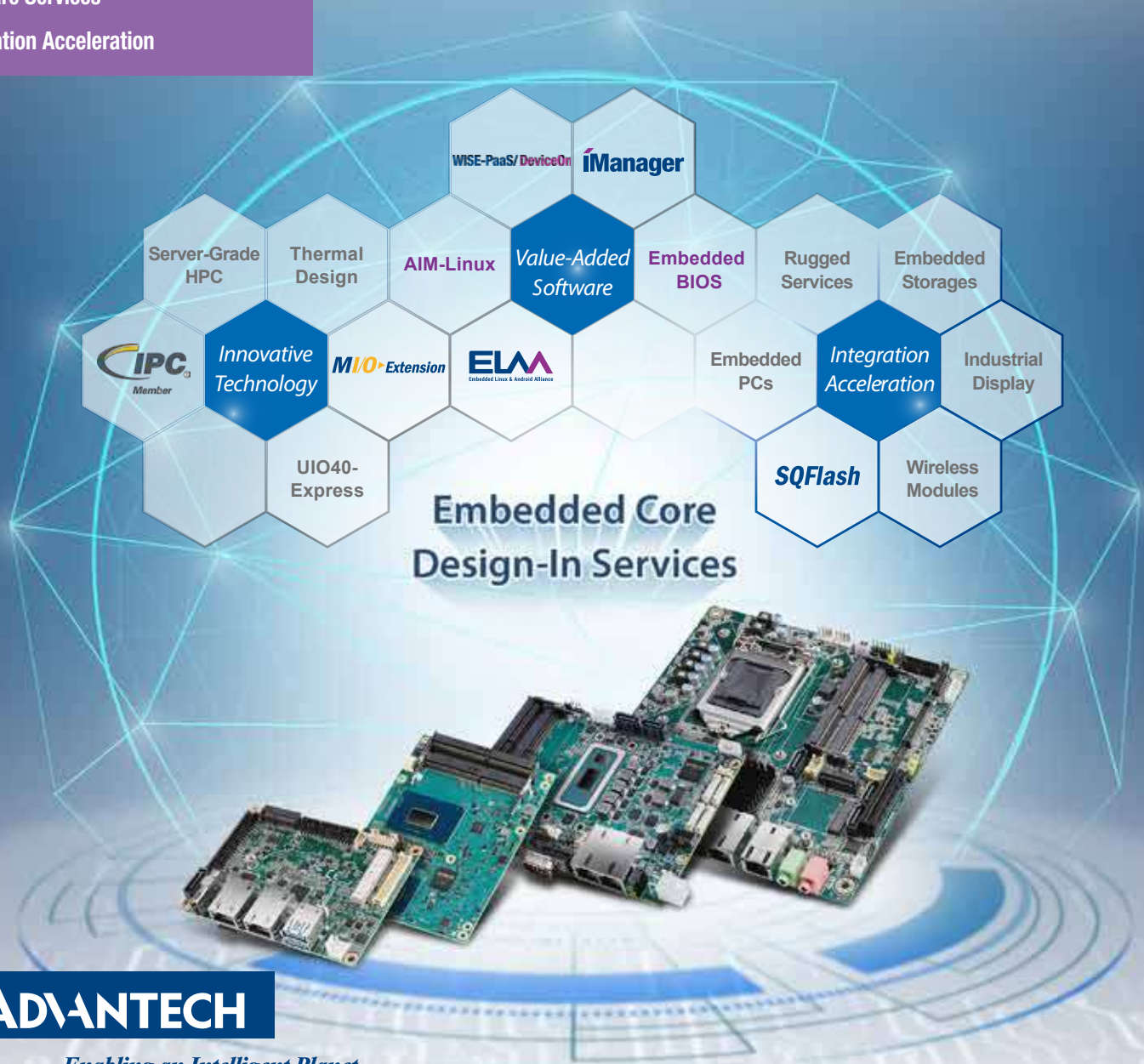


Embedded Core Design-In Services

Leading Embedded Core Innovation
& Design-In Services

- / Innovative Technology
- / Software Services
- / Integration Acceleration

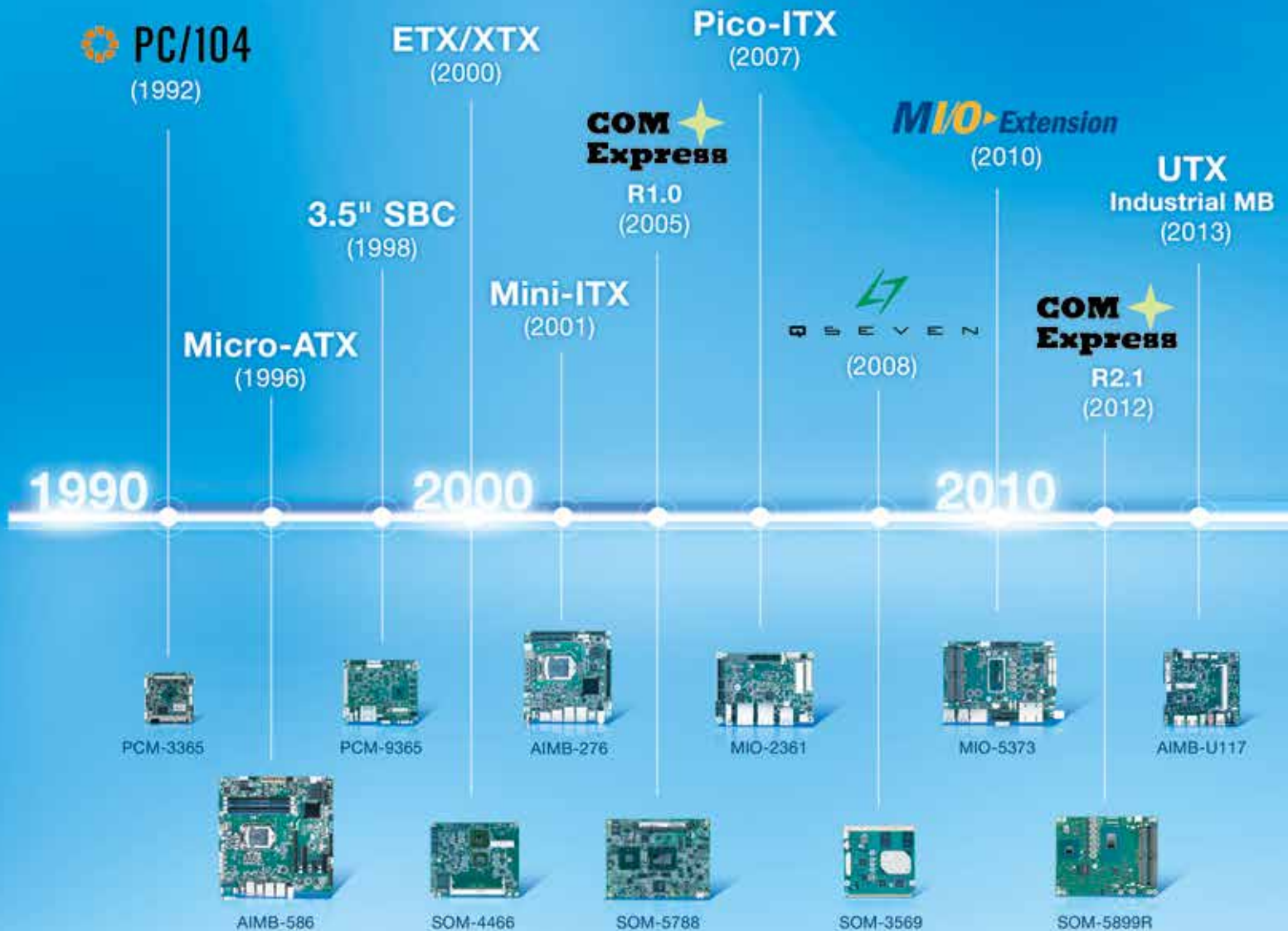


ADVANTECH

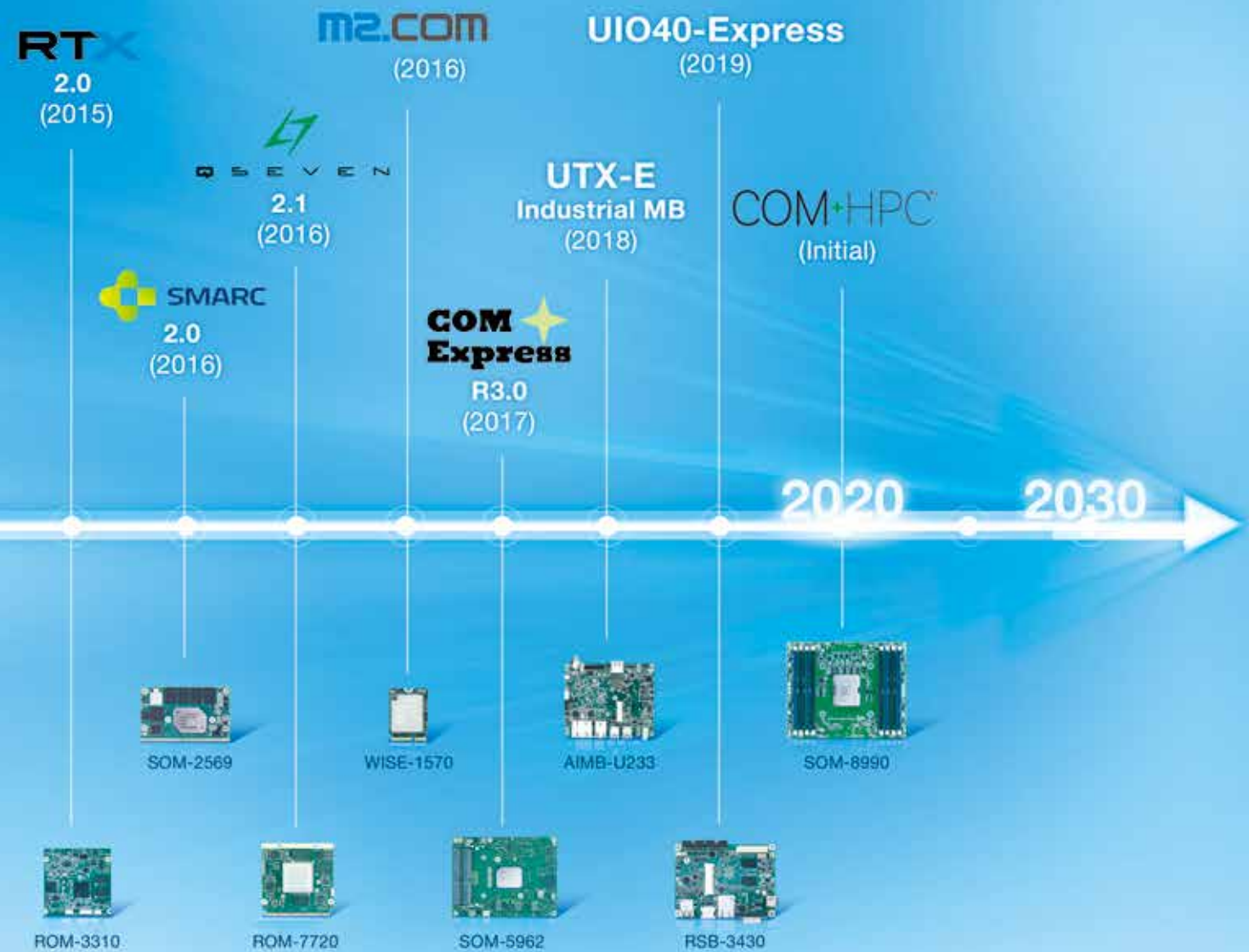
Enabling an Intelligent Planet

www.advantech.com

Advantech Embedded



Platform Innovation



Leading Embedded Core Innovation & Design-In

The development of IoT applications has become more specialist and differentiated. This makes the resources of the IoT services we provide. Embedded boards are the core component of all IoT applications, so naturally IoT solution developers have greater expectations on the features provide that allow them to reduce the time and resources required for system integration.

Advantech's Embedded Core Design-In Service is designed to respond to these new expectations from IoT solution developers. Embedded Core software add-on services, which are offered with all Advantech embedded boards. These services help developers to integrate their systems and

Innovative technology, embedded software, and peripheral integration services are the three major components of Advantech's Embedded technology and embedded software, with value added services that help customers integrate IoT application software with our embedded of peripherals, you won't need to worry about compatibility and longevity issues. Advantech Embedded Design-In Service is designed to help you deliver IoT solutions in the fastest time.

Faster Time-to-Market

Leading Innovation

Inter



Industrial Motherboards

Computer On Module

Embedded Single Board Computers

Arm-Based Computing

Industrial Flash & Memory

Embedded PCs

Embedded Software

*Part of services in this publication are optional offerings, please contact Advantech for further information.

Services

more tailored to our customer's needs.
and services that embedded boards can

Design-In Service is a series of hardware and
achieve faster time to market.

Core Design-In Service. We offer the latest
boards. And with our comprehensive range
overcome any integration difficulties and help

Integration Acceleration

Platforms

Embedded Wireless Module

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Full Scale Embedded Computing Platforms

Innovative board & modular solutions with x86 and Arm technology

Advantech provides full scale x86 and Arm-based computing platforms covering various form-factors from MicroATX, mini-ITX, 3.5" SBC, Pico-ITX, to COM Express, Qseven, and SAMRC modules. It not only satisfies a variety of applications in terms of performance and dimensions, but also meets various I/O needs with expansion capacity aimed at vertical markets. Through our wide standard board offerings, customers get the latest platforms, most up-to-date technology, a lower total cost ownership (TCO), and faster time-to-market.



Advantech Embedded Computing Platforms Give You:

Leading Technology

- Executive member of industrial standards
- Partnerships with hardware and software vendors
- Early access to programs on the latest platforms

Innovative Solutions

- Innovative, high-end thermal solutions
- MIO/UIO modularized solutions that lower TCO
- Create RTX/UTX form factors for industrial needs

Powerful Reliability

- Wide-temperature operation of -40~85°C
- Conformal coating service for harsh environments
- IPC-A-610G Class 3 assembly quality

Design-in Services

- Local design-in consultant service
- Taiwan & China design centers for onsite joint-design
- Expertise in ODM services

Server-Grade Solutions in Edge Computing

Innovative solutions that fulfill extreme performance demands

Distributed computing structures have been proven to outperform centralized ones. Nowadays, advanced analytics and massive data processing place a greater burden on local edge computers compared with remote cloud servers. A server-grade edge platform should come to grips with intricate computing tasks and the coordination of all endpoints.



Server-Grade Solutions Give You:

Connectivity – Wider bandwidth and faster transmission rates

- 10 Gigabit Ethernet delivers more throughput for end devices
- PCI Express Gen 5 provides top-level performance for high-end applications

Performance – Powerful CPU and large memory size

- Up to 16 cores with server-grade CPU capability
- Reliable ECC memory with up to 1TB capacity

Manageability – Secure maintenance

- Simply integrate iManager 2.0 API in the OS to enhance system security and reliability
- Remote access system edge devices without OS operation by server technologies IPMI & BMC

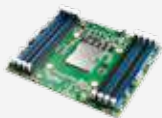
Reliability – Designed for industrial applications

- Extended temperature operation from -40°C ~ 85°C
- MIL-STD-810G compliant with customized test profile

Product Highlights

Computing on Module

High Scalability x Fast Deployment x Easy Maintenance



COM-HPC
SOM-8990

- Intel Xeon D-2100
- 512GB memory
- 45 pairs PCIe & 4 ports with 10Gbase-KR



COM-Express Type 7
SOM-5992

- Intel Xeon D-1500
- 128GB memory
- Operating Temperature -40~85°C



Mini-ITX
AIMB-290

- Intel C3000 SoC Up to 16 Cores
- Supports 10GbE, IPMI2.0
- Supports 6 SATA storages



Micro-ATX
AIMB-586

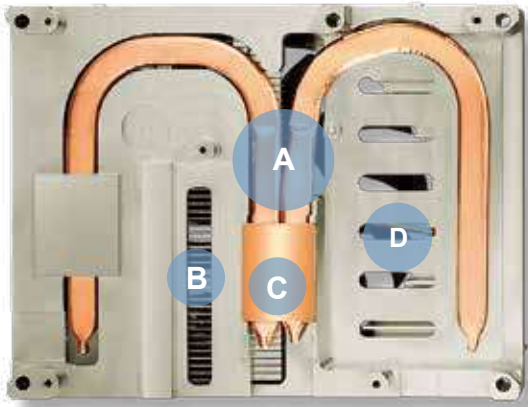
- Intel 8th/9th Gen Xeon/CORE-i
- Supports 8 SATA storage
- Supports RAID 0/1/5/10

Advanced High Efficiency Cooling Solutions

Thermal design innovation for extreme computing performance

To fulfill multiple requirements for high computing performance in medical, factory automation, and edge computing applications, any thermal solution must tick several boxes such as good heat dissipation, low noise margins, and a compact heat sink. Advantech's Quadro Flow Cooling System (QFCS) provides a low profile and cost-effective thermal solution that meets customer requirements.

QFCS is an advanced cooling heatsink which offers ultra-cooling performance, 27mm compact size, and quiet noise out of only 45dB. The mixed fin and utilizing heat pipe design offers a 360° airflow for reliable heat dissipation and quiet operation. The dynamic doubled-layer screw design provides a super reliable hard contact between CPU and heatsink to meet strain gage criteria and prevent board bending. With a slim design and excellent cooling ability, customers can integrate QFCS quickly to speed up their product development.



- A Two-phase change heat pipe
- B Mixed heat sink
- C CPU hard contact
- D Vertical airflow



Lightweight: 250 gram



Ultra slim: 27mm



Silent: 45dB



CPU no throttling: 45W/60°C

QFCS Give You:

High Efficiency Cooling System

- Integrated heat pipe & copper block
- Lower heat resistance for quick heat dissipation
- Mixed fin & venting hole for best airflow

Application Friendly Design

- Slim and powerful for high-end platform
- Quiet with smart fan management
- Reliable assembly with precise damping calculation

Comprehensive Validation

- Thermal simulation for accurate design
- Strain gage valid for board protection
- Pre-assembly with board and 100% test for quality control

Solid Design Process

Design & Simulation

Expert design with simulation



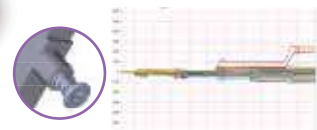
Performance Verification

Precise calculation for ultra low heat resistance



Reliability Validation

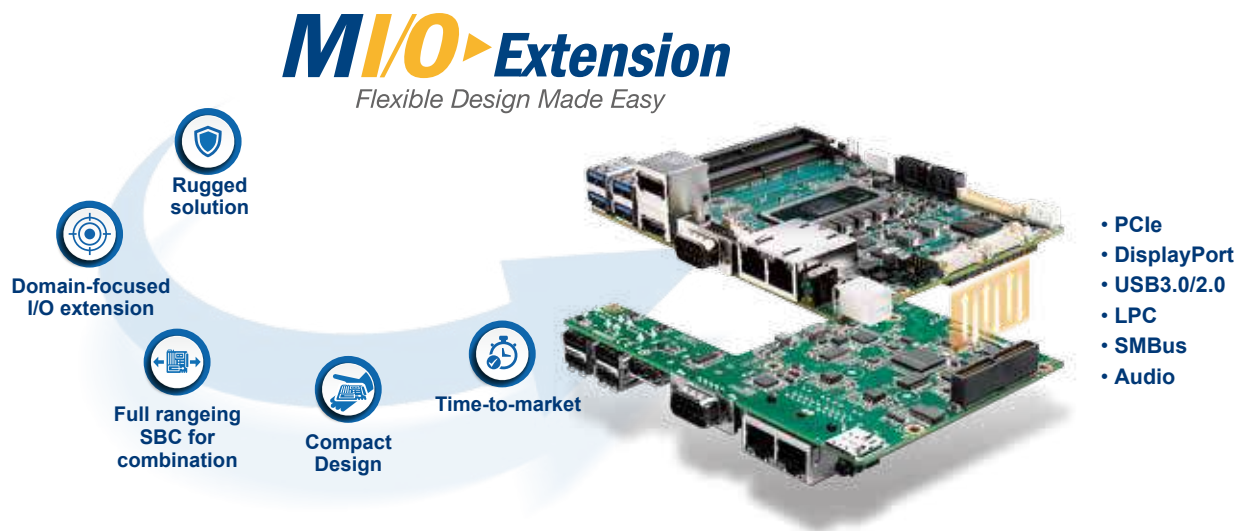
Better strain gauge for reliable operation



MIO - Domain Focused I/O Extension Solution

Quick select I/O combination for vertical applications

Advantech MIO Extension solutions provide a fastest way to satisfy specific I/O requirements for various vertical applications while lowering the total cost of ownership and shortening time-to-market. MIO Extension uses a board-to-board structure which guarantees mating reliability under industrial and embedded scenarios. An 80-pin connector encloses sufficient interfaces like PCIe1, DisplayPort, USB, LPC, and SMBus. There are many off-the-shelf modules which target a wide array of vertical applications and combine with Advantech's standard MIO-SBC product to achieve customer solutions. Rich design documents and ODM service allows customers to develop their own I/O modules or outsource to us.



MIO Extension Solutions Give You:

Full-Range SBCs

- Various computing performance range from Atom, Core, to Xeon
- Compact combination with 3.5" SBC and Pico-ITX

Off-the-Shelf Modules

- I/O targeting wide variety of applications
- Lower total cost of ownership
- Faster time-to-market
- Rugged B/B connection

Design-in Services

- Available IP building blocks
- 2D/3D mechanical drawing
- Schematic design guide & layout checklist

Product Highlights

Smart Parking



MIO-5373 **MIOe-210**

Intel 8th Gen. Core ULT
Total up to 8 UARTs

Transportation Surveillance



MIO-5393 **MIOe-3674**

Intel 9th Gen. Xeon/Core
MIO Extend 4 PoE

In Vitro Diagnostics



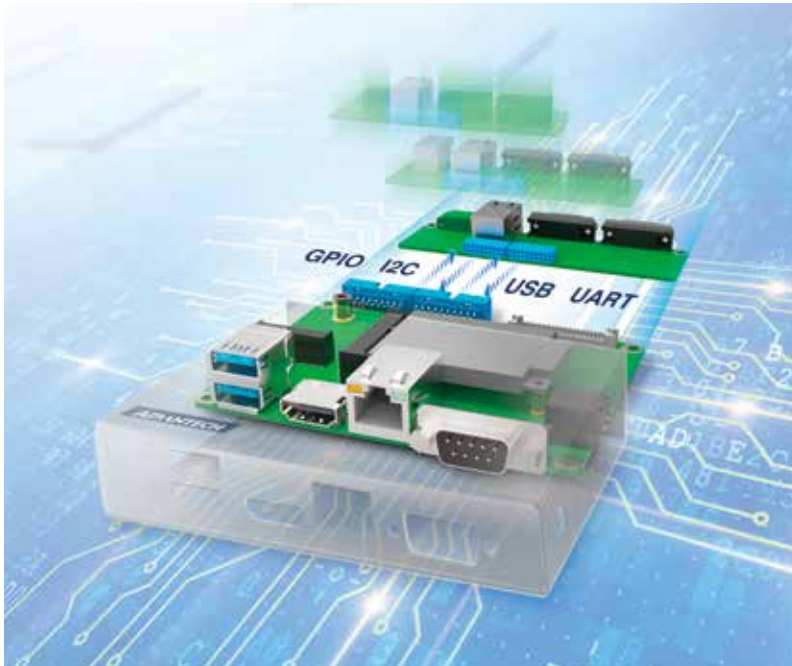
MIO-5350 **MIOe-3680**

Intel Pentium/Celeron
MIO Extend 2 isolated CANBus

UIO40-Express Extension Solutions

Quickly build Arm-based systems for your vertical applications

UIO40-Express is a new I/O extension standard created by Advantech for accelerating the development of Arm-based solutions. Advantech provides a series of UIO40-Express I/O boards ready for different vertical applications. They allow customers to build their Arm-based system quickly and flexibly by selecting the I/O and chassis they need. With Advantech's AIM-Linux and WISE-PaaS/DeviceOn support, UIO40-Express is the best time-to-market solution for your Arm-based embedded system.



