI 16 Mbit SPI	AMI 16 Mbit SPI	AMI 128 Mbit SPI	AMI EFI 128 Mbit, SPI
	Socket	1 x 204-pin SODIMM	2 x 204 PIN DDR3 SODIMM (Non-ECC)	2 x 204 PIN DDR3 SODIMM (Non-ECC)	2 x 204 PIN DDR3 SODIMM (Non-ECC)	2 x 260 PIN DDR4 SO-DIMM (Non-ECC)
	Technology	DDR3L 1600MHz	DDR3L 1066/1333 MHz SDRAM	DDR3L 1333/1866 MHz SDRAM	DDR3L 1600 MHz SDRAM	Dual Channel DDR4 2133 MHz SDRAM
Graphics	Max. Capacity	8 GB	8 GB/up to 4 GB per SODIMM	16 GB/up to 8 GB per SODIMM	16 GB/up to 8 GB per SODIMM	32 GB/up to 16 GB per SODIMM
	Chipset integrated	Intel Gen8 LP	Integrated Intel HD Graphics	AMD Radeon™ HD 8000 series Graphics	Intel® HD Graphics 6000	Intel® HD Graphics, Supports OpenGL 5.x, DirectX12, OpenCL 2.X
Storage	2.5" HDD bay	1 (support 2.5" HDD/SSD, max 9.5 mm height)	1 (support 2.5" HDD/SSD, max 9.5 mm height)	1 (support 2.5" HDD/SSD, max 9.5 mm height)	1 (support 2.5" HDD/SSD, max 9.5 mm height)	1 (support 2.5" HDD/SSD, max 9.5 mm height)
	mSATA Slot	1 (share w/ full size Mini-PCIe slot)	1 (share w/ full size Mini-PCIe slot)	1 (share w/ full size Mini-PCIe slot)	1 (share w/ full size Mini-PCIe slot)	1+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
	Controller	LAN1: Realtek RTL8111E LAN2: Realtek RTL8111E	LAN1: Realtek RTL8111E LAN2: Realtek RTL8111E	LAN1: Realtek RTL8111G LAN2: Realtek RTL8111G	LAN1: Intel PHY i218-LM LAN2: Intel i210	LAN1: Realtek RTL8111G LAN2: Realtek RTL8111G
Audio	Connector	2 (RJ-45)	2 (RJ-45)	2 (RJ-45)	2 (RJ-45)	2 (RJ-45)
	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)
Internal expansion Slot	Mini-PCIe	2 (Full-size, 1 default support mSATA)	1+1 (Full-size, Half-size)	1+1 (Full-size, Half-size)	1+1 (Full-size, Half-size)	1+1 (Full-size, Half-size)
	DP++	-	0	0	0	0
Front Panel	DP/HDMI	1 x HDMI	0	0	0	0
	VGA	1	0	0	0	0
	DVI	-	0	0	0	0
	COM	-	5 (RS-232)	5 (4 x RS-232, 1 x RS-232/422/485)	2 (1 x RS-232, 1 x RS-232/422/485)	2 (1x RS-232/422/485, 1 x RS-232/422/485 with 5V/12V)
	Lan	2	0	0	0	0
	USB	4(USB2.0 x 2, USB3.0 x 2)	4 (USB2.0)	4 (USB2.0)	4 (USB2.0)	4 (USB2.0)
	Audio Jack	-	2 (Line-Out, Mic-In)	2 (Line-Out, Mic-In)	2 (Line-Out, Mic-In)	2 (Line-Out, Mic-In)
Rear Panel	Antenna (optional)	up to 1	up to 2	up to 2	up to 2	up to 2
	DP++	-	1	1	1	1
	DP/HDMI	-	0	0	1	1 (HDMI 1.4)
	VGA	-	1	0	0	0
	DVI	-	0	1 (DVI-I)	0	0
	COM	4 (2 x RS232, 2 x RS232/422/485)	1 (RS-232)	0	0	0
	Lan	-	2 (RJ-45)	2 (RJ-45)	2 (RJ-45)	2 (RJ-45)
Miscellaneous	USB	2	1 (USB3.0); 3 (USB2.0)	2 (USB3.0); 2 (USB2.0)	4 (USB3.0)	4 (USB3.0)
	Audio Jack	Line-in, Line-out, Mic-in	1 (Line-Out)	1 (Line-Out)	2 (Line-Out, Mic-in)	2 (Line-Out, Mic-in)
	Antenna (optional)	up to 1	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)
	Switch	1 (Power 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	0	0	0	1(Reserved for LVDS cable)
	Power Requirements	Power Voltage	12V DC-in	12V DC-in	12V DC-in	12V DC-in
Environment	Power Input Type (Inlet)	Pheonix DC plug in	2.5ø DC jack	2.5ø DC jack	2.5ø DC jack	2.5ø DC jack
	Consumption	TBD	10.17W (idle with Intel Celeron J1900)	14.47W (idle with AMD G-series GX-424CC) 9.07W (idle with AMD G-series GX-412HC)"	14.4W (idle with Intel ULT i5 Processor) 13.4W (idle with Intel ULT i3 Processor)	TBD
	Operating Temperature	0 ~ 50° C (32 ~ 122° F)	Fan-base: 0 ~ 50° C (32 ~ 122° F) Fanless: 0 ~ 40° C (32 ~ 104° F)	Fan-base: 0 ~ 50° C (32 ~ 122° F) Fanless: 0 ~ 40° C (32 ~ 104° F)	0 ~ 50° C (32 ~ 122° F)	0 ~ 50° 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)	-20 ~ 60° C (-4 ~ 140° F)
Certification	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	10~85% @ 40°C, non-condensing
	Vibration (5 ~ 5 00Hz)	SSD : 30G, IEC 60068-2-27, half sine, 11 ms duration	1 Grms (HDD 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)	1 Grms (HDD x 1); 3 Grms (SSD x 1)
	Shock	SSD : 30G, IEC 60068-2-27, half sine, 11 ms duration	---	---	---	---
Physical Characteristics	Dimensions (W x H x D)	188 x 39 x 150 mm	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 1.74" x 8.27")	250 x 44.2 x 225 mm (9.84" x 1.74" x 8.85")
	Weight	TBD	3.1kg	3.1kg	3.1kg	3.68kg

Fanless Embedded Box PCs

Ultra Small Series



Model Name		ARK-10	ARK-1120L ARK-1120LX	ARK-1120F	ARK-1122H ARK-1122HS
Processor System	CPU	Intel Celeron Processor J1900 Quad Core SoC	Intel Atom N455	Intel Atom N455	Intel Atom N2600
	Frequency	2.0 GHz (Up to 2.41 GHz turbo burst)	1.66 GHz	1.66 GHz	1.6 GHz
	Core Number	4	1	1	2
	BIOS	AMI EFI 64 Mbit	AMI EFI 16Mbit	AMI EFI 16Mbit	AMI EFI 16Mbit
	Chipset	-	Intel ICH8-M	Intel ICH8-M	Intel NM10
Memory	Technology	DDR3L 1333MHz	DDR3 667MHZ	DDR3 667MHZ	DDR3 800MHZ
	Max. Capacity	8GB (2 GB Memory Built In)	2 GB	2 GB	4 GB
	Socket	1 x 204-pin SO-DIMM	1 x 204-pin SODIMM/ 2 GB Built-in (LX SKU)	1 x 204-pin SODIMM	1 x 204-pin SODIMM/ 2GB Built-in (HS SKU)
Display	VGA	1 x VGA, up to 1920 x 1200 at 60Hz	Up to 1600 x 1200	Up to 1600 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	1 x Half-size Mini PCIe	1 x Half-size Mini PCIe
	SIM Socket	-	-	-	-
	PCIe	-	-	-	-
	PCI	-	-	-	-
	PCIe + PCI	-	-	-	-
	ARK Plus	-	-	-	-
	iDoor	-	-	-	-
Ethernet	Controller	GbE1: Intel i210-IT GbE GbE2: Intel i210-IT GbE	GbE1: Intel 82567V, support wake on LAN	GbE1: Intel 82567V, support wake on LAN	GbE1: Intel 82583V, 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
	CODEC	Realtek ALC888S	Realtek ALC892	-	Realtek ALC892
	Connector	2 (Line-in, Line out)	2 (Line-in, Line out)	-	2 (Line-in, Line out)
WatchDog Timer	Yes	Yes	Yes	Yes	
Storage	SATA	1 x 500GB 2.5" 24x7 SATA HDD Built In	1 x 2.5" SATA HDD bay 1 x 320 GB SATA II HDD Built-In (LX SKU)	1 x 2.5" SATA HDD bay	1 x 2.5" SATA HDD bay 1 x 500 GB SATA II HDD Built-In (HS SKU)
	mSATA	1x Half size mSATA	-	-	1 x Full Size mSATA
	CompactFlash/Cfast/SD card	-	CompactFlash Type I/II	CompactFlash Type I/II	-
I/O	USB3.0	1	-	-	-
	USB2.0	2	4	2	4
	GPIO	-	-	-	-
	COM Port	2 (2 x RS232/ 422/ 485)	2 (2 x RS-232)	4 (2 x RS232, 2 x RS232/ 422/ 485 select by BIOS)	1 (1 x RS-232)
Power	Power Type	ATX	ATX	ATX	ATX
	Power Supply Voltage	12 V _{DC}	12 V _{DC} , ± 10%	12 V _{DC} , ± 10%	12 V _{DC} , ± 10%
	Connector	Lockable DC Jack	DC jack with power adaptor locker	DC jack with power adaptor locker	Lockable DC Jack
	Power Consumption (Idle)	5.64W	9.12W	9.12W	6.89W
	Power Consumption (Full Load)	14.04W	10.8W	10.8W	11.45W
Power Adaptor	AC to DC, DC12V/3A, 36W	AC to DC, DC12 V/3 A, 36 W	AC to DC, DC12 V/3 A, 36 W	Lockable AC to DC, DC12 V/3 A, 36 W	
Environment	Operating Temperature (air flow 0.7 m/sec)	0 ~ 50° C	0 ~ 40° C	0 ~ 40° C	With standard temperature HDD/SSD/ mSATA devices: 0 ~ 40° C With extended temperature SSD/ mSATA devices: -20 ~ 60° C
	Non-operating Temperature	-40~ 85° C and 95% @ 40° C Non-Condensing	-40~ 85° C and 95% @ 40° C Non-Condensing	-40~ 85° C and 95% @ 40° C Non-Condensing	-40~ 85° C and 95% @ 40° C Non-Condensing
	Vibration Resistance	0.5Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis	With CompactFlash disk: 3Grms	With CompactFlash disk: 3Grms	With SSD/mSATA: 3Grms
	Shock Protection	10G, IEC 60068-2-27, half sine, 11 ms duration	With CompactFlash disk: 30G	With CompactFlash disk: 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	133.8 x 43.1 x 94.2 mm
	Weight	1.1 kg (2.42lb)	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	Optional DIN Rail/ VESA/ Wall mounting
Operating System	Microsoft Windows	Yes (Windows 7, WE8S, Windows 8)	Yes (Windows 7, XP Professional, XP Embedded, WinCE 6.0); WES2009 Built-In in LX SKU	Yes (Windows 7, XP Professional, XP Embedded, WinCE 6.0)	Yes (WES 7 Built-In (HS SKU))
	Linux	Yes (by Project)	Yes (Ubuntu v10.04.1)	Yes (Ubuntu v10.04.1)	Yes (Ubuntu 12.04, Fedora 16)
APIs	WISE-PaaS/RMM	Yes	Yes	Yes	Yes
	iManager	-	-	-	-
	Other	-	McAfee, Acronis	McAfee, Acronis	McAfee, Acronis
Certification	EMC	CE, FCC, CCC, BSMI	CE/FCC Class A, CCC, BSMI	CE/FCC Class A, 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



ARK-1122C	ARK-1122F	ARK-1123L	ARK-1123C	ARK-1123H
Intel Atom N2600	Intel Atom N2800	Intel® Atom DC E3825	Intel® Atom DC E3825	Intel® Celeron QC J1900
1.6 GHz	1.86 GHz	1.33 GHz	1.33 GHz	2.0 GHz
2	2	2	2	4
AMI EFI 16Mbit	AMI EFI 16Mbit	AMI EFI 64 Mbit	AMI EFI 64 Mbit	AMI EFI 64 Mbit
Intel NM10	Intel NM10	Intel® Atom DC E3825	Intel® Atom DC E3825	Intel® Celeron QC J1900
DDR3 800MHz	DDR3 1066MHz	DDR3L 1066MHz	DDR3L 1066MHz	DDR3L 1333MHz
4 GB	4 GB	8GB	8GB	8GB
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
Up to 1920 x 1200	Up to 1920 x 1200	Up to 1920 x 1200	Up to 1920 x 1200	-
-	-	-	-	-
-	Lockable HDMI: 1920 x 1200, lockable supported	-	-	2 x lockable HDMI, 1920 x 1080
-	Dual	-	-	-
1 x Half-size Mini PCIe	1 x Half-size Mini PCIe 1 x Full-size Mini PCIe w/SIM Holder	1 x Half-size Mini PCIe 1 x Full-size Mini PCIe	1 x Half-size Mini PCIe 1 x Full-size Mini PCIe	1 x Half-size Mini PCIe 1 x Full-size Mini PCIe
-	1	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
GbE1: Intel 82583V, support wake on LAN	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
10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps
-	HD Audio	HD Audio	HD Audio	HD Audio
-	Realtek ALC892	Realtek ACL888S	Realtek ACL888S	Realtek ACL888S
-	2 (Line-in, Line out)	2 (Line-in, Line out)	2 (Line-in, Line out)	2 (Line-in, Line out)
Yes	Yes	Yes	Yes	Yes
1 x 2.5" SATA HDD bay (Optional by T-PN)	-	1 x 2.5" SATA HDD bay	1 x 2.5" SATA drive bay	1 x 2.5" SATA drive bay
1 x Full Size mSATA	1 x Full Size mSATA	1 x Half-Size mSATA	1 x Half-Size mSATA	1 x Half-Size mSATA
-	-	-	-	-
-	-	1	1	1
4 (Standard) or 2 (Option 2.5" drive bay version)	3	1	2	2
-	-	8-bit Programmable DIO	-	-
4 (2 x RS-232, 2 x RS-232/422/485, selected by BIOS)	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)
ATX	ATX	AT/ATX	AT/ATX	AT/ATX
12 V _{DC} , ± 10%	12 V _{DC} , ± 10%	12 V _{DC} , ± 10%	12 V _{DC} , ± 10%	12 V _{DC} , ± 10%
Lockable DC Jack	Lockable DC Jack	Lockable DC Jack	Lockable DC Jack	Lockable DC Jack
5.4W	7.84W	8.16W	8.16W	14.04W
9.47W	13.15W	5.28	5.28W	5.64W
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	Lockable AC to DC, DC12 V/3 A, 36 W
With standard temperature HDD/SSD/ mSATA devices: 0 ~ 40° C With extended temperature SSD/mSATA devices: -20 ~ 60° C	With standard temperature mSATA devices: 0 ~ 40° C With extended temperature mSATA devices: -20 ~ 60° C	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
-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	-40 ~ 85° C and 40° C @ 95% RH Non-Condensing	-40 ~ 85° C and 40° C @ 95% RH Non-Condensing
With SSD/mSATA: 3Grms	With mSATA: 3Grms	With mSATA/SSD : 3 Grms	With mSATA/SSD : 3 Grms	With mSATA/SSD : 3 Grms
With SSD/mSATA: 30G	With mSATA: 30G	With mSATA/SSD: 30 G	With mSATA/SSD: 30 G	With mSATA/SSD: 30 G
133.8 x 43.1 x 94.2 mm	133.8 x 43.1 x 94.2 mm	133.8 x 43.1 x 94.2 mm	133.8 x 43.1 x 94.2 mm	133.8 x 43.1 x 94.2 mm
1.2 kg (2.65 lb)	1.2 kg (2.65 lb)	1.2 kg (2.65 lb)	1.2 kg (2.65 lb)	1.2 kg (2.65 lb)
Optional DIN Rail/ VESA/ Wall mounting	Optional DIN Rail/ VESA/ Wall mounting	Optional DIN Rail/ VESA/ Wall mounting	Optional DIN Rail/ VESA/ Wall mounting	Optional DIN Rail/ VESA/ Wall mounting
Yes (XP, XPE by project support)	Yes (Windows 7 Pro, WES7)	Yes (Windows 7, Windows 8)	Yes (Windows 7, Windows 8)	Yes (Windows 7, Windows 8)
Yes (Ubuntu 12.04, Fedora 16)	Yes (Ubuntu 12.04, Fedora 16)	Yes (by Project)	Yes (by Project)	Yes (by Project)
Yes	Yes	Yes	Yes	Yes
-	-	-	-	-
McAfee, Acronis	McAfee, Acronis	McAfee, Acronis	McAfee, Acronis	McAfee, Acronis
CE/FCC Class A, CCC, BSMI	CE/FCC Class A, CCC, BSMI	CE/FCC Class A, CCC, BSMI	CE/FCC Class B, CCC, BSMI	CE/FCC Class B, CCC, BSMI
CB, UL, CCC, BSMI	CB, UL, CCC, BSMI	CB, UL, CCC, BSMI	CB, UL, CCC, BSMI	CB, UL, CCC, BSMI

Fanless Embedded Box PCs



NEW



NEW



NEW

Slim & Mountable Series



Model Name		ARK-1124C	ARK-1124U	ARK-1124H	ARK-1550
Processor System	CPU	Intel Atom E3930/E3950 Dual Core/ Qurd Cord SoC	Intel Atom E3930/E3950 Dual Core/ Qurd Cord SoC	Intel Atom E3930/E3950 Dual Core/ Qurd Cord SoC	Intel® Celeron 2980U Intel® Core i5 4300U
	Frequency	1.8/2.0 GHz	1.8/2.0 GHz	1.8/2.0 GHz	1.6 GHz / 1.9 GHz
	Core Number	2/4	2/4	2/4	2
	BIOS	AMI EFI BIOS	AMI EFI BIOS	AMI EFI BIOS	AMI EFI 128 Mbit Intel® Celeron 2980U Intel® Core i5 4300U
Memory	Chipset	-	-	-	-
	Technology	DDR3L 1866 MHZ	DDR3L 1866 MHZ	DDR3L 1866 MHZ	DDR3L 1333/1600 MHZ
	Max. Capacity	8GB	8GB	8GB	8GB
Display	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
	Graphic Engine	-	-	-	-
	VGA	1 x VGA	1 x VGA	-	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 :1920 x 1080	Lockable HDMI, up to 4096 x 2304 @24Hz
	Multiple Display	-	-	Dual HDMI Display	Dual
	Expansion Interface	Mini PCIe	1 x Full-size Mini PCIe 1 x Half-size Mini PCIe	1 x Full-size Mini PCIe 1 x M.2 E Key (for WIFI)	1 x Full-size Mini PCIe 1 x Half-size Mini PCIe
SIM Socket		-	1	-	1
ARK Plus		AMO-1000 series	AMO-1000 series	AMO-1000 series	-
iDoor		by AMO-1101E	by AMO-1101E	by AMO-1101E	-
Ethernet	Controller	GbE: Intel i210-AT GbE	GbE1: Intel i210-AT GbE GbE2: Intel i210-AT GbE	GbE1: Intel i210-AT GbE GbE2: Intel i210-AT 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
	CompactFlash/Cfast/ SD card	-	-	-	-
I/O	USB3.0	2	4	2	2
	USB2.0	0	0	1	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 V _{oc} (Option 12-24 V _{oc})	12 V _{oc} (Option 12-24 V _{oc})	12 V _{oc} (Option 12-24 V _{oc})	12 V _{oc} , ± 10%
	Connector	Lockable DC Jack	Lockable DC Jack	Lockable DC Jack	DC jack with power adaptor locker
	Power Consumption (Idle)	TBC	TBC	TBC	5.64W (2980U) / 10.56W (4300U)
	Power Consumption (Full Load)	TBC	TBC	TBC	15.1W (2980U) / 28.2W (4300U)
Environment	Power Adaptor	AC to DC, DC12V/3A, 36W	AC to DC, DC12V/3A, 36W	AC to DC, DC12V/3A, 36W	AC to DC, DC 12V/5A 60W (optional) With extend temperature peripherals: -20 ~ 55° C With standard temperature peripherals: 0 ~ 40° C
	Operating Temperature (air flow 0.7 m/sec)	-20 ~ 60° C	-20 ~ 60° C	-20 ~ 60° C	-40 ~ 85° C and 95% @ 40° C Non-Condensing
	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 mSATA/SSD : 3 Grms	With SSD : 3 Grms	With mSATA/SSD : 3 Grms	With mSATA/SSD : 3 Grms
	Shock Protection	With mSATA/SSD: 30G	With SSD: 30 G	With mSATA/SSD: 30G	With mSATA/SSD: 30G
Physical Characteristics	Dimensions (W x H x D)	133 x 44.4 x 94 mm	133 x 44.4 x 94 mm	133 x 44.4 x 94 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)
	Construction	Aluminum/Iron	Aluminum/Iron	Aluminum/Iron	-
	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)
Operating System	Microsoft Windows	Yes (Windows 10)	Yes (Windows 10)	Yes (Windows 10)	Yes (Windows 8, Windows 7)
	Linux	Yes (by Project)	Yes (by Project)	Yes (by Project)	Yes (by Project)
APIs	WISE-PaaS/RMM	Yes	Yes	Yes	Yes
	iManager	-	-	-	-
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 B, CCC, BSMI
Safety Certifications	CB, UL, CCC, BSMI	CB, UL, CCC, BSMI	CB, UL, CCC, BSMI	CB, UL, CCC, BSMI	

Multiple I/O Series



ARK-2120L	ARK-2120F	ARK-2121L	ARK-2121F	ARK-2150L
Intel Atom N2600 / Intel Atom D2550	Intel Atom D2550	Intel Celeron QC J1900	Intel Celeron QC J1900	3rd Gen Intel Celeron 1047UE / Core i3-3217UE / Core i7-3517UE
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)
2	2	4	4	2
AMI EFI 16Mbit	AMI EFI 16Mbit	AMI UEFI 64Mbit	AMI UEFI 64Mbit	AMI EFI 64Mbit
Intel NM10	Intel NM10	-	-	Intel QM77
DDR3 800MHz	DDR3 800MHz	DDR3L 1333MHz	DDR3L 1333MHz	DDR3 1600MHz/ DDR3L 1333 MHz
4 GB	4 GB	8GB	8GB	8 GB
1 x 204-pin SODIMM	1 x 204-pin SODIMM	1 x 204pin SODIMM	1 x 204pin SODIMM	1 x 204-pin SODIMM
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 1.1
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
-	LVDS: Dual channel 48-bit up to 2560 x 1600	-	-	-
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
Dual	Dual	Dual	Dual	Dual
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
1	1	1	1	1
-	-	-	-	-
-	-	-	-	-
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
10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps
HD Audio	HD Audio	HD Audio	HD Audio	HD Audio
Realtek ALC892	Realtek ALC892	Realtek ALC888S	Realtek ALC888S	Realtek ALC892
1 (Line-in, Line out, Mic-in)	1 (Line-in, Line out, Mic-in)	1 (Line-in, Line out, Mic-in)	1 (Line-in, Line out, Mic-in)	1 (Line-in, Line out, Mic-in)
Yes	Yes	Yes	Yes	Yes
1 x 2.5" SATAII HDD bay	1 x 2.5" SATAII HDD bay	1 x 2.5" SATAII HDD bay	1 x 2.5" SATAII HDD bay	1 x 2.5" SATAIII HDD bay (Max. Data Transfer Rate 600 MB/s) 1 (Supports either mSATA or full size miniPCIe, selected by BIOS, default support miniPCIe)
-	-	1	1	-
1 CFast	1 CFast	-	-	-
-	-	1	1	2
6	5	3	5 x external, 1 x internal	4
8-bit Programmable DIO	8-bit Programmable DIO	-	8-bit Programmable DIO, with 2.5Kv isolation	8-bit Programmable DIO
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)
AT/ATX	AT/ATX	AT/ATX	AT/ATX	AT/ATX
12 Vdc, ± 10%	12 ~ 24 Vdc	9 ~ 36 Vdc	9 ~ 36 Vdc	12 Vdc, ± 10%
Lockable DC Jack	2-pin phoenix head	2-pin phoenix head	2-pin phoenix head	Lockable DC Jack
8.9W	9.2W	7.2W	8.4W	9.6W
11W	11.59W	13.3W	16.2W	24.98W
Lockable AC to DC, DC12 V/3 A, 36 W (Optional)	Lockable AC to DC, DC19 V/3.42 A, 65 W (Optional)	Lockable AC to DC, DC19 V/3.42 A, 65 W (Optional)	Lockable AC to DC, DC19 V/3.42 A, 65 W (Optional)	Lockable AC to DC, DC12 V/5 A, 60 W (Optional)
With extend temperature peripherals: -20 ~ 60° C With HDD: 0 ~ 45° C	With extend temperature peripherals: -20 ~ 60° C With HDD: 0 ~ 45° C	With extend temperature peripherals: -20 ~ 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
-40~ 85° C and 40° C @ 95% RH Non-Condensing	-40~ 85° C and 40° C @ 95% RH Non-Condensing	-40~ 85° C and 40° C @ 95% RH Non-Condensing	-40~ 85° C and 40° C @ 95% RH Non-Condensing	-40 ~ 85° C and 40° C @ 95% RH Non-Condensing
With SSD: 5 Grms	With SSD: 5 Grms	With SSD: 3 Grms	With SSD: 3 Grms	With SSD: 5 Grms
With SSD: 50 G	With SSD: 50 G	With SSD: 30 G	With SSD: 30 G	With SSD: 50 G
264.5 x 69.2 x 133.0 mm	264.5 x 69.2 x 133.0 mm	264.5 x 68.4 x 133.0 mm	264.5 x 68.4 x 133.0 mm	264.5 x 75.1 x 133.0 mm
2.3 kg (5.07 lb)	2.5 kg (5.51 lb)	2.3 kg (5.07 lb)	2.5 kg (5.07 lb)	2.3 kg (5.07 lb)
Aluminum/Iron	Aluminum/Iron	Aluminum/Iron	-	Aluminum/Iron
Desk/ Wall/ VESA/ DIN-Rail mounting	Desk/ Wall/ VESA/ DIN-Rail mounting	Desk/ Wall/ VESA/ DIN-Rail mounting	Desk/ Wall/ VESA/ DIN-Rail mounting	Desk/ Wall/ VESA/ DIN-Rail mounting
Yes (Windows 7)	Yes (Windows 7)	Yes (Windows 7, Windows 8)	Yes (Windows 7, Windows 8)	Yes (Windows 7, Windows 7 Embedded, XP Professional, XP Embedded)
Yes (Ubuntu 12.04 , Fedora 16)	Yes (Ubuntu 12.04 , Fedora 16)	Yes (Ubuntu 13.10, fedora 19)	Yes (by Project)	Yes (Ubuntu v12.04/CentOS 6.6)
Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes	Yes
McAfee, Acronis	McAfee, Acronis	McAfee, Acronis	McAfee, Acronis	Intel AMT 8.0, McAfee, Acronis
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
CB, UL, CCC, BSMI	CB, UL, CCC, BSMI	CB, UL, CCC, BSMI	CB, UL, CCC, BSMI	CB, UL, CCC, BSMI

Fanless Embedded Box PCs



Model Name		ARK-2150F	ARK-2230L	ARK-2250L	ARK-3360L
Processor System	CPU	3rd Gen ¹ Intel Core i7-3517UE	Intel J1900	Intel i7-6600U Intel i5-6300U Intel i3-6100U	Intel Atom N450/D510
	Frequency	1.7 GHz (up to 2.8GHz)	2.0GHz	2.6/2.4/2.3GHz	1.66 GHz
	Core Number	2	4	2/2/2	2
	BIOS	AMI EFI 64Mbit	AMI EFI BIOS	AMI EFI BIOS	AMI EFI 16Mbit
	Chipset	Intel QM77	-	-	Intel ICH8-M
Memory	Technology	DDR3 1600MHz/ DDR3L 1333 MHz	DDR3L 1333MHz	DDR3L 1600MHz	DDR2 667MHz
	Max. Capacity	8 GB	8GB	16GB	2 GB
	Socket	1 x 204-pin SODIMM	1 x 204-pin SODIMM	1 x 204-pin SODIMM	1 x 200-pin SODIMM
Display	Graphic Engine	DirectX11, OpenGL 3.1, and OpenCL 1.1	DirectX 11.1 , OCL 1.2 and OGL 3.2	DirectX 11.3, OpenGL 4.4, and OpenCL 2.1	DirectX 9 and MPEG2 HW Decode
	VGA	Up to 2048 x 1536	Up to 2048 x 1152	Up to 1920 x 1200	Up to 2048 x 1563
	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, 1080P at 60Hz	-
	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	1 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	GbE1: Intel 82567V, 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
Audio	Audio Interface	HD Audio	HD Audio	HD Audio	HD Audio
	CODEC	Realtek ALC892	Realtek ALC888	Realtek ALC888	Realtek ALC886
	Connector	1 (Line-in, Line out, Mic-in)	Line out+ Mic in + Line in	Line out+ Mic in	1 (Line-in, Line out, Mic-in)
WatchDog Timer	Yes				
Storage	SATA	1 x 2.5" SATAIII HDD bay (Max. Data Transfer Rate 600 MB/s)	1 x 2.5" SATAIII HDD bay	1 x 2.5" SATAIII HDD bay	1 x 2.5" SATAIII HDD bay (Max. Data Transfer Rate 300 MB/s)
	mSATA	1 (Supports either mSATA or full size miniPCIe, selected by BIOS, default support miniPCIe)	1x Full size mSATA	1x Full size mSATA	-
	CompactFlash/Cfast/SD card	-	-	-	1 CFast
I/O	USB3.0	3	1	4	-
	USB2.0	3	4	2	6
	GPIO	4ch digital input and 4ch digital output with 2.5KV isolation	1 x 8 bit DIO	1 x 8 bit DIO	8-bit Programmable DIO
	COM Port	4 (4 x RS232/ 422/ 485)	4 (2 x RS232,2 x RS232/422/485)	4 (4 x RS232/ 422/ 485)	4 (3 x RS232, 1 x RS232/422/485)
	Power	Power Type	AT/ATX	AT/ATX	AT/ATX
Power	Power Supply Voltage	12 ~ 24 V _{DC}	12 V _{DC} (Option 9-36 V _{DC})	12 V _{DC} (Option 9-36 V _{DC})	12 V _{DC}
	Connector	2-pin phoenix head	Lockable DC Jack	Lockable DC Jack	DC Jack
	Power Consumption (Idle)	10.3W	7.3W	TBD	11W
	Power Consumption (Full Load)	25.7W	13.3W	-	15W
	Power Adaptor	Lockable AC to DC, DC19 V/3.42 A, 65 W (Optional)	96PSA-A60W12W6 (Option)	96PSA-A60W12W6 (Option)	ACto DC, DC12V/3A, 36W (Optional)
Environment	Operating Temperature (air flow 0.7 m/sec)	With extend temperature peripherals: -20 ~ 60° C With HDD: 0 ~ 45° C	-20 ~ 60° C	-20 ~ 60° 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 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: 5 Grms	With SSD: 3 Grms	With SSD: 3 Grms	With SSD: 5 Grms With HDD: 1 Grms
	Shock Protection	With SSD: 50 G	With SSD: 30 G	With SSD: 30 G	With SSD: 50 G With HDD: 20 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	264.5 x 69.2 x 137.25 mm
	Weight	2.8 kg (6.17lb)	2.3 kg (5.07lb)	2.3 kg (5.07lb)	2 kg (4.4 lb)
	Construction	Aluminum/Iron	Aluminum/Iron	Aluminum/Iron	Aluminum/Iron
	Mounting	Desk/ Wall/ VESA/ DIN-Rail mounting	Desk/Wall mounting	Desk/Wall mounting	Desk/ Wall/ VESA/ DIN-Rail mounting
Operating System	Microsoft Windows	Yes (Windows 7, Windows 7 Embedded, XP Professional, XP Embedded)	Yes (Windows 7, Windows 8.1)	Yes (Windows 7, Windows 8.1, Windows 10)	Yes (Windows 7, XP Professional, XP Embedded, WinCE 6.0)
	Linux	Yes (Ubuntu v12.04/CentOS 6.6)	Yes (by Project)	Yes (by Project)	Yes (Ubuntu v10.04.1)
APIs	SUSIAccess	Yes	Yes	Yes	Yes
	iManager	Yes	Yes	Yes	-
Certification	Other	Intel AMT 8.0, McAfee, Acronis	McAfee, Acronis	McAfee, Acronis	McAfee, Acronis
	EMC	CE/FCC class A, CCC, BSMI	CE/FCC Class B, CCC, BSMI	CE/FCC Class B, CCC, BSMI	CE/FCC class A, CCC, BSMI, KC
Safety Certifications	CB, UL, CCC, BSMI				