UIO40-Express Give You:

Compact Structure

- 2.5" Pico-ITX core main board
- Unified edge I/O definition
- Complete wireless expansion

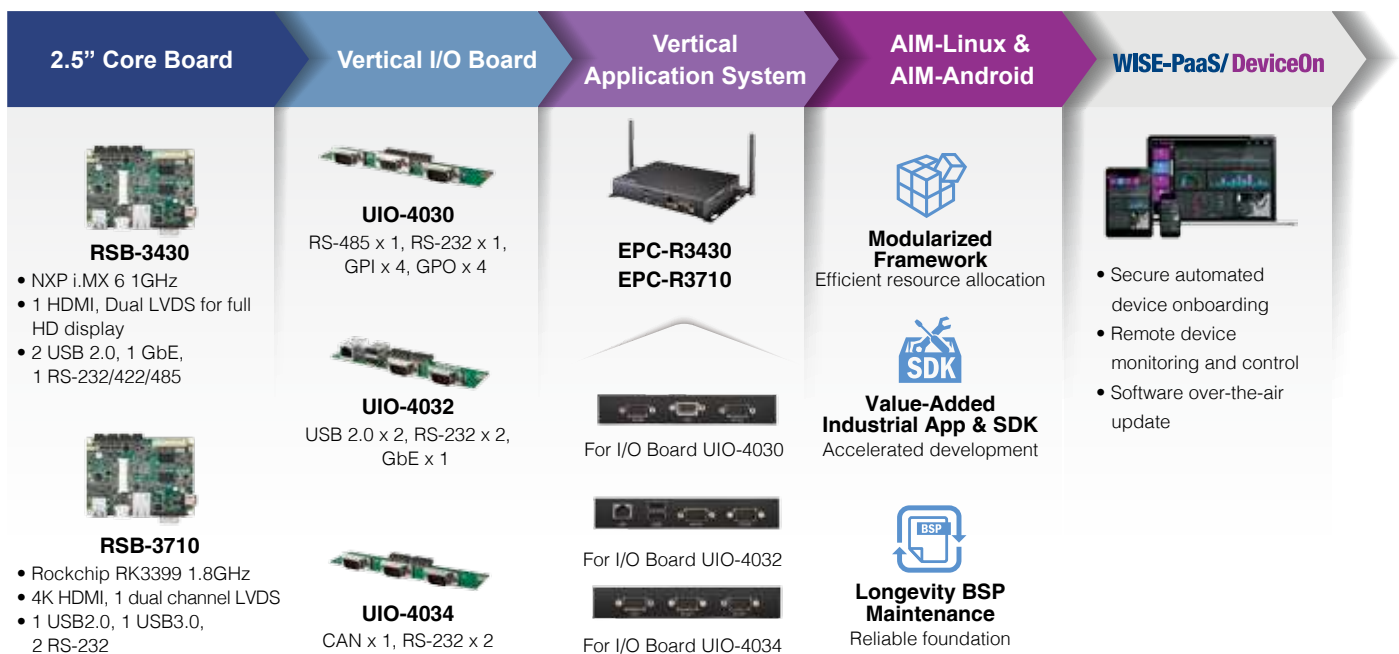
Various I/O Expansion

- Unified I/O expansion on 2.5" core board
UIO40-Express I/O interface:
4 USB, 4 GPIO, 3 UART, 1 CAN, 1 I2C,
8 GPIO, 3.3V, 5V
- Vertical focused I/O expansion boards
- Reference design and customization service

Unified Software Package

- AIM-Linux and AIM-Android
- Up-to-date and longevity support BSP
- WISE-PaaS cloud connectivity enabled service

Service Process

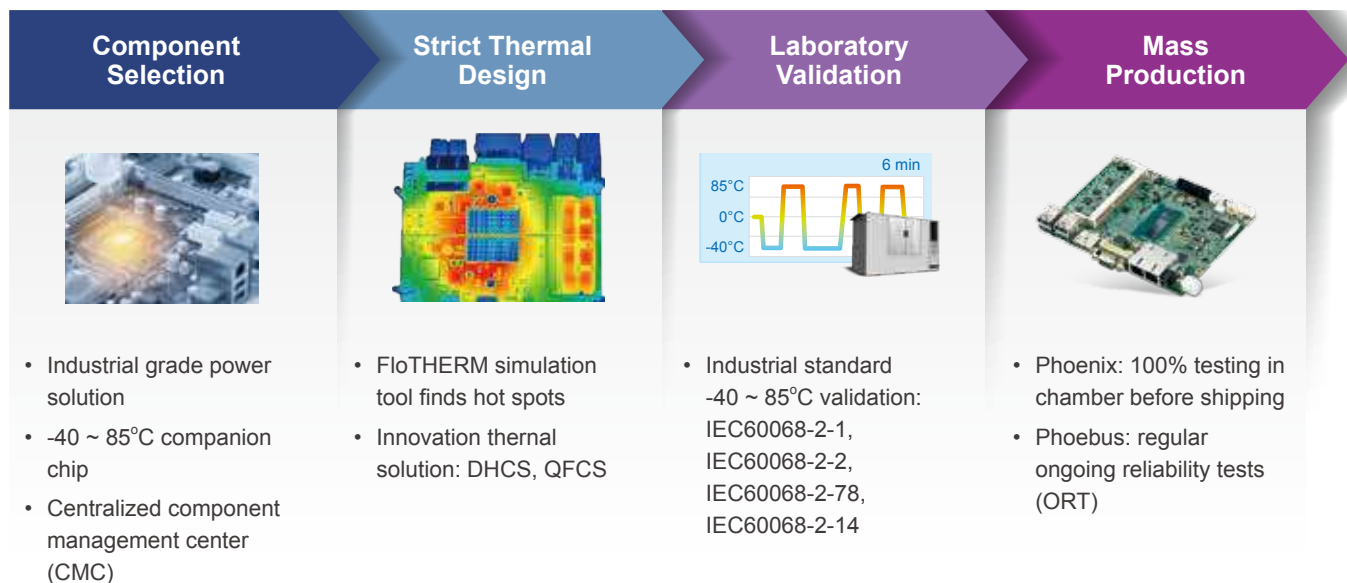


Wide Temperature Operation Services

Reliability guaranteed from design and validation to production

As the IoT revolution disrupts industry after industry, demand for wide-ranging temperature support is rising in both traditional industries like factory automation, defense, and fuel dispensers and also emerging industries like smart cities, electric vehicle charging systems, and smart parking systems (LPR). Advantech has over 35 years of experience in this field and utilizes its very strong technical know-how in defining a reliable process for the design and production of extended temperature products that satisfies the working needs of harsh indoor and outdoor environments.

Design, Validation & Production Process



Applications



Conformal Coating Services

One-stop services for moisture, dust, corrosion, and friction resistance

Conformal coating services(with warranty) is offered based on customers' demands to protect the PCB and parts from dust, moisture, fungus, corrosion, and vibration. The coating is sprayed on to the PCB to help minimize electro migration between metal conductors. In addition, the use of a conformal coating can protect circuits and components from direct contact that can lead to abrasions or electrical short circuits. With Advantech's one stop coating services ranging from board assembly, coating, function testing, and delivery, customers can easily customize the process without worrying about functionality and warranty. Advantech conformal coating service is the best choice for applications in railway, transportation, aerospace, and defense industries.

Conformal Coating Services Provide:

- Rust and corrosion prevention
- Electrical insulation
- Prolong longevity



Conformal Coating Services Give You:

Qualified coating material: CONAP® CE-1171

- Hydrolytic stability & flexibility: MIL-I-46058C
- Thermal shock (-65~125°C): MIL-STD-810
- Flame resistance, self-extinguishing: FED-STD-406
- Fungus resistance, rating 0: MIL-STD-810

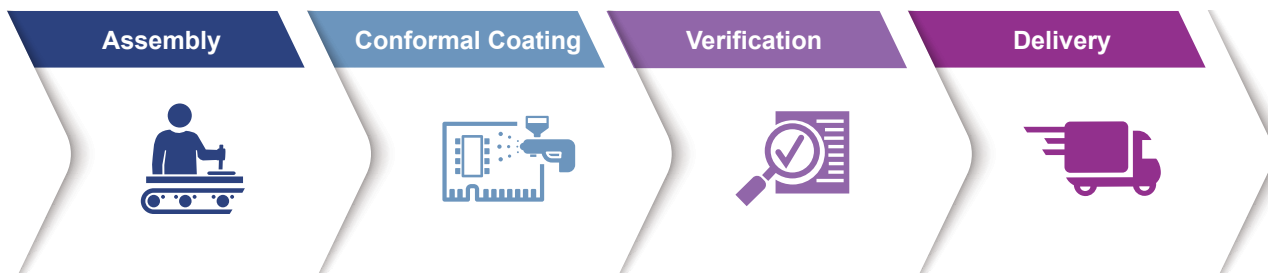
Tailored-Made Services

- Coating material
- Coating for specific part
- Coating thickness
- Functional check

IPC#1 Factory

- ISO standard certified
- Automatic coating process
- Functional test
- Visual inspection
- Failure analysis system

Service Process



Extreme Vibration Solutions

MIL-STD-810 anti-vibration design, reliability enhancements, and board verification

The increasing demand in transportation, automation, and military applications has meant anti-vibration features are now one of the main considerations of customer's applications. Military standard MIL-STD-810 is the toughest vibration requirement in the industry, and where during the development phase, Advantech provides a variety of services from design to validation in order to help customers improve product quality. Corner bonding for main chips, screw holes for key accessories, and high frequency vibration tests, are all services that help customers achieve the reliability needed to meet MIL-STD-810 requirements.

Applications



Extreme Vibration Services Give You:

Anti-Vibration Design

- Key component soldering capability
- External mechanical fixing for key accessory

Vibration Test Procedures

- Standard IEC60068-2-64 and MIL-STD-810 followed
- Test with board operation up to 7.7Grms with in X, Y and Z axis capability

Reliability Enhancement in Manufacture

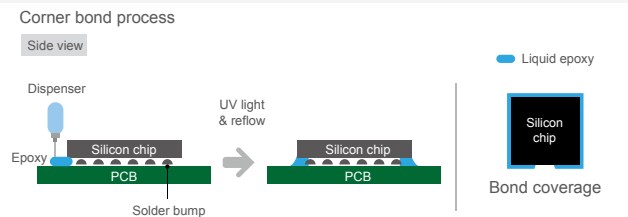
- RTV silicones glue on key connectors
- Corner bonding for BGA chips

Optimized Mechanical Design and Custom Services



Pioneering DRAM

Advantech rugged DIMMs are designed with screw holes on the PCB to prevent vibration and shock impacts. They come with the flexibility of strong protection and upgrade capability. Customers can easily maintain and upgrade their memory without needing special tools. The robust design is suited for mission critical environments such as energy mining machinery and military.



Corner Bond Process

For a product which does not reserve screw holes on PCB, Advantech provides customization services such as corner bonding and dispensing for BGA chips or connectors. Corner bonding and dispensing further secures the chip for ruggedized applications and can increase reliability for high thermal or vibration stress, high gravitational acceleration, and high fatigue cycle applications.

Advanced Manufacturing Process

Improving product quality by IPC-A-610G Class 3 certification

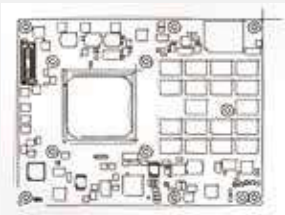
The IPC organization defines 3 classification quality standards from general level class 1, intermediate level class 2, to the highest level class 3. They are awarded to electronic products to determine quality where continued high performance or equipment downtimes cannot be tolerated. They are also given where end-user environments may be uncommonly harsh, and where equipment must function when required, such as life support systems or other critical systems.

Advantech is one of the industrial vendors who has IPC-A-610G class 3 certified products and can deliver class 3 services from board design, electronics manufacturing, printed circuit boards (PCB), soldering, assembly equipment, and inspections that fulfill high quality product demands for markets such as medical, networking, defense, or mining.



PCB Design & Manufacturing

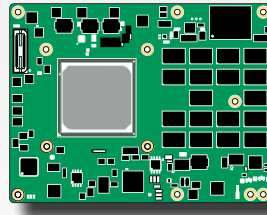
Top Design Quality



- Strict layout design rules
- ISO certified manufacture
- Monthly quality testing
- IPC-A 6012 Class 3 compliant

PCB Inspection

Strict Quality Check



- Highest IPC standard printed board inspection
- 10% sample tests for each batch done in house or 3th party lab
- IPC-A 600 Class 3 compliant

Board Manufacturing & Inspection

High Product Reliability



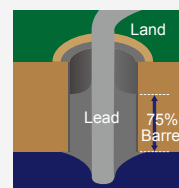
- Inspection with IPC-A qualified
- 100% functional check & visual inspection
- Regular statistical process & quality track system
- IPC-A 600 Class 3 compliant

IPC-A 610G class 3

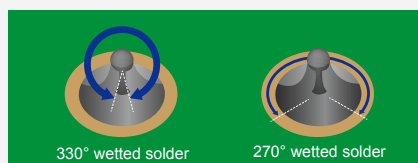
Manufacturing processes and quality criteria constantly improve and increase product reliability and requirements for critical applications.



A properly wetted solder fillet must circle at least 270° of the way around the lead and barrel for class 3



The amount of barrel fill required for through-hole leads is at least 75% for Class 3 (50% for Class 2).

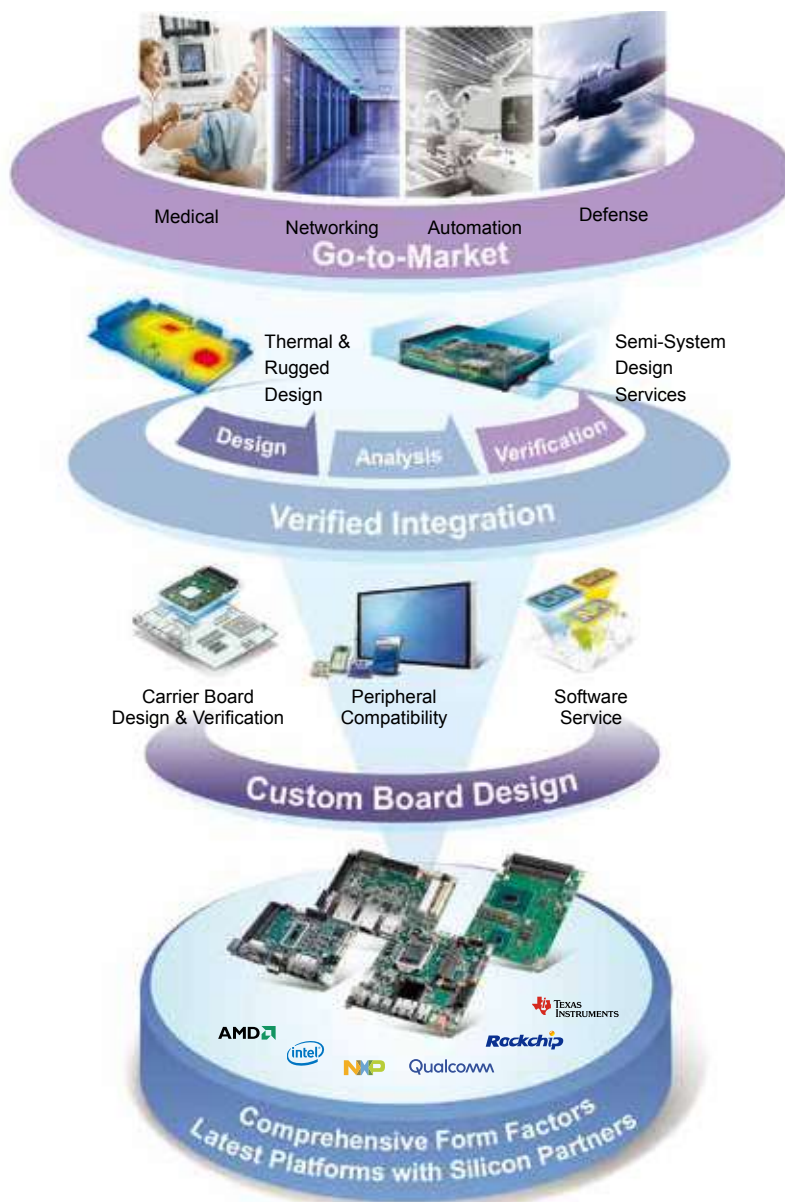


The wetting of the solder side required for the land is 270° & lead & barrel must be at least 330° for Class 3.

On Demand Board Custom Services

Fast and reliable customized services that leverage standard products for quicker time-to-market

The growing demand for embedded applications rises rapidly, but standard products may not be suitable for customers who seek flexible I/O or form factors. Advantech has multiple options to support faster development and time-to-market. For applications that require particular functions or platforms with value-added services, Advantech customization services are the solution that meets your expectation. We offer a comprehensive range of products and services from which to base your solution on and you benefit from many years of our experience in x86 and Arm-based architectures. We offer many types of customization services from modular I/O expansion, board redesign, to full customization. Our exclusive R&D team can help customers to design and review their board solutions so that customers can focus on their own core technology.



Board Custom Services Give You:

Leading Embedded Technologies

- Early-access programs joined with silicon partners
- Licensed software solutions
- Ecosystem partner collaboration

Fast Semi-Customized Services

- Customization based on a standard foundation with full range of form factors
- Dedicated support team for hardware and firmware design
- Certified peripherals

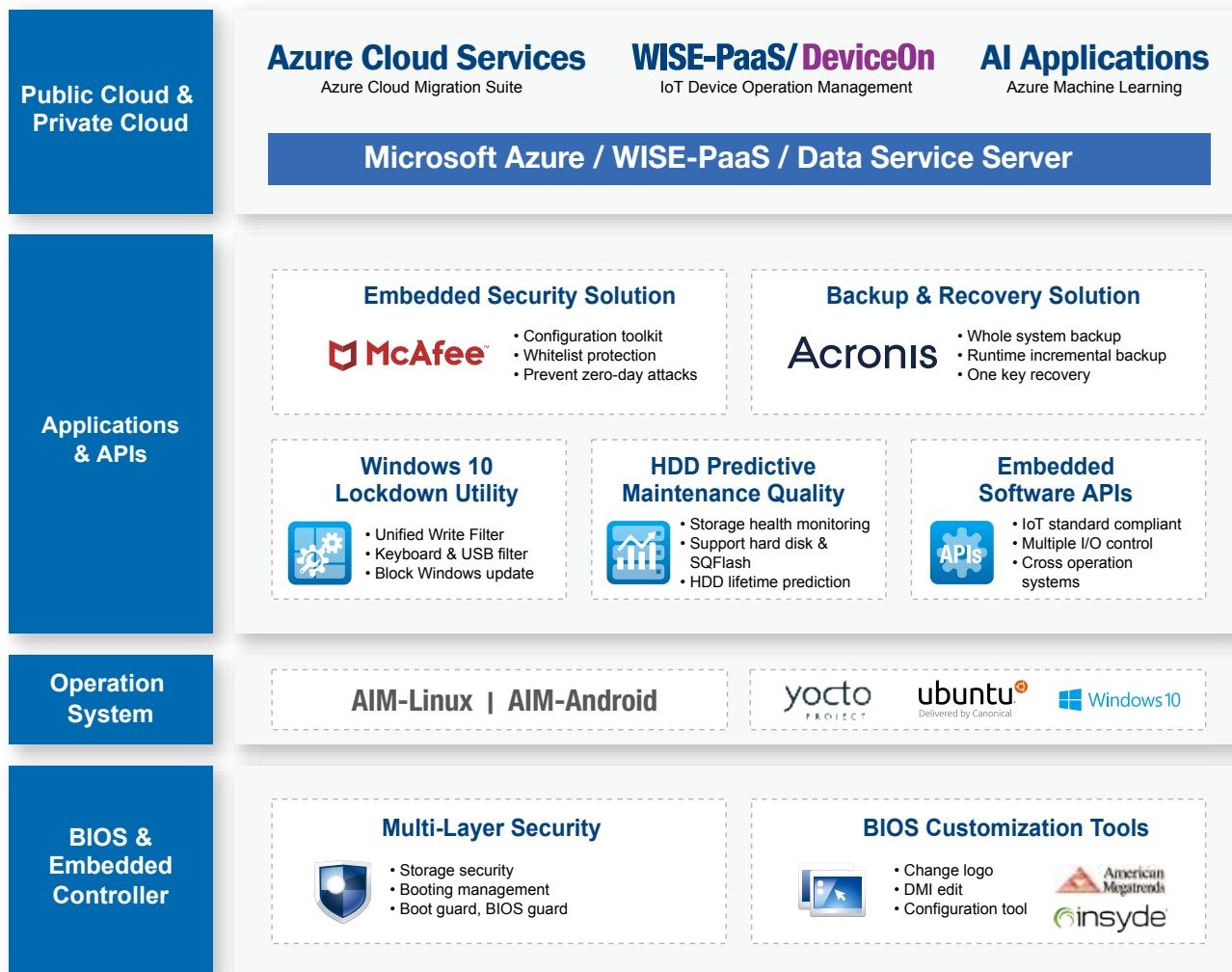
Reliability Enhancement Services

- Product life cycle maintenance
- Software maintenance
- Logistics management
- Extended warranty

Comprehensive Embedded Software Services

Accelerate your IoT application development

Any successful project needs to highly integrate hardware and software. Choosing a hardware platform is fairly straightforward, but finding the right software that can make or break a project takes time and resources. As a leading IPC company, we offer a comprehensive range of hardware platforms, but also on the software side we offer Embedded Software Services aimed at edge and cloud computing to accelerate your product development.



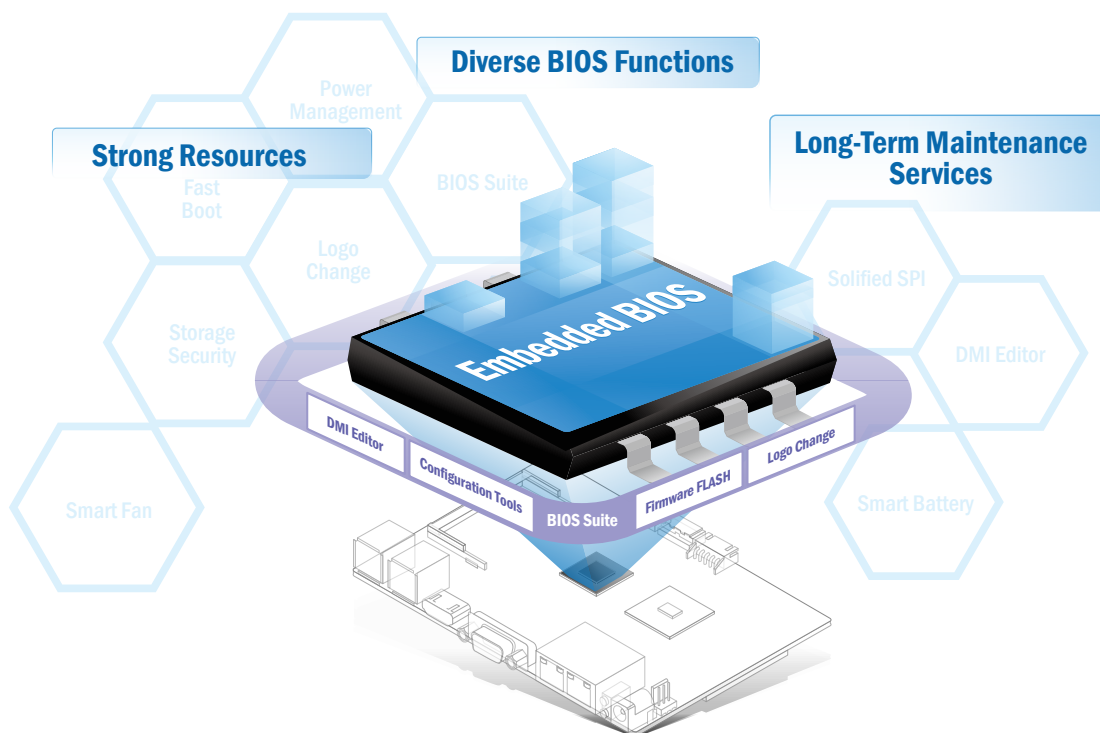
Embedded Software Services Give You:

Device to Cloud Software Service	Cross-platform software (CPU/OS/Cloud)	Long-Term Supports
• Sameness and uniformity • Reliable and trusted foundation • Instant cloud onboarding	• Reusable and H/W independent • Quicker development time • Easier maintenance	• Trusted partnership • Longevity software maintenance • Increased product quality and security

Trusted Embedded BIOS Solutions

Custom BIOS services with long-term support

Advantech provides full-featured Embedded BIOS solutions of proven quality, rapid execution, backed by industry-leading expertise. We offer reliable and high-quality BIOS services with solid support from our experienced BIOS team. Multi-function designs include security, power-management, and boot management to fulfill different applications. Additionally, 10+ years of BIOS version management benefits our clients for internal management and longevity support for both hardware and BIOS. Our comprehensive services and long-term support enhances application efficiency, diverse functionality, and optimized performance.