Multi Expansion Series

Model Name		ARK-3360F	ARK-3405	ARK-3500	ARK-3510	ARK-3520L
Processor System	CPU	Intel Atom N450/D510	Intel Celeron N3160	3rd gen ¹ Intel Core i7-3610QE/ i5-3610ME/i3-3120ME/ Celeron 1020E rPGA processor support	3rd gen ¹ Intel Core i7-3610QE/ i5-3610ME/i3-3120ME/ Celeron 1020E rPGA processor support	6th gen ¹ Intel i7-6820EQ/ i5-6440EQ/i3-6100E
	Frequency	1.66 GHz	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
	Core Number	2	4	4/2/2/2	4/2/2/2	4/2/2
	BIOS	AMI EFI 16Mbit	AMI EFI 64 Mbit BIOS	AMI EFI 64Mbit	AMI EFI 64Mbit	AMI EFI 128 Mbit
Memory	Chipset	Intel ICH8-M	-	Intel QM77	Intel QM77	QM170
	Technology	DDR2 667MHz	DDR3L 1600MHz	DDR3/DDR3L 1600MHz	DDR3/DDR3L 1600MHz	DDR4 2133MHz
	Max. Capacity	2 GB	8 GB	16GB	16GB	32GB
Display	Socket	1 x 200-pin SODIMM	1x204-pin SODIMM	2x204-pin SODIMM	2x204-pin SODIMM	2 x 260-pin SODIMM
	VGA	Up to 2048 x 1563	1920 x 1200	VGA integrated in DVI-I port	VGA integrated in DVI-I port	1920 x 1200
	LCD (TTL/LVDS/eDP)	Up to 2048 x 1563	-	-	-	-
Display	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 ¹ 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 ¹ processor)	HDMI:4096x2304@60Hz 2nd HDMI :1920 x 1080 (Optional) DVI-D :4096 x 2160@24Hz (Optional) DP: 4096x2304@60Hz (Optional)
	Multiple Display	-	Triple Independent Display VGA + HDMI + DVI-D	Triple/Dual	Triple/Dual	Triple Independent Display VGA + HDMI + DVI-D /VGA+HDMI+DP / VGA+HDMI+HDMI
Expansion Interface	PCI Express x 4	-	-	1 slot, ARK-3500F	-	-
	PCI Express x 1	-	2 x PCIe x 1 (Optional)	1 slot, ARK-3500F	-	-
	Mini PCIe	1 x Full-size 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)
	SIM socket	-	1 x SIM socket	-	-	1 x SIM socket
	PCIe	-	-	-	-	2 x PCIe x 4 (Optional)
	PCI	-	2 x PCI (Default)	2 slots, ARK-3500P	-	2 x PCI (Optional)
	PCIe + PCI	-	1 x PCI + 1 x PCIe x1 (Optional)	-	-	2 x PCI + 1 x PCIe x 4 (Optional)
	ARK Plus	-	-	-	-	Yes
I Door	-	Yes	-	-	Yes	
Ethernet	Controller	GbE1: Intel 82567V, GbE2: Intel 82583V, GbE3: Intel 82541PI, All support wake on LAN	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
	Speed	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000Mbps	10/100/1000Mbps	10/100/1000 Mbps
Audio	Audio Interface	HD Audio	HD Audio	HD Audio	HD Audio	HD Audio
	Codec	Realtek ACL886	Realtek ALC892	Realtek ALC892	Realtek ALC892	Realtek ALC888
WatchDog Timer	Connector	1 (Line-in, Line out, Mic-in)	2 (Line out, Mic-in)	2 (Line out, Mic-in)	2 (Line out, Mic-in)	2 (Line out, Mic-in)
		Yes	Yes	Yes	Yes	Yes
Storage	SATA	1 x 2.5" SATAIII HDD bay (Max. Data Transfer Rate 300 MB/s)	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" SATA HDD bay
	CompactFlash/Cfast/ SD card	1 CF	-	1 CFast	1 CFast	-
	mSATA	-	-	2 (Share with mini-PCIe)	2 (Share with mini-PCIe)	1 (Share with mini-PCIe)
	USB 3.0	-	3	4	4	6
I/O	USB2.0	6	3 x external, 1 x internal	2	2	2
	GPIO	8-bit Programmable DIO	1 x 8 bit DIO	-	-	1 x 16 bit DIO
	COM Port	6 (1 x RS232, 3 x RS232/ 422/ 485, 2 x RS-422/ 485 with 7.5KV isolation)	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)
	Power Type	ATX, AT	AT/ATX	AT/ATX	AT/ATX	ATX
Power	Power Supply Voltage	12 V _{oc} ~ 24 V _{oc}	9 V _{oc} ~ 36 V _{oc}	9 V _{oc} ~ 34 V _{oc}	12 V _{oc} ± 10% (optional 9 ~ 34 V _{oc})	12 V _{oc} (optional 9 ~ 36 V _{oc})
	Connector	2-pin phoenix head	4 pin phoenix head	4-pin terminal block	Lockable DC jack	Lockable DC jack
	Power Consumption (Idle)	12.12W	9.7W	14.8W	14.8W	TBC
	Power Consumption (Full Load)	14.96W	22.8W	60W (w/o add on card)	60W	TBC
Environment	Power Adaptor	Lockable AC to DC, DC19 V/3.42 A, 65 W (Optional)	AC to DC, DC 12V/7A, 84W (Optional)	Lockable AC to DC DC 12V 120W (Optional)	Lockable AC to DC, 12V 84W (Optional)	Lockable AC to DC DC 12V 150W (Optional)
	Operating Temperature (air flow 0.7 m/sec)	With extend temperature peripherals: -20 ~ 60° C With HDD: 0 ~ 45° C	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
	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 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
	Vibration Resistance	With SSD: 5 Grms With HDD: 1 Grms	With SSD: 3 Grms With HDD: 0.3Grms	With SSD: 5 Grms	With SSD : 3Grms	With SSD: 3 Grms
Physical Characteristics	Shock Protection	With SSD: 50 G With HDD: 20 G	With SSD: 30 G	With SSD 50G	With SSD 50G	With SSD: 30 G
	Dimensions (W x H x D)	264.5 x 69.2 x 137.25 mm	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
	Weight	2 kg (4.4 lb)	3.16 kg (6.97lb)	4.8 kg (10.56lb)	4.53 kg (10lb)	TBC
Operating System	Mounting	Desk/ Wall/ VESA/ DIN-Rail mounting	Wall/Desktop mounting	Desk/Wallmounting	Desk/Wallmounting	Desk mounting
	Microsoft Windows	Yes (Windows 7, XP Professional, XP Embedded, WinCE 6.0)	Yes (Windows 8.1, Windows 7, Windows 10)	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)
APIs	Linux	Yes (Ubuntu v10.04.1)	Yes (by Project)	Yes (by Project)	Yes (by Project)	Yes (by Project)
	SUSIAccess	Yes	Yes	Yes	Yes	Yes
Certification	iManager	-	-	Yes	Yes	Yes
	Other	McAfee, Acronis	McAfee, Acronis	McAfee, Acronis	McAfee, Acronis	McAfee, Acronis
Safety Certifications	EMC	CE/FCC class A, CCC, BSMI, KC	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	CB, UL, CCC, BSMI, KC	CB, UL, CCC, BSMI	CB, UL, CCC, BSMI	CB, UL, CCC, BSMI	CB, UL, CCC, BSMI

Fanless Embedded Box PCs

NEW

High Value Series

In-Vehicle & Surveillance Series



Model Name		ARK-3520P	ARK-6322	ARK-2121S	ARK-2151S
Processor System	CPU	6th gen ¹ Intel I7-6820EQ/I5-6440EQ/I3-6100E	Intel Celeron J1900 SoC	Intel Atom QC E3845	4th Gen Intel [®] Core i5 4300U
	Frequency	2.8/2.7/2.7GHz	2.0 GHz	1.91 GHz	1.9 GHz
	Core Number	4/2/2	4	4	2
	BIOS	AMI EFI 128 Mbit	AMI 16Mbit SPI	AMI EFI 64 Mbit	AMI EFI 128 Mbit
Memory	Chipset	QM170	-	Intel Atom QC E3845	4th Gen Intel [®] Core i5 4300U
	Technology	DDR4 2133MHz	DDR3L 1333MHz	DDR3L 1333 MHz	DDR3L 1600 MHz
	Max. Capacity	32GB	8GB (4GB per SODIMM)	8 GB	8 GB
Display	Socket	2 x 260-pin SODIMM	2 x 204-pin SODIMM	1 x 204-pin SO-DIMM	1 x 204-pin SO-DIMM
	VGA	1920 x 1200	Up to 2048 x 1280	1 (up to 1600 x 1200)	1 (up to 1920 x 1200)
	LCD (TTL/LVDS/eDP)	-	-	LVDS optional	LVDS optional
	DDI (HDMI/DVI/DisplayPort)	HDMI:4096x2304@60Hz 2nd HDMI :1920 x 1080 (Optional) DVI-D :4096 x 2160@24Hz (Optional) DP: 4096x2304@60Hz (Optional)	DisplayPort: up to 2560 x 1600 @ 60Hz	1 x lockable HDMI, up to 1080P	1 x lockable HDMI, up to 4K at 24 Hz
Expansion Interface	Multiple Display	Triple Independent Display VGA + HDMI + DVI-D / VGA+HDMI+DP /VGA+HDMI+HDMI	Dual	Dual	Dual
	Mini PCIe	2 x Full-size Mini PCIe (1 share with mSATA)	1 x Full-size Mini PCIe 1 x Half-size Mini PCIe	1 x Full-size Mini PCIe (mSATA) 1 x Full-size Mini PCIe (WLAN) 2 x Full-size Mini PCIe w/SIM holders (WWAN)	1 x Half-size Mini PCIe (WLAN) 1 x Full-size Mini PCIe (mSATA) 2 x Full-size Mini PCIe w/SIM holders (WWAN)
	SIM socket	1 x SIM socket	-	2	2
	PCIe	2 x PCIe x 4 (Optional)	-	-	-
	PCI	2 x PCI (Default)	-	-	-
Other	PCIe + PCI	2 x PCI + 1 x PCIe x 4 (Optional)	-	-	-
	I Door	Yes	Yes	-	-
Ethernet	PoE	-	-	4 x 10/100 Mbps PoE	4 x 10/100 Mbps PoE
	Controller	GbE1: Intel I219-LM GbE2: Intel I-210IT	GbE1: RTL8111E GbE2: RTL8111E	GbE 1 : Intel I210-IT GbE 2 : Intel I210-IT All support Wake On LAN	GbE 1 : Intel I218 GbE 2 : Intel I210-IT All support Wake On LAN
	Speed	10/100/1000 Mbps	10/100/1000 Mbps	10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps
Audio	Audio Interface	HD Audio	HD Audio	HD Audio	HD Audio
	CODEC	Realtek ALC888	Realtek ALC892	Realtek ALC888S	Realtek ALC888S
WatchDog Timer	Connector	2 (Line out, Mic-in)	1 (Line-out or Mic-in)	3 (Line-in, Line-out, Mic-in)	3 (Line-in, Line-out, Mic-in)
		Yes	Yes	Yes	Yes
Storage	SATA	2 x 2.5" SATAIII HDD bay	1 x 2.5" or 3.5" SATA HDD bay	1x 2.5" removable drive bay	1x 2.5" removable drive bay
	CompactFlash/Cfast/SD card	-	-	-	-
	mSATA	1 (Share with mini-PCIe)	1 x Full-size mSATA (share with mini-PCIe slot)	1 x Full-size mSATA	1 x Full-size mSATA
I/O	USB 3.0	6	1	1	2
	USB2.0	2	7	3	2
	GPIO	1 x 16 bit DIO	-	6 x DI & 2 x DO with isolation	6 x DI & 2 x DO with isolation
	LPT	1 (by project support)	-	-	-
	COM Port	4 x RS232, 4 x RS232/422/485	5 x RS232, 1 x RS232/422/485	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
Power	Power Type	ATX	ATX	AT/ATX	AT/ATX
	Power Supply Voltage	9 ~ 36 V _{DC}	12 V _{DC} ± 10%	9 ~ 36 V _{DC} w/ isolation	9 ~ 36 V _{DC} w/ isolation
	Connector	4 pin phoenix head	-	3-pin Phoenix	3-pin Phoenix
	Power Consumption (Idle)	TBC	15.7W	10W	15W
	Power Consumption (Full Load)	TBC	24.7W	80W with PoE full-load	100W with PoE full-load
	Power Adaptor	Lockable AC to DC DC 19V 150W (Optional)	AC to DC, DC12V/5A, 60 W (Optional)	AC to DC, 19 V _{DC} 120W	AC to DC, 19 V _{DC} 120W
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	With extended temperature SSD/ mSATA/RAM: -30~60° C With standard temperature HDD/ SSD/mSATA/RAM peripherals: 0 ~ 40° C	With extended temperature SSD/ mSATA/RAM: -20 ~ 60° C With standard temperature HDD/ SSD/mSATA/RAM peripherals: 0 ~ 40° C
	Non-operating Temperature	-40~ 85° C and 95% @ 40° C Non-Condensing	-40~ 85° C and 40° C @ 95% RH Non-Condensing	40° C @ 95% RH Non-Condensing	40° C @ 95% RH Non-Condensing
	Vibration Resistance	With SSD: 3 Grms	With HDD: 0.5 Grms	With mSATA/SSD : 3 Grms	With mSATA/SSD : 3 Grms
Physical Characteristics	Shock Protection	With SSD: 30 G	With HDD: 10 G	With mSATA/SSD: 30 G	With mSATA/SSD: 30 G
	Dimensions (W x H x D)	220 x 101 x 233 mm	200 x 64 x 200 mm	264.5 x 69.2 x 133.0 mm	264.5 x 75.1 x 133.0 mm
Operating System	Weight	TBC	2.0 kg (4.4lb)	2.3 kg (5.07 lb)	2.5 kg (5.51 lbs)
	Mounting	Desk mounting	VESA/Wall mounting (Optional)	Wall Mounting (Standard) / VESA & DIN-Rail Mounting Kit (Optional)	Wall Mounting (Standard) / VESA & DIN-Rail Mounting Kit (Optional)
APIs	Microsoft Windows	Yes (Windows 8.1, Windows 7, Windows10)	Yes (Windows 10, Windows 8, Windows 7)	Yes (Windows 7, Windows 8)	Yes (Windows 7, Windows 8)
	Linux	Yes (by Project)	Yes (by Project)	Yes (by Project)	Yes (by Project)
Certification	SUSIAccess	Yes	Yes	Yes	Yes
	iManager	Yes	-	Yes	Yes
Safety Certifications	Other	McAfee, Acronis	McAfee, Acronis	McAfee, Acronis	McAfee, Acronis
	EMC	CE/FCC Class A/CCC/BSMI	CE/FCC Class A/CCC/BSMI	CE/FCC Class A, CCC, BSMI	CE/FCC Class A, CCC, BSMI