Embedded BIOS Solutions Give You:

Sufficient Sources

- Strong partnership with BIOS vendors
- 50+ engineers with deep industrial BIOS experience

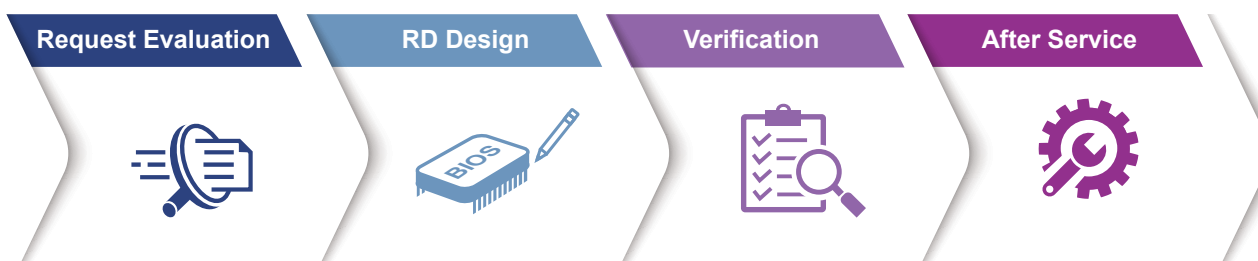
Diverse BIOS Functions

- Multi-layer security
- 3" sec fast boot
- Power management
- BIOS suite utility

Long-Term Maintenance Services

- Platform longevity support
- 10-year BIOS version control
- BIOS remote backup

Value-Added Customization Process



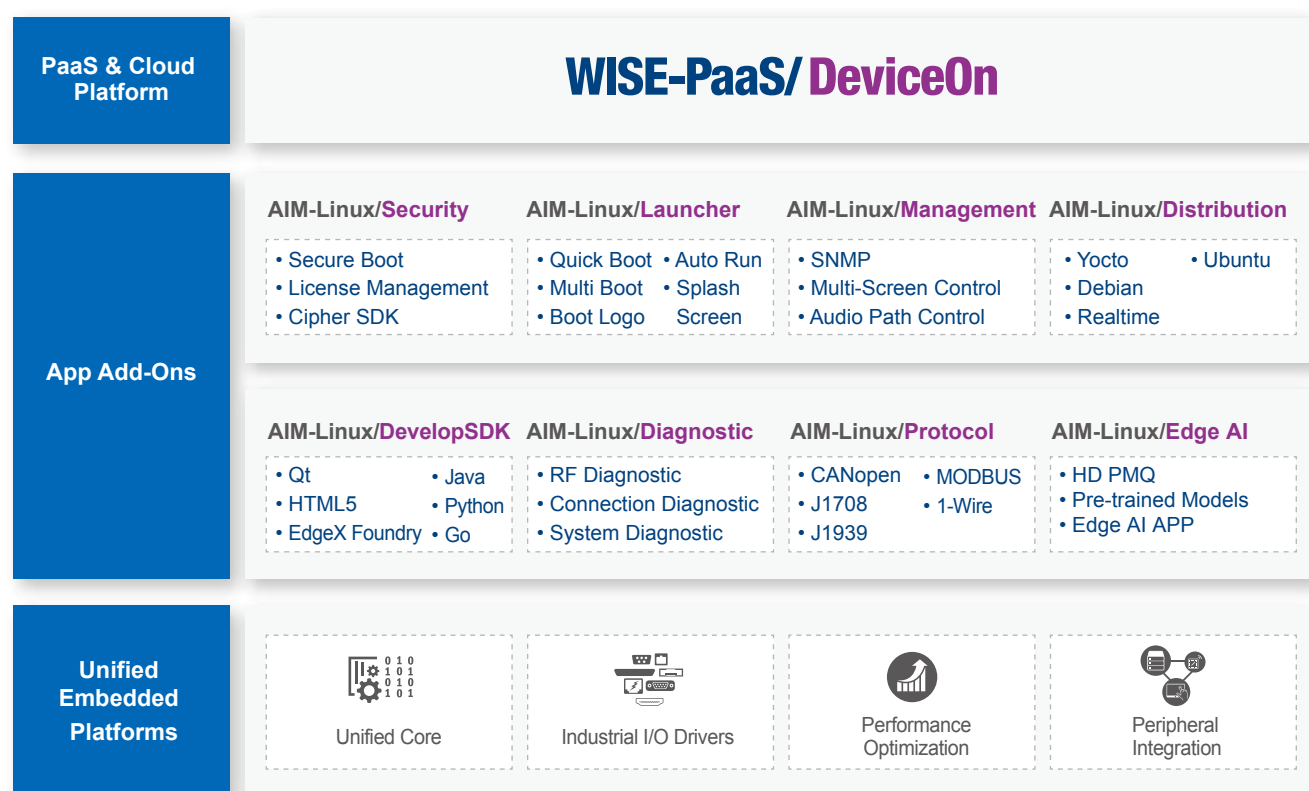
Allied, Industrial & Modular Linux Services

Unified embedded modularized Linux service to deploy your applications

Allied, Industrial and Modular Linux Services (AIM-Linux) were created to help our customers accelerate their software development on Advantech platforms by providing a flexible and modular framework, targeting the foundations of industrial markets, and focusing on long-term BSP maintenance and longevity support. With the AIM service, Advantech provides you with a verified solid foundation (Unified Embedded Platforms) and industrial focused value-added support (app, add-ons, and SDKs), plus embedded Linux and Android that allow you to simply focus on your own vertical application development.



AIM-Linux Services Landscape



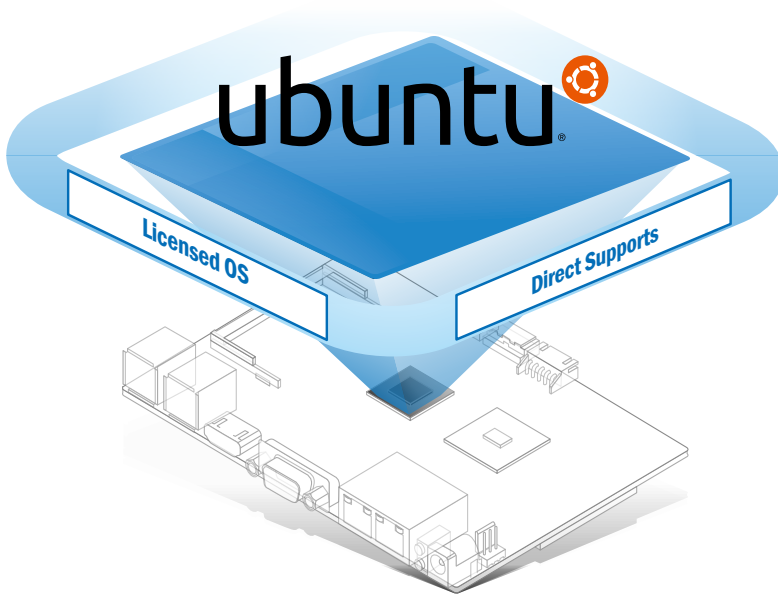
AIM-Linux Services Give You:

Modularized Framework	Value-Added Industrial Apps & SDKs	Longevity BSP Maintenance
• Efficient resource allocation • Unified core structure • Easy migration	• Accelerated development • High efficient library • Comprehensive documentation	• Reliable foundation • LTS kernel selected • Planned roadmap and validation

Embedded Ubuntu Built-In Services

Integrated and ready-to-use Linux OS

Ubuntu is the most famous Linux distribution in the market today, but how to get proper support is an important consideration for embedded developers. Through strong relationships between Advantech and Canonical, we can provide an optimized slim Ubuntu image for Advantech products with verification. We provide Ubuntu and ready-to-use utility tools via our online store service to help customers accelerate their application development.



Embedded Ubuntu Built-In Services Give You:

No Compile Linux Solutions

- H/W and peripheral integration
- Performance fine-tune and optimization
- Preload licensed OS for shipping

Function & Security Updates

- Independent upgrade (APPs, O.S. & kernel)
- Upgrade management
- Version upgrade support

Ready-to-Use Utility Tools

- Public store for various IoT APPs
- Branding store for own APPs
- Customized store and download authority

ADVANTECH

CANONICAL

Product Highlights



RSB-3430

- NXP Cortex-A9 i.MX6 CPU
- On board 1GB DDR3-1066 and eMMC 4GB
- Dual Display by 24-bit LVDS + HDMI
- 1 GbE, 2 USB, UIO 20/40-Express



RSB-4411

- NXP Cortex-A9 i.MX6 CPU
- On board 1GB DDR3-1066 and eMMC 4GB
- Triple Display by 24-bit LVDS + VGA + HDMI
- 1 GbE, 5 USB, 2 CAN



MIO-5373

- Intel 8th Gen. Core U-Series
- Dual Channel DDR4-2400 up to 32GB
- eDP/LVDS, HDMI, DP Tripple Displays
- USB3.1, CANBus, MIOe, 12~24V

Embedded Feature APIs

Simplified integration and easy configuration with iManager 3.0 and SUSI APIs

Advantech has created Embedded Feature APIs to simplify application development and offer exclusive services to work with Advantech's embedded boards. These APIs make it easier to program and configure features while integrating solutions. With modular and cross platform designs, these new platforms can be easily upgraded without effort needing to be expended on redesigning applications. Embedded APIs also provide an IoT Translator SDK to assist customers with easily integrating their own devices on Advantech embedded boards. This SDK effectively plays the role of a translator, allowing plug-in functions to connect to peripherals and run applications. The full functionality of embedded feature APIs provides a building block to accelerate development, enhance security, and offer add-on value for your end-user applications.



Advantech Embedded APIs Give You:

Unified APIs

- Standard API for hardware platform
- Cross-platform programming
- Easy upgrade and maintenance
- Ready to use IoT translator SDK

Self Management

- I/O control
- System protection
- Device monitoring
- Application extension

WISE-PaaS/DeviceOn

Power up IoT devices with 24/7 operation management

WISE-PaaS/DeviceOn provides an equipment maintenance and management software solution. Grouping settings to make instant device onboarding easy to deploy to the cloud. It offers real-time monitoring functions to check device status, with remote controls for device operations and troubleshooting. Additional OTA updates and backups ensure better system security and protection.



WISE-PaaS/DeviceOn Give You:

Device Management	BIOS & Framework OTA Update	Remote Monitor & Control	Alerts & Actions
• Mass device onboarding • Cross-platform deployment to Azure • Group sharing	• Remote BIOS and framework updates • BIOS recovery mechanism • Backup and restore	• Whitelist protection • USB lock, keyboard filter and screen on/off • Remote terminal • Remote backup and restore	• Notifications by message and mail • Grouping event log • Remote desktop troubleshooting • USB device fail resume

Multi-Layer Security Solutions

Effectively protect your devices from devices to the cloud

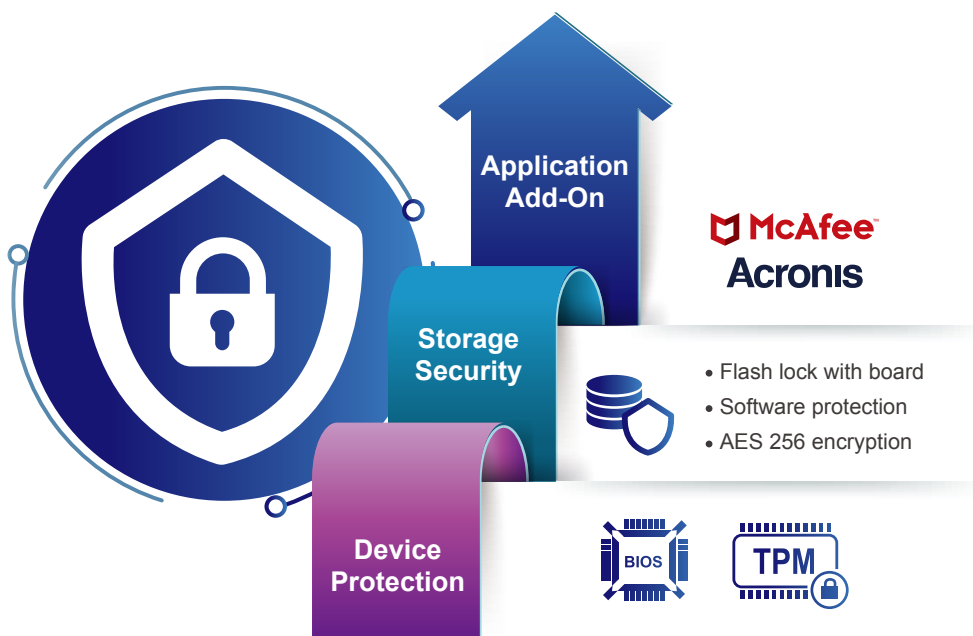
In the IoT Era, security becomes more important as more and more devices are connected. At Advantech, we provide multi-layered security from the edge to cloud. We not only offer secure software security but also secure hardware through functions for device protection, storage security, and application add-on services. Our multi-layered security provides you with reliable platforms and peace of mind.

Centralized IoT Device Security Management

McAfee™ embedded solutions provide superior and intelligent security functions, such as whitelisting and blacklisting for protecting IoT devices and data from zero-day attacks, monitoring/tracking system changes, and guarding entire systems with McAfee Global Threat Intelligence. WISE-PaaS/Security, empowered by McAfee™, provides a centralized IoT security management console on Azure for deploying security policies that ensure data and device protection. Our IoT platforms can be configured with McAfee™ function modules to satisfy diverse vertical applications and scenarios.

Convenient and Secure Backup and Recovery Solution

As digital data is an essential asset for any consumer centered business organization, it's crucial that clients have strong data protection systems in place. Additionally, the ability to restore systems to their factory settings on-site saves time and reduces costs for both system integrators and end users. Leveraging Acronis' award-winning technology, Acronis OEM solutions are specifically designed to satisfy the needs of OEMs.



Advantech Security Solutions Give You:

Device Protection	Storage Security	Applications
- Secure boot certified device - Authority control - TPM	- HDD access control - Storage encryption - Configuration tool	- SSL/TLS - Blacklisting and whitelisting - Powerful recovery and easy backup

Embedded Linux & Android Alliance (ELAA)

Ecosystem for embedded Linux & Android industrial applications

Embedded Linux & Android Alliance (ELAA) is an industry alliance committed to driving the unification and board adoption of an open architecture standard for embedded Linux and Android cores in industrial embedded systems.



ELAA Give You:

Unified Architecture

The ELAA Unified Development Platform provides a unified hardware and software architecture across different industrial embedded applications. Users can leverage resources from one project to another with minimized learning curves and effort.

Longevity Support

Provide hardware platform, kernel and firmware upgrades to members and customers during the whole SoC life cycle.

Integrated Peripherals

ELAA Unified Development Platform integrates multiple industrial peripherals verified on different OS and hardware platforms.

Extensive Software Offerings

Empowered by alliance members, ELAA provides extensive software offerings throughout various kinds of OS, kernels, drivers and industrial applications.

Faster Time-to-market

Pre-integrated hardware and software platform to accelerate the POC to MP cycle.

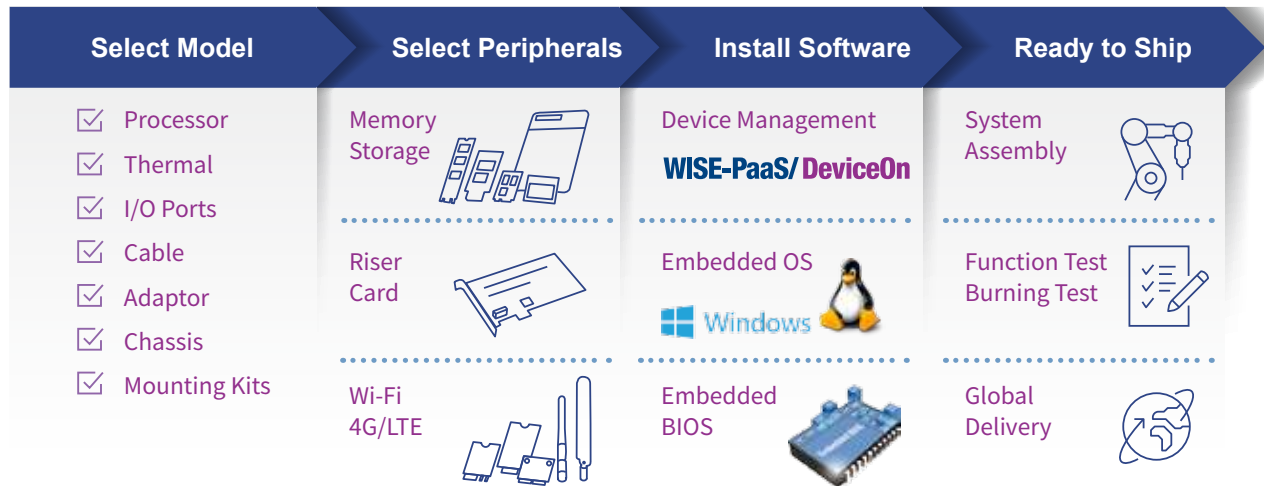
Global Partner Eco-system

Partners across the supply chain and geo-regions support customers' business development and expansion.

Embedded PCs : Configuration-to-Order Services

Select-and-Go process to fulfill extensive market demands

We live in an era of growing diversity. The variety of digital world and corresponding business models multiplies swiftly. Numerous combinations among different I/O ports, connectivity options, CPU platforms and OS systems are configured to manage each dedicated application. Consequently, quick responses to meet all different demands become inevitable.



Advantech CTOS Give You:

Feasibility Verified in NPI	Step-by-Step Ready	Global Operations
- Feasibility verified in NPI - ISO 17025/CNLA & UL certified lab for EMC, safety & reliability tests - Complete & thorough DQA test flows - All components, peripherals, systems and software are crosschecked	- Selection guide ready to build a dedicated system - Comprehensive choices for all components - Just select-and-go, no further effort required	- Global manufacturing network ready for assembly - Global logistics ready for delivery - Global FAE network ready for technical support

Product Highlights



EPC-U Series

- Small footprint fanless PC
- Sufficient connectivity
- From Intel® Atom® to CORE-i



EPC-S Series

- Factory automation & HMI focused
- Compact design: 139x100x44mm
- Sufficient I/O, USB, COM, DIO, VGA



EPC-C301

- Automation & medical application focused
- Compact size with integrated GbE USB CANBus
- Expansions for WiFi, LTE, NVMe, AI



EPC-R Series

- Compact and efficient Arm-based PC
- Linux/Android OS support
- Industrial peripheral pre-integration



EPC-T Series

- Slim 44mm with up to 65W CPU
- Plentiful I/O and expansion options
- A wide range of CPU options



EPC-B Series

- High performance CPU
- Multiple I/O and expansion options
- User-friendly mechanical design



EPC-P Series

- Machine vision industrial PC
- Up to 4 PCIe expansions
- Intel 8th/9th Gen CORE-I CPU

Embedded Wireless Modules & Design-In Services

Simplifying wireless connectivity for IoT platforms

To help customers quickly develop intelligent platforms with wireless functions, Advantech offers streamlined wireless design-in services including wireless module design package with RF certification, optimal antennas and module configuration, wireless system performance verification, and an online document center. All provided by Advantech's expert team to help customers create an efficient development environment.

Benefit from:

- Streamlined design-in service
- Wireless certification
- Conformal coating and underfill
- Wide temperature range (-40~85°C)
- Various wireless technologies



Industrial Wireless Technology

- WiFi/BT
- 3G/4G LTE
- GPS
- LPWAN

Standard Form Factor Mini PCIe

- M.2 1216 solder down
- M.2 2230
- M.2 3042
- Mini PCIe

RF Certification Design Service

- RF certification equipment reports
- RF test SW/tool

Wireless Software Integration

- Multi OS driver
- Wireless connection management tool
- SW AP / fast roaming

Product Highlights

LTE



EWM-C148
Mini PCI-e FMC
LTE CAT4



EWM-C117
Mini PCI-e FMC
LTE CAT4



EWM-C148S
LGA solder down
LTE CAT4



EWM-G109
Mini PCI-e HMC
NEO-M8N multi-GNSS

Wi-Fi & Bluetooth



EWM-W195
M.2 2230
802.11 a/b/g/n/ac 2*2+BT4.2



EWM-W190
Mini PCI-e HMC
802.11 a/b/g/n/ac 2*2+BT4.2



EWM-W158
Mini PCI-e FMC
802.11 b/g/a/n 2*2



EWM-NB147
Mini PCI-e FMC
Cat M1 / NB1 engine

Industrial Flash and Memory Solutions

High reliability, 360-degree security, and design-in services

Advantech SQFlash SSDs and SDRAM memory modules are designed with the best quality chips from original IC vendors to ensure consistent quality. They also apply strict 100% screen testing and 3-year longevity to guarantee industrial-grade stability and reliable 24/7 operation. With SQ security features and smart management software, SQFlash and SDRAM are the ideal memory products for various AIoT applications.

Explore More



Comprehensive Security and Software Integration



SDRAM Manager

- Operating temperature monitoring
- Temperature alerts when over 65°C
- SPD information and timing table



SQFlash Manager

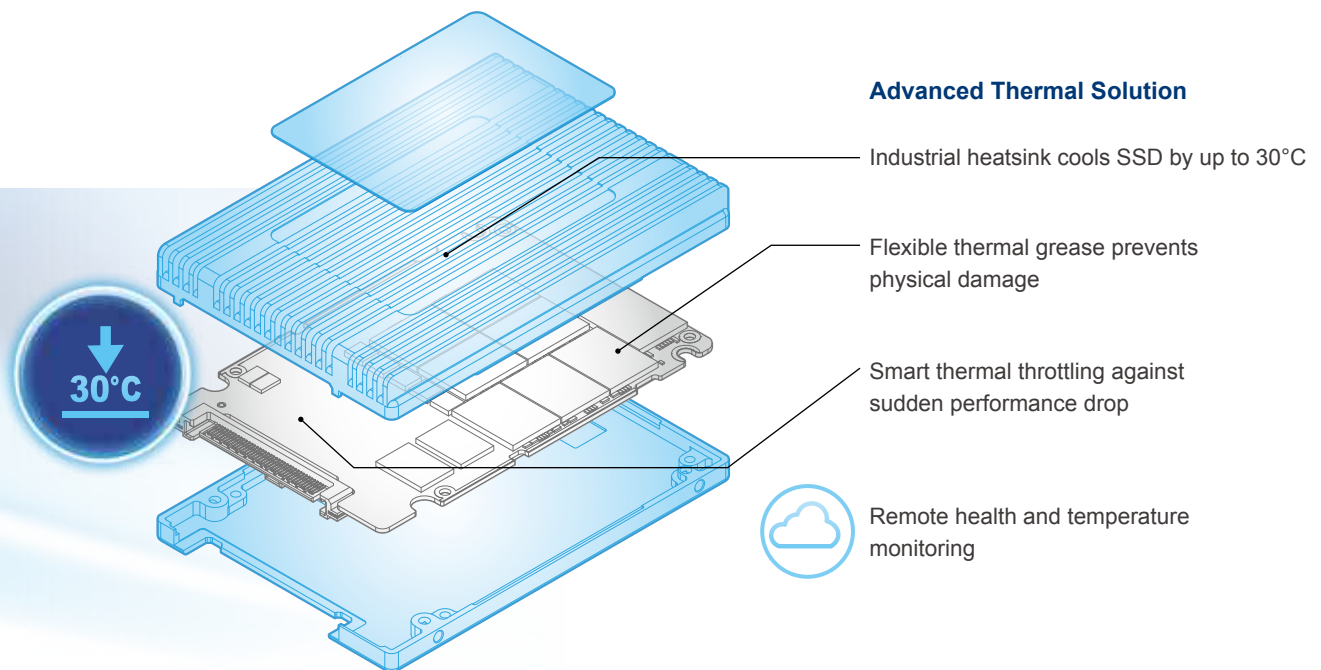
- Status and endurance estimation
- TCG compliant drive encryption and quick erase
- Disk security management and encryption

Mcafee Acronis



Cloud-based Management

- WISE-PaaS compatible
- Remote Monitoring
- Predictive Maintenance



Flexible Customization

- 30-day time to market design-in service
- Extended longevity: 3 to 5 years
- Early access to the latest Flash technology
- System integration with FPGA and firmware support

Product Highlights

SQFlash Storage Modules

Complete Form Factor Selection

2.5" SSD, mSATA, M.2, DOM, CFast, Half-Slim, etc.



Advanced Thermal Solution

Industrial heatsink on high-capacity NVMe SSDs



0~55 °C

0~70 °C

-10~70 °C

-40~70 °C

40~85 °C

SQRAM Memory Modules

Server-Grade Performance

SODIMM, UDIMM, ECC DIMM, and RDIMM with monitoring software



Thermal & Robust Solution

Optional heatsinks and rugged DIMMs against extreme vibration and shock.



Advantech Industrial Display Solutions

Seamlessly integrated with all embedded platforms

Advantech designs, develops and manufactures display systems that meet the demands of industrial display markets in gaming, transportation, medical, and many system integration markets globally. Combining proven technologies and flexible manufacturing, Advantech creates class leading solutions for your customers that deliver significant product differentiation and competitive advantage. Our customer-centric approach reinforces all of our activities and is an essential part of the thousands of products we ship daily.



Product Highlights

Industrial Touch LCD Kits



IDK-1000 Series
Indoor LCD Kit
5.7"~21.5"



IDK-2000 Series
Outdoor LCD Kit
8.4"~21.5"



IDS-3100/IDS-3200 Series
Open Frame/ Panel Mount
6.5"~21.5"



IDS-3300 Series
IP-65 Rated
15", 19", 21.5"



IDP Series Series
Proflat
15", 15.6", 21.5"

Digital Signage & Gaming Displays



DSD-3000/ DSD-5000/ DSD-7000 Series
Large Format/ Stretched
32"/42"/55"/65", 28"/38", 55"



CRV Series(J type/C type)
CRV Series(J type/C type)
43", 55" UHD



4K C/J Type Curved Display

CRV-430WP / CRV-430JP

- Screen size: 43"
- Radius: 1500
- Resolution: 3840 x 2160
- Multiple interface: VGA, HDMI, DP
- Touch integration: projected capacitive touch
- Long backlight lifetime: 50,000 hrs



Ultra Wide Temperature LCD Kit

IDK-2112U

- Screen size: 12"
- Resolution: 1024 x 768
- High brightness: 1200nits
- Ruggedized design: -40~70°C operating temperature
- Touch integration: projected capacitive touch
- Intelligent control: automatic thermal on/off control



4K All-in-One Signage Display

DSD-7055

- Screen Size: 55"
- High Resolution: 1920 x 1080
- Brightness: 500nits
- Backlight life time: 50,000 hrs
- Easy maintenance: Intel SDM slot design

Computer On Modules



Model Name		SOM-5992	SOM-5962	SOM-5899/SOM-5899R	SOM-5871	SOM-9590
Form Factor		COM Express Basic	COM Express Basic	COM Express Basic	COM Express Basic	COM Express Basic
Pin-out Type		COM R3.0 Type 7	COM R3.0 Type 7	COM R3.0 Type 6	COM R3.0 Type 6	COM R3.0 Type 7
Processor System	CPU	Intel® Xeon Processor D-1500 Product Family	Intel® Atom® Processor C3000 Series	Intel® 9th/8th Gen. Core i7/i5/i3/Xeon	AMD V1000 V1807B/V1756B/V1605B/V1202B	Intel® Xeon Processor D-1500 Product Family Xeon D-1539
	Base Frequency	2.2 - 1.3 GHz	2.2-1.5GHz	3.0 - 1.6 GHz	3.35 - 2.0 GHz	1.6GHz
	Processor Core	16/12/8/6/4/2	16/12/8/4/2	6/4	4/2	8
	LLC	24/12/6/3MB	16/12/8/4MB	12/9/8/6MB	2/1MB	12MB
	CPU TDP	45/35/25W	31/25/16/8.5W	45W	35-54/12-25W	35W
	Chipset	-	-	Intel QM370/CM246	-	-
Memory	Technology	DDR4 2400/2133/1866	DDR4 2400/2133/1866	DDR4 2400/2133	DDR4 3200/2400	DDR4 2133MHz
	ECC Support	ECC and non-ECC	ECC and non-ECC	ECC (Xeon only)	ECC and non-ECC	ECC
	Max. Capacity	128GB	128GB	96GB (Support with specific SKUs)	32GB	Up to 32GB
	Socket	4 x 260P SODIMM	4 x 260P SODIMM	3 x 260P SODIMM	2 x 260P SODIMM	Solder-down memory
Graphics	Controller	-	-	Intel® UHD Graphics 630/P630	AMD Vega GPU	-
	Max. Frequency	-	-	1.2 - 1.0GHz	1.3-1.0GHz	-
	VGA	-	-	1	1	-
	LCD (TTL/LVDS/eDP)	-	-	LVDS 2-CH 18/24-bit BOM option support eDP	LVDS 2-CH 18/24-bit BOM option support eDP	-
	DDI (HDMI/DVI/DisplayPort)	-	-	2; up to 3	2; up to 3	-
	Multiple Displays	-	-	Triple-Display	Quad-Display	-
Expansion	PCIe x16	1	-	1	-	1
	PCIe x8	1	1	-	1	1
	PCIe x4	-	1	-	-	-
	PCIe x1	7	-	8	6	7
	ISA Bus	-	-	-	-	-
	LPC	1	1	1	1	1
Serial Bus	SMBus	1	1	1	1	1
	I²C Bus	1	1	1	1	1
	CAN Bus	-	-	Optional	Optional	-
Ethernet	Gigabit Ethernet	Intel® I210AT/IT	Intel® I210AT/IT	Intel® I219LM	Intel® I210AT	Intel® I210AT/IT
	GbE Speed	10/100/1000Mbps	10/100/1000 Mbps	10/100/1000Mbps	10/100/1000Mbps	10/100/1000Mbps
	10GB Ethernet	2	4	-	-	2
I/O	SATA	2	2	4	2	2
	PATA Channel	-	-	-	-	-
	USB3.0	4	4	4	3	4
	USB2.0	4	4	8	8	4
	Audio	-	-	HD Audio	HD Audio	-
	SPI Bus	1	1	1	1	1
	GPIO	8	8	8	8	8
	SDIO (GPIO pin shared)	-	-	Optional	-	-
	Watchdog	1	1	1	1	1
	COM Port	2 (2-wire)	2 (2-wire)	2 (2-wire)	2 (2-wire)	2 Ports (2-Wire)
	LPT/FDD	-	-	-	-	-
	PS/2	-	-	-	-	-
	IR	-	-	-	-	-
	Onboard Storage	-	eMMC	-	-	SATA SSD 16GB
	TPM	TPM2.0	TPM2.0	TPM2.0	TPM2.0	TPM2.0
Power	Power Type	ATX: Vin, VSB, AT: Vin	ATX: Vin, VSB, AT: Vin	ATX: Vin, VSB; AT: Vin	ATX: Vin, VSB, AT: Vin	ATX: Vin, VSB, AT: Vin
	Supply Voltage	Vin: 8.5-20V VSB: 4.75-5.25V	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
	Power Consumption Max.	55.5W	32.67W	57.7W	39.98 W	48.891W
	Power Consumption Idle	12.3W	11.88W	7.1W	7.34 W	12.756W
Environment	Operating Temp.	0 ~ 60° C (32 ~ 140° F)	0 ~ 60 °C (32 ~ 140 °F)	0 ~ 60 °C (32 ~ 140 °F)	0 ~ 60 °C (32 ~ 140 °F)	0 ~ 60 °C (32 ~ 140 °F)
	Extended Temp.(Optional)	-40 ~ 85 °C (-40 ~ 185 °F)	-40 ~ 85 °C (-40 ~ 185 °F)	-40 ~ 85 °C (-40 ~ 185 °F)	-	-40 ~ 85 °C (-40 ~ 185 °F)
Mechanical	Dimensions	125 x 95mm (4.92" x 3.74")	125 x 95 mm (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")

Note: "-" : means Not Applicable (N/A)



Model Name		SOM-7569	SOM-6882	SOM-6869	SOM-3569	SOM-2569
Form Factor		COM-Express Mini	COM Express Compact	COM Express Compact	QSeven	SMARC Small
Pin-out Type		COM R2.1 Type 10	COM R3.0 Type 6	COM R2.1 Type 6	QSeven 2.1	SMARC
Processor System	CPU	Intel® Atom E3900/ Pentium/Celeron Series	Intel® 8th Gen Core i7/i5/ i3/Celeron series	Intel® Atom E3900/ Pentium/Celeron Series	Intel® Atom E3900/ Pentium/Celeron Series	Intel® Atom E3900/ Pentium/Celeron Series
	Base Frequency	1.6-1.1GHz	2.2 -1.7 GHz	1.6-1.1GHz	1.6-1.1GHz	1.6 - 1.1 GHz
	Processor Core	4/2	4/2	4/2	4/2	4/2
	LLC	2MB	4/2MB	2MB	2MB	2MB
	CPU TDP	12/9.5/6.5/6W	15W	6/6/12/9.5/6.5W	12/9/6W	12/9.5/6.5/6W
	Chipset	-	-	-	-	-
Memory	Technology	DDR3L 1866/1600	DDR4 2400	DDR3L 1866 for non-ECC/1600 for ECC	LPDDR4 2400	LPDDR4 2400
	ECC Support	ECC (E3900 SKU only) and non-ECC	-	A1: non-ECC; B1: ECC (E3900 SKU only)	-	-
	Max. Capacity	8GB	32GB	8GB	8GB	8GB
	Socket	-	2 x 260P SO-DIMM (Dual Channel)	2 x 204P SODIMM	-	-
Graphics	Controller	Intel® HD Graphics	Intel® UHD Graphics 620	Intel® HD Graphics	Intel® HD Graphics	Intel® HD Graphics
	Max. Frequency	750-550MHz	1.15 GHz-1.0 GHz	750 - 550MHz	750-550MHz	750-550MHz
	VGA	-	1	1	-	-
	LCD (TTL/LVDS/eDP)	LVDS: 1-CH 18/24-bit BOM optional eDP	LVDS 2-CH 18/24-bit BOM optional eDP	LVDS 2-CH 18/24-bit BOM optional eDP	LVDS 2-CH 18/24-bit BOM optional eDP	LVDS 2-CH 18/24-bit BOM optional eDP
	DDI (HDMI/DVI/DisplayPort)	1	2 (DDI2 for option)	2 (DDI2 for option)	1	2
	Multiple Displays	Dual-Display	Triple-Display	Triple-Display	Dual-Display	Triple-Display
Expansion	PCIe x16	-	-	-	-	-
	PCIe x8	-	-	-	-	-
	PCIe x1	4 (optional 1PCIe x4)	4 PCIe x1 +1 PCIe x4 (optional 5)	4 (optional 5)	4 (optional 1 PCIe x4)	4
	PCI Masters	-	-	-	-	-
	ISA Bus	-	-	-	-	-
	LPC	1	1	1	1	1
Serial Bus	SMBus	1	1	1	1	1
	I ² C Bus	1	1	1	1	1
	CAN Bus	Optional	Optional	Optional	Optional	Optional
Ethernet	Controller	Intel® I210AT/IT	Intel® I219 LM	Intel® I210IT/210AT	Intel® I211AT	Intel® I210AT/IT
	Speed	10/100/1000Mbps	10/100/1000Mbps	10/100/1000Mbps	10/100/1000 Mbps	10/100/1000Mbps
	10GB Ethernet	-	-	-	-	-
I/O	SATA	2	2 (3 for Optional)	2	-	1
	PATA Channel	-	-	-	-	-
	USB3.1	-	1	-	-	-
	USB3.0	2	4	2	1(Optional 2)	2
	USB2.0	8	8	8	8	6
	Audio	HD Audio	HD Audio	HD Audio	HD Audio	HD Audio / I2S Audio
	SPI Bus	1	1	1	1	Yes
	GPIO	8	8	8	SD3.0	Up to 12
	SDIO (GPIO pin shared)	-	Optional	-	1	Optional
	Watchdog	1	1	1	1	1
	COM Port	2 (2-Wire)	2 (2-wire)	2 (2-wire)	2 (4-wire COM 1 port, 2-wire COM 1 port)	4 (2 Ports: 4-wire/2 Ports: 2-wire)
	LPT/FDD	-	-	-	-	-
	PS/2	-	-	-	-	-
	IR	-	-	-	-	-
	Onboard Storage	eMMC	eMMC	-	eMMC	eMMC
	TPM	TPM2.0	TPM2.0	TPM2.0	TPM2.0	TPM2.0
Power	Power Type	ATX:Vin, VSB, AT:Vin	ATX: Vin, VSB; AT: Vin	ATX: Vin, VSB; AT: Vin	ATX: Vin, VSB, AT: Vin	ATX: Vin; AT: Vin
	Supply Voltage	ATX (Vin 4.75-20V, Vsb 4.75-5.25V) AT (Vin 4.75-20V)	Vin: 8.5-20V VSB: 4.75-5.25V	ATX (Vin 4.75-20V, Vsb 4.75-5.25V) AT (Vin 4.75-20V)	Vin: 5V±5%, VSB: 5V±5%, RTC Battery: 2.0-3.3V	Vin: 4.75-5.25V
	Power Consumption Max.	12.886Watt. (N4200), 11.999Watt. (N3350)	59.72W	14.76W	5.89W	14.11 W
	Power Consumption Idle	2.555Watt.(N4200), 2.783Watt. (N3350)	4.2 W	4.46W	3.71W	3.45 W
Environment	Operating Temp.	0 ~ 60 °C (32 ~ 140 °F)	0 ~ 60 °C (32 ~ 140 °F)	0 ~ 60° C (32 ~ 140° F)	0 ~ 60 °C (32 ~ 140 °F)	0 ~ 60 °C (32 ~ 140 °F)
	Extended Temp. (Optional)	-40 ~ 85 °C (-40 ~ 185 °F) (E3900 SKU only)	-40 ~ 85 °C (-40 ~ 185 °F)	-40 ~ 85 °C (-40 ~ 185 °F)	-40 ~ 85 °C (-40 ~ 185 °F)	-40 ~ 85 °C (-40 ~ 185 °F) (Atom x7-E3950 Only)
Mechanical	Dimensions	84 x 55 mm (3.3" x 2.17")	95 x 95 mm (3.74" x 3.74")	95 x 95 mm (3.74" x 3.74")	70 x 70 mm (2.75" x 2.75")	82 x 50mm (3.23" x 1.97")

Embedded Single Board Computers

MI/O Extension 3.5" SBCs

NEW


Model Name		MIO-5393	MIO-5391
Form Factor		3.5" MI/O-Compact	3.5" MI/O-Compact
Processor System	CPU	Intel® Xeon® E-2276ME/ Intel® Core™ i7-9850HE/i7-9850HL/i5-8400H	Intel® Xeon® E3-1505MV6/ Intel® Core™ i7-7820EQ/i5-7442EQ/i3-7102E
	CPU TDP	45W/45W/25W/45W	45W/45W/25W/25W
	Frequency	2.8 GHz (Turbo: 4.5GHz) / 2.7 GHz (Turbo: 4.4GHz) / 1.9 GHz (Turbo: 4.1GHz) / 2.5 GHz (Turbo: 4.2GHz)	3.0 GHz (Turbo: 4.0GHz)/3.0 GHz (Turbo: 3.7GHz) / 2.1 GHz (Turbo: 2.9GHz) / 2.1 GHz (Turbo: 2.1GHz)
	Core Number	6/ 6/ 6/ 4	4/4/4/2
	Last Level Cache	12MB/ 9MB/ 9MB/ 8MB	8MB/8MB/6MB/3MB
	BIOS	AMI UEFI 256Mb	AMI UEFI 128Mb
Memory	Chipset	Intel CM246 / QM370	Intel CM238 / QM175
	Technology	DDR4 up to 2400MHz	DDR4 up to 2400MHz
	Max. Capacity	up to 64G	up to 32G
Display	Socket	2x 260P SODIMM	2x 260P SODIMM
	Controller	Intel Gen 9 low power graphics (Intel® UHD Graphics P630/630)	Intel Gen 9 low power graphics (Intel® HD Graphics P630/630)
	Graphic Memory	HW Decode:AVC/VC1/MPEG2/HEVC/VP8/JPEG HW Encode: AVC/MPEG2/HEVC/VP8/JPEG	HW Codec: H.265/HEVC 8bit/10bit encode/decode
	VGA	-	-
	LCD (LVDS/eDP)	48-bit LVDS up to WUXGA 1920 x 1200 at 60Hz Supports 3.3/5/12V for VDD power, 5/12V for inverter	48-bit LVDS up to WUXGA 1920 x 1200 at 60Hz Supports 3.3/5/12V for VDD power, 5/12V for inverter
	DDI (HDMI/DVI/DisplayPort)	HDMI 1.4 up to 4096 x 2160 @ 30Hz ; DisplayPort 1.2 up to 4096 x 2304 @ 60Hz	Supports 2 x HDMI 1.4 for HD Video playback Max resolution up to 4096 x 2304 @ 30Hz
Expansion Interface	Multiple Display	Triple simultaneous displays with HDMI + DP + LVDS	HDMI + LVDS, Dual HDMI + LVDS
	Mini PCIe	-	1 x Full-size
	SIM Socket	1	1
	SMBus	1	1
	I ² C	1	1 (Shared with SMBus pin)
	M.2 slot	1 x E-Key 2230; 1 x B-Key 2280/3042 (*optional M-Key 2280)	-
Ethernet	MIOe	DDI x 1, 4 PCIe x1, USB3.0/2.0 LPC, SMBUS, rest, line out, power on	DDI x 1, 4 PCIe x1, USB2.0 LPC, SMBUS, rest, line out, power on
	Controller	GbE1: Intel I219 GbE2: Intel I210	GbE1: Intel I219 GbE2: Intel I210
	Speed	10/100/1000Mbps	10/100/1000Mbps
Audio	Connector	RJ45 x 2	RJ45 x 2
	Audio Interface	High Definition Audio	High Definition Audio
	CODEC	Realtek ALC888S	Realtek ALC888S
WatchDog Timer	Amplifier	optional via MIOe	optional via MIOe
	Connector	Line-in, Line-out, Mic-in	Line-in, Line-out, Mic-in
Storage	WatchDog Timer	255 level timer interval	255 level timer interval
	SATA	2, up to 6Gb/s (600 MB/s)	2, up to 6Gb/s (600 MB/s)
	mSATA	-	supports either mSATA or full size miniPCIe
I/O	CFast	-	-
	USB3.0	4 (USB 3.1 Gen.2)	4
	USB2.0	2 (Internal)	2 (Internal)
	GPIO	2 x 8bit GPIO (5V tolerance)	2 x 8bit GPIO (5V tolerance)
	COM Port	2 x RS-232/422/485 from COM1/2 with auto flow control (ESD protection: air gap ±15kV, contact ±8kV)	2 x RS-232/422/485 from COM1/2 with auto flow control (ESD protection: air gap ±15kV, contact ±8kV)
	Reset Button	1	1
Security	Smart Fan	1	1
	TPM	TPM 2.0	TPM 2.0
Power	Power Type	single 12V DC power input	single 12V DC power input
	Power Supply Voltage	12V ± 10%	12V ± 10%
	Connector	ATX 2x2P (DC Jack optional)	ATX 2x2P (DC Jack optional)
	Power Consumption (Idle)	E-2276ME/i7-9850HE/i7-9850HL/i58400H: 11.55W	i7-7820EQ: 8.2W i5-7440EQ: 6.595W i3-7100E: 5.333 W
	Power Consumption (Full Load)	E-2276ME: 102.75W i7-9850HE: 95.38W i7-9850HL: 44.55W i5-8400H: 74.44W	i7-7820EQ 67.6W i5-7440EQ: 50.729W i3-7100E: 29.623 W
	Battery	Lithium 3V/210mAH	Lithium 3V/210mAH
Environment	Operational Temperature	0 ~ 60 °C (32 ~ 140 °F); Extend: -40 ~ 85 °C (-40 ~ 185 °F) (Operational humidity: 40 °C @ 95% RH Non-Condensing)	0 ~ 60 °C (32 ~ 140 °F); Extend: -40 ~ 85 °C (-40 ~ 185 °F) (Operational humidity: 40 °C @ 95% RH Non-Condensing)
Physical Characteristics	Dimensions (L x W x H)	146 x 102 mm (5.7" x 4")	146 x 102 mm (5.7" x 4")
Operating System	Microsoft Windows	Yes	Yes
	Linux	Yes	Yes
	SUSIAccess/ WISE-PaaS/RMM	Yes	Yes
	iManager/SUSI 4.0	Yes	Yes
Certification	EMC	CE, FCC	CE, FCC