NEW

NEW

	Model	ARK-2121V	ARK-2151V	ARK-2231R	ARK-2250R
Processor System	CPU	Intel® Atom DC E3825 Intel® Atom QC E3845	4th Gen Intel® Celeron 2980U 4th Gen Intel® Core i5 4300U	Intel® Apollo Lake-I Quad Core/ Atom	Intel Core i5-6442EQ /i7-6822EQ
	Frequency	1.33 GHz / 1.91 GHz	1.6 GHz / 1.9 GHz	2.0GHz	1.9GHz/2.0GHz
	Core Number	2/4	2	4	2/4
	BIOS	AMI EFI 64 Mbit	AMI EFI 128 Mbit	AMI EFI 64bit	AMI EFI 64bit
Memory	Chipset	Intel® Atom DC E3825 Intel® Atom QC E3845	4th Gen Intel® Celeron 2980U 4th Gen Intel® Core i5 4300U	Intel® Apollo Lake-I Quad Core integrated	QM170
	Technology	DDR3L 1066/1333 MHz	DDR3L 1333/1600 MHz	DDR3L 1867MHz	DDR4 2133MHz
	Max. Capacity	8 GB	8 GB	8G	32G
Display	Socket	1 x 204-pin SODIMM	1 x 204-pin SODIMM	1 x 204-pin SODIMM	2 x 260-pin SODIMM
	VGA	1 (up to 1600 x 1200)	1 (up to 1920 x 1200)	up to 2560x1600	up to 1920x1200
	LCD (TTL/LVDS/eDP)	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 3840 x 2160 @ 30Hz	1 x lockable HDMI, up to 4096 x 2304 @ 24Hz
Expansion Interface	Multiple Display	Dual	Dual	Dual	Dual
	Mini PCIe	1 x Full-size Mini PCIe (mSATA) 1 x Full-size Mini PCIe (WLAN) 2 x Full-size Mini PCIe w/SIM holders (WWAN)	1 x Half-size Mini PCIe (WLAN) 1 x Full-size Mini PCIe (mSATA) 2 x Full-size Mini PCIe w/SIM holders (WWAN)	1 x Full-size Mini PCIe (SATA/Pcie/USB) 1 x Full-size Mini PCIe (Pcie/USB) 1 x Full-size Mini PCIe (USB) w/SIM holder	1 x Full-size Mini PCIe (SATA/Pcie/USB) 1 x Full-size Mini PCIe (Pcie/USB) 1 x Full-size Mini PCIe (USB) w/SIM holder
Other	SIM Socket	2	2	1	1
	GPS	On board standalone GPS, support GPS, GLONASS, GALILEO and QZSS signals	On board standalone GPS, support GPS, GLONASS, GALILEO and QZSS signals	On board standalone GPS, support GPS, GLONASS, GALILEO, BeiDou and QZSS signals Optional Dead Reckoning	On board standalone GPS, support GPS, GLONASS, GALILEO, BeiDou and QZSS signals Optional Dead Reckoning
	G-Sensor	Yes	Yes	On board high resolution G-Sensor, up to 13-bit resolution at ± 16g Optional in 2nd Stack:	On board high resolution G-Sensor, up to 13-bit resolution at ± 16g Optional in 2nd Stack:
Ethernet	PoE	4 x 10/100 Mbps PoE (E3845)	4 x 10/100 Mbps PoE (i5-4300U)	4 x 10/100/1000 Mbps PoE+ or 8 x10/100/1000 Mbps PoE+	4 x 10/100/1000 Mbps PoE+ or 8 x10/100/1000 Mbps PoE+
	Controller	GbE 1 : Intel I210-IT GbE 2 : Intel I210-IT All support Wake On LAN	GbE 1 : Intel I218 GbE 2 : Intel I210-IT All support Wake On LAN	GbE 1 : Intel I210-IT GbE 2 : Intel I210-IT	GbE 1 : Intel I210-IT GbE 2 : Intel I210-IT
Audio	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
WatchDog Timer	CODEC	Realtek ALC888S	Realtek ALC888S	Realtek ALC-888S	Realtek ALC-888S
	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)
Storage	3G Voice	1 x Line-out, 1 x Mic-in	1 x Line-out, 1 x Mic-in	-	-
	SATA	Yes	Yes	Yes	Yes
	mSATA	1x 2.5" removable drive bay	1x 2.5" removable drive bay	1x 2.5" removable drive bay Optional 2nd 2.5" removable drive bay in 2nd stack	1x 2.5" removable drive bay Optional 2nd 2.5" removable drive bay in 2nd stack
I/O	USB3.0	1 x Full-size mSATA	1 x Full-size mSATA	1 x Full-size mSATA	1 x Full-size mSATA
	USB2.0	1	2	1	1
	GPIO	6 x DI & 2 x DO with isolation	6 x DI & 2 x DO with isolation	1 x 8bit DIO Optional 1 x Isolated 16bit DIO in 2nd Stack	1 x 8bit DIO Optional 1 x Isolated 16bit DIO in 2nd Stack
	COM Port	1 x RS-232/422/485 1 x RS-232/422/485 (can be option to 2x CANBus 2.0A/B) + 2 x Isolated RS-232/422/485 (E3825)	1 x RS-232/422/485 1 x RS-232/422/485 (can be option to 2x CANBus 2.0A/B) + 2 x Isolated RS-232/422/485 (2980U)	2 x RS-232/422/485 Optional 2 x Isolated RS-232/422/485 or 4 x Isolated RS-232/422/485 in 2nd Stack	2 x RS-232/422/485 Optional 2 x Isolated RS-232/422/485 or 4 x Isolated RS-232/422/485 in 2nd Stack
Power	LAN	2 x RJ45	2 x RJ45	2 x M12 X-code	2 x M12 X-code
	Power Type	AT/ATX	AT/ATX	ATX	ATX
	Power Supply Voltage	PC Mode: 9 ~ 36 V _{DC} VH Mode: 12 V battery (11 ~ 16 V _{DC}), 24 V battery (22 ~ 32 V _{DC})	PC Mode: 9 ~ 36 V _{DC} VH Mode: 12 V battery (11 ~ 16 V _{DC}), 24 V battery (22 ~ 32 V _{DC})	24 V _{DC} (48 V _{DC} , 72 V _{DC} , 110 V _{DC} optional)	24 V _{DC} (48 V _{DC} , 72 V _{DC} , 110 V _{DC} optional)
	Connector	3-pin Phoenix	3-pin Phoenix	M12	M12
	Power Consumption (Idle)	12W	17W	TBD	TBD
	Power Consumption (Full Load)	80W with PoE full-load	100W with PoE full-load	TBD	TBD
Environment	Power Adaptor	AC to DC, 19 V _{DC} , 120W ISO 7637-2 lev.4	AC to DC, 19 V _{DC} , 120W ISO 7637-2 lev.4	AC to DC, 24Vdc, 150W EN50155 S2&C1	AC to DC, 24Vdc, 150W EN50155 S2&C1
	Regulation	With extended temperature SSD/mSATA/RAM : -30~70° C / -30~60° C With standard temperature HDD/SSD/ mSATA/RAM peripherals: 0 ~ 40° C	With extended temperature SSD/mSATA/RAM: -20~60° C With standard temperature HDD/SSD/ mSATA/RAM peripherals: 0 ~ 40° C	-40~70° C (EN50155 Tx)	-40~70° C (EN50155 Tx)
	Operating Temperature (air flow 0.7 m/sec)	40° C @ 95% RH Non-Condensing	40° C @ 95% RH Non-Condensing	40° C @ 95% RH Non-Condensing	40° C @ 95% RH Non-Condensing
	Humidity	With mSATA/SSD: IEC 60721-3-5 Class 5M3 With mSATA/SSD: IEC 60721-3-5 Class 5M3	With mSATA/SSD: IEC 60721-3-5 Class 5M3 With mSATA/SSD: IEC 60721-3-5 Class 5M3	IEC61373 Category1, Class B	IEC61373 Category1, Class B
Physical Characteristics	Vibration Resistance	With mSATA/SSD: IEC 60721-3-5 Class 5M3	With mSATA/SSD: IEC 60721-3-5 Class 5M3	IEC61373 Category1, Class B	IEC61373 Category1, Class B
	Shock Protection	IEC 60721-3-5 Class 5M3	IEC 60721-3-5 Class 5M3	IEC61373 Category1, Class B	IEC61373 Category1, Class B
	Dimensions (W x H x D)	264.5 x 69.2 x 133.0 mm	264.5 x 75.1 x 133.0 mm	260 x 52 x 160 mm (260 x 78.6 x 160 mm with 2nd stack)	260 x 52 x 160 mm (260 x 78.6 x 160 mm with 2nd stack)
Operating System	Weight	2.3 kg (5.07 lb)	2.5 kg (5.51 lbs)	TBD	TBD
	Mounting	Wall Mounting (Standard) / VESA & DIN-Rail Mounting Kit (Optional)	Wall Mounting (Standard) / VESA & DIN-Rail Mounting Kit (Optional)	Wall Mounting (Standard) / VESA & DIN-Rail Mounting Kit (Optional)	Wall Mounting (Standard) / VESA & DIN-Rail Mounting Kit (Optional)
APIs	Microsoft Windows	Yes (Windows 7, Windows 8)	Yes (Windows 7, Windows 8)	Yes	Yes
	Linux	Yes (by Project)	Yes (by Project)	Yes (By project)	Yes (By project)
Certification	SUSIAccess	Yes	Yes	Yes	Yes
	iManager	Yes	Yes	-	-
Safety Certifications	Other	McAfee, Acronis	McAfee, Acronis	McAfee, Acronis	McAfee, Acronis
	EMC	CE/FCC Class A, CCC, BSMI	CE/FCC Class A, CCC, BSMI	CE/FCC, CCC, BSMI, EN50155	CE/FCC, CCC, BSMI, EN50155

Digital Signage Players with Ready Software

WebAccess/IMM Built-in



Specifications\Models		Entry Level Series			
		DS-063/DS-065	DS-080	DS-370	DS-060/DS-061
Processor System	CPU	Intel Atom D2550/ Intel Atom N2600	Intel Celeron 3765U	Intel Celeron J1900	Intel Core i7-3615QE/ Intel Core i7-3517UE
	BIOS	AMI uEFI 16 Mbit	AMI uEFI 128 Mbit	AMI uEFI 64 Mbit	AMI uEFI 64 Mbit
	Chipset	Intel NM10	Integrated in SOC	Integrated in CPU	Intel QM77
Memory	Technology	DDR3 1066MHz	DDR3L 1600MHz	DDR3L 1333MHz	DDR3 1600MHz
	Max. Capacity	4GB	16 GB (8 GB per SODIMM)	8 GB(4 GB per SODIMM)	8 GB
	Socket	1 x 204-pin SODIMM	2 x 204-pin SODIMM	2 x 204-pin SODIMM	1 x 204-pin SODIMM
Display	Controller	CPU Integrated	Integrated in SOC	CPU Integrated	CPU Integrated
	Graphic Engine	Intel GMA 3650	Intel HD Graphics	Intel HD Graphics	Intel HD Graphics 4000
	Video Format	H.264, VC1, MPEG2, DivX 3.11, WMV9, MPEG4 Part 2 SP, MPEG4 ASP	H.264, VC1, MPEG2, DivX 3.11, WMV9, MPEG4 Part 2 SP, MPEG4 ASP	H.264, VC1, MPEG2, DivX 3.11, WMV9, MPEG4 Part 2 SP, MPEG4 ASP	H.264, VC1, MPEG2, DivX 3.11, WMV9, MPEG4 Part 2 SP, MPEG4 ASP
	Graphic Memory	Shared system memory	Shared system memory	Shared system memory	Shared system memory
	Multiple Display	Dual	Dual	Dual	Dual
	Interface	HDMI x 1, VGA x 1	HDMI x 2	HDMI x 1, DP+ x1, VGA x1	DisplayPort x 1, VGA x 1
	Max. Resolution	1920 X 1080	1920 x 1080 @60Hz	2048 x 1280 @ 60Hz	1920 X 1080
Expansion Interface	M.2	-	-	-	-
	Mini PCIe	1	1	2	1
	PCIe x16	-	-	-	-
Ethernet	Speed	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps
	Connector	RJ-45 x 1	RJ-45 x 2	RJ-45 x 2	RJ-45 x 1
Audio	Audio Interface	HD Audio	HD Audio	HD Audio	HD Audio
	Connector	2 (Line-out, Mic-in)	1 (SPDIF/Line-out/ Mic-in), supports Jack Sense	2 (SPDIF/ Line-Out, Mic-In), Supports Jack Sense	2 (Line-out, Mic-in)
WatchDog Timer		Yes	Yes	Yes	Yes
Storage	SATA	1 x 2.5-inch SATA II HDD/SSD	1 x 2.5-inch SATA III HDD/SSD	1 x 2.5-inch SATA II HDD/SSD	1 x 2.5-inch SATA II HDD/SSD
	mSATA	Yes, colay mini-PCIe	Yes, colay mini-PCIe	Yes, colay mini-PCIe	Yes, colay mini-PCIe
	CFast	-	-	-	-
	Others	-	-	64GB Onboard Micro SSD(Optional)	-
I/O	USB3.0	-	4	1	2
	USB2.0	4	-	3	2
	COM Port	1 (RS-232)	1 (RS-232/422/485) or 2 (RS-422/485) with extension cable	2 (RS-232)	1 (RS-232)
	Power Button	1	1	1	1
Power	Smart Fan	-	-	-	Yes
	Power Type	ATX, AT	ATX, AT	ATX, AT	ATX, AT
	Power Supply Voltage	DC 19V input	DC 19V input	DC 19V input	DC 19V input
	Power Consumption (Idle)	8.3W (Atom N2600, w/o expansion)	7.0W (Core i5-5350U, w/o expansion)	4.39W (w/o expansion)	17.4W (Core i7-3615QE, w/o expansion)
	Power Consumption (Full Load)	11.3W (Atom N2600, w/o expansion)	29.2W (Core i5-5350U, w/o expansion)	10.85W (w/o expansion)	26.0W (Core i7-3615QE, w/o expansion)
	Power Adaptor	Input 100-240Vac, Output 19V _{oc} , 65W	Input 100-240Vac, Output 19V _{oc} , 65W	Input 100-240 VAC, Output 19 V _{oc} , 65W	Input 100-240Vac, Output 19V _{oc} , 65W
Environment	Operational Temperature	0 ~ 40°C (32 ~ 104°F) (w / HDD)	0 ~ 40° C (32 ~ 104° F) (w / HDD) with 0.7m/s air flow	0 ~ 40° C (32 ~ 104° F) (w / HDD) 0 ~ 50° C (32 ~ 122° F) (w / On board Micro SSD)	0 ~ 40° C (32 ~ 104° F) (w / HDD)
	Operational Humidity	40° C @ 95% RH Non-Condensing	40° C @ 95% RH Non-Condensing	40° C @ 95% RH Non-Condensing	40° C @ 95% RH Non-Condensing
Physical Characteristics	Dimensions (L x W x H)	180 x 190 x 19 mm	180 x 190 x 19 mm	204 x 118.2 x 44.2 mm	180 x 190 x 19 mm
	Weight	0.87 kg (1.92 lb)	0.87 kg (1.92 lb)	1.28 kg (2.81 lb)	0.87 kg (1.92 lb)
	Mounting	VESA/Desk/Wall/Din Rail	VESA/Desk/Wall/Din Rail	VESA/Desk/Wall /DIN Rail	VESA/Desk/Wall/Din Rail
Operating System	Microsoft Windows	Yes	Yes	Yes	Yes
	Linux	Yes (support by project)	Yes (support by project)	Yes (support by project)	Yes (support by project)
APIs	WISE-PaaS/RMM	Yes	Yes	Yes	Yes
	iManager/SUSI APIs	Yes	Yes	Yes	Yes
	Others	Yes, McAfee, Acronis	Yes, McAfee, Acronis	Yes, McAfee, Acronis	Yes, McAfee, Acronis
Signage Management (Content editing/Scheduling/Dispatch)		Yes	Yes	Yes	Yes
Certifications	EMC	CE, FCC Class B, CCC, BSMI	CE, FCC Class B, CCC, BSMI	CE, FCC Class B, CCC, C-Tick, BSMI	CE, FCC Class B, CCC, BSMI
	Safety	UL, CB, CCC, BSMI	UL, CB, CCC, BSMI	UL, CB, CCC, BSMI	UL, CB, CCC, BSMI