MI/O Extension 3.5" SBCs

NEW



Model Name		MIO-5373	MIO-5272	MIO-5350
Form Factor		3.5" MI/O-Compact	3.5" MI/O-Compact	3.5" MI/O-Compact
Processor System	CPU	Intel Core i7-8665UE/i5-8365UE/ i3-8145UE/Celeron 3950U*	Intel Core i7-7600U/i7-6600U/ i5-6300U/i3-6100U/Celeron 3955U*	Intel® Pentium N4200 Celeron N3350 & Atom™ E3950/E3940/E3930
	CPU TDP	15W	15W	6W/6W/12W/9W/6W
	Frequency	1.70 GHz/ 1.60 GHz/ 2.20 GHz	2.8(Turbo: 3.9)GHz/ 2.6(Turbo: 3.4)GHz/ 2.4(Turbo: 3.0) GHz/ 2.3 GHz/ 2.0 GHz	1.1GHz/1.1GHz/1.6GHz/1.6GHz/1.3GHz
	Core Number	4/4/2	2	4/2/4/4/2
	L2 Cache	2MB	-	2
	L3 Cache	-	4MB/4MB/ 3MB/ 3MB/ 2MB	-
	BIOS	AMI UEFI 256Mbit	AMI UEFI 128 Mbit	AMI UEFI 64 Mb
Memory	Chipset	-	-	-
	Technology	DDR4-2400MT/s	DDR3L 1333/1600 MHz	DDR3L 1867 MHz
	Max. Capacity	32 GB	16 GB	8 GB
	Socket	2 x 204-pin SODIMM	2 x 204-pin SODIMM	1 x 204-pin SODIMM
Display	Controller	Intel® WHL-U SoC integrated	Intel® HD Graphics 620/520/510 (Celeron)	Intel Gen9 graphic engine
	Graphic Memory	Shared with system memory up to 3968MB	Shared with system memory up to 3968MB	Shared with system memory up to 1792MB
	VGA	-	Up to 1920 x 1200 at 60 Hz	2560 x 1600 at 60Hz
	LCD (LVDS/eDP)	LVDS 48-bit, up to 1920 x 1200 at 60Hz	LVDS 48-bit, up to 1920 x 1200 at 60Hz	48-bit LVDS up to WUXGA 1920 x 1200 at 60Hz
	DDI (HDMI/DVI/DisplayPort)	HDMI: up to 4096 x 2160 at 24 Hz	HDMI: up to 4096 x 2160 at 24 Hz	HDMI 1.4a for HD video playback, 1080P at 60Hz Displayport*, up to 2560 x 1600 at 60Hz
	Multiple Display	48-bit LVDS/eDP+HDMI+DP	VGA + HDMI + LVDS	VGA + LVDS (eDP *) + HDMI (DP*)
Expansion Interface	Mini PCIe	-	2 x Full-size	1 x Full size
	SIM Socket	1	1	-
	SMBus	1	1	1
	I²C	1	1 (Shares with SMBus pin)	1 (Shares with SMBus pin)
	M.2 slot	1 x M.2 E-key 2230 1 x M.2 M-key 2280 support SATA or NVMe, optional B-key 3042	-	-
	MIOe	4 PCIe1(x1/x2/x4), USB2.0, LPC, SMBus, Line-out, 12V/5V Power supply	SMBus, USB3.0, LPC, 2 x PCIe, line-out Displayport (optional), Reset, PowerOn, +5Vsb, +12Vsb	Displayport (optional), SMBus, 3 x USB2.0, LPC, 1 x PCIe x1, line out, +5 Vsb/+12 Vsb power, Power On, Reset#
Ethernet	Controller	GbE1: Intel i219, GbE2: Intel i210	GbE1: Intel i219, GbE2: Intel i210	GbE1 & GbE2: Intel i210
	Speed	10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps	10/100/1000Mbps
	Connector	RJ45 x 2	RJ45 x 2	RJ45 x 2
Audio	Audio Interface	High Definition Audio	High Definition Audio	High Definition Audio
	CODEC	Realtek ALC888S	Realtek ALC888S	Realtek ALC888S
	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, programmable by software
Storage	SATA	2, up to 6 Gb/s (600 MB/s)	2, up to 6 Gb/s (600 MB/s)	2" SATAIII (Max. Data Transfer Rate up to 6.0 Gb/s)
	mSATA	-	Supports either mSATA or full size miniPCIe, default support mSATA	1 x Full size
	CFast	-	-	-
I/O	USB3.1	4	-	-
	USB3.0	-	2	2
	USB2.0	2 (from internal)	4 (2 from rear, 2 from internal)	4 (2 from Rear, 2 from Internal)
	GPIO	16-bit general purpose input/output	8-bit general purpose input/output	8-bit general purpose input/output
	COM Port	1 x RS-232/422/485, 2 x GPIO 8b (default) or 2 x RS-232 (*by request)	2 x RS-232/422/485 with RS-485 auto flow control	2xRS-232, 2xRS-232/422/485 with RS-485 auto flow control
	Reset Button	1	1	1
	Smart Fan	-	-	-
Security	TPM	TPM 2.0	TPM 2.0 (optional)	TPM 2.0 (optional)
	Power Type	AT/ATX	Single 12V DC power input	Single 12V DC power input
Power	Power Supply Voltage	12V-24V +/- 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)	i7-8665UE: 6.61W (12V) i7-8665UE: 7.42W (24V)	i7 7600U: 6.46W / i7 6600U: 6.46 W/ i5 6300U: 5.26 W / i3 6100U: 5.02 W/ Celeron 3955U: 4.88 W	N4200: 0.4A @ 12V (4.80W) N3350: 0.4A @ 12V (4.80W)
	Power Consumption (Full Load)	i7-8665UE: 30.10W (12V) i7-8665UE: 33.33W (24V)	i7 7600U: 22.03 W i7 6600U: 22.03 W/ i5 6300U: 20.87 W/ i3 6100U: 20.45 W/ Celeron 3955U: 17.81 W	N4200: 1.26A @ 12V (15.12W) N3350: 1.29 @ 12V (15.48W)
	Battery	Lithium 3 V / 210 mA	Lithium 3 V / 210 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 @ 95% RH Non-Condensing)	0 ~ 60 °C (32 ~ 140 °F) (Operational humidity: 40 °C @ 95% RH Non-Condensing)
Physical Characteristics		Dimensions (L x W x H)	146 x 102 mm (5.7" x 4")	146 x 102 mm (5.7" x 4")
Operating System	Microsoft Windows	Yes	Yes	Yes
	Linux	Yes	Yes	Yes
	SUSIAccess/ WISE-PaaS/RMM	Yes	Yes	Yes
	iManager/SUSI 4.0	Yes	Yes	Yes
Certification		CE, FCC	CE, FCC	CE, FCC

Embedded Single Board Computers

3.5" Single Board Computers



Model Name		PCM-9366	PCM-9365
Form Factor		3.5" SBC	3.5" SBC
Processor System	CPU	Intel® Pentium N4200 Celeron N3350 & Atom™ E3950/E3940/E3930	Intel Celeron N2930/Intel Atom E3825
	CPU TDP	6W/6W/12W/9W/6W	7.5W/ 6W
	Frequency	1.1GHz/1.1GHz/1.6GHz/1.6GHz/1.3GHz	1.83/ 1.33 GHz (Burst: 2.16 GHz/ -)
	Core Number	4/2/4/4/2	4/2
	L2 Cache	2MB	2MB/ 1MB
	BIOS	AMI EFI 16Mbit	AMI UEFI BIOS at 64 Mbit
Memory	Chipset	-	-
	Technology	DDR3L-1866MHz	DDR3L 1333 MHz for N2930, DDR3L 1066 MHz for E3825
	Max. Capacity	8GB	4 GB
	Socket	1 x 204-pin SODIMM	-
Display	Onboard Memory	-	Onboard 2GB/ 4GB
	Controller	Intel Gen9 graphic engine	Intel Gen7 graphic engine
	Graphic Memory	Share with system memory up to 1792MB	-
	VGA	up to 1920x1200	2560 x 1600 at 60Hz
	LCD (TTL/LVDS/eDP)	48-bit LVDS up to WUXGA 1920 x 1200 at 60Hz	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
	DDI (HDMI/DVI/DisplayPort)	HDMI 1.4a for HD video playback, 1080P at 60Hz	HDMI 1.4a for HD video playback, 1080P at 60Hz
Expansion Interface	Multiple Display	VGA + LVDS * eDP + HDMI	VGA + LVDS, HDMI*+ LVDS, LVDS + LVDS*
	Mini PCIe	1 x Full size	1 x Full-size
	SIM Socket	1	-
	SMBus	1	1
	I2C Bus	1 (Shares with SMBus pin)	1 (shared with SMBus pin)
	PC/104	-	-
	PCI-104	-	1
Ethernet	M.2	1 (Key E)	-
	Controller	GbE1: Intel i210 GbE2: Intel i210	Realtek RTL8111E-VL-CG
	Speed	10/100/1000Mbps	10/100/1000Mbps
	Connector	RJ45 x 2	RJ45 x 2
Audio	Audio Interface	HD Audio	HD Audio
	CODEC	Realtek ALC888S	Realtek ALC888S
	Amplifier	-	-
	Connector	Line-in, Line-out, Mic-in	pin header (Line-in, Line out, Mic-in)
WatchDog Timer		-	Yes
Storage	SATA	1* SATAIII (Max. Data Transfer Rate up to 6.0 Gb/s)	1, up to 3Gb/s (300 MB/s)
	mSATA	1 x Full size	1 x Full-size
	IDE	-	-
	CompactFlash	-	-
	Floppy	-	-
I/O	USB3.0	2	-
	USB2.0	4	4
	GPIO	16-bit general purpose input/output	8-bit
	LPT	-	-
	COM Port	2xRS-232, 2xRS-232/422/485 with RS-485 auto flow control	3 RS-232 (ESD protection: Air gap ±15kV, Contact ±8kV)
	PS/2 KB/Mouse	-	-
	Reset Button	1	-
	Smart Fan	-	-
	Power Type	AT/ATX	-
Power	Power Supply Voltage	9 (-5%) - 36 (+10%)V DC power input	12V ± 10%
	Connector	2x2P phenix power connector	1 x 4-pin power connector
	Power Consumption (Idle)	N4200: 0.4A @ 12V (4.80W) N3350: 0.4A @ 12V (4.80W)	PCM-9365E-2GS3A1E: 0.39A @ 12V (4.68W) PCM-9365EV-4GS3A1E: 0.44A @ 12V (5.28W) PCM-9365N-4GS8A1E: 0.509A @ 12V (6.108W)
	Power Consumption (Full Load)	N4200: 1.26A @ 12V (15.12W) N3350: 1.29 @ 12V (15.48W)	PCM-9365E-2GS3A1E: 0.49A @ 12V (5.88W) PCM-9365EV-4GS3A1E: 0.554A @ 12V (6.648W) PCM-9365N-4GS8A1E: 0.745A @ 12V (8.94W)
	Battery	Lithium 3 V / 210 mAh	Lithium 3 V / 210 mAh
Environment	Operational Temperature	(Operational humidity: 40 °C @ 95% RH Non-Condensing)	0 ~ 60 °C (32 ~ 140 °F) (Operational humidity: 40 °C @ 85% RH non-condensing)
Physical Characteristics	Dimensions (L x W x H)	146 x 102 mm (5.7" x 4")	146 x 102 mm (5.7" x 4"), same as 3.5"
	Construction	-	Aluminum with fanless design
Operating System	Microsoft Windows	Yes	Yes
	Linux	Yes	Yes
	SUSIAccess	Yes	SUSI4
	iManager	Yes	Yes
Certification	EMC	CE, FCC	CE,FCC

Note: "-" : means Not Applicable (N/A)

MI/O Extension 2.5" Pico-ITX

NEW



Model Name		MIO-2361	MIO-2360
Form Factor		2.5" MI/O-Ultra (Pico-ITX)	2.5" MI/O-Ultra (Pico-ITX)
Processor System	CPU	Intel® Atom™ E3900 series/ Pentium N4200/ Celeron N3350	Intel® Pentium N4200/ Intel® Celeron N3350
	CPU TDP	12W	6W
	Frequency	2.0 GHz/2.5GHz/2.4GHz	2.5GHz/2.4GHz
	Core Number	4/4/2	4/2
	L2 Cache	2M	2M
	BIOS	AMI EFI 64 Mbit	AMI EFI 64 Mbit
	Technology	-	DDR3L-1866MHz
Memory	Max. Capacity	LPDDR4-2400MT/s	8GB
	Socket	-	1 x 204-pin SODIMM
	Onboard Memory	Onboard LPDDR4	-
	Controller	Intel® Gen9 graphic engine	Intel® Gen9 graphic engine
Display	Graphic Memory	Intel® Atom SoC integrated	Shared with system memory up to 1792MB
	VGA	-	up to 1920x1200 at 60Hz
	LCD (TTL/LVDS/ eDP)	48-bit LVDS, up to 1920 x 1200	24-bit up to 1440 x 900 at 60Hz
	DDI (HDMI/DVI/ DisplayPort)	HDMI 1.4b: up to 3840 x 2160 at 30Hz	HDMI 1.4b(3840x2160@30Hz)
	Multiple Display	HDMI + LVDS	VGA+LVDS, HDMI+LVDS
Expansion Interface	Mini PCIe	1 x Full-size	1 x Half size
	SIM Socket	-	-
	SMBus	1	1
	I²C	1 (shared with SMBus pin)	1 (Shares with SMBus pin)
	MIOe	-	SMBus, 2 x USB3.0, LPC, 2 x PCIe x1, line out, DisplayPort/HDMI*, +5 Vsb/+12 Vsb power, Power On, Reset, SATA*
	64-pin connector A	-	-
	64-pin connector B	-	-
Ethernet	Controller	Intel® i210IT/i210AT	Intel i210
	Speed	10/100/1000 Mbps	10/100/1000Mbps
	Connector	RJ45 x 2	RJ45 x 1
Audio	Audio Interface	High Definition Audio	High Definition Audio
	CODEC	Realtek ALC888S	Realtek ALC888S
	Amplifier	-	-
	Connector	Line-in, Line-out, Mic-in	Line-in, Line-out
WatchDog Timer		Yes	255 levels timer interval, programmable by software
Storage	SATA	1, up to 6Gb/s (600MB/s)	1, up to 6Gb/s (600 MB/s)
	mSATA	1 x Full-size*	1
	CompactFlash	-	-
I/O	USB3.0	2	2
	USB2.0	2	6
	GPIO	16bit GPIO (5V tolerance)	8-bit general purpose input/ output
	COM Port	2 x RS-232/422/485	2 x RS-232/422/485
	Reset Button	1	1
	Fan	-	-
Power	Power Type	AT/ATX	Single 12V DC power input
	Power Supply Voltage	12V or 24V +/- 10%	single 12V input, ±10%
	Connector	ATX 1x2p, DC Jack (optional)	ATX 1x2p, DC Jack (optional)
	Power Consumption (Idle)	E3950: 8.59 W (12V) E3950: 8.81 W (24V)	N4200: 4.89 W (12V) N3350: 4.61 W (12V)
	Power Consumption (Full Load)	E3950: 26.27 W (12V) E3950: 26.51 W (24V)	N4200: 12.90 W (12V) N3350: 17.18 W (12V)
	Battery	Lithium 3V/ 210mAh	Lithium 3 V / 210 mAh
Environment	Operational Temperature	0 ~ 60 °C (32 ~ 140 °F), Extend: -40 ~ 85 °C (-40 ~ 185 °F)	0 ~ 60 °C (32 ~ 140 °F) (Operational humidity: 40 °C @ 95% RH Non-Condensing)
Physical Characteristics	Dimensions (L x W x H)	100 x 72 mm (3.9" x 2.8")	100 x 72 mm (3.9" x 2.8")
	Microsoft Windows	Yes	Yes
Operating System	Linux	Yes	Yes
	SUSIAccess/ WISE-PaaS/RMM	Yes	Yes
	iManager	Yes	-
Certification	EMC	CE, FCC	CE, FCC

PC/104 CPU Modules



Model Name		PCM-3365
Form Factor		PC/104-Plus
Processor System	CPU	Intel Atom E3825/E3845/N2930
	Frequency	1.33GHz/ 1.91GHz/ 1.83GHz
	Core Number	2/4/4
	L2 Cache	1MB/2MB/2MB
	L3 Cache	-
	BIOS	AMI UEFI BIOS at 64 Mb
	Chipset	1 x 204-pin SODIMM
Memory	Technology	DDR3L 1066MHz/ 1333MHz/ 1333MHz
	Max. Capacity	8GB
	Socket	1 x 204-pin SODIMM
	Onboard Memory	-
Display	Controller	Intel Gen7 graphic engine
	Graphics Engine	DirectX11, 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
	HDMI/DVI	HDMI1.4a for HD video playback, 1080P at 60Hz, up to 1920 x 1080, DVI1.0 (DVI-D), up to 1920 x 1080
	Multiple Displays	VGA + LVDS, VGA + HDMI/DVI, HDMI/DVI + LVDS
Expansion Interface	Mini PCIe	1 x Full-size
	SMBus	1 (configurable to I²C by customer's request)
	I²C Bus	1 (supported by request)
	PC/104	-
	PCI-104	-
Ethernet	Controller	Intel I210
	Speed	10/100/1000 Mbps
	Connector	Pin Header
Audio	Codecs	Intel High Definition audio interface (requires an audio extension module P/N: PCE-SA01-00A1E
WatchDog Timer		Output System Reset, Programmable counter from 1 ~ 255 sec
Storage	SATA	1 SATA II
	mSATA	1 x Full-size (default, SATA signal shared with Onboard flash)
	IDE	-
	CompactFlash	-
	Onboard Flash	16GB/32GB/64GB (by request)
I/O	Floppy	-
	USB2.0	6
	SPI Bus	-
	GPIO	8-bit GPIO
	LPT	-
	COM Port	3 (1 x RS-232/422/485, 2 RS-232)
	PS/2 KB/Mouse	1
Power	Power Type	AT/ATX
	Power Supply Voltage	5 V ± 5% only to boot up (12 V is optional for LCD inverter and add on card)
	Power Consumption (Idle)	E3825: 4.474W E3845: 4.72W N2930: 4.417W
	Power Consumption (Full Load)	E3825: 5.675W E3845: 7.686W N2930: 6.843W
	Battery	Lithium 3 V / 210 mAh
Environment	Operational Temperature	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
Physical Characteristics	Dimensions (L x W x H)	96 x 90 mm (3.8" x 3.5")
	Weight	0.735kg (1.62lb) (with heat-sink)
Operating System	Microsoft Windows	Yes
	Linux	Yes
	SUSIAccess	Yes
Certifications	EMC	CE, FCC

Industrial Motherboards

UTX



Model Name		AIMB-U233	AIMB-U217	AIMB-U117
Form Factor		UTX-E	UTX-E	UTX
Processor System	CPU	Intel® 8th Gen Core i7/i5/i3	Intel E3950/ E3940	Intel E3950/ E3930
	Socket	BGA1528	FCBGA	FCBGA
	Max. Speed	2.2/1.7/1.6 GHz	QC 1.6 GHz	QC 1.6/ DC 1.3 GHz
	TDP	15 W	12W/ 9.5W	12W/ 6.5W
	L2 Cache	-	2M	2M
	L3 Cache	-	-	-
	Chipset	-	-	-
	BIOS	AMI EFI 32MB, SPI	AMI EFI 128 Mbit SPI	AMI EFI 128 Mbit SPI
Expansion Slot	M.2	3 (M-key, E-key, B-Key)	1 (E-Key)	1 (E-Key)
	PCI	-	-	-
	Mini PCIe	-	1 (F/S)	1 (F/S)
	PCIe	-	-	-
Memory	Technology	DDR4 2400MHz SDRAM	Single channel DDR3L 1866/ 1600/ 1333 Mhz SDRAM	Single channel DDR3L 1866/ 1600/ 1333 Mhz SDRAM
	Max. Capacity	16 GB per DIMM	8GB	8GB
	Socket	1 x 260-pin SODIMM	1 X 204-pin SODIMM	1 X 204-pin SODIMM
Graphics	Controller	Intel HD Graphics	Intel HD Graphics	Intel HD Graphics
	LCD	Dual channel 24-bit LVDS / eDP (BOM Option)	Dual channel 48-bit LVDS (colay with eDP)	Dual channel 48-bit LVDS (colay with eDP)
	HDMI	2	1	1
	DVI	-	-	-
Ethernet	Interface	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps
	Controller	LAN1: Intel i219LM LAN2: Intel i211AT	LAN1: Intel i211AT LAN2: Intel i211AT LAN3: Realtek RTL8111G	LAN1: Realtek RTL8111G LAN2: Realtek RTL8111G
	Connector	RJ45 x 2	RJ-45 x3	RJ-45 x2
TPM		Optional	Optional	Optional
SATA	Max Data Transfer Rate	600 MB/s	600 MB/s	600 MB/s
	Channel	1	1	1
	eSATA/mSATA	-	-/-	-/-
Rear I/O	VGA/DVI/HDMI/DP	-/-/2/- (type C Alt.)	-/-/1/1	-/-/1/1
	Ethernet	2	3	2
	USB	2	4 x USB3.0	4 x USB3.0
	Audio	1	Line out	Line out
	Serial	-	-	-
	PS/2	-	-	-
	DC Jack	1	1	1
	LVDS & Inverter	1, optional	1	1
Internal Connector	DVI	-	-	-
	USB	2	2 (USB2.0)	-
	Serial	4	4 (2 x RS-232, 2 x RS-232 or 422 or 485)	2 (1 x RS-232; 1 x RS-422 or 485)
	Parallel	-	-	-
	SATA	1	1	1
	CompactFlash/ eMMC	-	-/1 (128GB), optional	-/1 (128GB), optional
	GPIO	16 bit GPIO	16-bit GPIO	8-bit GPIO
	CANBus	-	1 (Isolated CANBus)	1
	MDB	-	-	1 (colay with RS-232)
	ccTALK	-	-	1 (colay with RS-422/ 485)

Note: "-" : means Not Applicable (N/A)

Mini-ITX



Model Name		AIMB-276	AIMB-286	AIMB-233	AIMB-218	AIMB-228
Form Factor		Mini-ITX	THIN Mini-ITX	THIN Mini-ITX	THIN Mini-ITX	THIN Mini-ITX
Processor System	CPU	Intel 9th/8th Core i7/ i5 / i3 / Pentium/Celeron	Intel 9th/8th Core i7/ i5 / i3 / Pentium/Celeron	Intel® 8th Gen Core i7/i5/ i3/Celeron	Intel Pentium/Celeron/ Atom	AMD Ryzen Embedded V/R-Series
	Socket	LGA1151	LGA1151	BGA1528	FCBGA	FP5
	Max. Speed	3.7/3.6/3.2/3.1/3.0/2.9/ 2.4/2.1GHz	3.7/3.6/3.2/3.1/3.0/2.9/ 2.4/2.1GHz	2.2/1.7/1.6/2.0 GHz	2.0 GHz	QC 3.35GHz/ QC 2.00GHz/ DC 2.30GHz
	TDP	65W/54W/35W	65W/54W/35W	15W/15W/15W/15W	12 W/6 W	45W/ 15W/ 15W
	L2 Cache	-	-	-	-	2M/2M/1M
	L3 Cache	12MB/9 MB/6 MB/ 4 MB/2 MB	12MB/9 MB/6 MB/4 MB/2 MB	-	-	-
	Chipset	Intel Q370	Intel H310	-	-	-
	BIOS	AMI EFI 256 Mbits, SPI	AMI EFI 128 Mbits, SPI	AMI EFI 32Mbit, SPI	AMI EFI 128Mbit, SPI	AMI EFI 128Mbit, SPI
Expansion Slot	M.2	2 (B key + E key)	2 (B key + E key)	2 (M key + E key)	2 (B key + E key)	2 (B key + E key)
	Mini PCIe	0	0	1 (F/S)	-	-
	PCIe	PCIe x 16, 1 slot	PCIe x 4, 1 slot	PCIe x1, 1 slot	PCIe x1, 1 slot	PCIe x 8, 1 slot (Only PCIe4 signal for R1000)
Memory	Technology	Dual Chaneel DDR4 2666 MHz SDRAM	Dual Chaneel DDR4 2666 MHz SDRAM	Dual channel DDR4 2400MHz SDRAM	Dual channel DDR4 3200MHz SDRAM	Dual channel DDR4 2400/2666/3200 MHz SDRAM
	Max. Capacity	64 GB/ up to 32 GB per DIMM	64 GB/ up to 32 GB per DIMM	32 GB/ up to 16 GB per DIMM	64 GB/ up to 32 GB per DIMM	32 GB/ up to 16 GB per DIMM
	Socket	2 x 260-pin SODIMM	2 x 260-pin SODIMM	2 x 260-pin SODIMM	2 x 260-pin SODIMM	2 x 260-pin SODIMM
Graphics	Controller	Intel® UHD Graphics	Intel HD Graphics	Intel HD Graphics	Intel HD Graphics	CPU Integrated Vega
	LCD	Dual channel 48-bit LVDS	Dual channel 48-bit LVDS	Dual channel 48-bit LVDS	Dual channel 48-bit LVDS	Dual channel 48-bit LVDS
	HDMI	1 (HDMI2.0a)	1	1 (HDMI 2.0a)	1	-
	DVI	-	-	-	-	-
	Type C Alt.	-	-	1	-	-
Ethernet	Interface	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps
	Controller	LAN1: Intel i219LM LAN2: Intel i211AT	LAN1: Realtek 8111G LAN2: Realtek 8111G (only for F/G2 SKU) LAN3: Intel i211AT (only for F SKU)	LAN1: Intel i219LM LAN2: Intel i211AT	LAN1: Realtek 8111H LAN2: Realtek 8111H	LAN1: Realtek 8111G LAN2: Realtek 8111G
	Connector	RJ-45 x 2	RJ-45 x 3 (AIMB-286F: 3; AIMB-286G2: 2; AIMB-286L: 1)	RJ45 x 2	RJ45 x 2	RJ45 x 2
TPM		Optional	Optional	Optional	Optional	Optional
SATA	Max Data Transfer Rate	600 MB/s	600 MB/s	600 MB/s	600 MB/s	600MB/s
	Channel	3	3	1	1	2
	eSATA/mSATA	-/-	-/-	-	-	-
Rear I/O	VGA/DVI/HDMI/DP	-/-1/2	-/-1/1	-/-1/1(type C Alt.)	-/-1/1	-/-/V1000: 4 -/-/R1000: 3
	Ethernet	2	F SKU: 3 G2 SKU: 2 L SKU: 1	2	2	2
	USB	5 USB3.1 + 1 USB 3.1 type C (optional) + 2 USB3.0	4 (USB3.0)	3 USB 3.1 + 1 USB 3.1 Type C (optional)	2 USB 3.1 + 2 USB 2.0	2 USB 3.1 + 2 USB 2.0
	Audio	Mic-in, Line-out, Line-in	Mic-in, Line-out	Mic-in, Line-out	Line-out	Mic-in, Line-out
	Serial	-	-	-	-	-
	PS/2	-	1	-	-	-
	DC Jack	1 (4-pin phoenix connector)	1	1	1	1
Internal Connector	LVDS & Inverter	1	1	1, optional	1, optional	1(optional)
	DVI	-	-	-	-	-
	USB	2 (USB 3.0)	4 USB2.0 (only for F/G2 SKU)	2 x USB 3.0 + 2 x USB 2.0	1 USB 3.0 + 3 USB 2.0	2 USB 2.0
	Serial	2 (1 x RS-232; 1 x RS-232/422/485)	F SKU: 6 (4 x RS-232, 2 x RS-232/422/485, RS-422/485 support by BOM optional) G2/L SKU: 2 (1 x RS-232, 1 x RS-232/422/485, RS-422/485 support by BOM optional)	6 (5 x RS-232, 1 x RS-232/422/485)	6 (5 x RS-232, 1 x RS-232/422/485)	6 (4 x RS-232, 2 x RS-232/422/485)
	Parallel	-	-	-	-	-
	SATA	3	F/G2 SKU: 3 L SKU: 2	2	1	2
	eMMC/UFS	-/-	-/-	-/-	-/1 (256GB), optional	-/-
	GPIO	8-bit GPIO	16-bit GPIO	8 bit GPIO	8 bit GPIO	16-bit GPIO