Advanced Computing Series	Multi-Display Series			OPS Series	
DS-080	DS-570	DS-780	DS-980	DS-270	DS-280
Intel Core i5-5350U/ Intel Core i5-5200U	Intel Celeron J1900	Intel Core i7-6650U Intel Core i5-6360U	Intel Core i7-6700TE/ Intel Core i5-6500TE/ Intel Core i3-6100TE	Intel Celeron J1900	Intel Core i7-6822EQ/ Intel Core i5-6442EQ
AMI uEFI 128 Mbit	AMI uEFI 64 Mbit	AMI uEFI 128 Mbit	AMI uEFI 128 Mbit	AMI uEFI 64 Mbit	AMI uEFI 128 Mbit
Integrated in SOC	Integrated in CPU	Integrated in CPU	Intel Q170	Integrated in CPU	Intel QM170
DDR3L 1600MHz	DDR3L 1333MHz	DDR4 2133MHz	DDR4 2133MHz	DDR3L 1333MHz	DDR4 2133MHz
16 GB (8 GB per SODIMM)	8 GB (4 GB per SODIMM)	32GB (16GB per SODIMM)	32GB (16GB per SODIMM)	8 GB (4 GB per SODIMM)	32GB (16GB per SODIMM)
2 x 204-pin SODIMM	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
Integrated in SOC	NVIDIA GeForce GT730M	CPU Integrated	CPU Integrated	NVIDIA GeForce GT730M	CPU Integrated
Intel HD Graphics 6000/ Intel HD Graphics 5500	-	Intel Iris Graphics 540	Intel HD Graphics 530	-	Intel HD Graphics 530
H.264, VC1, MPEG2, DivX 3.11, WMV9, MPEG4 Part 2 SP, MPEG4 ASP	H.264, VC1, MPEG-1, MPEG2, DivX 3.11, WMV9, MPEG-4 Part 2 SP, MPEG-4 ASP	HEVC, H.264, MPEG2, VC1/ WMV9, MJPEG, VP9	HEVC/265, AVC/264, MPEG2, VC1/WMV9, VP8, JPEG/MJPEG, VP9	H.264, VC1, MPEG-1, MPEG2, DivX 3.11, WMV9, MPEG-4 Part 2 SP, MPEG-4 ASP	HEVC/H265, AVC/H264, MPEG2, VC1/ WMV9, VP8, JPEG/MJPEG, VP9
Shared system memory	1 GB (On board memory)	Share System Memory	Shared system memory	1GB (On board memory)	Shared system memory
Dual	Four	Triple	Triple+ (up to Six with graphic card)	Dual	Triple
HDMI x 2	HDMI 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 x2	JAE TX25 80-pin x 1, HDMI x1	JAE TX25 80-pin x 1, HDMI x1, DP x1
3840 x 2160 @30Hz	3840 x 2160 @ 30Hz	4096 x 2160 @60Hz	4096 x 2160 @60Hz	3840 x 2160 @ 30Hz	4096 x 2304@60Hz
-	-	1 (2230/1630 EKey)	1 (2230 E key)	-	-
1	*2, with SIM slot x 1	1	1, with SIM slot	1	1, with SIM slot
-	-	-	1	-	-
10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps
RJ-45 x 2	*RJ-45 x 2	RJ-45 x 2	RJ-45 x 2	RJ-45 x 1	RJ-45 x 2
HD Audio	HD Audio	HD Audio	HD Audio	HD Audio	HD Audio
1 (SPDIF/Line-out/ Mic-in), supports Jack Sense	2 (SPDIF/ Line-out, Mic-in), support 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), support Jack Sense
Yes	Yes	Yes	Yes	Yes	Yes
1 x 2.5-inch SATA III HDD/SSD	1 x 2.5-inch SATA II HDD/ SSD	1 x 2.5-inch SATA III HDD/SSD	1 x 2.5-inch SATA III HDD/ SSD (top); 1 x 2.5-inch SATA III SSD (bottom), support RAID 0/1	1 x 2.5-inch SATA II HDD/SSD	1 x 2.5-inch SATA III HDD/ SSD
Yes, colay mini-PCIe	Yes, colay mini-PCIe	Yes, colay mini-PCIe	Yes, colay mini-PCIe	Yes, colay mini-PCIe	Yes, colay mini-PCIe
-	-	-	-	-	-
-	-	-	-	-	-
4	1	4	4	2	3
-	3	-	2	-	-
1 (RS-232/422/485) or 2 (RS- 422/485) with extension cable	*2 x RS-232 or 1x RS-485/ RS-422/ RS-232 & 1x RS232 (by project)	1 (RS-232)	1 (RS-232)/ 2 (RS-485 & 422 with extension cable)	-	-
1	1	1	1	1	1
-	-	-	Yes	Yes	Yes
ATX, AT	ATX, AT	ATX, AT	ATX, AT	ATX	ATX, AT
DC 19V input	DC 19V input	DC 19V input	DC 12V input	DC 12V-24V input (via OPS connector)	DC 12V-19V input (via OPS connector)
7.0W (Core i5-5350U, w/o expansion)	9.7W (J1900 CPU, w/o expansion)	TBC	9.56W (i7-6700TE, w/o expansion) 9.19W (i5-6500TE, w/o expansion)	11.82W (w/o expansion)	TBC
29.2W (Core i5-5350U, w/o expansion)	22.6W (J1900 CPU, w/o expansion)	TBC	53.60W(i7-6700TE, w/o expansion) 51.67W (i5-6500TE, w/o expansion)	21.84W (w/o expansion)	TBC
Input 100-240V _{ac} , Output 19V _{dc} , 65W	Input 100-240 V _{ac} , Output 19 V _{dc} , 65W	Input 100-240V _{ac} , Output 19V _{dc} , 65W	Output 12V _{dc} , 150W for top layer; Optional output 12V _{dc} , 84W for bottom layer	-	-
0 ~ 40° C (32 ~ 104° F) (w / HDD) with 0.7m/s air flow	0 ~ 40° C (32 ~ 104° F) (w/HDD) 0~65° C (32 ~149° F) (w/SSD)	0 ~ 40° C(32 ~ 104° F) (w/HDD) 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)
40° C @ 95% RH Non-Condensing	40° C @ 95% RH Non-Condensing	40° C @ 95% RH Non-Condensing	40° C @ 95% RH Non-Condensing	40° C @ 95% RH Non-Condensing	40° C @ 95% RH Non-Condensing
180 x 190 x 19 mm	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
0.87 kg (1.92 lb)	1.7 kg (3.74 lb)	1.45 kg (3.2 lb)	3.8kg (8.38 lb)	1.5kg (3.3 lb)	1.5kg (3.3 lb)
VESA/Desk/Wall/Din Rail	VESA/Desk/Wall/Din Rail	VESA/Desk/Wall/Din Rail	VESA/ Desk/ Wall	-	-
Yes	Yes	Yes	Yes	Yes	Yes
Yes (support by project)	Yes (support by project)	Yes (support by project)	Yes (support by project)	Yes (support by project)	Yes (support by project)
Yes	Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes	Yes	Yes
Yes, McAfee, Acronis	Yes, McAfee, Acronis	Yes, McAfee, Acronis	Yes, McAfee, Acronis	Yes, McAfee, Acronis	Yes, McAfee, Acronis
Yes	Yes	Yes	TBC	Yes	Yes
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, C-Tick, BSMI	CE, FCC Class B, CCC, BSMI
UL, CB, CCC, BSMI	UL, CB, CCC, BSMI, LVD	UL, CB, CCC, BSMI	UL, CB, CCC, BSMI	UL, CB, CCC, BSMI	UL, CB, CCC, BSMI

Gaming Platforms

Standalone Series

NEW



Model Name	DPX® -S2440	DPX® -S440	DPX® -S1435	DPX® -S435	DPX® -S430	DPX® -S425	
Form Factor	DPX® Gaming System	DPX® Gaming Platform	DPX® Gaming System	DPX® Gaming Platform	DPX® Gaming Platform	DPX® Gaming Platform	
Processor System	CPU	AMD 3rd Generation R-Series (formerly code-named Merlin Falcon)		Intel® 4th Generation Core™ i	Intel® 4th Generation Core™ i	AMD R-Series APU	Intel® Core™ Duo
	Socket	BGA		LGA1155	LGA1155	FS1r2	Socket G1 / rPGA988A
	max. speed	2.8 (3.4) GHz		2.77GHz	2.77GHz	3.2GHz	2.33GHz
	TDP	35W		45W	45W	35W	35W
	Chipset	SOC		Q87	Q87	A75	HM55
	BIOS	AMI APTIO UEFI (Gaming optimised)		AMI UEFI 32Mb	AMI UEFI 32Mb	AMI UEFI 32Mb	AMI PCI/PnP/ACPI BIOS
Expansion Slot	PCI	-		-	-	-	-
	MINI PCIe	-		-	-	-	-
	PCIe	PCIe x 16 (x 8 mode)		PCIe x 16	PCIe x 16	PCIe x 16	PCIe x 16
	MXM	-		-	-	-	-
Memory	Technology	Dual Channel DDR3 2133MHz		Dual Channel DDR3 1600MHz	Dual Channel DDR3 1600MHz	Dual Channel DDR3 1600MHz	Dual Channel DDR3 1033MHz
	Max. Capacity	16GB		16GB	16GB	16GB	8GB
	Socket	2x SODIMM		2x SODIMM	2x SODIMM	2x SODIMM	2x SODIMM
Graphics	Controller	in APU - Radeon R7 (HD10000)		In CPU (HD4600)	In CPU (HD4600)	In APU (Radeon 7000 series)	In CPU (Intel GMA HD)
	VGA	-		1	1	1	1
	DVI	-		2	2	1	1
	DP	3		1	1	1	-
	HDMI	-		-	-	-	-
Ethernet	LAN1	GbE		GbE	GbE	GbE	GbE
	LAN2	GbE		GbE	GbE	GbE	GbE
Storage	SATA	2		3	3	3	2
	CompactFlash	-		-	-	-	2
	Cfast	2		2	2	2	2
Rear I/O	VGA/DVI/HDMI/DP	0/0/0/3		1/2/0/1	1/2/0/1	1/1/0/1	1/1/0/0
	Ethernet	2		2	2	2	2
	USB 2.0	5		8	8	8	12
	USB 3.0	3		4	4	4	0
	Audio	1 (ch5.1), SPDIF		1 (ch5.1)	1 (ch5.1)	1 (ch5.1)	1 (ch5.1)
	Serial Ports	10		10	10	10	10
	Serial Type RS232/Ctalk/TTL/485	10/2/1/1		8/2/1/1	8/2/1/1	8/2/1/1	8/2/1/1
Gaming Hardware	SRAM	8MB		8MB	8MB	4MB	4MB
	ROM Sockets	SPI ROM module		PLCC	PLCC	PLCC	PLCC
	TPM	TPM 2.0/1.2		TPM1.2	TPM1.2	TPM1.2	TPM1.2
	Audio Amplifier	15W+15W+15W (FL,FR, LF)		13W+13W+13W (FL,FR, LF)	13W+13W+13W (FL,FR, LF)	13W+13W+13W (FL,FR, LF)	13W+13W+13W (FL,FR, LF)
	Digital Inputs	32 (ESD protected)		32 (ESD protected)	32 (ESD protected)	32 (ESD protected)	32 (ESD protected)
	Digital Outputs	32 (OC 500mA 50V)		32 (OC 500mA 50V)	32 (OC 500mA 50V)	32 (OC 500mA 50V)	32 (OC 500mA 50V)
	Intrusion Inputs	8		8	8	6	6
	iButton® / GPIO	2		1	1	1	1
	DPCI Expansion	-		1	1	1	1
	Watchdog Timer	1		1	1	1	1
	Write Protect	Yes		Yes	Yes	Yes	Yes
	Gaming BIOS	Standard		Standard	Standard	Standard	Standard
	DPCI Advanced Gaming API & Runtime	Standard		Standard	Standard	Standard	Standard
DPX Connector Peripherals Libraries	Standard		Standard	Standard	Standard	Standard	
Gaming Software	Embedded OS Support	Standard		Standard	Standard	Standard	Standard
	BIOS Customization	Optional		Optional	Optional	Optional	Optional
	TPM Suite	Optional		Optional	Optional	Optional	Optional
	DPX SAS Connector	Optional		Optional	Optional	Optional	Optional
	SecureBoot	Optional		Optional	Optional	Optional	Optional
	Other Features	LED lamp driver, I2C, Precision RTC, ATX or 12VDC power		-	-	-	-

Economy Series



NEW



NEW

ConnectBus® Series

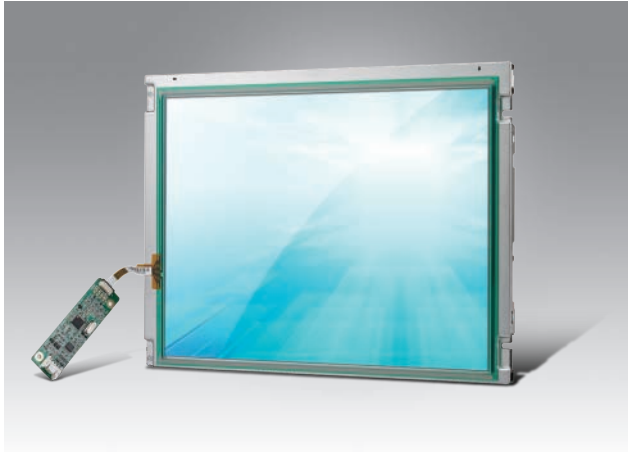


DPX®-E130	DPX®-E120	DPX®-E135	DPX®-E250	DPX®-SC710	DPX®-C710
DPX® Gaming System	DPX® Gaming System	DPX® Gaming Platform	DPX® Gaming Platform	DPX® Gaming System	DPX® Gaming Platform
AMD Embedded G-Series APU	AMD Embedded G-Series APU	AMD Embedded G-Series APU	Intel 4th Generation Core-I	AMD Embedded R-Series APU	AMD Embedded R-Series APU
BGA	BGA	BGA	LGA 1150	FS1r2	FS1r2
1.6 GHz	1.6 GHz	2.4 GHz	3.7 (4.0) GHz	2.3GHz(3.2GHz Turbo)	2.3GHz(3.2GHz Turbo)
18W	18W	25W	65W	35W	35W
A55E	A55E	SOC	Q87	A75	A75
AMI UEFI 32Mb	AMI PCI/PnP/ACPI BIOS	AMI APTIO UEFI (Gaming optimised)	AMI APTIO UEFI (Gaming optimised)	AMI UEFI 32Mb	AMI UEFI 32Mb
-	-	-	-	-	-
1	-	-	2	-	-
-	-	-	PCIe x 16	-	-
-	-	-	-	MXM 3.0 Type A	MXM 3.0 Type A
Dual Channel DDR3 1600MHz	Dual Channel DDR3 1600MHz	Dual Channel DDR3 1866MHz	Dual Channel DDR3 1600MHz	Dual Channel DDR3 1600MHz	Dual Channel DDR3 1600MHz
8GB	8GB	16GB	16GB	16GB	16GB
2x SODIMM	2x SODIMM	2x SODIMM	2x SODIMM	2x SODIMM	2x SODIMM
In APU (AMD Radeon HD 6320/6310/6250)	In APU (AMD Radeon HD 6320/6310/6250)	In APU (AMD Radeon HD 8000)	In CPU Intel HD 4600	In APU (AMD Radeon HD 7420G/7660G)	In APU (AMD Radeon HD 7420G/7660G)
2	1	1	0 (VGA signals in DVI-I)	-	-
-	1	-	2. DVI-I, DVI-D	2 (APU) + 2 (MXM)	2 (APU) + 2 (MXM)
-	-	2	1	1 (APU) + 2 (MXM)	1 (APU) + 2 (MXM)
-	-	-	-	-	-
GbE	GbE	GbE	GbE	GbE	GbE
-	GbE	GbE	GbE	GbE	GbE
1	-	2	2	2 SATA + 1 eSATA	2 SATA + 1 eSATA
1	2	-	-	-	-
1	-	2	-	2	2
2/0/0/0	1/1/0/0	1/0/0/2	0/2/0/1	0/4/0/3	0/4/0/3
-	2	2	2	2	2
2	6	7	6	11	11
-	-	2	4	3	3
1 (ch2.1)	1 (ch2.1)	1 (ch5.1), SPDIF	1 (ch2.1)	1 (ch7.1)	1 (ch7.1)
3	5	10	6	8	8
4/2/1/0	4/1/2/1	4/2/1/1	4/0/0/1	8/2/2/1	8/2/2/1
4MB	4MB	8MB	-	8MB	8MB
-	-	SPI ROM module	-	PLCC	PLCC
-	-	TPM 2.0/1.2	TPM 2.0/1.2	TPM 1.2	TPM 1.2
3W+3W	13W+13W	20W+20W	-	-	-
-	32 (ESD protected)	32 (ESD protected)	-	32 (ESD protected)	32 (ESD protected)
-	32 (OC 500mA 50V)	32 (OC 500mA 50V)	-	32 (OC 500mA 50V)	32 (OC 500mA 50V)
5	6	8	-	8	8
-	1	1	8	1	1
-	-	-	-	1	1
-	-	1	1	1	1
Yes	Yes	-	-	Yes	Yes
Standard	Standard	Standard	N/A	Standard	Standard
Standard	Standard	Standard	Standard	Standard	Standard
Standard	Standard	Standard	Standard	Standard	Standard
Optional	Optional	Optional	Optional	Optional	Optional
Optional	Optional	Optional	Optional	Optional	Optional
Optional	Optional	Optional	Optional	Optional	Optional
Optional	Optional	Optional	Optional	Optional	Optional
-	-	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 Kit with LED B/L



Features

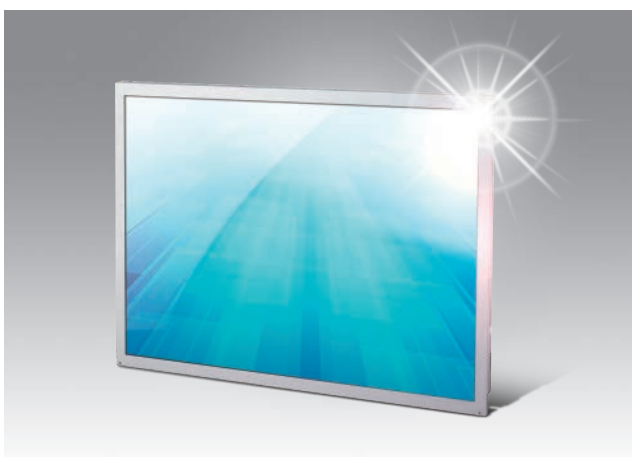
- 5.7" ~ 21.5" industrial-grade LCD panel with LED backlight
- Resistive / Projected Capacitive touchscreen support
- LVDS signal interface
- Perfect for industrial and indoor applications
- Full compatibility with embedded boards
- Maximum flexibility for mechanical design
- Touch controller included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

Specifications

	IDK-1105	IDK-1107W	IDK-1107WP	IDK-1108	IDK-1110W	IDK-1110	IDK-1110P	IDK-1112	IDK-1115	IDK-1115P	IDK-1119	IDK-1121W	
LCD Display	Size	5.7"	7"	7"	8.4"	10.1"	10.4"	10.4"	12.1"	15"	15"	19"	21.5"
	Resolution	640 x 480, VGA	1024 x 600, WSVGA	800 x 480 WVGA	800 x 600, SVGA	1024 x 600, WSVGA	800 x 600, SVGA	1024 x 768 XGA	800 x 600, SVGA	1024 x 768, XGA	1024 x 768, XGA	1280 x 1024, SXGA	1920 x 1080, FHD
	Brightness	500 cd/m ²	500 cd/m ²	500cd/m ²	450 cd/m ²	550 cd/m ²	400 cd/m ²	500 cd/m ²	450 cd/m ²	400 cd/m ²	400 cd/m ²	350 cd/m ²	300 cd/m ²
	Colors	262 k	262K/16.2M	262K/16.2M	262K/16.2M	262K/16.2M	262K/16.2M	16.2M	262K/16.2M	262K/16.2M	262K/16.2M	16.7M	16.7M
	Viewing Angle (H/V°)	140/100	150/145	140/120	160/140	120/140	160/140	176/176	160/140	160/140	160/140	170/160	178/178
	Contrast Ratio	250 : 1	700 : 1	600:1	600 : 1	500 : 1	700 : 1	1000:1	700 : 1	700 : 1	700 : 1	1000 : 1	5000 : 1
	Response Time (ms)	50	50	16	30	25	30	25	35	16	16	5	16
	Touchscreen	4-Wire Resistive Touch	4-Wire Resistive Touch/ Projective Capacitive Touch	Projective Capacitive Touch	4-Wire Resistive Touch	4-Wire Resistive Touch	4-Wire Resistive Touch	Protective Capacitive Touch	5-Wire Resistive Touch	5-Wire Resistive Touch	Projective Capacitive Touch	5-Wire Resistive Touch	5-Wire Resistive Touch
	Signal Interface	1 Channel LVDS	1 Channel LVDS	1 Channel LVDS	1 Channel LVDS	1 Channel LVDS	1 Channel LVDS	1 Channel LVDS	1 Channel LVDS	1 Channel LVDS	1 Channel LVDS	2 Channel LVDS	2 Channel LVDS
	Backlight Type	LED	LED	LED	LED	LED	LED	LED	LED	LED	LED	LED	LED
	Backlight Life (hrs)	30000	50000	50000	50000	50000	50000	50000	50000	50000	50000	50000	50000
	Power Consumption (W)	1.8	3.57	3.56	2.94	8.99	4.8	10	6.7	10.8	10.8	20.55	24
	Dimensions (mm)	127 x 98.43 x 9.1	165.5 x 104.44 x 10.52	187.6 x 126.64 x 12.46	203 x 142.5 x 10.3	235 x 145.8 x 10.25	243 x 184 x 10.6	251.03 x 202.42 x 11.32	276 x 209 x 11.3	326.5 x 253.5 x 14.4	323.5 x 259.7 x 14.6	396 x 324 x 20.7	495.6 x 292.2 x 20.8
Weight (g)	200	190	160	250	420	530	500	980	835	990	2750	3100	
Touchscreen	Durability	1 million touches	1 million touches	100 million touches	1 million touches	1 million touches	1 million touches	50 million touches	10 million touches	10 million touches	50 million touches	10 million touches	10 million touches
	Surface Hardness	3H	3H	7H	3H	3H	3H	5H	3H	3H	5H	3H	3H
	Transparency	80%	82.5%	90%	82.5%	82.5%	82.5%	90%	80%	80%	91%	80%	80%
Environment	Temperature (Operating)	-20 ~ 70° C	-20 ~ 70° C	-20~70° C	-10 ~ 60° C	-5 ~ 60° C	-10 ~ 60° C	-20~70 oC	-20 ~ 70° C	-20 ~ 70° C	-20 ~ 70° C	0 ~ 50° C	0 ~ 60° C

IDK-2000

Ultra High Brightness Industrial LCD Kit with LED B/L



Features

- 7" ~ 21.5" industrial-grade LCD panel with wide operating temperature support
- 1200-cd/m² ultra high brightness with LED backlight
- Resistive / Projected Capacitive touchscreen support
- High uniformity of 85%
- Superior sunlight readability for outdoor applications
- LVDS signal interface
- Auto-dimming light sensor (optional)
- Full compatibility with embedded boards
- Optional Projected Capacitive Touch solution
- Optional AD board solution

Specifications

	IDK-2108	IDK-2110 (SVGA)	IDK-2110 (XGA)	IDK-2112	IDK-2115	IDK-2117	IDK-2119	IDK-2121	
LCD Display	Size	8.4"	10.4"	10.4"	12.1"	15"	17"	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	1200 cd/m ²	1200 cd/m ²	1300 cd/m ²	1200 cd/m ²	1200 cd/m ²	1200 cd/m ²	1200 cd/m ²	1200 cd/m ²
	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	1100 : 1	5000:1
	Response Time (ms)	30	35	30	35	16	5	5	16
	Touchscreen	4-Wire Resistive Touch	4-Wire Resistive Touch	4-Wire Resistive Touch	5-Wire Resistive Touch	5-Wire Resistive Touch	5-Wire Resistive touch	5-Wire Resistive Touch	5-Wire Resistive Touch
	Signal Interface	1 Channel LVDS	1 Channel LVDS	1 Channel LVDS	1 Channel LVDS	1 Channel LVDS	2 Channel LVDS	2 Channel LVDS	2 Channel LVDS
	Backlight Type	LED	LED	LED	LED	LED	LED	LED	LED
	Backlight Life (hrs)	50000	50000	70000	50000	50000	50000	50000	50000
	Power Consumption (W)	5.85	7.1	16.05	8.924	16.06	19.12	35.42	46.8
	Dimensions (mm)	203.0 x 142.5 x 8.0	236.0 x 176.9 x 5.7	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 16.65	396 x 324 x 17.8	495.6 x 292.2 x 17.7
Weight (g)	260	350	600	600	1350	2200	2500	2400	
Touchscreen (Optional)	Durability	1 million touches	1 million touches	1 million touches	10 million touches	10 million touches	10 million touches	10 million touches	
	Surface Hardness	3H	3H	3H	3H	3H	3H	3H	
	Transparency	82.5%	82.5%	82.5%	80%	80%	80%	80%	
Environment	Temperature (Operating with touchscreen)	-20 ~ 70° C	-10~60° C	-10~60° C	-20 ~ 70° C	-20 ~ 70° C	0 ~ 50° C	0 ~ 50° C	0 ~ 55° C

Industrial Display Systems

IDS-3100

Ultra Slim Open Frame Monitors



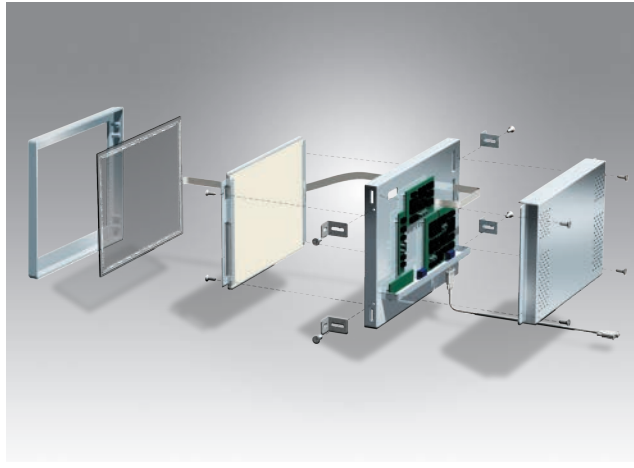
Features

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

Specifications

		IDS-3106	IDS-3110	IDS-3112 (SVGA)	IDS-3112 (XGA)	IDS-3115	IDS-3115P (HB)	IDS-3117	IDS-3118W	IDS-3119	IDS-3121W
LCD Display	Size	6.5"	10.4"	12.1"	12.1"	15"	15"	17"	18.5"	19"	21.5"
	Resolution	640 x 480, VGA	800 x 600, SVGA	800 x 600, SVGA	1024 x 768, XGA	1024 x 768, XGA	1024 x 768, XGA	1280 x 1024, SXGA	1366 x 768, HD	1280 x 1024, SXGA	1920 x 1080, FHD
	Colors	262K/16.2M	262K/16.2M	262K/16.2M	262K/16.2M	262K/16.2M	262K/16.2M	16.7 M	16.7 M	16.7 M	16.7M
	Viewing Angle (H/V°)	160/140	160/140	160/140	160/140	160/140	160/140	170/160	170/160	170/160	178/178
	Contrast Ratio	600 : 1	700 : 1	700 : 1	700 : 1	700 : 1	700 : 1	800 : 1	1000:1	1000 : 1	1000 : 1
	Response Time (ms)	25	30	35	16	16	16	30	5	5	5
	Brightness	800 cd/m ²	400 cd/m ²	450 cd/m ²	600 cd/m ²	400 cd/m ²	1200 cd/m ²	350 cd/m ²	300 cd/m ²	350 cd/m ²	250 cd/m ²
	Touchscreen	4-Wire Resistive	5-Wire Resistive	5-Wire Resistive	5-Wire Resistive	5-Wire Resistive	Projected Capacitive	5-Wire Resistive	5-wire resistive and P-cap	5-Wire Resistive	5-Wire Resistive
	Backlight Type	LED	LED	LED	LED	LED	LED	LED	LED	LED	LED
	Backlight Life (hrs)	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	30,000
Dimensions (mm)	215 x 160 x 32.1	279.4 x 220 x 30	320.2 x 252 x 30.7	320.2 x 252 x 30.7	362 x 288 x 32.8	362 x 288 x 32.8	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 48.1	
Weight (kg)	0.8	1.6	2.15	2.13	4	4.5	4.05	4.69	5.14	7.3	
Touchscreen (Optional)	Durability	1 million touches	36 million touches	10 million touches	10 million touches	10 million touches	50 million touches	10 million touches	50 million touches	10 million touches	10 million touches
	Surface Hardness	3H	3H	3H	3H	3H	5H	3H	5H	3H	3H
	Transparency	80%	82%	80%	80%	80%	91%	80%	91%	80%	80%
Environment	Temperature (Operating)	0 ~ 50° C	- 20 ~ 60° C	-20 ~ 60° C	-20 ~ 60° C	-20 ~ 60° C	-20 ~ 60° C	-20 ~ 60° C	0 ~ 55° C	0 ~ 45° C	0 ~ 45° C
	Temperature (Storage)	-20 ~ 60° C	-30 ~ 70° C	-30 ~ 70° C	-30 ~ 70° C	-30 ~ 70° C	-30 ~ 70° C	-30 ~ 70° C	-20 ~60° C	-20 ~ 60° C	-20~60° C
System	Humidity	5 ~ 95% @ 40° C, non-condensing	5 ~ 95% @ 40° C, non-condensing	5 ~ 95% @ 40° C, non-condensing	5 ~ 95% @ 40° C, non-condensing	5 ~ 95% @ 40° C, non-condensing	5 ~ 95% @ 40° C, non-condensing	10 ~ 90% @ 40° C, non-condensing	5 ~ 90% @ 40° C, non-condensing	5 ~ 90% @ 40° C, non-condensing	10 ~ 90% @ 40° C, non-condensing
	I/O Ports	VGA x 1; DVI x 1; 12 V _{DC} 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 _{DC} 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 _{DC} 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 _{DC} 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 _{DC} 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 _{DC} 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 _{DC} 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 _{DC} 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 _{DC} 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 _{DC} 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					

IDS31 Series Configured Display Solutions - Touch Monitors and Non-Touch Monitors



- ### Features
- 6.5"–65" size options
 - Flexible mechanical formats: open frame & closed frame, all with VESA standard mounting
 - Configurable Options:
 - Brightness: 400 cd/m² ~2000 cd/m²
 - I/O: VGA,DVI,HDMI, DisplayPort
 - Touchscreen (USB and/or RS232 input): 5-wire Rugged Analogue Resistive, Surface Capacitive, Projected Capacitive
 - Compatibility with embedded computing platform.
 - Wide temperature and 24/7 industrial operation.