Industrial Motherboards

Micro-ATX

NEW


Model Name		AIMB-586	AIMB-506
Form Factor		Micro-ATX	Micro-ATX
Processor System	CPU	Intel 9th & 8th Xeon/Core i7/i5/i3 / Pentium/Celeron	Intel 9th & 8th Gen Core i7/i5/i3/Pentium/ Celeron
	Socket	LGA1151	LGA1151
	Max. Speed	3.7/3.6/3.4/3.2/3.1/ 3.0/2.9/2.4/2.1 GHz	3.7/3.6/3.2/3.0/2.9 GHz
	TDP	80W/71W/65W/35W	65W /58W/35W
	L2 cache	-	-
	L3 cache	12MB/9 MB/8 MB/6 MB/4 MB/2 MB	12 MB/ 9MB /6MB /2MB
	Chipset	Intel Q370/C246/H310	Intel H310
	BIOS	AMI EFI 256 Mbits, SPI	AMI EFI 128 Mbits, SPI
Expansion Slot	PCI	-	2 (L Sku: 0)
	PCIe x16	1 (QG2/L: x16 link, WG2: x8 link)	1
	PCIe x8	1 (WG2 only)	-
	PCIe x4	1	-
	PCIe x1	1 (QG2/WG2 only)	1
	mini-PCIe / M.2	- / 2 (M & E key, QG2/WG2 only)	- / 1 (B-Key, L Sku:0)
	Technology	Dual Channel DDR4 2400/2666 MHz SDRAM	Dual Channel DDR4 2400/2666 MHz SDRAM
Memory	Max. Capacity	128 GB/ up to 32 GB per DIMM	64 GB/ up to 32 GB per DIMM
	Socket	4 x 288-pin DIMM	2 x 288-pin DIMM
	Controller	Intel HD Graphics	Intel HD Graphics
Graphics	VRAM	Shared system memory up to 1 GB	Shared system memory up to 1 GB
	VGA	-	1
	LCD	Dual channel 48-bit LVDS(option)	Dual Channel 48-bit LVDS (Optional)
	DVI-D	-	1
	HDMI	1 (option to HDMI2.0a)	-
	DP/eDP	2 / 1 (L: eDP is option)	1/1 (G2/ L sku without eDP)
	Dual Display	DP++ + HDMI, DP++ + DP++, DP++ + eDP/LVDS, HDMI + eDP/LVDS	DP+ DVI-D, DP+VGA, DVI-D+VGA, DP+eDP(LVDS), DVI-D+eDP(LVDS), VGA+eDP(LVDS)
	Triple Display	DP++ + DP++ + HDMI, DP++ + DP++ + eDP/LVDS, DP++ + HDMI + eDP/LVDS	-
	Interface	10/100/1000 Mbps	10/100/1000 Mbps
Ethernet	Controller	LAN1: Intel I219LM (QG2/WG2/L) LAN2: Intel I211AT (QG2) I210AT (WG2) LAN3/4: Realtek 8111G (Option)	LAN1: Realtek RLT8111G LAN2: Realtek RLT8111G
	Connector	RJ-45 x 4 (2 option)	RJ-45 x2
	TPM	Optional	Optional
SATA	Max Data Transfer	600 MB/s	600 MB/s
	Channel	6 -QG2 sku; 8 - WG2 sku (SW RAID)	3
	mSATA/ M.2	- / 1 (M key)	-
I/O Interface	VGA	-	1
	USB	4 USB3.1 (L:4 USB3.0 + 8 USB2.0, 2 option)	F sku: 20 (8 USB3.0 + 12 USB2.0) G2 sku: 12 (4 USB3.0 + 8 USB2.0) L sku: 8 (4 USB3.0 + 4 USB2.0)
	Serial	6 (QG2/WG2: 5x RS-232, 1x RS-232/422/485) 2 (L: 1x RS-232, 1x RS-232/422/485)	F sku: 14 (12 x RS-232; 2 x RS-232/422/485) G2 sku: 10 (8 x RS-232; 2 x RS-232/422/485) L sku: 2 (2 x RS-232)
	Parallel	-	-
	SIM Card Holder	-	1 (L Sku:0)
	PS/2	1(onboard)	1
	Ethernet (GbE)	4 (2 option)	2
	IEEE 1394	-	-
	Audio	Mic-in, Line-out	Mic-in, Line-out
	GPIO	16-bit	16-bit

Note: "-" : means Not Applicable (N/A)

Arm-Based Computing Platforms

Computer-on-Modules



NEW



NEW



Model Name		ROM-7720	ROM-7510	ROM-5720
Form Factor		Qseven V2.1	Qseven V2.0	SMARC V2.0
Processor System	CPU	NXP Arm Cortex-A72 i.MX8 1.6 GHz	TI Sitara Cortex-A15 AM5728 1.5 GHz	NXP Arm Cortex-A53 i.MX8M 1.5 GHz
	Technology	LPDDR4 1200 MT/s	DDR3L 1066 MT/s	LPDDR4 1866 MT/s
	Capacity	On-board LPDDR4 4 GB	On-board DDR3L 2 GB	On-board LPDDR4 2 GB
Memory	Flash	16 GB eMMC NAND Flash for O.S. and 32MB QSPI NOR FLASH for Advantech boot loader	8 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader	16 GB eMMC NAND Flash for O.S. and 8MB QSPI NOR FLASH for board information
	LVDS	2 x 24-bit LVDS, 1366 x 768 for 1ch; 1920 x 1080 for 2ch at 60Hz	1 x 24-bit dual channel LVDS, 1920 x 1200	-
	MIPI-DSI	-	-	1 x 4-Lane MIPI DSI
Graphics	HDMI	4096 x 2160 at 60Hz	1920 x 1080 at 60Hz	4096 x 2160 at 60Hz
	Parallel RGB	-	-	-
	VGA	-	-	-
	Graphics Engine	Vivante GC7000XS/VX	2D-Graphics Accelerator (BB2D) Subsystem and Dual-Core PowerVR® SGX544™ 3D GPU	GC7000L/GC7000LVX
	H/W Video Codec	Decoder: HEVC/H.265(4Kp60), VP9(4Kp60), H.264(4Kp30), MPEG-2, MPEG-4p2, VC-1, VP8, RV9, AVS, MJPEG, H.263	Video Processing Engine (VPE)	Decoder: HEVC/H.265(4Kp60), VP9(4Kp60), H.264(4Kp30), MPEG-2, MPEG-4p2, VC-1, VP8, RV9, AVS, MJPEG, H.263
Ethernet	Chipset	NXP i.MX8 Integrated RGMII	TI Sitara Integrated RGMII	1 x NXP i.MX8M Integrated RGMII 1 x RTL8119I PCIe GbE controller
	Speed	1 x 10/100/1000 Mbps	1 x 10/100/1000 Mbps	2 x 10/100/1000 Mbps
RTC		Yes	Yes	Yes
WatchDog Timer		1~6553s, default 60s, power on/off 1s	1~6553s, default 60s, power on/off 1s	1~6553s, default 60s, power on/off 1s
I/O	PCIe	2 PCIe 1x	2 PCIe 1x	1 PCIe 1x
	SATA	1 SATA III	1 SATA II	-
	USB	3 USB 3.0, 1 USB 2.0 OTG	1 USB 3.0, 1 USB 2.0 OTG, 4 USB 2.0 Host	2 USB 3.0, 4 USB 2.0, 1 USB 2.0 OTG
	Audio	I2S	I2S	2 x I2S
	SPDIF	-	-	-
	SDIO	1	1	1
	Serial Port	2 UART (2 x 4-wire)	2 UART (2 x 4-wire)	4 UART (1 x 4-wire, 3 x 2-wire)
	SPI	1	1	1
	CAN	1 x CAN bus 2.0 A/B	1 x CAN bus 2.0 A/B	-
	GPIO	8	8	12
	I2C	2	2	4
	Camera Input	1 x 4-Lane MIPI CSI-2 1 x 2-Lane MIPI CSI-2	-	1 x 4-Lane MIPI CSI-2 1 x 2-Lane MIPI CSI-2
	System Bus	-	-	-
	Touch	-	-	-
	Keypad	-	-	-
	PWM	-	2	-
Power	Power Supply Voltage	5V	5V	Fixed 5V DC source and allow 3.3 V ~ 5.25 V operates directly from single level Lithium-ion cells
	Power Consumption	TBD	10W (Max)	5.3W (Max)
Environment	Operating Temperature	0 ~ 60 °C / -40 ~ 85 °C	0 ~ 60 °C / -40 ~ 85 °C	0 ~ 60 °C / -40 ~ 85 °C
	Operating Humidity	5% ~ 95% Relative Humidity, non-condensing	5%~95% Relative Humidity, non-condensing	5% ~ 95% Relative Humidity, non-condensing
Mechanical	Dimensions (W x D)	70 x 70 mm	70 x 70 mm	82 x 50 mm
Operating System		Linux Android	Linux	Linux Android
Certifications		CE/FCC Class B	CE/FCC Class B	CE/FCC Class B

Note: "-" : means Not Applicable (N/A)

Arm-Based Computing Platforms

Computer-on-Modules



Model Name		ROM-5721	ROM-5620	ROM-3420
Form Factor		SMARC V2.0	SMARC V2.0	RTX V2.0
Processor System	CPU	NXP Arm Cortex-A53 i.MX8M Mini 1.8 GHz	NXP Arm Cortex-A35 i.MX8X 1.2 GHz	NXP Arm Cortex-A9 i.MX6 1 GHz
Memory	Technology	LPDDR4 1866 MT/s	LPDDR4 1200 MT/s	DDR3 1066 MT/s
	Capacity	On-board LPDDR4 2 GB	On-board LPDDR4 2 GB	On-board DDR3 1 GB / 2 GB
	Flash	8 GB eMMC NAND Flash for O.S. and 8MB QSPI NOR FLASH for Advantech boot loader	16 GB eMMC NAND Flash for O.S. and 8MB QSPI NOR FLASH for board information	4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader
Graphics	LVDS	1 x 24-bit dual channel LVDS*	2 x 24-bit single channel LVDS*	1 x 24-bit LVDS, 1366 x 768 at 60Hz
	MIPI-DSI	1 x 4-Lane MIPI-DSI*	2 x 4-Lane MIPI DSI*	-
	HDMI	-	-	1920 x 1080 at 60Hz
	Parallel RGB	-	-	1 x 24-bit TTL, 1920 x 1200 at 60Hz
	VGA	-	-	-
	Graphics Engine	Vivante GC320, GC NanoUltra 3D GPU Support OpenGL ES 2.0, VG 1.1	Vivante GC7000 Lite	2 x IPUs. OpenGL ES 2.0 for 3D, BitBlt for 2D and OpenVG 1.1
	H/W Video Codec	Decoder: H.265, H.264, VP8/9 1080p Encoder: H.264, VP8 1080p	Decoder: HEVC/H.265(4Kp60), VP9(4Kp60), H.264(4Kp30), MPEG-2, MPEG-4p2, VC-1, VP8, RV9, AVS, MJPEG, 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
Ethernet	Chipset	NXP i.MX8M Mini Integrated RGMII	2 x NXP i.MX8X Integrated RGMII	NXP i.MX6 Integrated RGMII
	Speed	1 x 10/100/1000 Mbps	2 x 10/100/1000 Mbps	1 x 10/100/1000 Mbps
RTC		Yes	Yes	Yes
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
I/O	PCIe	1 PCIe 1x	1 PCIe 1x	1 PCIe 1x
	SATA	-	-	1 SATA II
	USB	4 USB 2.0, 1 USB 2.0 OTG	1 USB 3.0, 2 USB 2.0 OTG	1 USB 2.0, 1 USB 2.0 OTG
	Audio	2 x I2S	2 x I2S	I2S
	SPDIF	-	-	-
	SDIO	1	1	1
	Serial Port	4 UART (2 x 2-wire, 2 x 4-wire)	3 UART (1 x 4-wire, 2 x 2-wire)	3 UART (3 x 4-wire)
	SPI	2	2	2
	CAN	-	2 x CAN bus 2.0 A/B	2 x CAN bus 2.0 A/B
	GPIO	12	12	10
	I2C	4	4	4
	Camera Input	1 x 4-Lane MIPI CSI-2	1 x 4-Lane MIPI CSI-2	1 x 4-Lane MIPI CSI-2
	System Bus	-	-	Address: 26 bits Data: 16 bits
	Touch	-	-	-
	Keypad	-	-	-
	PWM	-	-	-
Power	Power Supply Voltage	Fixed 5V DC source and allow 3.3 V ~ 5.25 V operates directly from single level Lithium-ion cells	Fixed 5V DC source and allow 3.3 V ~ 5.25 V operates directly from single level Lithium-ion cells	5 ~ 24 V
	Power Consumption	TBD	4.45W (Max)	3.3W (Max)
Environment	Operating Temperature	0 ~ 60 °C / -40 ~ 85 °C	0 ~ 60 °C / -40 ~ 85 °C	0 ~ 60 °C / -40 ~ 85 °C
	Operating Humidity	5% ~ 95% Relative Humidity, non-condensing	5% ~ 95% Relative Humidity, non-condensing	5%~95% Relative Humidity, non-condensing
Mechanical	Dimensions (W x D)	82 x 50 mm	82 x 50 mm	68 x 68 mm
Operating System		Linux Android	Linux Android	Linux Android
Certifications		CE/FCC Class B	CE/FCC Class B	CE/FCC Class B

Note: "-" : means Not Applicable (N/A)
 *LVDS & MIPI-DSI are shared interface

Single Board Computers

NEW



Model Name		RSB-3430	RSB-4411	RSB-4680	RSB-4710
Form Factor		2.5" SBC	3.5" SBC	3.5" SBC	3.5" SBC
Processor System	CPU	NXP Arm Cortex-A9 i.MX6 1 GHz	NXP Arm Cortex-A9 i.MX6 1 GHz	Rockchip Arm Cortex-A17 RK3288 1.6 GHz	Rockchip Cortex-A72 RK3399 1.8 GHz
	Technology	DDR3 1066 MT/s	DDR3 1066 MT/s	DDR3L 1333 MT/s	LPDDR4
Memory	Capacity	On-board DDR3 1 GB	On-board DDR3 1 GB	On-board DDR3L 2 GB	On-board 2 / 4GB
	Flash	4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader	4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader	8 GB eMMC NAND Flash for O.S. and Advantech boot loader	8 / 16 GB eMMC NAND Flash for O.S.
	Flash				
Graphics	LVDS	2 x 18/24-bit LVDS, 1366 x 768 for 1ch; 1920 x 1080 for 2ch at 60Hz	1 x 18/24-bit LVDS, 1366 x 768 for 1ch; 1920 x 1080 for 2ch at 60Hz	1 x 18/24/30-bit LVDS, 1366 x 768 for 1ch; 1920 x 1080 for 2ch at 60Hz	1 x dual channel LVDS
	HDMI	1920 x 1080 at 60Hz	1920 x 1080 at 60Hz	3840 x 2160 at 60Hz	2 (4Kp60 + 1080P)
	VGA	-	1920 x 1080 at 60Hz	1920 x 1200 at 60Hz	-
	eDP	-	-	-	1
	Graphics Engine	2 IPUs. OpenGL ES 2.0 for 3D, BitBlit for 2D and OpenVG 1.1	2 IPUs. OpenGL ES 2.0 for 3D, BitBlit for 2D and OpenVG 1.1	OpenGL ES1.1/2.0/3.0, OpenCL1.1, DirectX11	OpenGL ES 1.1/2.0/3.1, OpenCL 1.1, DirectX 11
	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-1, MPEG-2, MPEG-4, H.263, H.264, AVS, VC-1, VP8, MVC, HEVC/H.265 decoder, 4k@60FPS, Encoder: H.264 (BP@level4.0, MP, HP@level4.0), MVC and VP8	Decoder: MPEG-1, MPEG-2, MPEG-4, H.263, H.264, AVS, VC-1, VP8, MVC, HEVC/H.265 decoder, 4k@60 FPS, Encoder: H.264 (BP@level4.0, MP, HP@level4.0), MVC and VP8
Video in	MIPI CSI	-	1	-	1
Ethernet	Chipset	NXP i.MX6 Integrated RGMII	NXP i.MX6 Integrated RGMII	TI DP83867	RTL8211FSI
	Speed	1 x 10/100/1000 Mbps	1 x 10/100/1000 Mbps	1 x 10/100/1000 Mbps	2 x 10/100/1000 Mbps
WatchDog Timer		1~6553s, default 60s, power on/off 1s	1~6553s, default 60s, power on/off 1s	0~22s, default 22s	0~22s, default 22s
I/O	SATA	-	1	-	-
	SATA Power	-	1	-	-
	USB	2 x USB 2.0 Type A, 4 x USB 2.0 in UIO 20/40	1 x USB 2.0 OTG, 2 x USB Type A, 3 x USB pin header	1 x USB 2.0 OTG, 2 x USB 2.0 Type A, 3 x USB 2.0 pin header	1 x USB 3.0 + 1 x USB 2.0 TypeA, 3 x USB 2.0 pin header, 1 x USB 2.0 OTG
	Audio	1 x Line-out, 1 x Line-in via pin header	1 x Line-out, 1 x Mic-in via pin header	1 x Line-out, 1 x Mic-in via pin header	1 x Line-out/Mic-in/Line-in/Speaker by pin header
	SPDIF	-	-	-	-
	SDIO	-	1 x SD slot	1 x Micro SD slot	-
	Serial Port	3 x 2-wire RS-232 in UIO 20/40, 1 x 4-wire RS-232/422/485, DB9	2 x 2-wire RS-232 pin header, 1 x 4-wire RS-232/422/485	1 x 4-wire RS-232/485, DB9, 1 x 2-wire RS-232/Debug port, pin header selected by jumper, 4 x 4-wire RS-232, pin header	4 x RS-232, 2 x 4-wire RS-232/485
	SPI	-	1	1	1
	CAN	1 CAN 2.0B in UIO 20/40 (share w/ UART)	2	-	-
	GPIO	12 GPIO, 4 GPIO in UIO 20/40 and 8 GPIO in UIO 20/40, 3.3V level	20 GPIO w/o Isolation via pin header	8 GPIO via pin header (3.3V TTL level)	6
	I2C	1 in UIO 20/40	2	1	1
	System Bus	-	-	-	-
	Touch	-	-	-	-
	Keypad	-	-	-	-
	Button	-	-	1 Reset Button, 1 Power Button by pin header	1 Reset Button
Indicator	LED	1 Power LED, 1 Programmable LED	1 Power LED	1 Power LED	1 Power LED
Expansion	Mini PCIe	1 x mini PCIe slot (USB signal only)	1 x mini PCIe slot	1 x mini PCIe slot	1 x mini PCIe slot
	M.2	1 x M.2 2230 Key E slot	1 x M.2 2230 Key E slot	1 x M.2 2230 Key E slot	1 x M.2 2230 Key E slot
	SD Socket	1 x Micro SD slot	1 x SD slot	1 x Micro SD Slot	1 x Micro SD slot
	SIM	1 x SIM slot	1 x SIM slot	1 x SIM slot	1 x nano SIM slot
Power	Power Supply Voltage	12 V	12~24V	12V	12 V
	Power Type	DC-in	DC-in	DC-in	DC-in
	Power Consumption	TBD	5.6W (Max)	11.6W (Max)	TBD
Environment	Operating Temperature	0 ~ 60 °C / -40 ~ 85 °C	0 ~ 60 °C / -40 ~ 85 °C	0 ~ 60°C / -20 ~ 85°C	0 ~ 60 °C / -20 ~ 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
Mechanical	Dimensions (W x D x H)	100 x 72 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, Android	Android, Debian	Android, Debian
Certifications		CE/FCC Class B	CE/FCC Class B	CE/FCC Class B	CE/FCC Class B

Embedded PCs

EPC-S & EPC-C Series


NEW

Model Name		EPC-S101	EPC-S201	EPC-C301
Barebone system	Description	Fanless barebone system w/ memory	Fanless barebone system	Fanless barebone system
Processor System	Compatible Motherboard	PCM-9310	MIO-2360	MIO-5373
	Thermal Solution	Fanless	Fanless	Fanless
	CPU	Intel Celeron N3160/N3060, Atom x5-E8000	Intel Celeron N3350 1.10GHz	Intel Core i7-8665UE/i5-8365UE
Memory	BIOS	AMI UEFI 64Mb SPI	AMI UEFI 64Mb SPI	AMI UEFI 256Mb SPI
	Socket	1 x 204-pin SODIMM	1 x 204-pin SODIMM	2 x 260-pin SODIMM
	Technology	DDR3L-1600	DDR3L-1866	DDR4-2400
Graphics	Max. Capacity	Default 2GB adopted, up to 8GB	8GB	32GB
	Chipset Integrated	Intel Gen8LP	Intel Gen9LP	Intel® UHD Graphics 620
Storage	2.5" HDD Bay	Room for 1 x 2.5" SSD, max. 9.5mm height	-	-
	M.2 Slot	-	-	M-Key 2280 (PCIe Gen.3 x4, SATA III)
	mSATA Slot	Full size SATAIII (opt. mPCIe)	Half size SATAIII	-
Ethernet	Interface	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps
	Controller	LAN1: Realtek RTL8111E LAN2: Realtek RTL8111E	Intel i210	LAN1: Intel i219; LAN2: Intel i210 LAN3: Intel i210; LAN4: Intel i210
	Connector	RJ-45 x 2	RJ45	RJ-45 x 4
Audio	Codec	Realtek ALC892	Realtek ALC888	Realtek ALC888
Internal expansion Slot	Mini-PCIe	Full size PCIe Gen2 (opt. 2 slots)	Full size PCIe Gen2	Full size PCIe Gen3
	M.2	1	-	1 x E-Key 2230 (PCIe x1, USB2.0) 1 x B-Key 3042 (PCIe x1, USB2.0)
	SIM slot	1	-	1 x Nano SIM
	SD slot	-	-	-
Front Panel	DP++	-	-	-
	DP/HDMI	HDMI 1.4b up to 2560 x 1600	Opt. HDMI 1.4b up to 3840 x 2160	HDMI 1.4: up to 4096 x 2160 at 30Hz DP 1.2: up to 4096x2306@60Hz (Note: not support Audio & Hot-plug)
	VGA	1	1	-
	DVI	-	-	-
	COM	-	1 (RS-232/422/485)	2 (RS-232/422/485)
	LAN	2	1	4
	USB	4 (USB2.0 x 2, USB3.0 x 2)	2 x USB3.0	8 (USB3.0 x4, USB2.0 x4)
	Audio Jack	-	Line-in/Line-out	MIC/Line-out
	Antenna (optional)	up to 1	up to 2	-
	DP++	-	-	-
Rear Panel/ Side Panel	DP/HDMI	-	-	-
	VGA	-	-	-
	DVI	-	-	-
	COM	4 (2 x RS-232, 2 x RS-232/422/485)	1 (RS-232/422/485)	2 (RS-232/422/485)
	LAN	-	-	-
	USB	2 (USB2.0)	-	-
	Audio Jack	Line-in, Line-out, Mic-in	-	-
	GPIO	8-bit	8-bit	8-bit
	CANBuss	-	-	2
	Antenna (optional)	up to 1	-	up to 4
Miscellaneous	LED Indicators	2 (Power LED, HDD LED)	1 (Power LED)	1 (Power LED)
	Switch	1 (Power Switch)	1 (Power Switch)	1 (Power Switch)
	Circular Cutouts	1	-	-
Mounting		Desk mount, VESA mount, DIN rail	Desk mount, Wall mount, DIN rail	Wall mount, DIN rail
Power Requirements	Power Voltage	12V DC-in	12V DC-in	12V/24V DC-in
	Power Input Type (Inlet)	Phoenix DC plug-in	Phoenix DC plug-in	DC Jack
	Consumption	4.5W (idle with Celeron N3060)	N3350: 0.41 @ 12V (4.89 W)	TBD
Environment	Operating Temperature	0 ~ 50 °C (32 ~ 122 °F)	0 ~ 50 °C (32 ~ 122 °F)	-20 ~ 60 °C
	Non-operating Temperature	-40 ~ 85 °C (-40 ~ 185 °F)	-40 ~ 85 °C (-40 ~ 185 °F)	-40 ~ 85 °C (-40 ~ 185 °F)
	Humidity	Operating: 40 °C @ 95% RH, non-condensing Storage: 60 °C @ 95% RH, non-condensing	Operating: 40 °C @ 95% RH, non-condensing Storage: 60 °C @ 95% RH, non-condensing	Operating: 40 °C @ 95% RH, non-condensing Storage: 60 °C @ 95% RH, non-condensing
	Vibration (5 ~ 500Hz)	IEC60068-2-64 random 3.0Grms IEC60068-2-6 sinusoidal 2.0G	IEC60068-2-64 random 3.0Grms IEC60068-2-6 sinusoidal 2.0G	IEC60068-2-64 random 3.0Grms IEC60068-2-6 sinusoidal 2.0G
	Shock	IEC60068-2-27 half-sine 30G/11ms	IEC60068-2-27 half-sine 30G/11ms	IEC60068-2-27 half-sine 30G/11ms
Certification		CE/FCC Class B CB/UL/CCC/BSMI	CE/FCC Class B CB/UL/CCC/BSMI/ KCC	CE/FCC ClassB/CB/UL/CCC/BSMI
Physical Characteristics	Dimensions (W x H x D)	188 x 39 x 150 mm	134 x 100 x 44mm	170 x 118 x 70mm
	Weight	0.95kg	0.6Kg	1.5Kg

Note: "-" : means Not Applicable (N/A)

EPC-B, EPC-T & EPC-P Series

NEW

NEW



Model Name		EPC-B2205	EPC-T4286	EPC-P3066
Barebone system	Description	Fan-base barebone, w/ 150W PSU, w/o HDD, memory	w/Fan, w/o adaptor, memory	w/Fan, w/o adaptor, memory
Processor System	Compatible Motherboard	AIMB-205G2-00A1E	AIMB-286	Proprietary
	Thermal Solution	2 x chassis fan (7cm/28CFM)	2 Chassis Fans, 1 CPU cooler	2 Chassis Fans, 1 CPU cooler
	CPU	Intel® 7th Gen Core™ & 6th Gen Core™ i processor /Pentium / Celeron (LGA1151) with Intel H110 chipset	Intel® 8th /9th Gen Desktop Core i CPU	I7-9700E
Memory	BIOS	AMI EFI 128 Mbit SPI	AMI EFI 128 Mbit SPI	AMI EFI 128 Mbit SPI
	Socket	2 x 260-pin DDR4 SO-DIMM	2 260-Pin SODIMM	2 260-Pin SODIMM
	Technology	Dual channel DDR4 2400/2133 MHz non ECC SDRAM (Only supports DDR4 2133 MHz SDRAM for SKL-S CPU)	DDR4 2666	DDR4 2666
Graphics	Max. Capacity	Up to 32GB (16GB per SO-DIMM)	32GB	32GB
	Chipset Integrated	Integrated Intel® HD Graphics 530	Intel® UHD Graphics 630	Intel® UHD Graphics 630
Storage	2.5" HDD Bay	2 (supports 2 x 2.5" HDD/SSD, or 1 slim ODD & 1 x 2.5" HDD/SSD)	1	2
	mSATA Slot	1 (share w/ full size Mini-PCIe slot)	-	-
Ethernet	Interface	10/100/1000 Mbps	10/100/1000 Mbps Ethernet	10/100/1000 Mbps Ethernet
	Controller	LAN1: Realtek RTL8111G LAN2: Realtek RTL8111G	GbE LAN1/2: Realtek 8111G GbE LAN3: Intel i211AT	LAN1: Intel Clarkville: i219LM GbE PHY LAN 2: Intel Springville: i210AT GbE LAN 3: Realtek: RTL8111H GbE
	Connector	2 (RJ-45)	RJ45	RJ45
Audio	Codec	Realtek ALC892, High Definition Audio (HD)	Realtek ALC892	Realtek ALC892
Internal expansion Slot	Mini-PCIe	1 (Full-size)	-	2 (F/S)
	M.2	1 x M.2 Key B slot (2242)	2, 1 B-Key, 1 E-Key	2, 1 B-Key, 1 E-Key
	SIM slot	-	1	-
	SD slot	-	-	-
Front Panel	DP++	-	1	-
	DP/HDMI	-	1 HDMI	1 HDMI
	VGA	-	-	1
	DVI	-	-	-
	COM	4 (Optional)	2 (RS-232)	6 (2 RS-232/422/485, 4 RS-232)
	LAN	-	3 (GbE)	3 (GbE)
	USB	2 (USB2.0; Optional)	6 (4 USB3.0, 2 USB2.0)	6 USB3.0
	Audio Jack	-	2 (1 Line-out, 1 Mic-in)	-
	Antenna (optional)	up to 2	1	-
	DP++	-	-	-
Rear Panel	DP/HDMI	1/0	-	-
	VGA	1	-	-
	DVI	1 (DVI-D)	-	-
	COM	-	4 (RS-232)	-
	LAN	2 (RJ-45)	-	-
	USB	4 (USB3.0); 4 (USB2.0)	-	-
	Audio Jack	3 (line-in, line-out, mic-in)	-	-
	GPIO	8 bits (Optional)	-	-
	Antenna (optional)	-	2	-
Miscellaneous	LED Indicators	2 (Power LED, HDD LED)	2 (Power, HDD)	5 (COM1 TX/RX, COM2 TX/RX, HDD LED)
	Switch	1 (Power Switch); 1 (Reset Switch)	1 Power Switch	-
	Circular Cutouts	-	1 Power Switch	-
Mounting		Wall mount		
Power Requirements	Power Voltage	Power Voltage: 100V~240V AC input	12V DC-In	12 ~ 24V DC-In
	Power Input Type (Inlet)	Power Code input	DC Jack	4 Pin Phoenix Connector
	Consumption	TBD	120W	220W
Environment	Operating Temperature	0 ~ 40 °C (32 ~ 104 °F)	0 ~ 45 °C	0 ~ 50 °C
	Non-operating Temperature	-20 ~ 60 °C (-4 ~ 140 °F)	-40 ~ 85 °C	-40 ~ 85 °C
	Humidity	10~95% @ 40°C, non-condensing	10~95% @ 40°C, non-condensing	10~95% @ 40°C, non-condensing
	Vibration (5 ~500Hz)	1 Grms (HDD*1+ODD*1); 0.5 Grms (HDD*2)	3G (with SSD)	3G (With SSD and w/o expansion options)
	Shock	-		
Certification		CE, FCC	CE / FCC	CE / FCC
Physical Characteristics	Dimensions (W x H x D)	250 x 98 x 255 mm (9.84" x 3.86" x 10.04")	188 x 44 x 188 mm	335 x 88 x 260 mm
	Weight	3.8kg	3.1 Kg	5.5 Kg

Embedded PCs

EPC-U Series



Model Name		EPC-U2217
Barebone system	Description	Fanless w/Adapter, memory
Processor System	Compatible Motherboard	AIMB-U217N-00A1E
	Thermal Solution	Heatsink
	CPU	Intel Atom E3940 (on board)
	BIOS	AMI EFI 16Mbit SPI
Memory	Socket	1 X 204-pin DDR3L SODIMM (Non-ECC)
	Technology	DDR3L 1866MHz SDRAM
	Max. Capacity	Up to 8GB SODIMM
Graphics	Chipset Integrated	Intel HD Graphics GEN9
Storage	2.5" HDD Bay	1(support 2.5" HDD/SSD, max 7.5mm height)
	mSATA Slot	1, colay with F/S miniPCIE
	eMMC	Onboard eMMC 5.1 upto 128GB
Ethernet	Interface	10/100/1000 GbE LANs.
	Controller	LAN1/2 Intel i210TE LAN 3 Realtek RTL8111G
	Connector	3(RJ-45)
Audio	Codec	Realtek ALC892, High Definition Audio(HD)
Internal expansion Slot	Mini-PCle	2 (1x F/S miniPCIE slot,
	M.2	1 M.2(E-Key)
	SIM slot	-
	SD slot	-
Front Panel	DP++	-
	DP/HDMI	-
	VGA	-
	DVI	-
	COM	3 x RS-232 1 x RS-422/RS-485
	LAN	3
	USB	4 X USB 3.0
	Audio Jack	1
	Antenna (optional)	-
	DP++	-
Rear Panel	DP/HDMI	-
	VGA	1/1
	CAN bus	-
	COM	1
	LAN	-
	USB	-
	Audio Jack	-
	GPIO	2 x 8 bit
Miscellaneous	Antenna (optional)	Up to 4
	LED Indicators	-
	Switch	-
Mounting	Circular Cutouts	1 x Power Switch
		Wall mount, Din Rail mount
Power Requirements	Power Voltage	12V~24V DC-in
	Power Input Type (Inlet)	2 pin Phenix Connector
	Consumption	12V@1.409A
Environment	Operating Temperature	-20 ~ 60 °C (32 ~ 104 °F) with RF module by max system performance
	Non-operating Temperature	-40 ~ 85 °C and 95% @ 40 °C
	Humidity	Non-Condensing
	Vibration (5 ~ 500Hz)	3G (with 2.5" SSD)
Certification	Shock	
		CE/FCC/CCC/BSMI
Physical Characteristics	Dimensions (W x H x D)	170 X 52.6 X 117
	Weight	1.2KG

Note: "-" : means Not Applicable (N/A)

EPC-R Series



Model Name		EPC-R3220	EPC-R4680
Barebone System	Description	Arm based Fan-less Barebone System	Arm based Fan-less Barebone System
Processor System	Compatible Motherboard	-	RSB-4680
	Thermal Solution	Fanless	Fanless
	CPU	TI Sitara™ AM3352 Cortex®-A8 800MHz	Rockchip Arm Cortex-A17 RK3288 Quad core 1.6 GHz
	BIOS	Advantech boot loader	Advantech boot loader
Memory	Socket	On-board	On-board
	Technology	DDR3 800MHz	DDR3L 1333MHz
	Max. Capacity	1 GB	2 GB
Graphics	Chipset Integrated	-	Mali-T764 GPU processor with OpenGL ES3.0, OpenCL1.1 and DirectX11
Storage	On-board Storage	8 GB of eMMC NAND Flash for OS and 4 MB of SPI NOR Flash for Advantech boot loader	8GB eMMC NAND Flash for O.S. and Advantech boot loader
	mSATA Slot	-	-
Ethernet	Interface	2 x 10/100/1000 Mbps	10/100/1000 Mbps
	Controller	TI AM3352 Integrated RGMII	TI DP83867
	Connector	2 x RJ45	RJ45
Audio	Codec	-	Realtek ALC5660
Internal expansion Slot	Mini-PCle	1 x Full-size	1 x Full-size
	M.2	-	1 x M.2 Key E slot
	SIM slot	1 x Nano SIM slot	1
	SD slot	1 x Micro SD slot	1 x Micro SD slot
Front Panel	DP++	-	-
	DP/HDMI	-	-
	VGA	-	-
	DVI	-	-
	COM	2 x 4-wire RS-232/485	4 x 4-wire RS-232
	GPIO	6	-
	LAN	2	-
	USB	-	3 USB2.0
	Audio Jack	-	-
	Antenna (optional)	-	3 x antenna hole
Rear Panel/Side Panel	DP++	-	-
	DP/HDMI	-	1x HDMI 2.0 up to 3840 x 2160
	VGA	-	1
	DVI	-	-
	COM	-	1 x 4-wire RS-232/485 1 x 2-wire RS-232/Debug port
	LAN 1	-	1
	USB	1 USB2.0 OTG	2 x USB2.0 Host 1 x USB2.0 OTG
	Audio Jack	-	1 x Line out 1 x Mic in
Miscellaneous	GPIO	-	8 x GPIO by DB9
	Antenna (optional)	4 x Antenna holes	2 x Antenna holes
	LED Indicators	1 LED for system power 3 LEDs for user to define	1 Green LED for system power 1 Orange LED for WLAN
	Switch	1 x Reset button	1 x Reset button 1 x Power button
Mounting	Circular Cutouts	-	-
		Wall mount/DIN rail mount (option)	Wall mount
Power Requirements	Power Voltage	12~24V	12V
	Power Input Type (Inlet)	2-pole lockable DC-in	DC-in
	Consumption	4.7W (Burning)	11.6W (heavy loading burning)
Environment	Operating Temperature	-20 ~ 70 °C	0 ~ 55 °C/-20 ~ 70 °C
	Non-operating Temperature	-40 ~ 85 °C	-40 ~ 85 °C
	Humidity	5 ~ 95% Relative Humidity, non-condensing	5 ~ 95% Relative Humidity, non-condensing
	Vibration (5 ~ 500Hz)	IEC60068-2-64 random 2.0Grms IEC60068-2-6 sinusoidal 2.0G	IEC60068-2-64 random 2.0Grms IEC60068-2-6 sinusoidal 2.0G
Certification	Shock	IEC60068-2-27 halfsine 10G/11ms	IEC60068-2-27 halfsine 10G/11ms
		CE/FCC/CCC/BSMI/SSRC	CE/FCC Class B/CCC/BSMI
Physical Characteristics	Dimensions (W x H x D)	139 x 85 x 30 mm	190 x 150 x 43 mm
	Weight	0.6KG	0.95KG

Embedded Wireless Modules

4G LTE CAT1/CAT4/CAT6


NEW

Model Name	EWM-C128	EWM-C117		EWM-C163	EWM-C145	EWM-C148
Part Number	EWM-C128FG01E	EWM-C117FL03E	EWM-C117FL04E	EWM-C163M201E	EWM-C145FL01E	EWM-C148FL02E
Form Factor	Full-size Mini PCIe	Full-size Mini PCIe	Full-size Mini PCIe	M.2 3042 (B key)	Full Size Mini PCI-e	mini PCI-e FMC
SIM Slot	With SIM card slot	With SIM card slot	With SIM card slot	No SIM card slot	With SIM card slot	no
Radio Technology	LTE CAT1+GPS	LTE CAT4	LTE CAT4	LTE CAT6	LTE CAT4+GPS	CAT4
Downlink/ Uplink	DL:10 Mbps, UL:5 Mbps	FDD LTE Max150Mbps(DL) / 50Mbps(UL)	FDD LTEMax150Mbps(DL) / 50Mbps(UL)	FDD LTEMax300Mbps(DL) / 50Mbps(UL)	FDD LTEMax150Mbps(DL) / 50Mbps(UL) TDD-LTE: 132 Mbps DL, 30 Mbps UL	150Mbps/50Mbps
Frequency Band	4G/LTE Cat. 1: Bands 3, 8, 28 for Taiwan 3G UMTS: band 1	4G LTE bands 2 / 4 / 5 / 7 / 17, 3G bands 1/2/4/5/8, GPRS band 850 / 900 / 1800 / 1900	4G LTE bands 1 / 3 / 5 / 7 / 8 / 20, 3G bands 1/2/5/8, GPRS: 850/ 900/1800/1900MHz	4G LTE FDD: Band 1, 3, 7, 8, 20, 28, 32 3G bands: 1, 8	FDD-LTE: B1/B3/B5/B8 TDD-LTE: B38/B39/ B40/B41 TD-SCDMA: B34/B39 EVDO/CDMA: BC0	FDD-LTE: Band 1,3,5,7,8,20,28 TDD-LTE: Band 38,40,41
Main Chipset	u-blox LARA- R280+M8M-0 GNSS engine	u-blox TOBY-L200	u-blox TOBY-L210	Intel 7262	Qualcomm MDM9X07	Qualcomm MDM9X07
Operating Temperature	(-40~+85) (Operating)	-40 ~ +85 °C (Operating)	-40 ~ +85 °C (Operating)	-30 ~ +65 °C (Operating)	(-40~+85) (Operating)	Extended: -40 ~ +85 °C
Signal Protocol	USB 2.0	USB 2.0	USB 2.0	USB 2.0	USB 2.0	USB 2.0
Support Area	Taiwan/Australia	US	EU/APAC	EMEA	China	EU

Wi-Fi 6


NEW

Wi-Fi



Model Name	EWM-W260
Part Number	EWM-W260M201E
Form Factor	M.2 2230 E-key
Wireless Standard	802.11 a/b/g/n/ac/ax+BT5.1
Chipset	QCA6391
Signal Protocol	PCI-e/USB 2.0
Antenna	2 antenna
Operating Voltage	3.3V
Temperature Range	TBD
Dimensions (LxWxH)	22 x 30 x 2.2 mm
Security	WEP 64-bit and 128-bit encryption with H/W TKIP processing WPA/WPA2 (Wi-Fi Protected Access); WAPI
SISO/MIMO	2T2R MIMO
Data Rate	802.11ax:up to 1774.5Mbps
Bluetooth	BT5.1
O.S Supported	Win10
Host Connector Type	M.2 card

Model Name	EWM-W158	EWM-W170
Part Number	EWM-W158F01E	EWM-W170H01E
Form Factor	Full Size Mini PCI-e	Half Size Mini PCI-e
Wireless Standard	802.11 a/b/g/n	802.11a/b/g/n/ac
Chipset	Atheros AR9592- AR1B	Atheros QCA9377-7
Signal Protocol	PCIe Differential	USB Differential
Antenna	2 x U.FL connectors	2*U.FL connectors
Operating Voltage	DC 3.3V ± 5%	DC 3.3V+5%
Temperature Range	-40 ~ 85 °C (Operating)	(-20~+70) (Operating)
Dimensions (L x W x H)	50.8 x 29.85 x 2.86 mm	26.65*29.85*2.75mm
Security	64/128-bit WEP, WPA, WPA2, 802.1x, TKIP and AES	WAPI, 64/ 128-bit WEP, WPA/WPA2 TKIP and AES
SISO/MIMO	2T2R MIMO	1T1R
Data Rate	300Mbps	433Mbps
Bluetooth	-	-
O.S Supported	Win 7/ 8/ 8.1	Win7/8/8.1/10
Host connector type	PCIe Mini card	PCIe Mini card

Embedded Wireless Modules

GPS



Model Name	EWM-G109	EWM-G110
Part Number	EWM-G109H01E	EWM-G110H01E
Form Factor	Half Size Mini PCI-e	Half Size Mini PCI-e
GPS Type	Hardware standalone	Hardware standalone
Signal Protocol	USB	USB
Chipset	NEO-M8N	NEO-M8U+3D inertial sensors
Operating Temperature	-40 to +85 °C	-40 to +85 °C
RF Receiver Type	GPS module, multi-GNSS (GPS, Beidou, GLONASS, Galileo, QZSS and SBAS)	GPS module, multi-GNSS (GPS, Beidou, GLONASS, Galileo, QZSS and SBAS)
GPS Acquisition	Cold starts: 26s / Aided starts: 2	Cold starts: 26s / Aided starts: 2
GPS Accuracy	Aided starts: 2	Aided starts: 2
GPS Sensitivity	Tracking: -167 dBm / Cold starts: -148 dBm / Reacquisition: -160 dBm	Tracking: -167 dBm / Cold starts: -148 dBm / Reacquisition: -160 dBm

LPWAN



Model Name	EWM-NB147
Part Number	EWM-NB147F02E
Form Factor	Full Size Mini PCI-e
SIM slot	With SIM card slot
Radio Technology	LTE Cat M1 / NB1
Downlink/ Uplink	DL 375 kb/s Cat M1 Half-duplex UL 375 kb/s Cat M1 Half-duplex
Frequency Band	4G/LTE Cat. 1: Bands 2, 3, 4, 5, 8, 12, 13, 20, 28
Main Chipset	u-blox SARA-R410-02B engine
Operating Temperature	(-40 ~ +85 °C) (Operating)
Signal protocol	USB 2.0
support area	FCC, ISCED, GCF, NCC, PTCRB, RCM, AT&T, Telstra, T-Mobile, Verizon