Specifications

		IDS31-070W	IDS31-104	IDS31-156W	IDS31-185W	IDS31-190	IDS31-215W	IDS31-230W	IDS31-320W
Size		7" Wide	10.4"	15.6" Wide	18.5" Wide	19"	21.5" Wide	23" Wide	32" Wide
Mechanical	Overall Size (mm)	190 x 142 x 36.5	262 x 194 x 40.3	377 x 230 x 45	455 x 276 x 45	422 x 347 x 45	516 x 320 x 46	560 x 337 x 50	805 x 495 x 73
	Active Area Size (mm)	152.4 x 91.44 ± 5	211.2 x 158.4 ± 5	344.2 x 193.5 ± 5	409.8 x 230.4 ± 5	377 x 301 ± 5	476.6 x 268.1 ± 5	509.2 x 286.4 ± 5	698.4 x 392.9 ± 5
	Weight (Kg)	2.7	3.5	4	5	5	7	8	15
	VESA Mounting Options	75 x 75	75 x 75	100 x 100	100 x 100	100 x 100	100 x 100 200 x 100	100 x 100 200 x 100	200 x 100
Display	Backlight type	LED + TN	LED + TN	LED + TN	LED + TN	LED + TN	LED + MVA	LED + IPS	LED + MVA
	Brightness (cd/m ²)	400	230	300	300	350	250	300	350
	Viewing angle (L/R/U/D)	80,80,60,80	60,60,55,45	85,85,80,80	85,85,80,80	85,85,80,80	89,89,89,89	89,89,89,89	89,89,89,89
	Resolution	800 x 480	800 x 600	1366 x 768	1366 x 768	1280 x 1024	1920 x 1080	1920 x 1080	1920 x 1080
	Backlight Life (hours)	50000	30000	50000	50000	50000	30000	30000	50000
	Response Time (ms)	30	35	8	5	5	16	14	8
	Contrast Ratio	500 : 1	500 : 1	500 : 1	1000 : 1	1000 : 1	5000 : 1	1000 : 1	1000 : 1
Touch	Touch Options	5 wire AR	5 wire AR	Projected Capacitive	Projected Capacitive	Projected Capacitive	Projected Capacitive	Projected Capacitive	Surface / Projected Capacitive
	Touches	1	1	2	2	10	10	10	1 / 10
	Surface	3H	3H	7H	7H	7H	7H	7H	7H
	Transparency	81.0%	81.0%	82.0%	82.0%	82.0%	82.0%	82.0%	92.0%
Environment	Operating Temp.	0 ~ +50° C	0 ~ +50° C	0 ~ +50° C	0 ~ +50° C	0 ~ +50° C	0 ~ +50° C	0 ~ +50° C	0 ~ +50° C
	Storage Temp.	-20 ~ +60° C	-20 ~ +60° C	-20 ~ +60° C	-20 ~ +60° C	-20 ~ +60° C	-20 ~ +60° C	-20 ~ +60° C	-20 ~ +60° C
	Humidity (RH)	90%	90%	90%	90%	90%	90%	90%	90%
Electrical & I/O	IO	VGA/DVI	VGA/DVI	VGA/DVI	VGA/DVI	VGA/DVI	VGA/DVI	VGA/DVI	VGA/DVI
	Power Consumption	8.0W	7.0W	19.0W	22.0W	31.0W	28.0W	38.0W	53.0W
	Power Supply	12V/3.5A	12V/3.5A	12V/3.5A	12V/3.5A	12V/3.5A	12V/3.5A	12V/3.5A	24V/5A

Industrial Display Systems

IDS-3200



Industrial Panel Mount Monitors

Features

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

Specifications

	IDS-3206	IDS-3210	IDS-3212(SVGA)	IDS-3212(XGA)	IDS-3215	IDS-3217	IDS-3218W	IDS-3219	IDS-3221W	
LCD Display	Size	6.5"	10.4"	12.1"	12.1"	15"	17"	18.5"	19"	21.5"
	Resolution	640 x 480, VGA	800 x 600, SVGA	800 x 600, SVGA	1024 x 768, XGA	1024 x 768, XGA	1280 x 1024, SXGA	1366 x 768, HD	1280 x 1024, SXGA	1920 x 1080, FHD
	Colors	262K/16.2M	262K/16.2M	262K/16.2M	262K/16.2M	262K/16.2M	16.7 M	16.7 M	16.7 M	16.7M
	Viewing Angle (H/V°)	160/140	160/140	160/140	160/140	160/140	170/160	170/160	170/160	178/178
	Contrast Ratio	600 : 1	700 : 1	700 : 1	700 : 1	700 : 1	800 : 1	1000:1	1000 : 1	1000:1
	Response Time (ms)	25	30	35	16	16	30	5	5	5
	Brightness	800 cd/m ²	400 cd/m ²	450 cd/m ²	600 cd/m ²	400 cd/m ²	350 cd/m ²	300 cd/m ²	350 cd/m ²	250cd/m ²
	Touchscreen	4-Wire Resistive	5-Wire Resistive	5-Wire Resistive	5-Wire Resistive	5-Wire Resistive	5-Wire Resistive	5-wire resistive and P-cap	5-Wire Resistive	5-wire resistive and P-Cap
	Backlight Type	LED	LED	LED	LED	LED	LED	LED	LED	LED
	Backlight Life (hrs)	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	30,000
Dimensions (mm)	219 x171.8x37.6	290.2x237.6x35.1	323.7x262.4x36.5	323.7x262.4x36.5	365x291x38	425x357.5x39	478 x 303 x 38	449.7x374.4x40.4	555 x 340 x 60	
Weight (kg)	1.5	3.85	4.2	4.2	4.5	5.8	5.2	7.6	6.4	
Touchscreen (Optional)	Durability	1 million touches	36 million touches	10 million touches	10 million touches	10 million touches	10 million touches	50 million touches	10 million touches	10 million touches
	Surface Hardness	3H	3H	3H	3H	3H	3H	5H	3H	3H
	Transparency	80%	82%	80%	80%	80%	80%	91%	80%	85%
Environment	Temperature (Operating)	0 ~ 50° C	- 20 ~ 60° C	-20 ~ 60° C	-20 ~ 60° C	-20 ~ 60° C	-20 ~ 60° C	0 ~ 55° C	0 ~ 45° C	0 ~ 45oC
	Temperature (Storage)	-20 ~ 60° C	-30 ~ 70° C	-30 ~ 70° C	-30 ~ 70° C	-30 ~ 70° C	-30 ~ 70° C	-20 ~60° C	-20 ~ 60° C	-20 ~ 60oC
	Humidity	5 ~ 95% @ 40° C, non-condensing	5 ~ 95% @ 40° C, non-condensing	5 ~ 95% @ 40° C, non-condensing	5 ~ 95% @ 40° C, non-condensing	5 ~ 95% @ 40° C, non-condensing	5 ~ 95% @ 40° C, non-condensing	5 ~ 90% @ 40° C, non-condensing	5 ~ 95% @ 40° C, non-condensing	90% @ 40oC non-condensing
System	I/O Ports	VGA x 1; DVI x 1; 12 V _{oc} Jack x 1; USB x 1 (USB is reserved for the connection to enable touch usage only)	VGA x 1; DVI x 1; 12 VDC Jack x 1; USB x 1; RS-232 x 1 (USB & RS-232 are reserved for the connection to enable touch usage only)							
	OSD	Keys: Power on/off, Menu/Enter, Left/Up, Right/Down, Exit/Auto, Source Menu Functions: Brightness, Contrast, Screen Setting, Color Temp, OSD Language, VGA/DVI, Reset, Auto Adjust								
	Power	36W power adapter, with AC 100 ~ 240V input and DC +12V @ 3A output				60W power adapter, with AC 100 ~ 240V input and DC +12V @ 5A output				

Gaming Display Solutions



Features

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

Applications

- Slot machine, lottery terminals, jackpot systems

Introduction

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

Selection Guide



		IDS-3119	IDS-3121GD	DSD-5028	IDS31-063W	IDS31-190PB
LCD Display	Size	19"	21.5"	28" (16:3)	6.3"	19" (Panoramic)
	Resolution	1280 x 1024, SXGA	1920 x 1080, FHD	1920 x 358	800 x 256	1680 x 342
	Colors	16.7M	16.7M	16.7M	262144	16.7M
	Viewing Angle (H/V°)	160/170	178/178	178/78	170 x 170	178/178
	Contrast Ratio	1000:1	1000:1	3000:1	400:1	2000:1
	Response Time (ms)	5 (Typ.)	14 (Typ.)	6.5 (Typ.)	5 (Typ.)	8 (Typ.)
	Brightness	350 (Typ.)	250 (Typ.)	700 (Typ.)	340 (Typ.)	300 (Typ.)
	Touchscreen	Resistive Touch	Surface Capacitive Touch	N/A	Projected Capacitive Touch	e2e SAW touch
	Backlight Type	LED	LED	LED	LED	LED
	Backlight Life (hrs)	50,000	30,000	50,000	30,000	30,000
Dimensions (mm)		438 (W) x 369.7 (H) x 35.8 (D)	546.6 (W) x 299.2 (H) x 48 (D)	736.6 (W) x 167.3 (H) x 44.35(D)	173 x 100 x 40.6	535.5 x 158 x 54.5
	Weight (kg)	5(estimation)	6.3	3	0.51	3.3
Touchscreen	Type	Resistive Touch	Surface Capacitive Touch	N/A	Projected Capacitive Touch	e2e SAW touch
	Durability	10 million touches	200 million touches	N/A	200 million touches	200 million touches
	Surface Hardness	3H	Hardness MoHS 7	N/A	Hardness MoHS 7	Hardness MoHS 7
	Transparency	80%	91.5% ± 1.5%	N/A	90%	90%
Environment	Temperature (Operating)	0 ~ 45° C	0 ~ 45° C	0 ~ 45° C	0 ~ 50° C	0 ~ 45° C
	Temperature (Storage)	-20 ~ 60° C	-20 ~ 60° C	-20 ~ 60° C	-20 ~ 60° C	-20 ~ 60° C
	Humidity	10 ~ 90% @ 40° C, non-condensing	10 ~ 90% @ 40° C, non-condensing	80%	10 ~ 90% @ 40° C	10 ~ 90% @ 40° C
System	I/O Ports	VGA/DVI	VGA/DVI	VGA/DVI/RS-232	VGA, DVI, USB	VGA, DVI, USB
	OSD	Keys: Power on/off, Menu/Enter, Left/Up, Right/Down, Exit/Auto, Source Menu Functions: Brightness, Contrast, Screen Setting, Color Temp, OSD Language, Reset, Auto Adjust		Keys: Power on/off, Source, Menu, Left/Up, Right/Down, Exit/Auto, Source Menu Functions: Brightness, Contrast, Screen Setting, Color Temp, OSD Language, Reset, Auto Adjust.	Keys: Power on/off, Menu/Enter, Left/Up, Right/Down, Exit/Auto, Source Menu Functions: Brightness, Contrast, Screen Setting, Color Temp, OSD Language, Reset, Auto Adjust	
	Power	60 W power adapter, with AC 100 ~ 240 V input and DC +12 V @ 5 A output		40 W	42 W power adapter, with AC 100 ~ 240V input and DC + 12V @ 3.5A output	

Industrial Display Systems

Medical Display Solutions



Features

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

Applications

- Ultrasound, clinical, surgical applications

Introduction

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

Selection Guide



		IDK-1115MD	IDK-1119MD	IDS-3115MD	IDS-3119MD	
LCD Display	Size	15"	19"	15"	19"	
	Resolution	1024 x 768	1280 x 1024	1024 x 768	1280 x 1024	
	Brightness	300 cd/m ²	300 cd/m ²	300 cd/m ²	300 cd/m ²	
	Colors	16.2M/262K colors	16.7M colors	16.2M/262K colors	16.7M colors	
	Viewing Angle (H/V°)	170/170	178/178	170/170	178/178	
	Contrast Ratio	1500:1	1000:1	1500:1	1000:1	
	Response Time (ms)	35	TBD	35	TBD	
	Backlight Type	LED	LED	LED	LED	
	Backlight Life (hrs)	50,000	50,000	50,000	50,000	
System	I/O Ports	VGA / DVI	VGA / DVI	VGA / DVI	VGA / DVI	
	Power	60W power adapter with AC 100-240V input and DC +12V @ 5A output				
	Dimensions (mm)	326.5 x 253.5 x 9.6	396 x 324 x 17	362 x 288 x 35.7	438 x 369.7 x 35.8	
	Weight (g)	835	1600	4000	5140	
	Temperature (Operating)	0 ~ 60° C	0 ~ 50° C	0 ~ 60° C	0 ~ 45° C	
	OSD	Color Management Program	•	•	•	•
		Color Temperature	•	•	•	•
		Color Gamma	•	•	•	•
		Gray Scale	•	•	•	•

Digital Signage Display Solutions



Features

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

Applications

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

Introduction

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

Selection Guide



		DSD-3032	DSD-3042	DSD-3055	DSD-5028	DSD-5038
LCD Display	Size	32"	42"	55"	28"	38"
	Resolution	1920 x 1080	1920 x 1080	1920 x 1080	1920 x 358	1920 x 538
	Colors	16.7 M	1073M	1073M	16.7M	16.7M
	Viewing Angle (H/V°)	178/178	178/178	178/178	178/178	176/176
	Contrast Ratio	3000:1	4000:1	4000:1	3000:1	4000:1
	Response Time (ms)	8	8	6.5	6.5	9.5
	Brightness	350	500	450	700	800
	Backlight Type	LED	LED	LED	LED	LED
	Backlight Life (hrs)	50000	50000	50000	50000	50000
	Dimensions (mm)	743.6 x 438.11 x 73	961 x 555 x 72.7	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	18	31	3	6.4	
Touchscreen (Optional)	Type	Optical Touch	Optical Touch	Optical Touch	N/A	N/A
	Durability	10 million touches	10 million touches	10 million touches	N/A	N/A
	Surface Hardness	7H	7H	7H	N/A	N/A
	Transparency	92%	92%	92%	N/A	N/A
Environment	Temperature (Operating)	5 ~ 45° C	5 ~ 45° C	5 ~ 45° C	0 ~ 45° C	0 ~ 45° C
	Temperature (Storage)	-20 ~ 55° C	-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	20 ~ 80 % RH
System	I/O Ports	HDMI/VGA/DisplayPort	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-485/Remote	RS-232	RS-232
	Power Consumption (W)	70	120	145	40	76

Industrial Storage Modules



Model Name	SQF-S25 830	SQF-S25 910S	SQF-SM8 830	SQF-C25 910C	SQF-CM8 910C	SQF-S25 630	SQF-SM4 630	SQF-SM6 630	SQF-SM8 630	SQF-SMS 630
Interface	SATA	SATA	SATA	PCIe	PCIe	SATA	SATA	SATA	SATA	SATA
Transfer Protocol	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s	PCIe Gen. III x4	PCIe Gen. III x4	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s
Connector	7 + 15 pin SATA	7 + 15 pin SATA	M.2 B + M key	U.2 (SFF-8639)	M.2 B + M key	7 + 15 pin SATA	M.2 B + M Key	M.2 B + M Key	M.2 B + M Key	Mini PCIe with SATA pin-out
Flash Type	SLC / Ultra MLC / MLC	SLC / Ultra MLC / MLC	SLC / Ultra MLC / MLC	SLC / Ultra MLC / MLC	SLC / Ultra MLC / MLC	SLC / Ultra MLC / MLC	SLC / Ultra MLC / MLC	SLC / Ultra MLC / MLC	SLC / Ultra MLC / MLC	SLC / Ultra MLC / MLC
Maximum Power Consumption	1,000 mA	1,000 mA	500 mA	750 mA	2750 mA	400mA	500mA	600mA	600mA	500 mA
Capacity	64GB ~ 2TB	200GB / 400GB / 800GB / 1600GB	64GB ~ 1TB	50GB ~ 1600GB	50GB ~ 800GB	1GB - 256GB	8GB - 256GB	1GB - 256GB	1G-256GB	1GB ~ 256GB
Maximum Read / Write Performance (MB/s)	Sequential: 550 / 530 Burst IOPS@4K: 100K / 100K Sustain IOPS@4K: 10K / 10K	Sequential: 550 / 530 Burst IOPS@4K: 100K / 100K Sustain IOPS@4K: 20K / 20K	Sequential: 530 / 500 Burst IOPS@4K: 90K / 90K Sustain IOPS@4K: 8K / 8K	Sequential: 2,500 / 1,300 Burst IOPS@4K: 300K / 250K Sustain IOPS@4K: 25K / 25K	Sequential: 2,500 / 1,300 Burst IOPS@4K: 300K / 250K Sustain IOPS@4K: 25K / 25K	SLC: 500/150 Ultra MLC: 520/190 MLC: 510/190	SLC: 500/150 Ultra MLC: 520/170 MLC: 490/170	SLC: 500/150 Ultra MLC: 520/190 MLC: 510/190	SLC: 500/150 Ultra MLC: 520/190 MLC: 500/190	SLC: 500/150 Ultra MLC: 520/195 MLC: 510/190
Op. Temperature	0 ~ 70° C / -40 ~ 85° C	0 ~ 70° C / -40 ~ 85° C	0 ~ 70° C / -40 ~ 85° C	0 ~ 70° C	0 ~ 70° C	0 ~ 70° C / -40° C ~ 85° C	0 ~ 70° C / -40° C ~ 85° C	0 ~ 70° C / -40° C ~ 85° C	0 ~ 70° C / -40° C ~ 85° C	0 ~ 70° C / -40 ~ 85° C
SQFlash Utility	Supported	Supported	Supported	Supported	Supported	Supported	Supported	Supported	Supported	Supported
Shock	1,500G, Peak / 0.5 ms	1,500G, Peak / 0.5 ms	1,500G, Peak / 0.5 ms	1,500G, Peak / 0.5 ms	1,500G, Peak / 0.5 ms	1,500G, Peak / 0.5 ms	1,500G, Peak / 0.5 ms	1,500G, Peak / 0.5 ms	1,500G, Peak / 0.5 ms	1,500G, Peak / 0.5 ms
Vibration	20G, Peak / 80 ~ 2000Hz	20G, Peak / 80 ~ 2000Hz	20G, Peak / 80 ~ 2000Hz	20G, Peak / 80 ~ 2000Hz	20G, Peak / 80 ~ 2000Hz	20G, Peak / 80 ~ 2000Hz	20G, Peak / 80 ~ 2000Hz	20G, Peak / 80 ~ 2000Hz	20G, Peak / 80 ~ 2000Hz	20G, Peak / 80 ~ 2,000 Hz