Wi-Fi & Bluetooth Combo


NEW

Model Name	EWM-W157	EWM-W163	EWM-W190	EWM-W195	EWM-W159
Part Number	EWM-W157M201E	EWM-W163M201E	EWM-W190H01E	EWM-W195M201E	EWM-W159M201E
Form Factor	M.2-2230 (A-E key)	M.2-2230(A-E key)	Half Size Mini PCI-e	M.2-2230(A-E key)	M.2 2230 A-E key
Wireless Standard	802.11 ac/a/b/g/n+BT4.2	802.11a/b/g/n/ac+BT4.2	802.11a/b/g/n/ac+BT4.2	802.11a/b/g/n/ac+BT4.2	802.11 ac/a/b/g/n + Bluetooth 5.0
Chipset	Realtek RTL8821CE	Atheros QCA6174A-5	Atheros QCA6174A-5	Atheros QCA6174A-5	RTL 8822CE-CG
Signal Protocol	WiFi: PCIe BT: USB Differential	WiFi: PCIe BT: USB Differential	WiFi: PCIe BT: USB Differential	WiFi: PCIe BT: USB Differential	PCI-e/USB 2.0
Antenna	2 x I-PEX MHF4 connectors	2 x I-PEX MHF4 connectors	2*U.FL connectors	2*I-PEX MHF4 connectors	2 antenna
Operating Voltage	DC 3.3V ± 5%	DC 3.3V ± 5%	DC 3.3V±5%	DC 3.3V±5%	3.3V
Temperature Range	0 ~ 70 °C (Operating)	Extended Operating temperature: -20 ~ 85 °C	-40 ~ 85° C (Operating)	-40 ~ 85° C (Operating)	0 ~ +70°C
Dimensions (L x W x H)	22 x 30 x 2.3 mm	22 x 30 x 2.3 mm	26.65*29.85*2.75mm	22*30*2.3mm	22 x 30 x 2.2 mm
Security	64/128-bit WEP, WPA, WPA2, 802.1x, TKIP and AE	WAPI, 64/ 128-bit WEP, WPA/WPA2 TKIP and AES	WAPI, 64/ 128-bit WEP, WPA/WPA2 TKIP and AES	WAPI, 64/ 128-bit WEP, WPA/WPA2 TKIP and AES	WPA/WPA2 (Wi-Fi Protected Access) / WAPI / WEP 64-bit with H/W TKIP
SISO/MIMO	1T1R	2T2R MIMO	2T2R MIMO	2T2R MIMO	2T2R MIMO
Data Rate	433Mbps	867Mbps	867Mbps	867Mbps	867Mbps
Bluetooth	2.1, 2.1+EDR, 3.0, 3.0+HS, 4.0 (BLE), 4.1, 4.2	2.1, 2.1+EDR, 3.0, 3.0+HS, 4.0 (BLE), 4.1, 4.2	2.1, 2.1+EDR, 3.0, 3.0+HS, 4.0(BLE), 4.1, 4.2	2.1, 2.1+EDR, 3.0, 3.0+HS, 4.0(BLE), 4.1, 4.2	BT5.0
O.S Supported	Win 7/8/8.1/10	Win7/8/8.1/10	Win7/8/8.1/10	Win7/8/8.1/10	Windows 7/8.x/10
Host Type	M.2 card	M.2 card	PCIe Mini card	M.2 card	M.2 card

Optional Antenna Selection



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

Optional Accessories



Part Number	1750008767-01
Length (cm)	150
Cable Type	WiFi cable
Cable Loss	0.62dB@2500MHz for 1Meter
Polarization	Linear
Connector	SMA(F)/SMA(M)
Impedance	50 ohm

Industrial Flash and Memory Solutions

SQFlash Industrial Storage Modules

NVMe SSD

NEW



NEW



NEW



SATA SSD

NEW



Model Name	SQF-C25 920 series	SQF-CM8 920 series	SQF-CM3 720 series	SQF-CMS 710 series	SQF-S25 845 series	SQF-S25 840 series	SQF-SM8 840 series
Form factor	2.5" U.2 NVMe SSD	M.2 2280 NVMe SSD (NGFF)	M.2 2230 NVMe SSD (NGFF)	Full-size Mini PCIe SSD	2.5" SATA SSD	2.5" SATA SSD	M.2 2280 SATA SSD (NGFF)
Transfer Protocol	PCIe Gen3 x4	PCIe Gen3 x4	PCIe Gen3 x2	PCIe Gen3 x2	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s
Connector	U.2 NVMe Interface (SFF 8639)	M.2 M-key with PCIe pin-out	M.2 A+E key with PCIe pin-out	Mini PCIe with PCIe pin-out	7+15 pin SATA	7 + 15 pin SATA	M.2 with B+M key SATA pin-out
Flash Type	3D TLC (BiCS3)	3D TLC (BiCS3)	3D TLC (BiCS3)	3D TLC (BiCS3)	3D eTLC (BiCS3)	3D TLC (BiCS3)	3D TLC (BiCS3)
Maximum Power Consumption	790 mA	2,430 mA	910mA	957 mA	900mA	720 mA	900 mA
Capacity	240GB ~ 7.6TB	240GB ~ 1.9TB	128GB ~ 512GB	64GB-1TB	480GB ~ 1.9TB	240GB ~ 7.6TB	240GB ~ 1.9TB
Maimum Read / Write Performance (MB/s)	Read: upto 3,200 Write: upto 3,000	Read: upto 3,200 Write: upto 2,700	Read: upto 850 Write: upto 780	Read: upto 1,560 Write: upto 1,000	Sequential: 560.1 / 533.3 Random IOPS@4K: 98K/72K	Sequential: 550 / 530 Random IOPS@4K: 100K/90K	Sequential: 550 / 530 Random IOPS@4K: 100K/90K
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	0 ~ 70 °C / -40 ~ 85 °C	0 ~ 70 °C / -40 ~ 85 °C
SQFlash Utility/ SQFlash Manager	Supported	Supported	Supported	Supported	Supported	Supported	Supported
Shock	1,500G, Peak / 0.5 ms	1,500G, Peak / 0.5 ms	1,500G, Peak / 0.5ms	1,500G, Peak / 0.5 ms	1,500G, Peak / 0.5ms	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 / 80~2,000Hz	20G, Peak / 80 ~2,000 Hz	20G, Peak / 80~2,000Hz	20G, Peak / 80 ~ 2,000 Hz	20G, Peak / 80 ~ 2,000 Hz

SATA SSD



Model Name	SQF-S25 830 series	SQF-SMS 830 series	SQF-SM8 830 series	SQF-S25 640 series	SQF-SM8 640 series	SQF-SM4 640 series	SQF-SMS 640 series	SQF-S10 640 series
Form factor	2.5" SATA SSD	mSATA SSD (MO-300A)	M.2 2280 SATA SSD (NGFF)	2.5" SATA SSD	M.2 2280 SATA SSD (NGFF)	M.2 2242 SATA SSD (NGFF)	mSATA SSD (MO-300A)	CFast
Transfer Protocol	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s
Connector	7 + 15 pin SATA	Mini PCIe with SATA pin-out	M.2 with B+M key SATA pin-out	7 + 15 pin SATA	M.2 with B+M key SATA pin-out	M.2 with B+M key SATA pin-out	Mini PCIe with SATA pin-out	CFast Type-I
Flash Type	SLC / Ultra MLC / MLC	SLC / Ultra MLC / MLC	SLC / Ultra MLC / MLC	Ultra MLC / MLC / 3D TLC (BiCS3)	Ultra MLC / MLC / 3D TLC (BiCS3)	Ultra MLC / MLC / 3D TLC (BiCS3)	Ultra MLC / MLC / 3D TLC (BiCS3)	Ultra MLC / MLC / 3D TLC (BiCS3)
Maximum Power Consumption	1,080 mA	1,260 mA	1,260 mA	530 mA	750 mA	500 mA	750 mA	500 mA
Capacity	64GB ~ 2TB	32GB ~ 1TB	32GB ~ 1TB	16GB ~ 1TB	16GB ~ 512GB	16GB ~ 512GB	16GB ~ 1TB	16GB ~ 256GB
Maimum Read / Write Performance (MB/s)	Sequential: 550 / 530 Random IOPS@4K: 100K / 100K	Sequential: 540 / 480 Random IOPS@4K: 88K / 91K	Sequential: 540 / 480 Random IOPS@4K: 88K / 91K	Sequential: 560 / 490 Random IOPS@4K: 86K / 91K	Sequential: 560 / 490 Random IOPS@4K: 86K / 91K	Sequential: 560 / 500 Random IOPS@4K: 86K / 91K	Sequential: 560 / 490 Random IOPS@4K: 86K / 91K	Sequential: 560 / 470 Random IOPS@4K: 82K / 82K
Op. Temperature	0 ~ 70 °C / -40 ~ 85 °C	0 ~ 70 °C	0 ~ 70 °C	0 ~ 70 °C / -40 ~ 85 °C	0 ~ 70 °C / -40 ~ 85 °C	0 ~ 70 °C / -40 ~ 85 °C	0 ~ 70 °C / -40 ~ 85 °C	0 ~ 70 °C / -40 ~ 85 °C
SQFlash Utility/ SQFlash Manager	Supported	Supported	Supported	Supported	Supported	Supported	Supported	Supported
Shock	1,500G, Peak / 0.5 ms	1,500G, Peak / 0.5 ms	1,500G, Peak / 0.5 ms	1,500G, Peak / 0.5 ms	1,500G, Peak / 0.5 ms	1,500G, Peak / 0.5 ms	1,500G, Peak / 0.5 ms	1,500G, Peak / 0.5 ms
Vibration	20G, Peak / 80 ~2,000 Hz	20G, Peak / 80 ~2,000 Hz	20G, Peak / 80 ~2,000 Hz	20G, Peak / 80 ~2,000 Hz	20G, Peak / 80 ~2,000 Hz	20G, Peak / 80 ~2,000 Hz	20G, Peak / 80 ~2,000 Hz	20G, Peak / 80 ~2,000 Hz

Industrial Flash and Memory Solutions

SQRAM Industrial Memory Modules

SODIMM



UDIMM



Model	SQR-SD4N	SQR-SD3N	SQR-SD3M	SQR-SD4I	SQR-SD3I	SQR-SD2I	SQR-UD4N	SQR-UD3N
DDR	DDR4	DDR3L	DDR3L	DDR4	DDR3L	DDR2	DDR4	DDR3L
DIMM Type	SODIMM	SODIMM	SODIMM	SODIMM	SODIMM	SODIMM	UDIMM	UDIMM
Pin Number	260pin	204pin	204pin	260pin	204pin	200pin	288pin	240pin
Frequency(MHz)	3200/2666/2400	1866/1600	1866/1600	3200/2666/2400	1866/1600	800/667	3200/2666/2400	1866/1600
Capacity	2/4/8/16/32GB	2/4/8GB	2/4/8GB	4/8/16/32GB	2/4/8GB	1/2GB	2/4/8/16/32GB	2/4/8GB
Voltage	1.2V	1.35V/1.5V	1.35V/1.5V	1.2V	1.35V/1.5V	1.8V	1.2V	1.35V/1.5V
Operating Temperature	0 ~ 85 °C	0 ~ 85 °C	-20 ~ 85 °C	-40 ~ 85 °C	-40 ~ 85 °C	-40 ~ 85 °C	0 ~ 85 °C	0 ~ 85 °C
SQRAM Manager	Supported							



Model	SQR-RD4N	SQR-RD4I	SQR-SD4 (ECC)	SQR-UD4N (ECC)	SQR-YD4I
DDR	DDR4	DDR4	DDR4	DDR4	DDR4
DIMM Type	RDIMM	RDIMM	SODIMM	UDIMM	Rugged SODIMM
Pin Number	288pin	288pin	260pin	288pin	260pin
Frequency(MHz)	3200/2933/2666	2400	2666/2400	2666/2400	2666
Capacity	8/16/32GB	8/16/32GB	4/8/16/32GB	4/8/16/32GB	8/16/32GB
Voltage	1.2V	1.2V	1.2V	1.2V	1.2V
Operating Temperature	0 ~ 85 °C	-40 ~ 85 °C	0 ~ 85 °C / -40 ~ 85 °C	0 ~ 85 °C	0 ~ 85 °C / -40 ~ 85 °C
Function	ECC	ECC	ECC	ECC	ECC (optional)
Register	Yes	Yes	-	-	-
SQRAM Manager	No support	No support	Supported	Supported	Supported

EXM Embedded Extension Modules



Model Name	EXM-523	EXM-510 (EMIO-100E)	EXM-520 (EMIO-200SA)	EXM-522	EXM-322 (EMIO-220S)	EXM-321 (EMIO-210S)	EXM-CMPF1 (A key)	EXM-CMPF1 (E key)
Type	PCIe to 2-Ch Giga LAN port	PCIe to 1-Ch Giga LAN port	PCIe to 2-Ch SATA III port	PCIe to 2-Ch USB 2.0 port	USB to 2-Ch High Speed RS-422/ RS-485 port	USB to 2-Ch High Speed RS-232 port	M.2 (NGFF) to mPCIe (PCIe+USB) adapter	M.2 (NGFF) to mPCIe (PCIe+USB) adapter
Communication Interface	PCIe	PCIe	PCIe	PCIe	Combo USB (Internal/ External)	Combo USB (Internal/ External)	PCIe and USB	PCIe and USB
Interface Connector	MiniPCIe thru PCIe	MiniPCIe thru PCIe	MiniPCIe thru PCIe	H/S MiniPCIe thru PCIe	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	MiniPCIe thru PCIe and USB	MiniPCIe thru PCIe and USB
Channel Connector	2	1	2	2	2	2	1 (2230/2242 A key)	1 (2230/2242 E key)
Operating Temperature	0 ~ 70°C	-40 ~ 85°C	-10 ~ 70°C	-40 ~ 85°C	-40 ~ 85°C	-40 ~ 85°C	-40 ~ 85°C	-40 ~ 85°C
Storage Temperature	-40 ~ 85°C	-40 ~ 85°C	-40 ~ 85°C	-40 ~ 85°C	-40 ~ 85°C	-40 ~ 85°C	-40 ~ 85°C	-40 ~ 85°C
LED Status	Reserve the LED signal for external usage	Reserve the LED signal for external usage	Activated indicator	-	Power On/Off: Red LED COM-1 working : Green LED COM-2 working: Green LED	Power On/Off: Red LED COM-1 working : Green LED COM-2 working: Green LED	Activated indicator	Activated indicator
Dimensions (L x W x H)	50.59 x 30 x 20 mm + iDoor PCB Board	50.59 x 30 x 20 mm	50.59 x 30 x 20 mm	26.65 x 30 x 15 mm	50.59 x 30 x w20 mm	50.59 x 30 x 15 mm	50.59 x 30 x 15 mm	50.59 x 30 x 15 mm

Note: "-" : means Not Applicable (N/A)

Industrial Display Systems

Industrial Display Kit IDK-1000 Series

	IDK-1105	IDK-065	IDK-1107W			IDK-1108	IDK-1110W		IDK-1110	
Size	5.7"	6.5"	7"			8.4"	10.1"		10.4"	
Resolution	640 x 480 (VGA)	640 x 480 (VGA)	800 x 480 (WVGA)	1024 x 600 (WSVGA)	1024 x 600 (WSVGA)	800 x 600 (SVGA)	1024 x 600 (WSVGA)	1280 x 800 (WXGA)	800 x 600 (SVGA)	1024 x 768 (XGA)
Brightness (cd/m2)	500	800	400	400	500	450	550	500	400	500
Viewing Angle (H/V°)	140/100	160/140	160/160	150/145	140/120	160/140	120/140	170/170	160/130	176/176
Contrast Ratio	250:1	600:1	750:1	700:1	600:1	600:1	500:1	800:1	700:1	1000:1
Touchscreen	4-Wire Resistive	4-Wire Resistive	4-Wire Resistive	4-Wire Resistive	P-cap	4-Wire Resistive	4-Wire Resistive	P-cap	4-Wire Resistive	P-cap
Signal Interface	LVDS	LVDS	LVDS	LVDS	LVDS	LVDS	LVDS	LVDS	LVDS	LVDS
Backlight Life (hrs)	30,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000
Durability (touches)	1 million	1 million	1 million	1 million	50 million ~	1 million	1 million	50 million ~	1 million	50 million ~
Operating Temperature	-20 ~ 70°C	-10 ~ 60°C	-5 ~ 60°C	-20 ~ 70°C	-20 ~ 70°C	-10 ~ 60°C	-5 ~ 60°C	-20 ~ 65°C	-10 ~ 60°C	-20 ~ 70°C

	IDK-1112		IDK-1115	IDK-1115WP		IDK-1119	IDK-1121W	
Size	12.1"		15"	15.6"		19"	21.5"	
Resolution	800 x 600 (SVGA)	1024 x 768 (XGA)	1024 x 768 (XGA)	1366x768 (WXGA)	1920x1080 (FHD)	1280 x 1024 (SXGA)	1920 x 1080 (FHD)	1920 x 1080 (FHD)
Brightness (cd/m2)	450	500	500	500	450	350	300	250
Viewing Angle (H/V°)	160/140	178/178	178/178	160/150	170/170	170/160	178/178	178/178
Contrast Ratio	700:1	1000:1	2500:1	600:1	800:1	1000:1	5000:1	1000:1
Touchscreen	5-Wire Resistive	5-Wire Resistive and P-cap	5-Wire Resistive and P-cap	P-cap	P-cap	5-Wire Resistive	5-Wire Resistive	P-cap
Signal Interface	LVDS	LVDS	LVDS	LVDS	2 Channel LVDS	2 Channel LVDS	2 Channel LVDS	2 Channel LVDS
Backlight Life (hrs)	50,000	30,000	70,000	50,000	50,000	50,000	50,000	30,000
Durability (touches)	10 million	10 / 50 million ~	10 / 50 million ~	50 million ~	50 million ~	10 million	10 million	50 million ~
Operating Temperature	-20 ~ 70°C	-20 ~ 70°C	-20 ~ 70°C	-10 ~ 70°C	-20 ~ 70°C	0 ~ 50°C	0 ~ 60°C	0 ~ 50°C

High Brightness Display Kit IDK-2000 Series

	IDK-2108	IDK-2110		IDK-2112		IDK-2115	IDK-2117	IDK-2119	IDK-2121
Size	8.4"	10.4"		12.1"		15"	17"	19"	21.5"
Resolution	800 x 600 (SVGA)	800 x 600 (SVGA)	1024 x 768 (XGA)	800 x 600 (SVGA)	1024 x 768 (XGA)	1024 x 768 (XGA)	1280 x 1024 (SXGA)	1280 x 1024 (SXGA)	1920 x 1080 (FHD)
Brightness (cd/m2)	1200	1200	1300	1200	1200	1200	1200	1200	1200
Viewing Angle (H/V°)	160/140	160/130	170/170	160/140	178/178	178/178	170/160	170/160	178/178
Contrast Ratio	600:1	500:1	700:1	700:1	1000:1	2500:1	1000:1	1000:1	5000:1
Touchscreen	4-Wire Resistive	4-Wire Resistive	4-Wire Resistive	5-Wire Resistive	P-cap	5-Wire Resistive	5-Wire Resistive	5-Wire Resistive	5-Wire Resistive
Signal Interface	LVDS	LVDS	LVDS	LVDS	LVDS	LVDS	2 Channel LVDS	2 Channel LVDS	2 Channel LVDS
Backlight Life (hrs)	50,000	50,000	70,000	50,000	50,000	50,000	50,000	50,000	50,000
Durability (touches)	1 millions	1 million	1 million	10 million	50 million ~	10 million	10 million	10 million	10 million
Operating Temperature	-20 ~ 70°C	-10~60°C	-10~60°C	-20 ~ 70°C	-20 ~ 70°C	-20 ~ 70°C	0 ~ 50°C	0 ~ 50°C	0 ~ 55°C

Slim Open Frame/Panel Mount Monitors IDS-3000 Series

	IDS-3106/ IDS-3206	IDS-3110/ IDS-3210	IDS-3112/ IDS-3212	IDS-3115/ IDS-3215	IDS-3117/ IDS-3217	IDS-3118W/ IDS-3218W	IDS-3119/ IDS-3219	IDS-3121W/ IDS-3221
Size	6.5"	10.4"	12.1"	15"	17"	18.5"	19"	21.5"
Resolution	800 x 600 (SVGA) 1024 x 768 (XGA)	800 x 600 (SVGA) 1024 x 768 (XGA)	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)
Brightness (cd/m2)	800	400/500	450/600	500/1200	350	300	350	250
Viewing Angle(H/V°)	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	800 : 1	1000:1	1000:1	1000:1
Touchscreen	4-Wire Resistive	5-wire resistive and P-cap	5-wire resistive and P-cap	5-wire resistive and P-cap	5-Wire Resistive	5-wire resistive and P-cap	5-wire resistive and P-cap	5-wire resistive and P-cap
Backlight Life (hrs)	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000
Durability	1 million touches	10/50 million touches	10/50 million touches	10/50 million touches	10 million touches	10/50 million touches	10/50 million touches	10/50 million touches
Operating Temperature	0 ~ 50° C	- 20 ~ 60° C	- 20 ~ 60° C	- 20 ~ 60° C	- 20 ~ 60° C	0 ~ 55° C	0 ~ 45° C	0 ~ 45° C
I/O Ports	VGA x 1; DVI x 1; HDMI x 1 (selected models); 12 VDC Jack x 1; USB x 1; RS-232 x 1							
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							

Industrial Display Systems

IP65 Monitors IDS-3300 Series

	IDS-3315	IDS-3319	IDS-3321W
Size	15"	19"	21.5"
Resolution	1024 x 768 (XGA)	1280 x 1024 (SXGA)	1920 x 1080 (FHD)
Brightness (cd/m2)	500 / 1200	350	250
Viewing Angle (H/V°)	160/140	170/160	178/178
Contrast Ratio	2500:1	1000:1	1000:1
Touchscreen	5-wire resistive and P-cap	5-wire resistive and P-cap	5-wire resistive and P-cap
Backlight Life (hrs)	50,000	50,000	50,000
Durability	10/50 million touches	10/50 million touches	10/50 million touches
Operating Temperature	-20 ~ 60° C	0 ~ 45° C	0 ~ 45° C
I/O Ports	VGA x 1; DVI x 1; HDMI x 1 12VDC Jack x 1; USB x 1; RS-232 x 1		

Configurable Industrial Monitors IDS31 Series

	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"	32" Wide
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
Brightness (cd/m2)	400	230	300	300	350	250	300	350
Viewing Angle (H/V°)	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
Contrast Ratio	500 : 1	500 : 1	500 : 1	1000 : 1	1000 : 1	5000 : 1	1000 : 1	1000 : 1
Touchscreen	5 wire AR	5 wire AR	Projected Capacitive	Projected Capacitive	Projected Capacitive	Projected Capacitive	Projected Capacitive	Surface / Projected Capacitive
Backlight Life (hrs)	50,000	30,000	50,000	50,000	50,000	30,000	30,000	50,000
Operating Temperature	0 ~ +50° C	0 ~ +50° C	0 ~ +50° C	0 ~ +50° C	0 ~ +50° C	0 ~ +50° C	0 ~ +50° C	0 ~ +50° C

Digital Signage Displays DSD-3000/5000 Series

	DSD-3032	DSD-3042	DSD-3055	DSD-5028	DSD-5038
Size	32"	42"	55"	28"	38"
Resolution	1920 x 1080	1920 x 1080	1920 x 1080	1920 x 358	1920 x 538
Brightness (cd/m2)	350	500	450	700	800
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
Touchscreen	Optical Touch	Optical Touch	Optical Touch	N/A	N/A
Signal Interface	HDMI/VGA/ DisplayPort	HDMI/VGA/ DisplayPort	HDMI/VGA/ DisplayPort	VGA/DVI	VGA/DVI
Backlight Life (hrs)	50,000	50,000	50,000	50,000	50,000
Durability	10 million touches	10 million touches	10 million touches	N/A	N/A
Operating Temperature	5 ~ 45° C	5 ~ 45° C	5 ~ 45° C	0 ~ 45° C	0 ~ 45° C

Ultra Thin Proflat Monitors IDP31 Series

	IDP31-150	IDP31-156W	IDP31-215W
Size	15"	15.6"	21.5" Wide
Resolution	1024 x 768	1920 X 1080	1920 x 1080
Brightness (cd/m2)	500	450	250
Viewing Angle (H/V°)	160 / 140	170 / 170	178 / 178
Contrast Ratio	2500:1	800:1	1000 : 1
Touchscreen	P-cap	P-cap	P-cap
Backlight Life (hrs)	50,000	50,000	50,000
Durability	50 million touches	50 million touches	50 million touches
Operating Temperature	-20 ~ 60	-20 ~ 60	0 ~ 45

Curved Display CRV Series

	CRV-430WP	CRV-430JP
Size	43" C type	43" J type
Resolution	3840 x 2160 UHD	
Brightness (cd/m2)	450	
Contrast Ratio	1100:1 (8ms)	
Curved Radius	1500	
Touchscreen	Multi-touch PCT(10 touches)	
Cover Glass	4mm	
Operating Temperature	0 ~ 50° C	
I/O Ports	HDMI 1.4 (2 ports), HDMI 2.0 (2 ports), DisplayPort, VGA	

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Product Selection



Solution Site



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Product Selection



Solution Site



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Product Selection



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Product Selection



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Product Selection



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