Complete Story Security

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

Flash Lock

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

Monitoring



SMART

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



Model Name	SQF-SHM 630	SQF-SLM 630	SQF-SDM 630	SQF-S10 630	SQF-SUS 630	SQF-P10 P8/P9	SQF-PDM	SQF-P25 P9	SQF-1SD	SQF-UDM
Interface	SATA	SATA	SATA	SATA	SATA	IDE / PCMCIA	IDE	IDE	SD	USB
Transfer Protocol	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s	UDMA 2 / UDMA 4 / UDMA 5	UDMA 2 / UDMA 4	UDMA 4	SDIO	USB 2.0
Connector	Mini PCIe with SATA pin-out	7 + 15 pin SATA	7-pin Female	CFast Type-I	Onboard	CF Type-I	44-pin Female / 40-pin Female	44-pin Male	SD 9-pin	10-pin, 2.54mm pitch
Flash Type	SLC / Ultra MLC / MLC	SLC / Ultra MLC / MLC	SLC / Ultra MLC / MLC	SLC / Ultra MLC / MLC	Ultra MLC / MLC	SLC / Ultra MLC / MLC	SLC	SLC / MLC	SLC / MLC	SLC / MLC
Maximum Power Consumption	480 mA	370 mA	480 mA	480 mA	500 mA	160 mA	160 mA	210 mA	100 mA	145 mA
Capacity	1GB ~ 128GB	1GB ~ 256GB	1GB ~ 128GB	1GB ~ 128GB	2GB ~ 64GB	256 MB / 512 GB / 1 GB / 2 GB / 4 GB / 8 GB / 16 GB / 32 GB / 64 GB	1 GB / 2 GB / 4 GB / 8 GB / 16 GB	4 GB / 8 GB / 16 GB / 32 GB / 64 GB / 128 GB / 256GB	1GB ~ 128GB	1 GB / 2 GB / 4 GB / 8 GB / 16 GB / 32 GB / 64 GB
Maximum Read / Write Performance (MB/s)	SLC: 65/60 Ultra MLC: 520/195 MLC: 510/190	SLC: 500/150 Ultra MLC: 520/195 MLC: 510/190	SLC: 500/150 Ultra MLC: 520/195 MLC: 520/200	SLC: 500/150 Ultra MLC: 520/195 MLC: 520/195	Ultra MLC: 490/190 MLC: 480/190	4 channel: 83/87 2 channel: 43/40 1 channel: 22/15	2 channel: 40/29	SLC: 65/55 MLC: 63/28	SLC: 25/15 MLC: 22/10	SLC: 32/26 MLC: 30/12
Op. Temperature	0 ~ 70° C / -40 ~ 85° C	0 ~ 70° C / -40 ~ 85° C	0 ~ 70° C / -40 ~ 85° C	0 ~ 70° C / -40 ~ 85° C	0 ~ 70° C / -40 ~ 85° C	0 ~ 70° C / -40 ~ 85° C	0 ~ 70° C / -40 ~ 85° C	0 ~ 70° C / -40 ~ 85° C	0 ~ 70° C / -40 ~ 85° C	0 ~ 70° C / -40 ~ 85° C
SQFlash Utility	Supported	Supported	Supported	Supported	Supported	Supported	Supported	Supported	Not Supported	Not Supported
Shock	1,500G, Peak / 0.5 ms	1,500G, Peak / 0.5 ms	1,500G, Peak / 0.5 ms	1,500G, Peak / 0.5 ms	1,500G, Peak / 0.5 ms	1,500G, Peak / 0.5 ms	1,500G, Peak / 0.5 ms	1,500G, Peak / 0.5 ms	1,500G, Peak / 0.5 ms	1,500G, Peak / 0.5 ms
Vibration	20G, Peak / 80 ~ 2,000 Hz	20G, Peak / 80 ~ 2,000 Hz	20G, Peak / 80 ~ 2,000 Hz	20G, Peak / 80 ~ 2,000 Hz	20G, Peak / 80 ~ 2,000 Hz	20G, Peak / 80 ~ 2,000 Hz	20G, Peak / 80 ~ 2,000 Hz	20G, Peak / 80 ~ 2,000 Hz	5G, Peak / 10 ~ 2,000 Hz	20G, Peak / 80 ~ 2,000 Hz

AES

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

Flash Vault

Protect data in SQFlash from unauthorized accessing or modification

Software Protection

Data Security



Security ID

Protect software intellectual property from duplication or unauthorized usage

Write Protect

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

Emergency Erase

Erasing of all data within 10ms for critical situations.

Embedded Wireless Modules

WiFi



Model Name	EWM-W151H	EWM-W142	EWM-W135	EWM-W161H	EWM-W153H	EWM-W155H	EWM-W150H	EWM-W157H	EWM-W158F	EWM-W160M2
Form Factor	Half Size Mini PCIe Card	Full/Half size Mini PCIe Card	Full/Half size Mini PCIe Card	Half size Mini PCIe Card	Half Size Mini PCIe Card	Half Size Mini PCIe Card	Half Size Mini PCIe Card	Half Size Mini PCIe Card	Full Size Mini PCIe Card	M.2 2230 (A-E key)
Wireless Standard	802.11 b/g/n	802.11 b/g/n	802.11 a/b/g/n	802.11 a/b/g/n	802.11 b/g/n	802.11 a/b/g/n	802.11 b/g/n	802.11 ac/a/b/g/n	802.11 a/b/g/n	802.11 b/g/n
Chipset	Realtek RTL8188EE	Atheros AR9287	Atheros AR9382	Atheros AR9462	Atheros AR9485 and AR3012	Atheros AR9462	Ralink RT5390	Realtek RTL8821AE	Atheros AR9592-AR1B	Realtek RTL8188EE
Signal Protocol	PCIe Differential	PCIe Differential	PCIe Differential	WiFi: PCIe & BT: USB Differential	WiFi: PCIe & BT: USB Differential	WiFi: PCIe & BT: USB Differential	USB Differential	WiFi: PCIe BT: USB Differential	PCIe Differential	PCIe Differential
Antenna	1 x U.FL connectors	2 x U.FL connectors	2 x U.FL connectors	2 x U.FL connectors	2 x U.FL connectors	2 x U.FL connectors	2 x U.FL connectors	2 x U.FL connectors	2 x U.FL connectors	2 x U.FL connectors
Operating Voltage	DC 3.3V ± 5%	DC 3.3V ± 5%	DC 3.3V ± 5%	DC 3.3V ± 5%	DC 3.3V ± 5%	DC 3.3V ± 5%	DC 3.3V ± 5%	DC 3.3V ± 5%	DC 3.3V ± 5%	DC 3.3V ± 5%
Temperature Range	0 ~ 80° C (Operating)	0 ~ 60° C (Operating)	-10 ~ 70° C (Operating)	-10 ~ 70° C (Operating)	0 ~ 60° C (Operating)	0 ~ 60° C (Operating)	0 ~ 70° C (Operating)	0 ~ 70° C (Operating)	-40 ~ 85° C (Operating)	0 ~ 70° C (Operating)
Dimensions (L x W x H)	26.65 x 29.85 x 3.05 mm	26.65 x 29.85 x 2.27 mm	26.65 x 29.85 x 3.25 mm	26.65 x 29.85 x 3.25 mm	26.65 x 29.85 x 3.75 mm	26.80 x 30.00 x 3.75 mm	26.65 x 29.85 x 3.05 mm	26.65 x 29.85 x 3.25 mm	50.8 x 29.85 x 2.86 mm	22 x 30 x 2.3 mm
Security	64/128-bit WEP, WPA, WPA2	64/128/152-bit WEP, WPA, WPA2, 802.1x, TKIP and AES	64/128/152-bit WEP, WPA, WPA2, 802.1x, TKIP and AES	64/128-bit WEP, AES-CCMP,TKIP; WPA, WPA2, 802.1X,EAP-SIM, EAP-AKA	64/128-bit WEP, AES-CCMP,TKIP; WPA, WPA2, 802.1X,EAP-SIM, EAP-AKA	64/128-bit WEP, AES-CCMP,TKIP; WPA, WPA2, 802.1X,EAP-SIM, EAP-AKA	64/128-bit WEP, WPA, WPA2	64/128-bit WEP, WPA, WPA2, 802.1x, TKIP and AES	64/128-bit WEP, WPA, WPA2, 802.1x, TKIP and AES	64/128-bit WEP, WPA, WPA2, 802.1x, TKIP and AES
SISO/MIMO	1T1R	2T x 2R	2T x 2R	2T x 2R	1T1R	2T x 2R	1T1R	1T1R	2T2R	1T1R
Data Rate	150Mbps	300Mbps	300Mbps	300Mbps	150Mbps	300Mbps	150Mbps	433Mbps	300Mbps	150Mbps
Bluetooth	-	-	-	2.1, 2.1+EDR, 3.0, 3.0+HS, 4.0 (BLE)	2.1, 2.1+EDR, 3.0, 3.0+HS, 4.0 (BLE)	2.1, 2.1+EDR, 3.0, 3.0+HS, 4.0 (BLE)	-	2.1, 2.1+EDR, 3.0, 3.0+HS, 4.0 (BLE)	-	-
O.S Supported	Win 7/ 8/ 8.1/ 10	Win 7/ 8/ 8.1	Win 7/ 8/ 8.1	Win 7/ 8/ 8.1/10	Win 7/ 8/ 8.1/10	Win 7/ 8/ 8.1/10	Win 7/ 8/ 8.1	Win 7/8/8.1/10	Win 7/ 8/ 8.1	Win 7/ 8/ 8.1/ 10
Host Type	PCIe Mini card	PCIe Mini card	PCIe Mini card	PCIe Mini card	PCIe Mini card	PCIe Mini card	PCIe Mini card	PCIe Mini card	PCIe Mini card	PCIe M.2 card

Cellular



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)
Acquisition	Cold starts: 29s / Aided starts: 5s / Reacquisition: 1s	Cold starts: 26s / Aided starts: 2
Accuracy	Position 2.5m / SBAS 2.0m	Position 2.5m / SBAS 2.0m
Sensitivity	Tracking: -162 dBm / Cold starts: -148 dBm / Reacquisition: -148 dBm	Tracking: -167 dBm / Cold starts: -148 dBm / Reacquisition: -160 dBm

Embedded Memory Modules



Model Name	SQR-SD41	SQR-SD41-ECC	SQR-UD41	SQR-SD4M	SQR-SD3M
Category	DDR4	DDR4	DDR4	DDR4	DDR3
Clock Speed	2133Mbps	2133Mbps	2133Mbps	2133Mbps	1333/1600 Mbps
Pin/DIMM	260pin SO-DIMM	260pin SO-DIMM	288pin U-DIMM	260pin SO-DIMM	204pin SO-DIMM
Chip Package	FBGA	FBGA	FBGA	FBGA	FBGA
Density	4GB to 16GB	4GB to 16GB	4GB to 16GB	4G to 16GB	2GB to 8GB
Power Supply	SSTL_12	SSTL_12	SSTL_12	SSTL_12	SSTL_15
Voltage	1.2V +/- 0.06V	1.2V +/- 0.06V	1.2V +/- 0.06V	1.2V +/- 0.06V	1.35V ± 0.1V 1.5V ± 0.075V
Operation Temp	-40° C to +85° C	-40° C to +85° C	-40° C to +85° C	-20° C to +85° C	-20° C to +85° C
Dimension (mm)	69.6 x 30	69.6 x 30	133.35 x 31.25	69.6 x 30	67.6 x 30



Model Name	SQR-SD31	SQR-UD31	SQR-SD31-ECC	SQR-SD21
Category	DDR3	DDR3	DDR3	DDR2
Clock Speed	1333/1600 Mbps	1333 Mbps	1333/1600 Mbps	667 Mbps
Pin/DIMM	204pin SO-DIMM	240pin DIMM	204pin SO-DIMM	200pin SO-DIMM
Chip Package	FBGA	FBGA	FBGA	FBGA
Density	1GB to 8GB	1GB to 4GB	2GB to 8GB	1GB to 2GB
Power Supply	SSTL_15	SSTL_15	SSTL_15	SSTL_18
Voltage	1.35V ± 0.1V 1.5V ± 0.075V	1.5V ± 0.075V	1.5V ± 0.075V	1.8V ± 0.1V
Operation Temp	-40° C to +85° C	-40° C to +85° C	-40° C to +85° C	-40° C to +85° C
Dimension (mm)	67.6 x 30	133.35 x 30	67.6 x 30	67.6 x 30

SQRAM Qualification Process



Different sorting criteria enables different product specifications.



100% Screening Test

To sorting out defective components, 100% screening test is an essential part of SQRAM for industrial grade reliability and quality assurance.



Thermal Shock Test

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



Low Temperature Test

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



Room Temperature

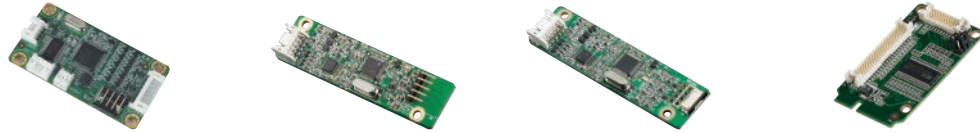
Final stage is to test all DRAM modules to pass the memory test without any error bit detected under room temperature conditions.



High Temperature Test

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

Embedded Extension Modules



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



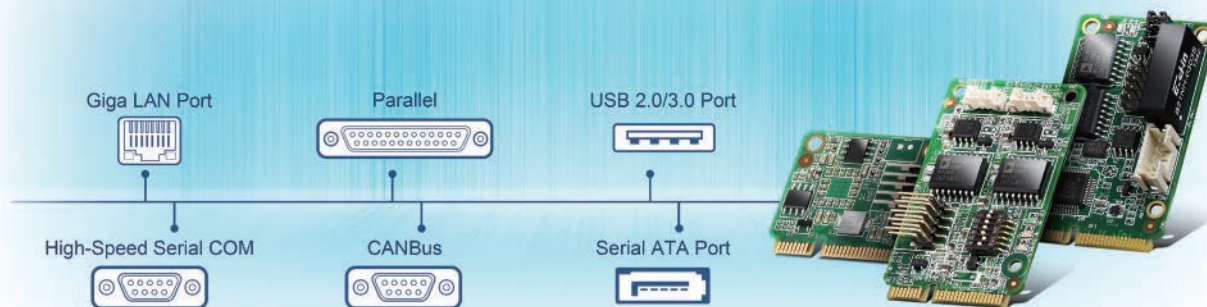
Model Name	EXM-310 (EMIO-100P)	EXM-311 (EMIO-100S)	EXM-320 (EMCB-200U)	EXM-321 (EMIO-210S)	EXM-322 (EMIO-220S)
Type	USB to 1-Ch Parallel port	USB to 1-Ch High Speed Serial COM port	USB to 2-Ch CANBus port	USB to 2-Ch High Speed RS-232 port	USB to 2-Ch High Speed RS-422/RS-485 port
Communication Interface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



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

Embedded Extension Modules

Wide Choice of Specific I/O Interface



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

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Pune	91-20-3948-2075

Indonesia

Jakarta	62-21-751-1939
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Australia

Toll Free	1300-308-531
Melbourne	61-3-9797-0100
Sydney	61-2-9476-9300

Europe

Germany

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

France

Paris	33-1-4119-4666
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Italy

Milano	39-02-9544-961
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Benelux & Nordics

Breda	31-76-523-3100
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UK

Newcastle	44-0-191-262-4844
London	44-0-870-493-1433

Poland

Warsaw	48-22-31-51-100
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Russia

Moscow	8-800-555-01-50
St. Petersburg	8-800-555-81-20

Czech Republic

Ústí nad Orlicí	420-465-521-020
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Ireland

Oranmore	353-91-792444
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Americas

North America

Toll Free	1-888-576-9668
Cincinnati	1-513-742-8895
Milpitas	1-408-519-3898
Irvine	1-949-420-2500
Ottawa	1-815-434-8731

Brazil

Toll Free	0800-770-5355
São Paulo	55-11-5592-5355

Mexico

Toll Free	1-800-467-2415
Mexico City	52-55-6275-2727

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